OFFICIAL ORGAN
OF THE

EUROPEAN GROUP OF LYMPHOLOGY
LATIN-MEDITERRANEAN CHAPTER OF ISL
SOCIETÀ ITALIANA DI LINFANGIOLOGIA
CZECH SOCIETY OF LYMPHOLOGY
ROMANIAN SOCIETY OF LYMPHOLOGY
GREEK SOCIETY OF LYMPHOLOGY

THE EUROPEAN JOURNAL
OF
lymphology
and related problems

VOLUME 37 ▪ No. 86 ▪ 2026

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SUMMARY

1º Congreso del grupo Español de Linfología GEL 2026

48th ESL CONGRESS
European Society of Lymphology
September 23rd - 26th, 2026

Congress Venue

Hospital Universitari i Politècnic La Fe
Valencia, SPAIN

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48th CONGRESS OF EUROPEAN SOCIETY OF LYMPHOLOGY ESL 2026

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THE EUROPEAN JOURNAL OF LYMPHOLOGY AND RELATED PROBLEMS (EJLRP)

The EJLRP - official organ of the European Group of Lymphology (ESL), Czech Society of Lymphology, Romanian Society of Lymphology, Greek Society of Lymphology, the Latin-Mediterranean Chapter of Lymphology (LMCL), the Società Italiana di Linfangiologia (SIL) covers all fields of Lymphology and aims to present a multidisciplinair approach to diseases of the lymphatic system, with information on the analysis, control and treatments of such diseases.

Topics

The topics include:

- anatomy and anatomopathology
- physiology and physiopathology
- pharmacology
- diagnostic methods (conventional radiology, nuclear medicine, ultrasonography, computed tomography, biopsy, nuclear magnetic resonance)
- therapy (surgery, medicine, radiotherapy, physical)
- oncology (primary lymphatic system diseases, lymphonodal metastatic process)
- immunology
- post-therapeutic complications
- upper and lower limb edemas

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Submitted manuscripts will be published in the form of Editorial, Review article, Original article, Teaching article, Special article, Work in progress, Case Report, Short Communications, Letter to the Editor (in English), Abstract (in English)

They will be subdivided in Clinical and Basic Sciences.

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European Society of Lymphology

TURKISH SOCIETY OF LYMPHEDEMA

48th ESL Congress European Society of Lymphology

September 23rd - 26th, 2026 - Valencia, Spain

Congress Venue
Hospital Universitari i Politècnic La Fe

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Dear Attendees,

It is an honor to extend my warmest welcome to the ***48th Congress of the European Society of Lymphology (ESL) and the 1st Congress of the Spanish Group of Lymphology,*** *to be held in the city of* ***Valencia at the Hospital Universitari i Politècnic La Fe.***

The ***Spanish Congress*** *will take place on* ***September 23–24, 2026,*** *followed by the* ***European Congress on September 25–26, 2026.***

At a time when the discipline is advancing through new therapies, diagnostic technologies, and a multidisciplinary approach, this congress stands as a key forum to discuss the challenges and opportunities shaping current practice.

Valencia, with its rich cultural tradition and dynamic environment, provides an ideal setting to combine academic rigor with opportunities for professional interaction. We are confident that the scheduled sessions will make a significant contribution to the advancement of knowledge and to strengthening ties within the scientific community.

Active participation in this congress is not only an opportunity for professional growth, but also a shared responsibility as healthcare professionals committed to continuous improvement in the care of patients with lymphatic disorders.

We sincerely thank you for your presence and commitment and wish you a productive and enriching stay.

Yours sincerely,

Isabel Forner-Cordero

Congress President

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SCIENTIFIC PROGRAM: 1º CONGRESO DEL GRUPO ESPAÑOL DE LINFOLOGÍA | GEL 2026

Miércoles, 23 de Septiembre de 2026

HALL

13:00-14:00 **ACREDITACIÓN**

AULA H004

14:00-16:00 **TALLER 1: DRENAJE LINFÁTICO**
Blanca Pardo Sievers & Reme Ruiz Miñarro

16:00-17:15 **TALLER 2: VENDAJE**
Pilar Rel Monzó

18:00-19:30 **TALLER 3: PRENDAS DE COMPRESIÓN**
Isabel Forner Cordero & Laura Albiach Gascó

AULA H002

17:15-18:00 **SIMPOSIO JOVER**
Evaluación del linfedema mediante la tecnología de constante dieléctrica tisular
Manel Jiménez

SALA EXHIBICIÓN

15:00-16:00 **PÓSTERS**

SALÓN DE ACTOS

16:00-18:40 **COMUNICACIONES ORALES**
Moderadores: Pilar Crespo Cobo, Marta Fernández González, Vicenta Pujol

LINFEDEMA

16:00-16:10 **Déficits asociados al linfedema de cabeza y cuello en pacientes con cáncer de cabeza y cuello: estudio retrospectivo observacional longitudinal.**
Mihaela Adriana Taranu; María del Mar Palou de Comasema Buñola; Barbara María Nuñez García; Sandra Almazan Casamayor; María José Dura Mata

16:10-16:20 **Abordaje rehabilitador en pacientes con cáncer de cabeza y cuello valorados en nuestra unidad de linfedema.**
Aixa María Martín Ruiz; Sonia Pons Blasco; Víctor Cruz Guisado; Patricia Jaime Lozano; Isabel González Álvarez

16:20-16:30 **Ondas de choque focales piezoeléctricas como tratamiento adyuvante del linfedema de miembro superior secundario a cáncer de mama.**
Oriana Sánchez Bermúdez; Concepción Cuenca González; María Esteban Vado; Rocío Rivera Ruiz; Belén Martínez Luna; María Ramírez Menéndez; Alicia García Penedo; Celia Pascual Fidalgo

16:30-16:40 **Impacto de un programa de ejercicio terapéutico supervisado en supervivientes de cáncer de mama con linfedema secundario: estudio prospectivo.**
Azusena Estefania Rodríguez García; M Pilar Crespo Cobo; M Susana Gil Hernández; José Antonio Diaz

16:40-16:50 **Detección y estratificación de la gravedad del edema mamario mediante tecnología dieléctrica portátil en mujeres españolas con cáncer de mama.**
Gerard García-Rodríguez; Alba Gómez-Garrido; M Carme Gelabert-Vea; Marta Fernández-González; Laura Sánchez Iglesias; Marta Duran Álvaro; Patricia Launois; Vicenta Pujol-Blaya

16:50-17:00 **Intervención nutricional en el abordaje rehabilitador tras linfadenectomía axilar en pacientes con sobrepeso u obesidad: Estudio piloto.**
Mar Cerezo Dura; Juana María Elia Martínez; Rocío Conejero Cisneros; Elena Rubio Gomis; María Dolores Rubio Fernández; Victoria Eugenia Iñigo Huarte.

17:00-17:10 **Neuropatía del nervio intercostobraquial tras linfadenectomía axilar en cáncer de mama: incidencia y evolución clínica.**
Azusena Estefania Rodríguez García; M Susana Gil Hernández; M Pilar Crespo Cobo; Marta Casallo Cerezo

17:10-17:20 **Utilidad de la bioimpedanciometría multifrecuencia en el diagnóstico y seguimiento del linfedema de extremidad inferior.**
Felicitas García Ortun; Marina Álvarez Rubio; Ana Victoria Lobato Bonilla; Raúl García Martínez; Paulo Cesar Mateluna Paredes; Mercedes Piqueras Céspedes; Roser Belmonte Martínez.

17:20-17:30 **Monitorización mediante Bioimpedancia de la Terapia Descongestiva Compleja en Linfedema: ¿Es más sensible que la Circometría clásica?**
Ángela González Velado; Cristina Martínez Martínez; María José Sánchez Pérez; Sonia López Medina; María Pérez Colino; Cristina Pérez Alonso

17:30-17:40 **Planificación de las anastomosis linfático-venosas con ecografía.**
Paloma Malagón; Takumi Yamamoto

17:40-17:50 **Impacto de la terapia descongestiva compleja mediante drenaje linfático manual en el edema generalizado de pacientes pediátricos críticos: estudio observacional prospectivo.**
Florencio Jiménez Martín

LINFEDEMA

18:00-18:10 **ECOLIPE. Ultrasonidos en el diagnóstico de lipedema y linfedema.**
Adán Jesús Guerra Cabrera; Isabel Forner Cordero

18:10-18:20 **Dolor selectivo sobre perforantes en el 95% de pacientes con lipedema: un hallazgo clínico que el eco-Doppler convencional apenas detecta.**
José Luis Simarro Blasco

18:20-18:30 **Estudio Piloto En Lipedema y Obesidad Combinando dieta baja en hidratos, ortésis tejido plano y programa específico ejercicios.**
Ana María Ruíz; Aitor Trabanco Llano; Soraya Gamazo Santiago; Soledad Riesgo Fernández

18:30-18:40 **El Eje Intestino-Tejido Adiposo En El Lipedema. Scooping Review.**
Elena Vaquero Ramiro; Ana- Belén Puentes Gutiérrez 2; María García Bascones 2; Laura Millan Casas 3; Rebeca Puentes-Gutiérrez

Jueves, 24 de Septiembre de 2026

HALL

08:00-08:30 **ACREDITACIÓN**

SALÓN DE ACTOS

08:30-09:00 **APERTURA DEL CONGRESO**

09:00-10:30 **SESIÓN 1: LINFEDEMA**
Moderadores: Marta López Martín, Lourdes Reina Gutiérrez, Helena Martínez Ramos

09:05-09:25 **Flebolinfedema: un problema común frecuentemente infradiagnosticado e infratratado en las Unidades de Úlceras.**
Lourdes Reina Gutiérrez

09:25-09:45 **Evaluación instrumental I: Linfogammagrafía – LinfoSPECT.**
Cristina Ruiz Llorca

09:45-10:05 **Evaluación instrumental II: Linfo RMN.**
Alberto Alonso Burgos

10:05-10:30 **DISCUSIÓN**

10:30-11:00 **COFFEE BREAK – ZONA EXPOSICIÓN**

11:00-13:00 **SESIÓN 2: LIPEDEMA**
Moderadores: Isabel Forner Cordero, Reme Ruiz-Miñarro

11:05-11:25 **Perspectivas de investigación en lipedema: estado actual y líneas futuras.**
Isabel Forner Cordero

11:25-11:45 **Lipedema de brazos: claves diagnósticas y estrategias terapéuticas.**
Alexo Carballeira

11:45-12:05 **Intestino hiperpermeable en lipedema**
José Luis Simarro

12:05-12:25 **Nutrición y lipedema: criterios clave para la práctica clínica.**
Eraci Drehmer

12:25-13:00 **DISCUSIÓN**

13:00-14:00 **ASAMBLEA GENERAL DEL GEL**

14:00-15:00 **ALMUERZO – ZONA EXPOSICIÓN**

15:00-17:30 **SESIÓN 3: TRATAMIENTO DEL LINFEDEMA**
Moderadores: Cristina Puigdellívol, Vicenta Pujol Blaya, Pilar Crespo Cobo

15:05-15:25 **Agentes físicos en el abordaje de los trastornos linfáticos.**
Raquel Reinaldos

15:25-15:45 **Terapia celular en el tratamiento del linfedema.**
Cristina Puigdellívol

15:45-16:05 **Cirugías derivativas y de resección en el linfedema.**
Andrés Reyes Valdivia & África Duque

16:05-16:25 **Optimización del resultado quirúrgico mediante el abordaje rehabilitador.**
Pilar Crespo Cobo

16:25-16:45 **Mitos en las medidas de prevención del linfedema**
Marta López Martín

16:45-17:05 **Ejercicio como prevención y manejo del linfedema.**
Roser Belmonte

17:05-17:30 **DISCUSIÓN**

17:30-19:00 **CONFERENCIA MAGISTRAL**
Linfofluoroscopia-ICG
Dr. Jean-Paul Belgrado

19:30-20:00 **CLAUSURA DEL CONGRESO Y ENTREGA DE PREMIOS**
Isabel Forner Cordero

AULA H004

09:00-10:30 **TALLER 4 (PHYSIOMED)**
Deep Oscillation en el linfedema y las secuelas oncológicas
Felipe Medina & Raquel Reinaldos

11:00-13:00 **TALLER 5**
Taller de Diagnóstico en Linfedema: Aplicación de Herramientas Digitales en la Consulta de Linfedema
Vicenta Pujol

15:00-16:30 **TALLER 6**
Linfedema en Cáncer de Mama: Estrategias Terapéuticas Actuales
Dra. Cristina Puigdellívol & Reme Ruiz

16:30-18:30 **TALLER 7**
Autogestión del Linfedema: Del Modelo Biomédico al Paciente Protagonista
Helena Martínez

AULA H002

18:30-19:30 **REUNIÓN DEL EXECUTIVE COMMITTEE DE LA EUROPEAN SOCIETY OF LYMPHOLOGY (ESL)**

E-POSTERS: 1º CONGRESO DEL GRUPO ESPAÑOL DE LINFOLOGÍA | GEL 2026

ESCUELA DE LINFEDEMA EN CÁNCER DE MAMA 2025. UN AÑO DE PREVENCIÓN.
Autor: María Rodríguez Manso

ESTRATEGIA DE PREVENCIÓN DEL LINFEDEMA ASOCIADO A CÁNCER DE MAMA DESDE LA PREHABILITACIÓN.
Autores: Yolanda Robledo do Nascimento; Sara Gómez Valero; Virginia Díaz de Miguel; Javier J. Cabrerizo Fernández

DOCUMENTACIÓN E INFORMACIÓN DEL PROGRAMA DE PREVENCIÓN DEL LINFEDEMA POSTMASTECTOMIA (LPM) Y RECUPERACIÓN FUNCIONAL: NOS PONEMOS AL DÍA.
Autores: Sonia López Medina; María José Sánchez Pérez; Genoveva González Parra; Ángela González Velado; Cristina Martínez Martínez; Marta Estébanez Sánchez; Cristina Pérez Alonso

MORFEA SOBRE LINFEDEMA SECUNDARIO A CÁNCER DE MAMA: UN DESAFÍO DIAGNÓSTICO Y FUNCIONAL.
Autores: Azusena Estefanía Rodríguez García; M Pilar Crespo Cobo; M Susana Gil Hernández

LINFEDEMA RUBRA COMO DIAGNÓSTICO DIFERENCIAL DE CELULITIS RECURRENTE EN LINFEDEMA SECUNDARIO DE MIEMBRO SUPERIOR: A PROPÓSITO DE UN CASO.
Autores: Carmen Urbaneja Dorado; Ana Belén Puentes Gutiérrez; Elena Vaquero Ramiro; María García Bascones; Stella Martín Villalvilla; Rebeca Puentes Gutiérrez; Mercedes Ramírez Ortega

BLOQUEO FUNCIONAL CON TOXINA BOTULÍNICA DEL COLGAJO MUSCULOCUTÁNEO DE DORSAL ANCHO EN PACIENTES MASTECTOMIZADAS CON DOLOR Y CONTRACTURA DINÁMICA.
Autores: Mercedes Ramírez Ortega; Carmen Urbaneja Dorado; José Antonio Moarquech Rodríguez; Carlos Domingo Bernal Leal; Paula María García García

LINFEDEMA GENITAL POST-CIRUGÍA DE CÁNCER DE PENE: ESTRATEGIAS DE COMPRESIÓN INDIVIDUALIZADA EN UN CASO COMPLEJO.
Autores: Irene Campos Varela; Sergi Barrantes Vedoy; Laura Torrano Romero; Mónica Jaraba Armas; Albert Aragonés Campos; Isabel López Zamora

TRATAMIENTO DEL LINFEDEMA GENITAL MASCULINO MEDIANTE ONDAS DE CHOQUE.
Autores: Bárbara María Núñez García; Mihaela Adriana Taranu; Carolina Lema Chacón; Carolina Martínez Bellido; Nerea Duque Cabello; María del Mar Palou de Comasema Buñola; María José Durà Mata; Gabriel Fernando Sandoval Ruiz

MONITORIZACIÓN MEDIANTE BIOIMPEDANCIA MULTIFRECUENCIA DE LA MICROCIRUGÍA LINFÁTICA EN LINFEDEMA BILATERAL DE MIEMBROS INFERIORES: A PROPÓSITO DE UN CASO.
Autores: Cristina Martínez Martínez; Ángela González Velado; María José Sánchez Pérez; Sonia López Medina; María Pérez Colino; Cristina Pérez Alonso

EXPERIENCIA DE LA REHABILITACIÓN ASOCIADA AL TRATAMIENTO QUIRÚRGICO INNOVADOR DEL LINFEDEMA MEDIANTE LA TÉCNICA BIOBRIDGE®: A PROPÓSITO DE UN CASO.
Autores: Barbara María Núñez García; Mihaela Adriana Taranu; Carolina Lema Chacón; Carolina Martínez Bellido

INFLUENCIA DE LA CALIDAD TÉCNICA DE LA LINFOGAMMAGRAFÍA EN EL DIAGNÓSTICO DE PATOLOGÍA LINFÁTICA PERIFÉRICA: A PROPÓSITO DE UN CASO.
Autores: Vicenta Pujol Blaya; Valentina Genot; Anderson Cardozo Saavedra; Carmen Gelabert Vea; Marta Fernández González; Laura Sánchez Iglesias; Marta Duran Álvaro; Alba Gómez-Garrido

LINFEDEMA EN MIEMBRO INFERIOR COMO SECUELA DE FASCITIS NECROTIZANTE.
Autores: Giuseppina De Mango; Esther de Castro Gil; Ainhoa Rodriguez Oyaga

IMPACTO DE LOS HÁBITOS DE VIDA EN LA PROGRESIÓN DEL LINFEDEMA PRIMARIO EN LA ADOLESCENCIA.
Autores: María Isabel Gómez Jiménez; Ana Belén Paba Dotes; María Elviria Villanueva González; María del Mar Martín Bravo; Francisco Luna Cabrera; Yolanda Ruiz Molina

SEGUIMIENTO TELEMÁTICO DEL LINFEDEMA ESTABLE MEDIANTE APLICACIÓN MÓVIL.
Autores: Mercedes Ramírez Ortega; Carmen Urbaneja Dorado; Paula María García García; Alejandro Plaza Merchan; Carmelo Fernández García

ATENCIÓN PRIMARIA FRENTE AL LIPEDEMA COMPLEJO: VALORACIÓN INTEGRAL Y VENDAJE DE BAJA ELASTICIDAD.
Autores: Ana Belén Fernández Ramírez; María Cruz Zarza Martín; Javier Quesada Lozano

PARÁLISIS DEL NERVIO PERONEO COMÚN TRAS LIPOSUCCIÓN POR LIPEDEMA: SERIE DE CASOS Y PROPUESTA DE MECANISMO MULTIFACTORIAL.
Autores: Ángela Río González; Laura González Fernández; Nuria Muñoz Bermúdez; Isabel Mínguez Esteban; Vanesa Abuín Porras

¿QUÉ DICE LA LITERATURA SOBRE EL USO DE PRENDAS DE CONTENCIÓN DURANTE EL EJERCICIO EN LINFEDEMA POR CÁNCER DE MAMA?
Autores: Marta Fernández González; Mónica Gómez Martínez; Laura Sánchez Iglesias; Marta Durán Álvaro; Vicenta Pujol Blaya

SCIENTIFIC PROGRAM: 48TH CONGRESS OF EUROPEAN SOCIETY OF LYMPHOLOGY | ESL 2026

Friday, 25th September, 2026

HALL

08:00-08:30 **REGISTRATION**

ASSEMBLY HALL

08:15-08:25 **WELCOME TO THE CONGRESS**

08:25-10:40 **SESSION 1: CLINICAL FEATURES**
Chairs: Etelka Földi, Jean-Paul Belgrado, Dolores Maldonado Garrido.

08:25-08:40 **Breast Edema After Conservative Surgery For Early-Stage Breast Cancer: A Single-Center Assessment Of Risk Factors.**
Sara Dessalvi (VIDEO)

08:40-08:55 **The Benefits of Combining Manual Lymphatic Drainage with Bandaging techniques in the Treatment of Lymphedema.**
Olivier Leduc (VIDEO)

08:55-09:10 **Lymphatic Disorders in Heroin Addicts.**
Amer Hamade

09:10-09:30 **Primary Lymphedema and Associated Syndromes.**
Miguel Amore

09:30-09:50 **Implementation of Prospective Surveillance Model for Early Intervention Strategies in Breast Cancer Related Arm Lymphedema.**
Karin Johansson

09:50-10:05 **Adaptive Velcro Compression Devices in Lymphedema: An Evolving Strategy in Patient-Centered Approach to Compression Therapy.**
Pinar Borman

10:05-10:20 **Head and Neck Lymphedema Management.**
Franz Schingale

10:20-10:40 **DISCUSSION**

10:40-11:00 **OPENING CEREMONY**

11:00-11:30 **COFFEE BREAK – EXHIBITION AREA**

11:30-14:00 **SESSION 2: DIAGNOSIS**
Chairs: Pierre Bourgeois, Evangelos Dimakakos, Fernando Gómez-Muñoz

11:30-11:50 **Non-invasive Diagnostic of Lymphedema.**
Alberto Macciò

11:50-12:10 **Technical Diagnosis of Lymphedema.**
Erika Mendoza

12:10-12:30 **The Standardization of Lymphoscintigraphic Imagings, Their Analysis, and Reporting.**
Pierre Bourgeois

12:30-12:50 **Assessment of Lymphedema Using Tissue Dielectric Constant (TDC) Technology.**
Mia Niinimäki

12:50-13:10 **MR Lymphography: New Data for Its Usefulness in the Diagnosis and Differential Diagnosis of Lymphedema.**
Evangelos Dimakakos

13:10-13:30 **The PeriKit: Standardizing the Measuring and Monitoring of Lymphoedema After 10 Years of Research and Development.**
Joe Harfouche

13:30-14:00 **DISCUSSION**

14:00-15:00 **LUNCH – EXHIBITION AREA**

15:00-17:40 **SESSION 3: LIPEDEMA**
Chairs: Sandro Michelini, Isabel Forner-Cordero, Lourdes Reina-Gutiérrez.

15:00-15:05 **Moderator**

15:05-15:20 **Alteration of Subcutaneous Adipose Tissue Function in Lipedema. (VIDEO)**
Philipp Kruppa

15:20-15:35 **Lymphedema and Lipedema: Different Diagnostic and Therapeutical Approach.**
Sandro Michelini

15:35-15:50 **Lipedema and Inflammation: Usefulness of the Resistive Index.**
Marina Cestari

15:50-16:05 **Dietary Management in Patients with Lipedema.**
Gabriele Faerber

16:05-16:20 **Beyond Emotional Eating: The Neuroinflammatory Root of Hedonic Hunger in Lipedema.**
José Luis Simarro

16:20-16:35 **Surgical Treatment of Lipedema**
Manuel Cornely

16:35-16:50 **An Update on Lipedema Research: Current Evidence and Future Challenges.**
Isabel Forner-Cordero

16:50-17:10 **DISCUSSION**

17:10-17:40 **ORAL COMMUNICATIONS**
Chairs: Sandro Michelini, Isabel Forner-Cordero, Lourdes Reina-Gutiérrez

17:10-17:20 **Comparing flat and circular-knit garments in lipedema management.**
Juan Vázquez-Díez, Isabel Forner-Cordero

17:20-17:30 **Assessing the Clinical Implications of Comorbidities prevalence in a Prospective Cohort Study of Lipedema Patients.**
Daniel A. Cespedes-Gómez, Fátima Sirvent-Sáez, Isabel Forner-Cordero

17:30-17:40 **Psychiatric conditions and Psychosocial Burden in Lymphedema and Lipedema: A Systematic Review.**
Isabel Muñoz-Forner, Daniel A. Cespedes-Gomez, Isabel Forner-Cordero

17:50-20:00 **SESSION 4: INNOVATIONS IN LYMPHOLOGY**
Chairs: Sarah Thomis, Michael Bernas, Amer Hamadé

17:50-18:10 **Potential Future Discoveries in Lymphology: A Research Roadmap for Consensus Document.**
Michael Bernas

18:10-18:30 **Embolotherapy in Lymphatic Pathology.**
Fernando Gómez Muñoz

18:30-18:50 **Cervical LV Anastomosis in Alzheimer's Disease: Preliminary Results of the ALCEA Study.**
Carmen Higueras

18:50-19:10 **Research Horizons in Lymphedema: Current Focus and Future Directions.**
Sarah Thomis

19:10-19:30 **DISCUSSION**

19:30-20:00 **ORAL COMMUNICATIONS**
Chairs: Sarah Thomis, Michael Bernas, Amer Hamadé

19:30-19:40 **LYMPH-V for Early Detection of Breast Cancer-Related Lymphedema: Reproducibility of a Wearable Arm-Volume Monitoring Device.**
Ismail Toygar, Gülcan Bağcivan, Ayşe Arıkan Dönmez, Elif Deniz Kaçmaz, Furkan Bilek, Mehmet Durmuş Çalışır, Yasin Karan, Pınar Borman

19:40-19:50 **Is it possible to enhance the alleged reducing properties of MLD?**
Slawomir Pyszniak

19:50-20:00 **Original protocol covering qualification, planning, and evaluation of microsurgical LVA surgery, along with recommendations and postoperative management improves the prognosis of microsurgical treatment of lymphedema.**
Slawomir Pyszniak, Piotr Gierej, Marzanna T. Zaleska

ROOM H004

08:30-09:10 **ORAL COMMUNICATIONS**
Chairs: Marina Cestari, Blanca Pardo Sievers, Helena Martínez-Ramos

08:30-08:40 **A validated method to assess upper limb lymphedema measuring skin thickness with ultrasound.**
Paloma Malagón

08:40-08:50 **Alterations of lymphatic drainage in upper limb lymphedema observed in ICG lymphography compared with tissue changes in different stages.**
Marzanna Teresa Zaleska, Natalia E. Krzesniak

08:50-09:00 **Establishing Quantitative Diagnostic Criteria for Breast Lymphedema via B-mode Ultrasonography and Elastography: A Systematic Review and Preliminary Synthesis.**
Urszula Janiuk, Luca Improta

09:00-09:10 **Modified Lymphoscintigraphy Refines the Diagnosis of Distal Primary Lymphatic Insufficiency of the Lower Limb**
Wald M.

09:30-11:00 **WORKSHOP 1 (EQUIPSA):**
Biobridge: Present and Future of the Surgical Solution for Lymphedema
Dra. Carmen Higueras & Michael Atlan

11:00-11:30 **COFFEE BREAK – EXHIBITION AREA**

11:30-13:30 **WORKSHOP 2 (THUASNE):**
Optimizing Lymphedema Care: Clinical and Medico-Economic Evidence of Home-Based Compression Strategies
Pinar Borman

14:00-15:00 **LUNCH – EXHIBITION AREA**

15:00-15:45 **MEETING OF THE EXECUTIVE COMMITTEE OF THE INTERNATIONAL SOCIETY OF LYMPHOLOGY**

15:45-17:45 **WORKSHOP 3 (JUZO):**
How to Improve Effectiveness of the Therapy and Have Sustainable Results in Lymphatic Diseases
Pyszniak Slawomir

18:00-20:00 **WORKSHOP 4 (MEDI):**
Management of Obesity in Lymphology: Developing of Lymphedema with Growing Obesity. Treatment and Prevention.
Franz Schingale & Gabriele Faerber

Saturday, 26th September, 2026

SALÓN DE ACTOS (ASSEMBLY HALL)

08:00-08:40 **ORAL COMMUNICATIONS**
Chairs: Alberto Macciò, Marta Fernández González

08:00-08:10 **A preliminary study on the immediate effects of multi-layer bandaging on balance, mobility, quality of life and risk of falling in patients with lower limb lymphoedema: a pre and post intervention analysis.**
Tacconi Claudia, Romaldini Fabio, Vetrano Mario, Michelini Serena, Michelini Sandro

08:10-08:20 **Head and neck lymphedema after radiotherapy - prevalence, changes and associated factors - a prospective observational cohort study**
Agneta Hagren, Johanna Sjövall, Christina Brogårdh, Karin Johansson, Eva Ekvall Hansson

08:20-08:30 **The effect of BOSU Ball Balance Exercises Added to Complete Decongestive Therapy on Static and Dynamic Balance in Breast Cancer-Related Lymphedema.**
Esra Karaköseli Yıldız, Oya Topuz, Hakan Alkan, Ayşe Sarsan

08:30-08:40 **Impact of a supervised exercise program in patients with cancer-related lymphedema: functional outcomes, safety perception, and 6-month adherence**
Azusena Estefania Rodríguez García, M Pilar Crespo Cobo, M Susana Gil Hernández, José Antonio Díaz Macías

08:40-09:00 **KEYNOTE LECTURE**
Pioneering Paths: The Foundational Legacy of Dr.E. Földi in Lymphology
CDT: The Cornerstone of Modern Lymphoedema Care
Etelka Földi

09:00-11:00 **SESSION 5: SURGERY**
Chairs: Francesco Boccardo, Gurusami Manokaran, Joe Harfouche

09:00-09:20 **Pathophysiological Bases of the Surgical Treatment of Lymphatic Diseases.**
Francesco Boccardo

09:20-09:40 **Peri-operative Complex Physical Therapy in Lymphaticovenous Anastomosis: Survey Findings and Updated Evidence.**
Nele Adrianssen

09:40-10:00 **Twenty-Five-Year Outcomes of Reconstructive Liposuction for Large, Chronic Lymphedema: Evidence of Complete Reduction.**
Hakan Brorson

10:00-10:20 **Microsurgery Procedures in Lymphedema.**
Gurusamy Manokaran

10:20-10:40 **1973–2026: A Long Surgical Activity and Continuous Research for the Progress of Clinical Lymphology and Lymphatic Surgery.**
Corradino Campisi

10:40-11:00 **DISCUSSION**

11:00-11:30 **COFFEE BREAK – EXHIBITION AREA**

11:30-12:30 **GENERAL ASSEMBLY OF THE ESL**

12:30-14:10 **SESSION 6: MISCELLANEOUS**
Chairs: Martin Wald, Karin Johansson, Giovanni Monetta

12:30-12:50 **Lymphedema of Male Genitals, a 360 Degrees Approach.**
Giovanni Monetta

12:50-13:10 **Let Us Not Wait for Lymphoedema. Recognizing Lymphatic Insufficiency Before Irreversible Damage Occurs.**
Martin Wald

13:10-13:30 **Summary of 44 Years Experience of Unit of Treatment of Edema: Necessary or Not? Real Justification.**
Alexandre Pissas

13:30-13:50 **Primary and Paediatric Lymphoedema at VASCERN: When Healthcare Professionals and ePAG Advocates Work as a Team.**
Manuela Lourenço Marques

13:50-14:10 **DISCUSSION**

14:10-14:30 **END OF THE CONGRESS**

ROOM H004

09:00-11:00 **WORKSHOP 5**
Optimising the Design and Manufacture of Multi-component Bandages Using the Latest Materials and Measurement Systems
Jean-Paul Belgrado

11:00-11:30 **COFFEE BREAK – EXHIBITION AREA**

12:30-14:10 **ORAL COMMUNICATIONS**
Chairs: Evangelos Dimakakos, Pierre Bourgeois, Nele Adrianssen

12:30-12:40 **Immunohistochemical study using anti-podoplanin and anti-CD31 antibodies on advanced colorectal adenocarcinoma, the second report**
Eikichi Okada, H Hayashi, M Makino, S Terabe, A Takemoto

12:40-12:50 **Axillary Web Syndrome: Incidence and Clinical Evolution in a Breast Cancer Cohort.**
Azusena Estefania Rodriguez Garcia, M Susana Gil Hernández, M Pilar Crespo Cobo, Monica Cabo Santiago

12:50-13:00 **Breast Lymphedema Following Cancer Treatment: A Comprehensive Narrative Review of Current Evidence and Clinical Challenges.**
Urszula Janiuk, Luca Improta

13:00-13:10 **Assessing Tissue Stiffness in Lower Extremity Lymphedema: A Comparative Analysis of Indentometer-Based Induration and Ultrasonographic Compliance- A Cross-sectional Study.**
Elif Duygu-Yildiz, Samet Genez, Mustafa Fatih Yaşar, Nuriye Özengi

13:10-13:20 **Genital Lymphedema: Clinical Characteristics, Severity, and Therapeutic Approaches in a 10-Year Retrospective Cohort.**
Daniel A., Cespedes-Gomez, Fátima Sirvent-Sáez, Isabel Muñoz-Forner, Isabel Forner-Cordero

13:20-13:30 **Is secondary lymphoedema always secondary?**
Michelini Sandro, Michelini Serena, Romaldini Fabio, Tacconi Claudia, Caputi Leonardo, Rosi Lorenzo

13:30-13:40 **Differences in fluid distribution, tissue alterations, and response to compression therapy between cancer-related and non-cancer-related lower limb lymphedema**
Marzanna Teresa Zaleska

13:40-13:50 **Comprehensive Care for Patients with Secondary Lymphedema**
J. Vlasák, M. Wald

13:50-14:00 **Nutritional Treatment of Chylous Dysplasias: Clinical Experience with a Hypolipidic Diet and Medium-Chain Triglycerides**
Beatrice Fedre, Francesco Boccardo

14:00-14:10 **Circumferential arm and forearm contouring in lipedema patients using dynamic anatomical liposuction techniques.**
Alexo Carballeira Braña

E-POSTERS: 48TH CONGRESS OF EUROPEAN SOCIETY OF LYMPHOLOGY | ESL 2026

UPPER LIMB LYMPHEDEMA

PP1-EFFECTIVENESS OF PREOPERATIVE PHYSIOTHERAPY IN BREAST CANCER SURGERY: A RETROSPECTIVE STUDY OF OUTCOMES AND CONTEXTUAL FACTORS.
Irene Campos Varela, Isabel López Zamora, Albert Aragonés Campos, Silvia De la Torre González, Mónica Jaraba Armas, Jordi Adamuz, Ana Luzardo González, Amparo García Tejedor

PP2- LONGITUDINAL EVOLUTION OF ARM VOLUMETRY IN BREAST CANCER-RELATED LYMPHEDEMA: MONITORING USING MIXED REALITY TECHNOLOGY.
Andrea Caminero, Alexandra C. Q. Ureta

PP3- EFFECTS OF A COMBINED STRENGTH AND HIIT PROGRAM ON ARM VOLUME PROGRESSION IN BREAST CANCER-RELATED LYMPHEDEMA.
Alexandra C. Q. Ureta, Andrea Caminero

PP4- BE CAREFUL WITH WATER. ATYPICAL INFECTION IN LYMPHEDEMA SECONDARY TO BREAST CANCER.
Elena Vaquero-Ramiro, Ana-Belén Puentes-Gutiérrez, Jorge Martínez Boix, Elvira Molina Figuera, María García-Bascones, Laura Millán-Casas, Antonio Morandeira-Rivas, Rebeca Puentes-Gutiérrez

PP5- LYMPHEDEMA SCHOOL IN BREAST CANCER: MORE THAN SIX YEARS OF PREVENTION.
María Rodríguez Manso, José Basilio Julián Labra, Alicia Amelia García Ferreira - Servicio Galego de Saúde. Complexo Hospitalario Universitario A Coruña. Hospital de Oza, A

DIAGNOSIS

PP6- COMPREHENSIVE DIAGNOSIS IS CRUCIAL FOR EFFECTIVE THERAPY IN LYMPHEDEMA.
Marzanna Teresa Zalesk - Mossakowski Medical Research Institute, Dept. of Applied Physiology, Polish Academy of

PP7- UTILITY OF MULTIFREQUENCY BIOIMPEDANCE ANALYSIS IN THE DIAGNOSIS AND FOLLOW-UP OF LOWER LIMB LYMPHEDEMA.
Felicitas García Ortun, Marina Álvarez Rubio, Ana Victoria Lobato Bonilla, Raul García Martínez, Paulo Cesar Mateluna Paredes, Mercedes Piqueras Céspedes, Roser Belmonte Martínez

PP8- SEGMENTAL TISSUE DIELECTRIC CONSTANT(TDC) PROTOCOL FOR STRATIFICATION OF BREAST OEDEMA AFTER BREAST CANCER TREATMENT UTILIZING PORTABLE DIELECTRIC DEVICES.
Vicenta Pujol-Blaya, Gerard García-Rodriguez, M Carme Gelabert- Vea, Marta Fernandez- Gonzalez, Laura Sánchez-Iglesias, Roger García-Gutierrez, Vanesa Dávalos-Yerovi, Alba Gomez-Garrido

PP9- BODY POSITION INFLUENCES TISSUE DIELECTRIC CONSTANT DISCRIMINATION OF CLINICAL BREAST OEDEMA SEVERITY AFTER CONSERVATIVE BREAST CANCER.
Gerard, Alba Gomez-Garrido, M Carme Gelabert-Vea, Marta Fernadez-Gonzalez, Marta Duran -Arevalo, Roger García-Gutierrez, M Inmaculada Donat-Cruz, Vicenta Pujol-Blaya

CONSERVATIVE TREATMENT

PP10- PROGRESS AFTER INTEGRATED REHABILITATION TREATMENT FOR A HEAD AND NECK CANCER PATIENT.
Aixa María Martín Ruiz, Sonia Pons Blasco, Víctor Cruz Guisado, Patricia Jaime Lozano, Isabel González Álvarez

PP11- LYMPHEDEMA OF THE LOWER LEGS AND ULCERS: EXPERIENCE IN A WIDE THERAPEUTIC VISION.
G.Moneta, Santoliquido A**., Santoro L.**, Nesci A.**, *S. Giovanni Battista Hospital - **Agostino Gemelli Hospital – Rome – Italy gmoneta@alice.it*

PP12- PROPER COMPRESSION THERAPY IS THE KEY IN MAINTAINING RESULTS OF LYMPHEDEMA TREATMENT - DIFFICULTIES AND SOLUTIONS.
Aleksandra Rovnaya, Andrea Damato

SURGERY

PP13- LYMPHATIC MICROSURGERY AFTER PROGRESSION DESPITE CONSERVATIVE TREATMENT IN ADOLESCENT PRIMARY LYMPHEDEMA: A REPORT OF TWO COMPLEX CASES.
Azusena Estefania Rodriguez Garcia, M Pilar Crespo Cobo, M Susana Gil Hernández, Susana Martínez Serrano

PP14- THE NOVEL APPROACH IN LYMPHEDEMA TREATMENT: COMBINING BIOBRIDGE AND COMPLEX DECONGESTIVE THERAPY – PRELIMINARY RESULTS.
Aleksandra Rovnaia, Andrea Damato

PP15- THE KEY ROLE OF PRE- AND POSTOPERATIVE CONSERVATIVE PROTOCOLS IN LYMPHEDEMA SURGERY TO PREVENT COMPLICATIONS AND IMPROVE OUTCOMES.
Alexandra Rovnaya, Andrea Damato

LIPEDEMA

PP16- FULL LEGS AC: A REPRODUCIBLE TECHNIQUE FOR LEG LIPOSCULPTURE.
Alexo Carballeira Braña

PP17- POSTBARIATRIC LIPEDEMA PATIENTS: COMBINED STRATEGIC APPROACH TO ABDOMEN AND THIGH CONTOURING.
Alexo Carballeira Braña

PP18- LIPEDEMA AND PELVIC FLOOR DYSFUNCTION: A PILOT STUDY.
Elena Vaquero-Ramiro, Soraya Hijazi Vega, Ana-Belén Puentes-Gutiérrez, María García-Bascones, Antonio Morandeira-Rivas, Laura Millán Casas, Rebeca Puentes-Gutiérrez

PP19- A CASE SERIES OF THE EFFICACY OF A LOW-CARBOHYDRATE DIET COMBINED WITH TIRZEPATIDE PHARMACOTHERAPY AND OMEGA-3-6-9 SUPPLEMENTATION IN WOMEN WITH OVERWEIGHT/ OBESITY AND LIPEDEMA.
Judyta Samul-Jastrzębska, Monika Cygler, Karolina Kędzierska-Kapuza, Magdalena Jerzak

PP20- LOW-CARBOHYDRATE MEDITERRANEAN-STYLE NUTRITIONAL APPROACH AS FIRST-LINE INTERVENTION IN PATIENTS WITH LIPEDEMA.
Beatrice Fedre, Francesco Boccardo

PP21- MULTIDISCIPLINARY PROTOCOL FOR THE DIAGNOSIS AND MANAGEMENT OF LIPEDEMA IN PHYSICAL AND REHABILITATION MEDICINE CLINICS.
Anabel López Salguero, Ana Salvador Blázquez

PP22- DEVELOPMENT OF PATIENT EDUCATIONAL MATERIAL FOR LIPEDEMA: DESIGN OF AN INFORMATIONAL LEAFLET.
Ana Salvador Blazquez, Anabel Lopez Salguero, Esther Carbonero

CASE REPORTS

PP23- PHENOTYPIC RELEVANCE AND THE ROLE OF REHABILITATION IN THE MANAGEMENT OF LYMPHEDEMA IN NOONAN SYNDROME: A CASE REPORT.
Pablo Sánchez-Bravo, Miguel Gutiérrez-Díaz, Fátima Sirvent-Sáez, Daniel A. Cespedes-Gomez, Isabel Forner-Cordero

PP24- PSEUDOCHYLOTHORAX ASSOCIATED WITH MALIGNANCY: A CASE REPORT.
Juana Mª Elía Martínez, Mª Asunción Elía Martínez, Javier Alcón Elía, Mar Cerezo Durá, Francisca Barberá Felip, Nuria Vila Olmos, Victoria Iñigo Huarte

PP25- REFRACTORY PRIMARY GENITAL LYMPHEDEMA: FOLLOW-UP, TREATMENT OPTIMIZATION, AND SURGICAL INDICATION IN A COMPLEX CASE.
Daniel A. Cespedes-Gomez, Isabel Forner-Cordero, Alberto Pérez García, Fernando Gómez-Muñoz

PP26- PRIMARY LYMPHEDEMA ASSOCIATED WITH CONGENITAL DISORDERS OF GLYCOSYLATION.
Amer Hamadé, Sercan Ur, Marie Vraux, Pierre Michel

PP27- YELLOW NAIL SYNDROME AS A SYSTEMIC LYMPHATIC DISORDER: CHALLENGES IN THE REHABILITATION MANAGEMENT OF MULTISEGMENTAL LYMPHEDEMA.
Miguel Gutiérrez-Díaz[1], Pablo Sánchez-Bravo[1], Daniel A. Cespedes-Gomez[1], Fátima Sirvent-Sáez[1], Isabel Forner-Cordero[1,2].

PP28- REFRACTORY NON-TRAUMATIC CHYLOTHORAX IN PRIMARY INTESTINAL LYMPHANGIECTASIA: INTENSIVE CONSERVATIVE MANAGEMENT.
Joan Gavilà Sanfèlix[1], Manuel Tello Martínez[1], Toni Zamora Chisvert[2], Isabel Forner-Cordero[1,3]

PP29- A CONGENITAL HEART DISEASE (EBSTEIN) AND A PRIMARY LYMPHEDEMA: A NEW SYNDROME?
E. Dimakakos, M. Toumanidou, A. Koumenis, M. Karantoni, F. Antonatou, D. Dimitropoulou, D. Nikas, I. Papapanagiotou

MISCELLANEOUS

PP30- PATIENT AWARENESS, ACCESS TO CARE, AND INFORMATION NEEDS IN CANCER-RELATED LYMPHEDEMA: A CROSS-SECTIONAL STUDY.
Katrin Kõre, Reet Pähklamägi

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ABSTRACT – ORAL COMMUNICATIONS:
1º Congreso del grupo Español de Linfología | GEL 2026

Wednesday, September 23rd, 2026

Salon De Actos

DÉFICITS ASOCIADOS AL LINFEDEMA DE CABEZA Y CUELLO EN PACIENTES CON CÁNCER DE CABEZA Y CUELLO: ESTUDIO RETROSPECTIVO OBSERVACIONAL LONGITUDINAL

MIHAELA ADRIANA TARANU; MARÍA DEL MAR PALOU DE COMASEMA BUÑOLA; BARBARA MARÍA NUÑEZ GARCIA; SANDRA ALMAZAN CASAMAYOR; MARÍA JOSÉ DURA MATA

Hospital Universitario Germans Trias i Pujol, Badalona, España

Objetivos: Identificar factores asociados al desarrollo de linfedema de cabeza y cuello (LCC) en pacientes supervivientes de cáncer de cabeza y cuello (CCC).

Material/Método: Estudio retrospectivo, longitudinal, descriptivo, aprobado por el comité de ética local. Se han incluido todos los pacientes valorados en nuestro servicio de Rehabilitación, de un hospital terciario, con diagnóstico de CCC, mayores de edad, que tengan una visita de control a los 6 meses tras la valoración inicial. Se han recogido variables sociodemográficas y variables relacionadas con la enfermedad, intervención oncológica (tipo de vaciamiento cervical ganglionar, radioterapia) y déficits funcionales secundarios (LCC, afectación del hombro, del balance articular cuello, fibrosis cutánea, adherencia cicatricial, dolor relacionado con la cicatriz y dolor no cicatricial, apertura oral máxima, alteración del habla). Para la valoración de la severidad del LCC y de la fibrosis se ha usado la escala Head and Neck Lymphedema and Fibrosis Assessment Criteria. Se realizó análisis descriptivo, análisis de asociaciones, significación estadística p

Resultados: Se han incluido 53 pacientes (24,5% mujeres), edad media 59 años. En la evaluación inicial, el 66% presentaba LCC y de ellos 1,9% severo. Se ha encontrado asociación estadísticamente significativa con vaciamiento ganglionar cervical (VGC) niveles V (p=0,04) y IIb (p=0,05), fibrosis cutánea (p=0,023), alteraciones del habla (p=0,019), limitación del balance articular cervical (p=0,014). En nuestra muestra no hubo relación estadísticamente significativa con los otros ítems recogidos y, como hallazgo a destacar, tampoco con la radioterapia (p> 0,05). El tratamiento aplicado fue fisioterapia (85% de los pacientes), al 34% se le prescribió máscara facial. El tratamiento aplicado consistía en drenaje linfático manual, terapia manual en la cicatriz, ejercicios activo y resistidos a nivel del hombro, cuello y articulación témporo-mandibular, y prescripción de terapia compresiva (máscara de compresión, realizada a medida). La prenda de compresión se recomienda a priori para uso nocturno, pero la adherencia al tratamiento era baja (por mala tolerancia), por lo cual se les recomendaba usarla lo máximo de tiempo posible y a su conveniencia. Aun así, la adherencia era baja. A los 6 meses, el 60% continuaba con LCC, sin ningún caso de linfedema severo.

Conclusión: El LCC es una complicación frecuente en el CCC; se asocia a VGC (niveles V, IIb), fibrosis cutánea, alteraciones del habla, limitación de la movilidad cervical. Las intervenciones de rehabilitación reducen la severidad del LCC, aunque no logran su resolución completa. La terapia compresivo a nivel de la cabeza y cuello tiene mala tolerancia.

ABORDAJE REHABILITADOR EN PACIENTES CON CÁNCER DE CABEZA Y CUELLO VALORADOS EN NUESTRA UNIDAD DE LINFEDEMA

AIXA MARÍA MARTÍN RUIZ; SONIA PONS BLASCO; VÍCTOR CRUZ GUISADO; PATRICIA JAIME LOZANO; ISABEL GONZÁLEZ ÁLVAREZ - *Hospital Universitario Jerez de la Frontera, Jerez de la Frontera (Cádiz), España*

Objetivos:

- Presentar una serie de casos de pacientes con cáncer de cabeza y cuello (CyC).
- Describir las principales complicaciones funcionales y clínicas.
- Analizar la evolución del linfedema tras el tratamiento rehabilitador.

Material/Método:

- Diseño: Estudio descriptivo, longitudinal y retrospectivo.
- Ámbito: Unidad de Linfedema del Servicio de Medicina Física y Rehabilitación.
- Participantes: 12 pacientes con cáncer de CyC y complicaciones asociadas (Junio 2025 - Abril 2026).
- Variables: Edad, sexo, tipo de tumor, tratamiento oncológico, balance articular (cervical/hombro), linfedema (circometría/escala SEG ecográfica), fibrosis, disfagia, habla, dolor neuropático y parálisis facial
- Intervención: Protocolo de Terapia Descongestiva Compleja (drenaje linfático manual, kinesiotape y prendas de contención cervical para mantenimiento en el 100% de la muestra).

Resultados:

- Muestra: 12 pacientes analizados (83,3% hombres con edad media de 58,3 años con un rango entre 30 y 69 años con una mediana de 59,5 años).
- Localización: Suelo de boca (33,3%), tiroides (25%), supraglotis (16,7%) hipofaringe, orofaringe y parótida (8,3%).
- Tratamientos recibidos: Radioterapia (83,3%), Cirugía (75%), Quimioterapia (33,3%) e I131 (25%).
- Complicaciones:
  - Linfedema (91,7%) y fibrosis (25%).
  - Lesión del nervio espinal con afectación de hombro (66,7%)
  - Alteraciones del habla (58,3%) y disfagia (41,7%).
  - Dolor neuropático (33,3%), parálisis facial (33,3%) y limitación cervical (25%)

- Evolución
  - Mejoría objetiva del linfedema submentoniano y cervical:
    - El análisis ecográfico mediante la escala SEG mostró que el 81,8% (9 de 11 pacientes) redujo al menos un grado en la escala SEG o normalizó el tejido. El 27,2% (3 pacientes) alcanzó un estado de normalización total de los tejidos cervicales.

      La circometría mostró tras análisis estadístico t de Student para muestra pareadas que existe una reducción clara y consistente en todos los niveles del cuello ($p < 0.05$).

      Nivel cervical superior reducción media de 1,51 cm p

Conclusión: El linfedema y la disfunción del hombro son las secuelas más prevalentes en el cáncer de CyC. El abordaje rehabilitador mediante terapia descongestiva compleja demuestra ser eficaz y estadísticamente significativo en la reducción volumétrica del linfedema de cabeza y cuello. Existe una concordancia clínica y diagnóstica entre la reducción de perímetros (circometría) y la mejoría de la arquitectura tisular observada mediante ecografía (escala SEG).
La ecografía (escala SEG) es una herramienta objetiva fundamental para monitorizar la recuperación de los tejidos blandos.

ONDAS DE CHOQUE FOCALES PIEZOELÉCTRICAS COMO TRATAMIENTO ADYUVANTE DEL LINFEDEMA DE MIEMBRO SUPERIOR SECUNDARIO A CÁNCER DE MAMA

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Objetivos: Evaluar la seguridad y eficacia de las ondas de choque focales (OCF) piezoeléctricas de intensidad media, añadidas al tratamiento conservador, en la reducción del volumen del linfedema leve-moderado de miembro superior estadio II, secundario a cáncer de mama, en fase de mantenimiento. Secundariamente, analizar cambios en diferencia circométrica, consistencia del edema, sintomatología subjetiva y calidad de vida.

Material/Método: Ensayo clínico aleatorizado abierto realizado en el Hospital Clínico San Carlos (Madrid). Se incluyeron 44 pacientes con linfedema unilateral de miembro superior estadio II, secundario a linfadenectomía por cáncer de mama, en fase de mantenimiento, asignadas aleatoriamente a grupo OCF (n=22; 3 sesiones semanales, 2000 pulsos, 0,27 mJ/mm², 8 Hz, PiezoWave® F10 G4, más tratamiento conservador habitual) o grupo control (n=22; tratamiento conservador exclusivo). Variable principal: diferencia de volumen (mL) entre miembro afecto y contralateral, calculada mediante circometría y calculadora SERMEF. Variables secundarias: diferencia circométrica absoluta (cm), consistencia, EVA (pesadez, hinchazón, tirantez), calidad de vida (ULL-27, SF-12) y elastosonografía cualitativa. Evaluaciones basal, a 2 y 5 meses. Comparaciones intergrupo (Mann–Whitney) e intragrupo (Wilcoxon).

Resultados: Ambos grupos fueron comparables en situación basal (volumen: mediana OCF 372,5 mL vs control 466,0 mL, p=0,385; circunferencia absoluta: 7,0 vs 7,5 cm, p=0,805). A 5 meses no se observaron diferencias significativas entre grupos en volumen (mediana OCF 421,5 mL vs control 619,6 mL; p=0,306) ni en circunferencia absoluta (8,0 vs 10,0 cm; p=0,502). En el análisis intragrupo, el grupo OCF mantuvo estabilidad en volumen (basal→5 meses: p=0,948) y circunferencia (p=0,896), mientras el grupo control mostró tendencia al empeoramiento en circunferencia (p=0,055) y volumen (p=0,163). La elastosonografía del miembro afecto evidenció cambios significativos en el grupo OCF a 2 meses (p=0,002), no mantenidos a 5 meses. El componente mental del SF-12 (MCS-12) empeoró significativamente en el grupo control (basal→5 meses: p=0,010), permaneciendo estable en el grupo OCF (p=0,940). Síntomas (EVA), ULL-27 y consistencia no mostraron diferencias significativas. No se registraron efectos adversos.

Conclusión: La Onda de Choque Focal es un procedimiento seguro y factible en pacientes con linfedema de miembro superior. No se demostró reducción significativa del volumen ni de la circunferencia a 5 meses frente al tratamiento conservador. Sin embargo, el grupo OCF mostró estabilización del edema frente a la tendencia al empeoramiento del control, cambios transitorios significativos en la elastosonografía tisular cualitativa y preservación de la salud mental.

IMPACTO DE UN PROGRAMA DE EJERCICIO TERAPÉUTICO SUPERVISADO EN SUPERVIVIENTES DE CÁNCER DE MAMA CON LINFEDEMA SECUNDARIO: ESTUDIO PROSPECTIVO

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Objetivos: La restricción de la actividad física, motivada por la incertidumbre sobre la seguridad del entrenamiento de fuerza, sigue constituyendo una de las barreras que limita la funcionalidad y la calidad de vida en pacientes con linfedema secundario a cáncer de mama. El objetivo de este estudio es evaluar la seguridad clínica del ejercicio terapéutico y su eficacia integral, analizando su impacto en la fuerza muscular (tren superior e inferior), la resistencia aeróbica, la discapacidad percibida y el bienestar emocional en supervivientes de cáncer de mama con linfedema.

Material/Método: Se realizó un estudio longitudinal prospectivo (febrero 2024 – febrero 2025) en el marco de un programa supervisado de ejercicio terapéutico para procesos oncológicos de diversa localización. De una cohorte de 150 pacientes con cáncer de mama, se analizaron 37 pacientes con linfedema unilateral secundario, tras la incorporación sistemática de la escala Lymph-ICF-UL al protocolo asistencial, con el objetivo de valorar de forma más objetiva la sintomatología y funcionalidad relacionada con el linfedema.

Del total de participantes, 31 pacientes recibieron quimioterapia, 35 radioterapia y 30 ambos tratamientos. El linfedema afectó al miembro dominante en 24 pacientes. Se compararon los datos basales con los obtenidos al finalizar el programa supervisado de 8 semanas de ejercicio combinado, evaluándose las siguientes variables: Seguridad clínica: diferencia circométrica entre miembro afecto y sano. Fuerza muscular: dinamometría de mano y test de sentadillas. Capacidad cardiorrespiratoria: Test de Marcha de los 6 Minutos (6MWT). Percepción de discapacidad: escala Lymph-ICF-UL.

Estado emocional: escala HADS. En las variables reportadas mediante escalas se utilizó la mediana como medida de tendencia central.

Resultados: Se evidenció una mejoría funcional global tras la intervención, con un incremento de la fuerza máxima y de la resistencia muscular del tren inferior. Según la dinamometría, la prevalencia de atrofia significativa en miembros superiores disminuyó de 11 a 4 pacientes. En el test 6MWT, a pesar de la dispersión en los resultados individuales, la mayoría de las pacientes mostró una mejoría con un aumento medio de 29.72 metros.

En cuanto a la evolución del linfedema, la intervención demostró ser clínicamente segura: el 62.1 % de las pacientes presentó mejoría circométrica y el 24.32 % estabilidad. Si bien se registró un empeoramiento clínico en seis casos, en cinco de ellos se identificaron factores externos asociados: omalgia intensa ipsilateral (n=1), baja adherencia al uso de la manga de compresión (n=3) y proceso infeccioso (n=1). En los resultados percibidos por las pacientes (PROMs), el 72.97 % mejoró su puntuación global en la escala Lymph-ICF-UL, con un descenso de la mediana de 34.3 a 25.31 puntos, reflejando una menor pesadez subjetiva y mayor autoeficacia diaria. En el estado emocional (HADS), la mediana de ansiedad (HADS-A) se mantuvo estable en 8 puntos, mientras que la de depresión (HADS-D) descendió de 6.2 a 5.05. El número de casos con relevancia clínica (> 11) se redujo de 11 a 4 en ansiedad y de 6 a 3 en depresión; la afectación conjunta (ambas escalas > 11) disminuyó de 5 a solo 2 pacientes.

Conclusión: Un programa de ejercicio terapéutico supervisado constituye una estrategia segura y esencial en el manejo del linfedema secundario al cáncer de mama. Los hallazgos muestran que sus beneficios trascienden el miembro afectado, logrando una mejora integral en la fuerza muscular y la capacidad aeróbica, sin comprometer la seguridad clínica.

La incorporación de la escala Lymph-ICF-UL permite objetivar la mejoría en la percepción de salud y funcionalidad, confirmando que el ejercicio terapéutico combinado representa una estrategia clínica efectiva para revertir el deterioro funcional en supervivientes de cáncer de mama con linfedema.

DETECCIÓN Y ESTRATIFICACIÓN DE LA GRAVEDAD DEL EDEMA MAMARIO MEDIANTE TECNOLOGÍA DIELÉCTRICA PORTÁTIL EN MUJERES ESPAÑOLAS CON CÁNCER DE MAMA

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Objetivos: El edema mamario secundario a cirugía conservadora y radioterapia es una complicación frecuentemente infradiagnosticada debido a la falta de criterios objetivos estandarizados. La medición de la constante dieléctrica tisular (CDT) mediante dispositivos dieléctricos portátiles (DDP) constituye un método no invasivo, reproducible y validado para la cuantificación de agua tisular. Sin embargo, los valores umbral actuales no contemplan una aproximación segmentaria ni estratificada por niveles de gravedad.

El objetivo principal de este estudio es determinar los puntos de corte de la ratio de CDT por cuadrantes (mama afecta vs. contralateral sana) para el diagnóstico precoz del edema mamario, y desarrollar una escala de gradación de la severidad basada en un protocolo de medición segmentario específico para la población española con cáncer de mama.

Material/Método: Estudio observacional retrospectivo con diseño de comparación intrasujeto en 110 mujeres con cáncer de mama unilateral tratadas mediante cirugía conservadora y radioterapia entre febrero de 2019 y enero de 2025. Tras 10 minutos de estabilización en decúbito supino, se midió la TDC mediante un dispositivo dieléctrico compacto en los cuatro cuadrantes (superoexterno, superointerno, inferoexterno e inferointerno) de ambas mamas. Se calculó la Ratio-TDC (mama afecta/mama sana) en cada cuadrante y como valor global. Se aplicaron las pruebas no paramétricas de Friedman y Wilcoxon para analizar la variabilidad inter-cuadrante. Los estadios de severidad se definieron a partir de los percentiles poblacionales P5, P10 y P25.

Resultados: La mediana de la Ratio-TDC global fue 1,44 (rango intercuartílico: 1,31–1,61). El análisis inter-cuadrante mostró una distribución heterogénea del edema (p

Conclusión: La medición segmentaria del TDC absoluto cuantifica de forma objetiva el edema mamario, identificando un punto de corte de 1,18 (Ratio-TDC) para el diagnóstico precoz en población española. La distribución heterogénea del edema, con predominio en cuadrantes inferiores, justifica un abordaje segmentario frente a mediciones globales. Asimismo, la categorización de la severidad mediante percentiles optimiza la toma de decisiones y el seguimiento evolutivo en consulta

INTERVENCIÓN NUTRICIONAL EN EL ABORDAJE REHABILITADOR TRAS LINFADENECTOMÍA AXILAR EN PACIENTES CON SOBREPESO U OBESIDAD: ESTUDIO PILOTO

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Objetivos: Evaluar si una intervención nutricional implementada en la consulta de Rehabilitación (MFyR) influye en el desarrollo/progresión del linfedema de miembro superior en pacientes con sobrepeso/obesidad (IMC≥25) sometidas a linfadenectomía axilar por cáncer de mama, y su impacto sobre la calidad de vida.

Material/Método: Estudio piloto experimental, prospectivo, aleatorizado, controlado y abierto, aprobado por el Comité Ético (marzo 2019). Se reclutaron 40 pacientes con IMC≥25 sometidas a linfadenectomía axilar remitidas al Servicio de MFyR. Las participantes fueron aleatorizadas a (I) grupo intervención (n=20): consejo estándar más pauta dietética hipocalórica; o (C) grupo control (n=20): consejo nutricional genérico. Seis pacientes abandonaron (15%); 34 completaron el seguimiento (C=16, I=18). Se evaluaron al mes de la cirugía (V1), a los 4 meses (V2) y a los 10 meses (V3). Las variables de resultado incluyeron: exceso de volumen (EV) relativo del brazo (circometría y volumetría indirecta por fórmula de Kuhnke; variable principal), IMC, dolor (EVA 0-10) y calidad de vida (cuestionario ULL-27E versión española validada). Se definió linfedema clínico como EV > 10%. Análisis estadístico: Mann-Whitney, Wilcoxon y Spearman; significación $p < 0,05$.

Resultados: Ambos grupos fueron comparables en todas las variables basales ($p > 0,05$). Edad media 57,8 ± 14,2 años; IMC basal 31,6 ± 5,4 kg/m². En V1, presentaban linfedema clínico el 12,5% (C) y 16,7% (I). En V3, 12,5% (C) frente al 35,3% (I), con tasas de progresión similares. No se encontraron diferencias estadísticamente significativas en ninguna variable en V3 ($p > 0,05$). El análisis intragrupo mostró una tendencia clínicamente relevante hacia la mejoría en la esfera física del ULL-27E en (I) (V1: 33,3 ± 19,8% vs. V3: 24,4 ± 13,6%; $\Delta = -8,96$ puntos; $p = 0,084$), mientras que (C) empeoró ($\Delta = +8,21$ puntos; $p = 0,266$). No se encontró correlación entre número de ganglios afectados y EV ($r = -0,148$; $p = 0,410$). La radioterapia mostró una tendencia no significativa hacia mayor EV, coherente con la literatura.

Conclusión: La intervención no demostró superioridad estadísticamente significativa respecto al consejo estándar en ninguna variable estudiada. No obstante, se observó una tendencia positiva clínicamente relevante en la esfera física del ULL-27E en el grupo intervención ($p = 0,084$). El reducido tamaño muestral (n=34) constituye la principal limitación. Los resultados deben interpretarse como datos preliminares para el diseño de un ensayo definitivo. Las variables sociodemográficas y la adherencia tampoco mostraron asociación significativa con los resultados, sugiriendo aplicabilidad de la intervención en diferentes perfiles de pacientes.

NEUROPATÍA DEL NERVIO INTERCOSTOBRAQUIAL TRAS LINFADENECTOMÍA AXILAR EN CÁNCER DE MAMA: INCIDENCIA Y EVOLUCIÓN CLÍNICA

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Objetivos: Evaluar la incidencia de neuropatía del NICB en una cohorte de pacientes con cáncer de mama y linfadenectomía en seguimiento prospectivo y analizar su evolución clínica a largo plazo.

Material/Método: Estudio prospectivo de una serie de 178 pacientes diagnosticadas de cáncer de mama intervenidas con cirugía conservadora o mastectomía y linfadenectomía entre los años 2018 y 2024, evaluadas en una Unidad de Linfedema. Se realizó un seguimiento de 2 años, valorando la sintomatología sensitiva (hipoestesia, disestesia e hiperestesia) en la región axilar y braquial. Se registró la evolución clínica categorizada en: resolución completa, persistencia con necesidad de tratamiento farmacológico (oral o tópico) o requerimiento de técnicas intervencionistas (bloqueos nerviosos).

Resultados: De las pacientes analizadas, 71.35 % presentaron clínica compatible con neuropatía del NICB. En cuanto a la evolución:

Resolución completa: 170 pacientes (95.51%).

Tratamiento farmacológico oral/tópico: 10 pacientes (5.62%).

Intervencionismo (bloqueos): 1 paciente (0.56%).

Conclusión: La neuropatía del NICB es una complicación frecuente tras la cirugía axilar en cáncer de mama y un factor contribuyente al dolor crónico postquirúrgico. En nuestra serie, los resultados coinciden con lo reportado en otras publicaciones en cuanto a la predominancia de una afectación leve y una evolución clínica favorable; de hecho, es bajo el porcentaje de pacientes que requieren manejo farmacológico avanzado o intervencionista. No obstante, son necesarios ensayos clínicos aleatorizados adicionales para determinar el impacto real de la preservación sistemática del NICB sobre la calidad de vida a largo plazo.

UTILIDAD DE LA BIOIMPEDANCIOMETRÍA MULTIFRECUENCIA EN EL DIAGNÓSTICO Y SEGUIMIENTO DEL LINFEDEMA DE EXTREMIDAD INFERIOR

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Objetivos: El linfedema produce una acumulación de líquido linfático en el espacio intersticial del segmento afectado. La bioimpedanciometría multifrecuencia (MFBIA) mide el contenido hídrico de los tejidos diferenciando entre los espacios extra e intracelular, proporcionando la información de cada una de las extremidades superiores, inferiores y tronco. El objetivo de este estudio fue evaluar la utilidad de la MFBIA en el diagnóstico y seguimiento del linfedema de extremidades inferiores.

Material/Método: Estudio observacional prospectivo en pacientes con linfedema de extremidades inferiores tratados en la unidad de linfedema de un hospital universitario. Se realizaron mediciones al inicio del tratamiento rehabilitador (t1), al finalizar 10 sesiones (t2) y al mes (t3). Se registraron los perímetros de ambas extremidades inferiores y el volumen calculado mediante la fórmula del cono truncado. Mediante MFBIA se midió, en cada extremidad, el agua total (H_2OL, en litros) y la ratio de agua extracelular segmentaria (AECs, porcentaje de agua en relación al total corporal). Se analizaron las correlaciones considerando significativo p

Resultados: Se incluyeron 28 pacientes (20 mujeres, edad media 63,8 años DE 15,3; IMC 30,5 kg/m² DE 7,5), con un total de 69 mediciones (t1=27, t2=23, t3=19). La variable H_2OL correlacionó positivamente con la suma de perímetros (r=0,286 p=0,017) y con el volumen de la extremidad afectada (r=0,323 p=0,007). La variable AECs correlacionó positivamente con la suma de perímetros (r=0,265 p=0,028) y con el volumen de la extremidad afecta (r=0,242 p=0,045). Las diferencias en el volumen y la suma de perímetros entre los tiempos t1, t2 y t3, no correlacionaron con las diferencias en el H_2OL ni en la AECs. La sensibilidad del AECs fue del 54,5% y la especificidad del 47,1%. El VPP del AECs fue del 51,6% y el VPN del 50,0%.

Conclusión: En esta muestra, las variables H_2OL y AECs de la MFBIA, correlacionaron positivamente con el volumen y la suma de perímetros de las extremidades inferiores con linfedema, aunque con una fuerza de correlación débil. Los valores de la AECs como prueba diagnóstica no alcanzaron los niveles deseables. Se requieren más estudios para determinar la utilidad de la MFBIA en el diagnóstico y seguimiento del linfedema.

Bibliografía: Yasunana Y et al. Extracellular Water Ratio as an Indicator of the Development and Severity of Leg Lymphedema Using Bioelectrical Impedance Analysis.Lymphat Res Biol. 2021 Jun;19(3):223-230. doi: 10.1089/lrb.2020.0074.

MONITORIZACIÓN MEDIANTE BIOIMPEDANCIA DE LA TERAPIA DESCONGESTIVA COMPLEJA EN LINFEDEMA: ¿ES MÁS SENSIBLE QUE LA CIRCOMETRÍA CLÁSICA?

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Objetivos: Contrastar la validez y sensibilidad de la bioimpedanciometría segmentaria multifrecuencia (DSM-BIA) frente al método del cono truncado y a la circumetría segmentaria en la respuesta al tratamiento del linfedema de miembro superior.

Material/Método: Estudio prospectivo cuasi-experimental en 10 pacientes con linfedema de miembro superior tras cirugía oncológica. Se aplicó un protocolo de Terapia Descongestiva Compleja (TDC) con una media de 18 sesiones. La evaluación pre y post-intervención incluyó: 1) Circometría segmentaria (fórmula del cono truncado); y 2) DSM-BIA (InBody S10) para análisis de Agua Extracelular (AEC), Ratio de Edema y Ángulo de Fase segmental. Se incluyeron casos con cicatrices no adheridas. Se empleó el coeficiente de Pearson y t-Student para muestras relacionadas ($p < 0,05$).

Resultados: Tras la TDC, el volumen por cono truncado se redujo de una media de 2585 ml a 2398 ml ($p < 0,001$). La DSM-BIA detectó un descenso del AEC de 12,7 a 12,3 litros ($p = 0,008$). Se halló una correlación positiva muy fuerte entre la reducción volumétrica y el descenso de AEC ($r = 0,86$; $p < 0,001$). La BIA mostró superioridad al detectar cambios significativos en el Ratio de Edema (de 0,387 a 0,383; $p = 0,024$) y en el PhA segmental (incremento de 4,05 a 4,28; $p = 0,031$), especialmente en el 30% de los casos con afectación distal (mano), donde la circometría fue menos precisa.

Conclusión: La DSM-BIA es una herramienta válida y altamente precisa para el seguimiento del linfedema. Su capacidad para discriminar el agua extracelular y evaluar la integridad celular mediante el ángulo de fase la posiciona como un método más objetivo que la circometría clásica para personalizar el tratamiento.

PLANIFICACIÓN DE LAS ANASTOMOSIS LINFÁTICO-VENOSAS CON ECOGRAFÍA

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Objetivos: Las anastomosis linfático-venulares (LVA) representan actualmente una de las técnicas quirúrgicas más utilizadas para el tratamiento del linfedema debido a su baja morbilidad y carácter mínimamente invasivo. Sin embargo, se trata de una cirugía técnicamente demandante, en la que la correcta selección de los vasos linfáticos y venas receptoras resulta fundamental para optimizar los resultados quirúrgicos. El objetivo de este trabajo es describir el papel de la ecografía de alta frecuencia en la planificación preoperatoria de las LVA y establecer criterios ecográficos y clínicos para la selección de vasos adecuados.

Material/Método: La guía presentada se basa en la experiencia clínica en el mapeo preoperatorio ecográfico de LVA en pacientes con linfedema de extremidades superiores e inferiores mediante ecografía. Además, se analizaron los datos de mujeres con linfedema secundario de extremidad inferior sometidas a LVA. El estudio ecográfico se realizó el día previo a la cirugía utilizando una sonda lineal de 18 MHz para identificar y mapear vasos linfáticos y venas superficiales potencialmente aptos para anastomosis. Se describió un protocolo sistemático paso a paso para la planificación preoperatoria mediante ecografía.

Resultados: La ecografía permitió identificar las áreas más favorables para realizar las incisiones quirúrgicas y seleccionar vasos con características adecuadas para LVA, incluyendo tamaño, profundidad y relación anatómica entre linfático y vena. Se analizaron un total de 349 incisiones en 97 extremidades inferiores, con una tasa global de identificación de vasos linfáticos del 99,7%. El diámetro medio de los vasos linfáticos y venas fue de 0,65 mm y 0,81 mm, respectivamente. La longitud media de las incisiones cutáneas fue de 1,97 cm y el tiempo quirúrgico medio por anastomosis fue de 21,7 minutos. Tras la cirugía se observó una reducción significativa del índice de volumen de la extremidad (281,2 vs 267,6; $p = 0,002$) y una mejoría significativa en la calidad de vida de los pacientes (48,3 vs 21,9; $p < 0,001$).

Conclusión: La ecografía permite realizar una planificación preoperatoria precisa y reproducible de las LVA mediante la identificación y selección ecoguiada de vasos apropiados para anastomosis. La utilización de un protocolo sistematizado mejora la eficiencia quirúrgica y contribuye a reducir el volumen del linfedema y mejorar la calidad de vida de los pacientes.

IMPACTO DE LA TERAPIA DESCONGESTIVA COMPLEJA MEDIANTE DRENAJE LINFÁTICO MANUAL EN EL EDEMA GENERALIZADO DE PACIENTES PEDIÁTRICOS CRÍTICOS: ESTUDIO OBSERVACIONAL PROSPECTIVO

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Objetivos: Evaluar la eficacia y seguridad del drenaje linfático manual para la reducción del edema generalizado en pacientes pediátricos ingresados en Unidad de Cuidados Intensivos Pediátricos (UCIP), así como analizar su repercusión funcional y clínica sobre la interacción con el entorno, movilidad y evolución clínica global.

Material/Método: Estudio observacional prospectivo realizado en una UCIP terciaria. Se incluyeron pacientes pediátricos con edema generalizado secundario a diferentes patologías críticas, incluyendo cirugía cardíaca, síndrome de intestino corto, fallo multiorgánico, sepsis y estados inflamatorios sistémicos. Los pacientes fueron tratados exclusivamente cuando alcanzaron estabilidad hemodinámica.
La intervención consistió en sesiones diarias de drenaje linfático manual realizadas por una fisioterapeuta experta en linfología pediátrica. La evaluación del edema se efectuó mediante circometría seriada pre y postratamiento, registrando perímetro cefálico, torácico, abdominal y de extremidades superiores e inferiores. Asimismo, se analizaron variables funcionales y clínicas relacionadas con el edema, incluyendo apertura ocular, interacción con el medio, movilidad espontánea, tolerancia a la movilización, confort postural y confort respiratorio.
El análisis estadístico se realizó mediante pruebas paramétricas para muestras relacionadas, considerando significación estadística un valor de $p < 0,05$.

Resultados: Se incluyeron 5 pacientes pediátricos críticos con una media de edad de 3 meses. Tras una media de 8 ± 3 sesiones de tratamiento, se objetivó una reducción significativa del edema en todas las localizaciones evaluadas. El perímetro cefálico disminuyó una media de 1,8 ± 0,6 cm ($p<0,001$), el perímetro torácico 3,2 ± 1,1 cm ($p<0,001$) y el abdominal 4,1 ± 1,4 cm ($p<0,001$). En extremidades superiores e inferiores se observó una reducción media del 12,6% y 15,3% respectivamente ($p<0,001$).

Desde el punto de vista funcional, la mayoría de los pacientes presentó mejor apertura ocular, mayor interacción con el entorno y aumento de la movilidad espontánea. Además, se observó mejor tolerancia a la movilización precoz, disminución de la tensión cutánea y mejoría del confort respiratorio asociada a la reducción del edema toracoabdominal. No se registraron eventos adversos relacionados con la intervención.

Conclusión: El drenaje linfático manual constituye una intervención segura y potencialmente eficaz para el tratamiento del edema generalizado en pacientes pediátricos críticos hemodinámicamente estables. Su aplicación se asocia a una reducción significativa del edema y a una mejoría funcional y clínica relevante, favoreciendo la recuperación global del paciente crítico pediátrico.

ECOLIPE. ULTRASONIDOS EN EL DIAGNÓSTICO DE LIPEDEMA Y LINFEDEMA

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Objetivos: El diagnóstico diferencial entre lipedema y linfedema es un desafío clínico debido a la similitud clínica y la falta de pruebas patognomónicas. La ecografía surge como una herramienta superior para evaluar la ecoestructura, el grosor del tejido celular subcutáneo (TCS) y la fibrosis de forma objetiva. El objetivo de este estudio es caracterizar variables ecográficas en una muestra randomizada de lipedema y linfedema.

Material/Método: Estudio observacional, transversal y cegado simple, con 85 pacientes (60 con lipedema y 25 con linfedema), con variables clínicas (edad, peso, talla, perímetro cintura/cadera, grado ISL - International Society of Lymphology-) y ecográficas medidas a nivel de muslo anterior, región pretibial y región supramaleolar medial, sin y con compresión del transductor. Se analizan variables cuantitativas (grosor y ecogenicidad determinado mediante el software ImageJ) y cualitativas (escalas SEG - Subcutaneous Echogenicity Grade, SEFS - Subcutaneous Echo-Free Space, patrón nodular, patrón edematoso, aspecto fascial…). Se desarrollaron índices específicos: SSTTI (relación grosor piel/TCS), SST-EI (relación ecogenicidad piel/TCS) y el ST-CI (índice de compresibilidad). Análisis estadístico con ANOVA y Chi Cuadrado.

Resultados: Las pacientes con lipedema fueron diagnosticadas 23,89 años tras el inicio de los síntomas y un 85% de ellas tenía antecedentes familiares. El lipedema mantiene una estructura de piel-TCS homogénea, mientras que el linfedema presenta una desorganización tisular marcada, especialmente en zonas de estasis gravitacional. Ecográficamente en regiones distales del linfedema, se obtuvo relación entre la escala SEG y el grado ISL (sig = 0,045), mientras que en lipedema se describió aumentos de ecogenicidad (sig. 0,017), alteraciones fasciales (sig 0,05), probablemente debido a la convergencia en nuestra muestra de estadios avanzados de lipedema. La relación de ecogenicidad (SST-EI) fue superior en lipedema respecto al linefedema, observándose en este último un descenso progresivo hacia distal, llegando a invertirse el índice (SST-EI

Conclusión: En este estudio se fundamenta la importancia del ultrasonido en el diagnóstico diferencial, especialmente con la evaluación del SST-EI a nivel supramaleolar. Se requerirán más estudios para integrarlo en un algoritmo clínico-ecográfico.

DOLOR SELECTIVO SOBRE PERFORANTES EN EL 95% DE PACIENTES CON LIPEDEMA: UN HALLAZGO CLÍNICO QUE EL ECO-DOPPLER CONVENCIONAL APENAS DETECTA

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Objetivos: El lipedema se asocia a dolor crónico en extremidades inferiores con mecanismo fisiopatológico no completamente esclarecido. En una cohorte de 1803 pacientes con lipedema, el 95,6–95,9% presentó dolor a la palpación selectiva profunda sobre el punto de penetración fascial de venas perforantes paratibiales y tibiales posteriores. Sin embargo, solo el 9,1% presentaba insuficiencia de la vena safena mayor. El objetivo primario fue describir la prevalencia de este signo clínico. El objetivo secundario fue explorar su posible relación con la hiperlaxitud ligamentosa y su discordancia con los hallazgos ecográficos disponibles en el eje safeno evaluado

Material/Método: Análisis de subconjunto de un estudio observacional descriptivo multicéntrico de 1803 pacientes con diagnóstico clínico de lipedema atendidas en dos clínicas españolas entre enero de 2022 y noviembre de 2024. Todas las pacientes fueron sometidas a eco-Doppler de la vena safena mayor, definiéndose insuficiencia como reflujo >500 ms. En las pacientes con registro disponible para esta variable, se evaluó mediante palpación digital profunda con instrumento de punta roma el dolor en el punto exacto de penetración fascial de perforantes paratibiales y tibiales posteriores. La hiperlaxitud ligamentosa se cuantificó mediante el test de Beighton (0–9). Se realizó análisis descriptivo. El estudio fue aprobado por el Comité Ético de Investigación correspondiente

Resultados: De 1803 pacientes evaluadas (edad media 42,9 años; DE 11,3; IMC medio 28,6), solo el 9,1% (46/538) presentó insuficiencia de la vena safena mayor en eco-Doppler. No obstante, el dolor selectivo sobre el punto de penetración fascial de perforantes paratibiales estuvo presente en el 95,6% (519/543) y sobre tibiales posteriores en el 95,9% (516/538). La baja frecuencia de insuficiencia safena sugiere que este hallazgo clínico no se explica, en la mayoría de los casos, por alteración hemodinámica proximal del eje safeno. La hiperlaxitud ligamentosa se confirmó en el 95,8% (1726/1801), con puntuación media de Beighton de 7,5 (DE 1,6).

Conclusión: La alta prevalencia de dolor selectivo sobre las perforantes en presencia de safenas funcionalmente normales sugiere una disfunción localizada en el punto de cruce fascial. La elevada frecuencia de hiperlaxitud ligamentosa permite plantear la hipótesis de que una alteración del tejido conectivo pueda modificar la función antirreflujo que la fascia muscular ejerce sobre las perforantes a su paso por ella, favoreciendo una disfunción subclínica no captada por la evaluación ecográfica convencional. Esta hipótesis requiere validación prospectiva específica

ESTUDIO PILOTO EN LIPEDEMA Y OBESIDAD COMBINANDO DIETA BAJA EN HIDRATOS, ORTÉSIS TEJIDO PLANO Y PROGRAMA ESPECÍFICO EJERCICIOS

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Objetivos: El objetivo es mejorar estado funcional y calidad de vida de las pacientes con linfedema y obesidad1. Tratar de generar evidencia para implantar este abordaje multidisciplinar2,3 en el entorno hospitalario público, integrando al dietista-nutricionista en nuestra unidad.

Material/Método: Estudio piloto de intervención clínica 30 mujeres (edad: 53,73; Peso 89,38 kg) lipedema y obesidad (IMC ≥ 27, media 37,7) en dos fases. Durante 6 meses protocolo: pauta nutricional hipocalórica con restricción de hidratos de carbono4, ortésis tejido plano a medida específicas y programa de ejercicio (aeróbico, fortalecimiento, estiramientos y drenaje linfático activo). Mediciones antropométricas y bioimpedancia. Funcionalidad, dolor y calidad de vida mediante Cuestionario SF-36, dolor (BPI-SF), adherencia a Dieta Mediterránea5 y actividad física (IPAQ) al inicio, 6 meses y año. Aquellas que no consigan objetivos en 6 meses, cumplan criterios y deseen, además tratamiento farmacológico inyectable agonista dual receptores GLP-1 y GIP 6 meses más (14 pacientes).

Resultados: 29 completaron. No se observaron cambios relevantes en composición corporal (Índice masa corporal: $-0{,}17 \pm 2{,}45$ kg/m²; masa grasa: $1{,}27 \pm 3{,}97$ kg). Sin embargo, se evidenció mejoría clínica, reducción del dolor ($-0{,}70 \pm 1{,}54$) y aumento calidad de vida (dolor corporal $\Delta = 11{,}57 \pm 22{,}36$; Componentes físicos SF-36: $\Delta = 11{,}78 \pm 15{,}62$). La reducción del dolor se asoció consistentemente con mejoría en calidad de vida ($\rho = -0{,}52$), y componente físico global ($\rho = -0{,}41$). No se observaron asociaciones relevantes entre cambios en dieta o actividad física y dolor o calidad de vida. Variación masa grasa y de adherencia a la dieta presentaron correlación débil con componentes físicos ($\rho = -0{,}29$ y $\rho = 0{,}19$), y prácticamente nula con dolor ($\rho = -0{,}08$). Cambios en actividad física (IPAQ) correlación débil con la calidad de vida (ρ entre 0,21 y 0,27) y ausencia con dolor (ρ −0,03 y 0,08). Subgrupo (14) con análogos de GLP-1 mostró mayor mejoría en componentes físicos (19,17 vs 6,04) reducción del dolor (−1,58 vs 0), y descenso Índice de Masa corporal.

Conclusión: Hallazgo principal estudio: la mejora en la calidad de vida está estrechamente vinculada a la reducción del dolor6, independientemente de cambios en composición corporal, dieta o actividad física. Coherente con fisiopatología del lipedema: dolor es síntoma central sin relación directa con peso. Utilización de medias podría desempeñar papel clave en mejoría sintomática7. Tratamiento con análogos GLP-1 podría potenciar mejoría. Estos resultados apoyan enfoque terapéutico multidisciplinar centrado en dolor8.

EL EJE INTESTINO-TEJIDO ADIPOSO EN EL LIPEDEMA. SCOOPING REVIEW

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Objetivos: El lipedema es una patología crónica que, en los últimos años, se ha descrito como una enfermedad con un posible componente inflamatorio sistémico. Diversos estudios han identificado alteraciones en el endotelio vascular-linfático, infiltrados inflamatorios en el tejido adiposo y alteraciones hormonales que podrían contribuir a su desarrollo. A su vez, la permeabilidad intestinal aumentada (comúnmente denominada «intestino permeable») constituye un mecanismo fisiopatológico relevante en múltiples enfermedades metabólicas e inflamatorias. La posible implicación del eje intestino-tejido adiposo en el lipedema constituye una hipótesis emergente que carece de revisiones bibliográficas.

El objetivo es explorar la evidencia publicada sobre la relación entre la permeabilidad intestinal y el lipedema, identificando conceptos clave, teorías, fuentes y lagunas de conocimiento sobre este campo.

Material/Método: Revisión sistemática exploratoria según criterios PRISMA-ScR, con búsqueda en bases de datos PubMed, Scopus, Web of Science, Cochrane, y Google Scholar, usando los términos MeSH y libres combinados: lipedema, lipoedema, intestinal permeability, leaky gut, gut microbiota, lipopolysaccharide, endotoxemia, tight junctions, zonulin, dysbiosis, LPS-binding protein y estroboloma. Como criterios de inclusión se establecieron: estudios que aborden la relación entre permeabilidad intestinal y/o microbiota intestinal con lipedema o sus mecanismos fisiopatológicos, sin restricción de fecha o tipo de artículo. La selección de artículos relevantes y extracción de datos se realizaron de manera independiente por dos investigadores y las discrepancias se resolvieron por consenso.

Resultados: La búsqueda bibliográfica identificó un total de 341 registros potencialmente relevantes. Tras la eliminación de duplicados (118) y la revisión en dos fases, se incluyeron 9 artículos. No existe ninguna scoping review ni revisión sistemática específica sobre la relación intestino permeable-lipedema. La evidencia disponible procede de un estudio piloto casos-controles que caracteriza el perfil de microbiota intestinal en pacientes con lipedema 1, un artículo de opinión de alto impacto que postula la cascada endotoxina-complemento como el mecanismo impulsor principal del lipedema 2, un estudio transversal sobre las IgG y su posible relación con la permeabilidad intestinal en lipedema 3 y revisiones narrativas nutricionales sobre microbiota e inflamación sistémica que abordan el lipedema pero de forma indirecta.

Conclusión: La evidencia actual es preliminar pero biológicamente coherente. Los mecanismos propuestos (endotoxemia por lipopolisacáridos, disbiosis intestinal con alteración de ácidos grasos de cadena corta, disfunción del estroboloma y activación del sistema del complemento) son plausibles y justifican investigación dirigida. El campo carece de estudios observacionales específicos que midan directamente marcadores de permeabilidad intestinal en cohortes bien fenotipadas de lipedema, por lo que existe un gap de investigación claro en este campo.

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ABSTRACT – SESSIONS:
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Thursday, September 24th, 2026

Salon De Actos

SESION 1: LINFEDEMA

FLEBOLINFEDEMA: UN PROBLEMA COMÚN FRECUENTEMENTE INFRADIAGNOSTICADO E INFRATRATADO EN LAS UNIDADES DE ÚLCERAS

LOURDES REINA- GUTIÉRREZ

El flebolinfedema de miembros inferiores (MMII) secundario a insuficiencia venosa crónica (IVC) es la causa más frecuente de úlcera de MMII. Con frecuencia es infradiagnosticado e infra tratado, lo que hace que la úlcera se cronifique y aparezca fibrosis de los tejidos blandos del tobillo con fallo de la bomba muscular agravándose el proceso. Es el linfedema de extremidad más frecuente en occidente, superando al linfedema de miembro superior secundario al cáncer de mama. Requiere del especialista en Angiología y Cirugía Vascular (ACV) quien realiza el diagnóstico clínico, la clasificación CEAP y evalúa la extensión, etiología y fisiopatología de la IVC mediante el ecodoppler de MMII y abdómino-pélvico que complementa con pruebas de imagen como AngioTAC, AngioRMN y flebografía abdómino-pélvica. El especialista en ACV realiza los tratamientos invasivos tanto del sistema venoso superficial como profundo. En el diagnóstico del flebolinfedema de MMII debe realizarse una linfogammagrafía isotópica de MMII para evaluar el estadio y extensión de la insuficiencia linfática crónica (ILC). Otras pruebas como la ecografía cutánea ayudan a establecer el estadio de la ILC y a evaluar la respuesta a los tratamientos. En el tratamiento del flebolinfedema secundario a IVC, es prioritario el tratamiento de la IVC sobre el tratamiento de la ILC, pues el efecto negativo de la IVC sobre la ILC es mayor que al contrario. El tratamiento debe enfocarse en disminuir la hipertensión venosa crónica mediante medidas conservadoras e invasivas. La terapia compresiva con dispositivos de compresión de baja elasticidad, con baja presión en reposo (>40 mm de hg) y alta presión de trabajo durante la deambulación o a la flexión del tobillo (>65 mm de hg), debe aplicarse en la primera semana de aparición de la úlcera, para evitar la fibrosis de los tejidos y fallo de la bomba muscular. Para ello, el especialista en ACV debe descartar la presencia de patología arterial periférica de MMII asociada. El especialista en ACV debe buscar la presencia de reflujo venoso superficial, presente en 2 de cada 3 pacientes, realizando un ecodoppler venoso de MMII en la primera visita y eliminar dicho reflujo mediante una cirugía endovenosa mínimamente invasiva en las dos primeras semanas de aparición de la úlcera. El tratamiento de la ILC es similar al del linfedema de otras causas mediante terapia descongestiva compleja y mantenimiento, con las peculiaridades propias de la úlcera venosa y la presencia o no de patología arterial periférica.

EVALUACIÓN INSTRUMENTAL I: LINFOGAMMAGRAFÍA- LINFOSPECT

CRISTINA RUIZ-LLORCA - *Servicio de Medicina Nuclear. Hospital Universitari i politecnic La Fe, Valencia.*

EVALUACIÓN INSTRUMENTAL II: LINFO RMN

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El conocimiento actual de la anatomía y fisiología del sistema linfático y del linfedema, junto con la aparición de procedimientos microquirúrgicos aplicados al territorio linfático, han incrementado la necesidad de disponer de métodos de imagen capaces de proporcionar una evaluación anatómica y funcional. La resonancia magnética para el estudio del sistema linfático (LinfoRM) representa actualmente la técnica de imagen más completa para la evaluación del linfedema, al combinar información anatómica y funcional de alta resolución sin emplear radiación ionizante. Su integración en la práctica clínica permite optimizar la indicación y planificación de los tratamientos reconstructivos, favoreciendo un abordaje individualizado y multidisciplinar de la patología linfática.

En esta ponencia se revisarán los fundamentos de la LinfoRM, sus indicaciones clínicas y las diferentes técnicas disponibles, diferenciando entre la LinfoRM directa, con administración intradérmica de gadolinio y la LinfoRM indirecta, no invasiva y basada en secuencias potenciadas en T2. Se

analizarán las ventajas y limitaciones de ambas modalidades, así como su papel frente a otras técnicas de imagen, especialmente la linfogammagrafía convencional. Asimismo, se describirán los principales hallazgos radiológicos, incluyendo los patrones de drenaje linfático, el dermal backflow, la velocidad de transporte linfático, la morfología de los colectores y la identificación de ganglios y vasos candidatos para cirugía. Finalmente, se abordará la utilidad de la LinfoRM en la planificación preoperatoria, la selección de pacientes, el seguimiento tras el tratamiento y la valoración objetiva de la respuesta terapéutica.

SESION 2: LIPEDEMA

PERSPECTIVAS DE INVESTIGACIÓN EN LIPEDEMA: ESTADO ACTUAL Y LÍNEAS FUTURAS

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Introducción: El lipedema es un trastorno crónico del tejido adiposo que afecta casi exclusivamente a mujeres. Históricamente infradiagnosticado y confundido con la obesidad o el linfedema, su reciente inclusión en la CIE-11 ha impulsado la investigación clínica y molecular.

Objetivo: Sintetizar la evidencia científica más reciente sobre la fisiopatología, diagnóstico y tratamiento del lipedema, identificando las lagunas de conocimiento actuales para optimizar la práctica médica.

Evidencia Actual: Las investigaciones recientes confirman que el lipedema es una enfermedad multifactorial caracterizada por hiperplasia e hipertrofia de adipocitos, hipoxia tisular, inflamación microvascular y una clara predisposición genética. A falta de biomarcadores moleculares, el diagnóstico sigue siendo estrictamente clínico. En el ámbito terapéutico, las guías clínicas y documentos de consenso respaldan un enfoque multidisciplinar. Éste combina el manejo conservador (terapia de compresión, dieta antiinflamatoria, cinesiterapia) con el tratamiento quirúrgico mediante lipedema reduction surgery como liposucción especializada para casos refractarios, la cual ha demostrado reducir significativamente el dolor y mejorar la calidad de vida a largo plazo.

Desafíos Futuros: El principal reto radica en descubrir biomarcadores específicos para el diagnóstico precoz, y trasladar los hallazgos genéticos y de imagen a biomarcadores de bajo coste accesibles en la práctica diaria. Asimismo, se requiere estandarizar los criterios clínicos para evitar el sesgo de peso y diseñar ensayos clínicos aleatorizados a gran escala que comparen la eficacia a largo plazo de las intervenciones quirúrgicas frente a las conservadoras.

LIPEDEMA DE BRAZOS: CLAVES DIAGNÓSTICAS Y ESTRATEGIAS TERAPÉUTICAS

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Objetivo: Presentar las principales características diagnósticas del lipedema de brazos y revisar las estrategias terapéuticas actuales, con especial énfasis en el tratamiento quirúrgico mediante liposucción circunferencial anatómica y en las técnicas destinadas a optimizar el contorno, la retracción cutánea y los resultados funcionales.

Material y métodos: Se revisa el abordaje diagnóstico del lipedema de las extremidades superiores, incluyendo la distribución característica del tejido adiposo, los hallazgos clínicos, la valoración dinámica del contorno y la calidad cutánea, así como los principales diagnósticos diferenciales.

Desde el punto de vista terapéutico, se describen las estrategias conservadoras y el tratamiento quirúrgico mediante liposucción circunferencial de brazos y antebrazos. Se analizan diferentes conceptos técnicos, como la liposucción circunferencial, los abordajes en múltiples posiciones, la liposucción selectiva y el empleo de tecnologías de retracción cutánea asistidas por radiofrecuencia (RFAL) en casos seleccionados.

El tratamiento postoperatorio incluyó prendas de compresión, drenaje linfático manual, ejercicio supervisado y terapia descongestiva compleja.

Resultados: El tratamiento quirúrgico permitió mejorar de forma significativa la sintomatología, el contorno de las extremidades superiores y la calidad de vida de las pacientes. La asociación de tecnologías de retracción cutánea favoreció una mayor contracción de la piel y disminuyó la necesidad de procedimientos complementarios como la braquioplastia en pacientes con laxitud leve o moderada.

La correcta selección de pacientes y una planificación anatómica individualizada permitieron obtener resultados reproducibles, con alta satisfacción y una mejora de la armonía corporal.

Conclusiones: El diagnóstico precoz del lipedema de brazos es fundamental para establecer una estrategia terapéutica adecuada. La liposucción circunferencial anatómica constituye una herramienta eficaz para mejorar los síntomas y el contorno corporal, mientras que el uso selectivo de tecnologías de retracción cutánea puede optimizar los resultados estéticos y funcionales, reduciendo la necesidad de cirugía escisional.

Palabras clave: Lipedema; lipedema de brazos; diagnóstico; liposucción circunferencial; WAL; PAL; RFAL; retracción cutánea; braquioplastia; contorno corporal.

INTESTINO HIPERPERMEABLE EN LIPEDEMA

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El linfólogo que atiende lipedema reconoce un patrón: dolor desproporcionado, resistencia al tratamiento dietético y un componente inflamatorio persistente cuyo origen no se explica. El consenso Delphi de la Lipedema World Alliance admite que la inflamación puede contribuir a la patogenia, pero le atribuye una fuerza de evidencia del 49,2% y deja sin resolver si constituye causa, consecuencia o amplificador (4).

Esta ponencia desarrolla la hipótesis de que la disfunción de la barrera intestinal puede ser una fuente sostenida de esa inflamación. La barrera intestinal es una estructura fisiológica medible cuya alteración permite el paso de lipopolisacáridos y otros productos microbianos a la circulación (1). Kruglikov y Scherer han propuesto que la cascada endotoxina-complemento podría ser el motor principal del lipedema, situando el eje intestino-tejido adiposo en un marco mecanístico publicado (2).

Se expondrá cómo explorar este fenotipo en consulta. En nuestra cohorte de 1.803 mujeres con lipedema, el 99,0% presentó un fenotipo clínico compatible con disfunción de barrera, mediante un cuestionario de 26 ítems (3). El dato ilustra la magnitud del fenómeno, no lo demuestra: el cuestionario no diagnostica hiperpermeabilidad, endotoxemia ni translocación microbiana, y la ausencia de grupo control impide establecer especificidad ni causalidad.

Se revisarán las implicaciones prácticas: qué preguntar en la anamnesis, qué sugiere la concurrencia de otros cofenotipos inflamatorios y por qué un patrón alimentario cotidiano no proinflamatorio, distinto de una dieta terapéutica antiinflamatoria prescrita, podría contribuir a modular la sintomatología sin implicar reducción del depósito adiposo.

El modelo fue presentado en el Curso de Fisiopatología del Lipedema del GEL (2023) y en el Lipedema World Congress de Potsdam (2023). Se expone como hipótesis razonada y falsable, no como mecanismo demostrado, y concluye proponiendo el programa que la pondría a prueba: validación del instrumento frente a pruebas fisiológicas de permeabilidad, biomarcadores del eje LPS-inflamación y grupos comparadores.

Palabras Clave: Lipedema; barrera intestinal; endotoxemia; inflamación crónica de bajo grado

NUTRICIÓN Y LIPEDEMA: CRITERIOS CLAVE PARA LA PRÁCTICA CLÍNICA

DRA. ERACI DREHMER RIEGER - *Dietista-nutricionista. Especialista en nutrición clínica, deportiva y composición corporal.*

Introducción

El lipedema es una enfermedad crónica del tejido adiposo asociada a inflamación persistente, dolor y una notable afectación funcional y psicosocial. A pesar del creciente interés por la nutrición como parte del tratamiento conservador, no existe consenso sobre una dieta específica para esta patología. Sin embargo, la evidencia disponible y la experiencia clínica sugieren que los patrones de alimentación con perfil antiinflamatorio pueden constituir una herramienta útil para el manejo nutricional de estas pacientes, especialmente cuando se adaptan a las comorbilidades metabólicas, endocrinas y digestivas frecuentemente asociadas. En este escenario, la correcta valoración de la composición corporal y de la calidad de vida resulta fundamental para la toma de decisiones clínicas y el seguimiento de la intervención nutricional.

Proporcionar criterios prácticos para la toma de decisiones en la consulta de nutrición clínica aplicada al lipedema, abordando el diseño de estrategias dietéticas antiinflamatorias adaptadas a las comorbilidades asociadas, la interpretación de los principales métodos de valoración de la composición corporal y la utilización de cuestionarios de salud y calidad de vida como herramientas de seguimiento clínico.

Desarrollo y contenido:

Se abordarán los principales criterios para el diseño de una intervención nutricional antiinflamatoria en pacientes con lipedema, considerando la fisiopatología de la enfermedad y la presencia de comorbilidades metabólicas, endocrinas y digestivas frecuentemente asociadas. Asimismo, se revisarán los alimentos, patrones dietéticos y estrategias nutricionales con mayor aplicabilidad clínica, así como los aspectos que deben tenerse en cuenta para individualizar la intervención y favorecer la adherencia terapéutica.

Además, se analizarán los métodos de valoración de la composición corporal empleados en la práctica clínica, destacando las ventajas, limitaciones y criterios de interpretación de la antropometría, la bioimpedancia eléctrica (BIA) y la absorciometría dual de rayos X (DEXA) en pacientes con lipedema. Finalmente, se expondrá el papel de los cuestionarios de calidad de vida, dolor, funcionalidad y conducta alimentaria como herramientas complementarias para una valoración integral y el seguimiento de la evolución clínica de la paciente.

Conclusiones:

El abordaje nutricional del lipedema debe sustentarse en una valoración clínica integral y en la individualización de las recomendaciones dietéticas según el perfil metabólico, digestivo y funcional de cada paciente. La dieta antiinflamatoria, basada en principios de alimentación saludable y adaptada a las comorbilidades asociadas, constituye una estrategia de elevada aplicabilidad clínica para optimizar el seguimiento nutricional. La integración de herramientas de valoración de la composición corporal y de calidad de vida permite una monitorización más precisa de la evolución clínica y contribuye a mejorar los síntomas, la funcionalidad y el bienestar de las pacientes con lipedema.

Palabras clave: lipedema; nutrición clínica; dieta antiinflamatoria; composición corporal; antropometría; bioimpedancia eléctrica; DEXA; calidad de vida.

SESION 3: Tratamiento del Linfedema

AGENTES FÍSICOS EN EL ABORDAJE DE LOS TRASTORNOS LINFÁTICOS

RAQUEL REINALDOS

El abordaje conservador de los trastornos linfáticos ha estado tradicionalmente orientado a la reducción del volumen y al control del edema mediante la Terapia Descongestiva Compleja (TDC), considerada actualmente el tratamiento de referencia. Sin embargo, los avances en el conocimiento de la fisiopatología del linfedema han puesto de manifiesto que esta enfermedad implica procesos complejos de inflamación crónica, fibrosis, remodelación de la matriz extracelular, infiltración adiposa y alteraciones inmunológicas que contribuyen a su progresión. Este nuevo conocimiento ha impulsado el desarrollo de estrategias terapéuticas dirigidas no solo a mejorar el transporte linfático, sino también a modular los mecanismos biológicos responsables del mantenimiento de la enfermedad.

Esta ponencia presenta una revisión de la evidencia científica sobre las principales modalidades de agentes físicos emergentes aplicadas al tratamiento de los trastornos linfáticos. Se analizan los fundamentos fisiopatológicos, los mecanismos de acción y el nivel de evidencia disponible en determinados agentes físicos, evaluando su potencial como terapias complementarias dentro de un abordaje basado en mecanismos.

La evidencia disponible confirma que la TDC continúa siendo la base del tratamiento conservador, mientras que las nuevas modalidades físicas muestran resultados prometedores, especialmente en la modulación de la inflamación, la fibrosis y la calidad del tejido, aunque aún persisten importantes limitaciones que impiden establecer recomendaciones clínicas definitivas.

TERAPIA CELULAR EN EL TRATAMIENTO DEL LINFEDEMA

CRISTINA PUIGDELLÍVOL

CIRUGÍAS DERIVATIVAS Y DE RESECCIÓN EN EL LINFEDEMA

ANDRÉS REYES VALDIVIA & ÁFRICA DUQUE

OPTIMIZACIÓN DEL RESULTADO QUIRÚRGICO MEDIANTE EL ABORDAJE REHABILITADOR

PILAR CRESPO COBO - *HGU Gregorio Marañón. Madrid*

La cirugía ha supuesto un avance importante en el tratamiento del linfedema, pero debe entenderse como una herramienta complementaria dentro de un abordaje integral donde el tratamiento conservador sigue siendo el pilar fundamental. Es crucial realizar una selección adecuada del paciente y establecer desde el principio expectativas realistas, ya que la intervención no implica el abandono de las medidas de autocuidado ni de las prendas de compresión.

La mayoría de los autores coinciden en que la rehabilitación postquirúrgica es esencial para potenciar los resultados, aunque no existe un consenso universal sobre su duración y las técnicas a aplicar.

Durante la fase preoperatoria, el proceso comienza optimizando el lecho quirúrgico mediante la reducción de la carga linfática basal y la fibrosis tisular. La estrategia varía según el estado del edema, aplicando terapia descongestiva intensiva con drenaje y vendaje en linfedemas descompensados, manteniendo la prenda habitual en casos estabilizados. Se recomienda drenaje linfático manual (DLM) las dos semanas previas para estimular vías colaterales y prevenir el riesgo iatrogénico de linfedema en la región donante

En la fase postquirúrgica, las pautas respetan minuciosamente los tiempos de angiogénesis y cicatrización endotelial. Inicialmente se pautan medidas posturales con elevación de la extremidad las primeras 24 horas y deambulación con carga parcial al segundo día en miembros inferiores para evitar la estasis venosa. La actividad física es progresiva las primeras tres semanas, incorporando ejercicios específicos para activar de forma directa la contractibilidad linfática.

El DLM postoperatorio debe ser ejecutado por terapeutas certificados o mediante auto-drenaje entrenado. En las anastomosis linfático-venosas (ALV) se inicia la segunda semana en zonas distantes y la tercera sobre las uniones (2-3 veces/semana), aunque algunos autores sugieren esperar 4 semanas, primando siempre el criterio del cirujano. En la transferencia ganglionar vascularizada empieza precozmente al primer o segundo día, con 3-5 sesiones semanales el primer mes y 3 semanales el segundo, manteniéndose unos 3 meses hasta la estabilización.

La terapia compresiva postoperatoria varía según la estructura tisular que se debe proteger. En la transferencia ganglionar se evita la compresión directa del colgajo de 2 a 4 semanas para salvaguardar el pedículo microvascular. En las anastomosis, se introduce una baja presión a las 24-72 horas para evitar el colapso de las derivaciones, incrementándola a partir del mes. Por el contrario, en la liposucción se exige contención continua con tejido plano desde el quirófano durante 23 horas al día de por vida.

La revisión de la literatura muestra que, aunque los protocolos son muy heterogéneos, la rehabilitación postoperatoria parece influir claramente en los resultados. Se han observado mayores reducciones de volumen, mejoras en la calidad de vida y una disminución de los episodios infecciosos en los pacientes que reciben un programa rehabilitador adecuado.

MITOS EN LAS MEDIDAS DE PREVENCIÓN DEL LINFEDEMA

MARTA LÓPEZ MARTÍN - *Hospital Universitario de la Princesa, Madrid.*

Introducción: El linfedema secundario asociado al cáncer de mama es una complicación crónica que puede afectar significativamente la calidad de vida. Las medidas de autocuidado contribuyen a reducir el volumen del edema, la sintomatología asociada y los niveles de ansiedad y depresión. Aunque la autogestión es fundamental para prevenir la progresión de la enfermedad y sus complicaciones, su aplicación puede verse limitada por la complejidad de las intervenciones y la falta de programas educativos estandarizados. La educación sanitaria favorece la adherencia terapéutica, mejora la calidad de vida y reduce conductas de riesgo, aunque aún existe escasa evidencia sobre las herramientas educativas más eficaces.

Objetivo: Revisar las medidas de autocuidado con mayor respaldo científico para la reducción de síntomas y la prevención de la progresión del linfedema en pacientes con cáncer de mama.

Metodología: Se realizó una revisión bibliográfica sistematizada en PubMed y Cochrane de artículos publicados en español e inglés durante los últimos diez años. Se seleccionaron ensayos clínicos aleatorizados, metaanálisis, revisiones sistemáticas y guías clínicas dirigidas a mujeres mayores de 18 años con linfedema secundario a cáncer de mama tratado, excluyendo estudios farmacológicos. De los 12 artículos identificados en PubMed se incluyeron 6 y de los 53 ensayos y 5 revisiones de Cochrane se seleccionaron 4 por su calidad metodológica y pertinencia.

Resultados: Los programas educativos multimodales y supervisados mejoran la calidad de vida, el bienestar emocional y el control del linfedema. Se recomienda una educación periódica e individualizada que favorezca el empoderamiento de las pacientes. La prevención de traumatismos e infecciones continúa siendo una medida habitual, aunque algunas recomendaciones, como evitar la exposición al calor, presentan evidencia limitada. El ejercicio físico regular, incluidos los ejercicios de fuerza progresiva, es seguro y mejora la función física y los síntomas asociados. El autodrenaje linfático ayuda a reducir el dolor y mantener o disminuir el volumen del linfedema. Las prendas de compresión constituyen la intervención con mayor evidencia para el control y mantenimiento del edema.

Conclusiones: La educación terapéutica, el ejercicio físico supervisado, el autodrenaje linfático y las prendas de compresión son las estrategias de autocuidado con mayor respaldo científico para el manejo del linfedema asociado al cáncer de mama. Se precisan estudios adicionales que permitan optimizar las recomendaciones educativas y preventivas.

EJERCICIO COMO PREVENCIÓN Y MANEJO DEL LINFEDEMA

ROSER BELMONTE MARTÍNEZ - *Hospital del Mar, Barcelona, España*

En los últimos años, la evidencia científica ha demostrado de forma consistente los beneficios del ejercicio físico para la salud y, específicamente, para los pacientes con cáncer, mejorando la capacidad cardiorrespiratoria, la función pulmonar y la condición física. Además, se asocia con mejoras significativas en el bienestar psicosocial y en la calidad de vida relacionada con la salud, así como con una disminución de la mortalidad específica por cáncer y de la mortalidad global.

Paralelamente a estos avances, ha aumentado el conocimiento de los efectos del ejercicio físico en los pacientes con linfedema. El ejercicio contribuye a incrementar el rendimiento muscular, mantener el rango de movilidad articular y optimizar la función de la bomba musculo venosa. La evidencia disponible demuestra que es una herramienta eficaz tanto para la prevención del linfedema como para su tratamiento, favoreciendo el mantenimiento y el control de su evolución.

Se han descrito beneficios con diferentes modalidades de entrenamiento, incluyendo ejercicio aeróbico, de fuerza y programas combinados. Asimismo, se han evaluado múltiples estrategias de intervención —en seco o en el medio acuático, unicomponente o multimodal, con o sin supervisión, alta intensidad, e incluso con participación en competiciones—, constatándose que todas ellas son, en términos generales, seguras y potencialmente beneficiosas para estos pacientes.

Por todo ello, el ejercicio físico debe formar parte de manera sistemática de las estrategias de prevención y tratamiento del linfedema.

No obstante, persisten aspectos que requieren mayor investigación, como la definición de los protocolos, la dosis óptima de ejercicio o las estrategias para mejorar la adherencia terapéutica. Por otro lado, hay poca evidencia sobre los efectos y aplicabilidad del ejercicio en pacientes con linfedema de extremidad inferior u otras localizaciones distintas de la extremidad superior, así como en linfedema primario y en formas más avanzadas o graves de la enfermedad.

En la ponencia se revisará la evidencia actualizada, especialmente del linfedema de miembro inferior. Asimismo, las recomendaciones y consensos actuales para la implementación y prescripción del ejercicio en la atención al linfedema.

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DR. JEAN-PAUL BELGRADO. - *Unité de Recherche en Lymphologie et Réadaptation, Université libre de Bruxelles, Belgium*

Lymphoedema diagnosis has become increasingly precise thanks to emerging knowledge and technologies. Indocyanine green (ICG) lymphofluoroscopy contributes significantly to better understanding the physiology of the lymphatics and the alternative drainage pathways associated with lymphoedema onset and progression. After an intradermal injection of highly diluted ICG, the superficial lymphatic network draining the injected area becomes fluorescent under a dedicated near infrared camera.

The workshop aims to demonstrate in real time the exam protocol and the fundamentals of dynamic image interpretation. We will show and discuss the testing of functional parameters such as: the diffusion of the dye from the injection point, the continence of the valves, the lymphangion motricity, pumping capacity and fatigability.

Update your lymphofluoroscopy imaging skills and understanding. In this workshop you will see the superficial lymphatics and the lymph flow in real-time normal and pathological conditions. The invisible lymphatics become visible, thanks to ICG lymphography, which. can be applied both for the diagnosis of lymphoedema and for the planning of surgical and conservative treatment strategies.

ABSTRACT – E-POSTERS:
1º Congreso del grupo Español de Linfología | GEL 2026

ESCUELA DE LINFEDEMA EN CÁNCER DE MAMA 2025 UN AÑO DE PREVENCIÓN.

MARÍA RODRÍGUEZ MANSO - *Servicio Gallego de Salud. Complejo Hospitalario Universitario A Coruña (CHUAC), A Coruña, España*

Objetivos: Nuestro objetivo es analizar el funcionamiento del programa preventivo "Escuela de Linfedema" (EL) realizado durante el año 2025. Se pretende analizar el perfil de los asistentes, los datos relativos a la propia EL (sesiones anuales, pacientes por sesión, tiempo de espera), el grado de satisfacción de los participantes y sus sugerencias de mejora.

Material/Método: Estudio descriptivo observacional con pacientes diagnosticados de cáncer de mama. Se revisaron las historias clínicas de los pacientes derivados desde de la Unidad de Mama del Área Sanitaria recogiéndose variables demográficas (edad, sexo, lugar de residencia), variables relacionadas con el cáncer, (lateralidad, tipo de cirugía, radioterapia), con el linfedema (linfedema secundario a cáncer de mama (LSCM), prescripción de TDC) y con la asistencia a la EL (fecha de derivación y de realización del programa y asistencia).

Se solicitó cubrir una encuesta anónima sobre la satisfacción de los asistentes puntuando desde 1 (muy mal) a 5 (muy bien) los siguientes aspectos: tiempo de espera; duración; sensación de seguridad; trato recibido; instalaciones; distancia desde el domicilio; explicaciones recibidas; atención de quejas; folleto resumen y valoración global.

Todos los datos obtenidos fueron analizados con el software IMB SPSS (versión 21) y el paquete ofimático LibreOffice Calc.

Resultados: 145 pacientes fueron derivados a la EL durante el periodo de estudio, de los cuales asistieron el 83.4% (121). El perfil fue el de mujer de 57.03 años de media, residente en la localidad donde se realiza el programa (44.6%), sin linfedema (93.1%), con cáncer de mama derecha (49.6%), tratamiento de radioterapia (89.3%) y cirugía de tumorectomía y biopsia de ganglio centinela (42.3%). El tiempo medio de espera fue de 1 mes (45.9%). La mayoría de los asistentes realizaron el programa tras la cirugía (97.1%).

Se realizaron un total de 10 ediciones del programa con una media de 13 asistentes por sesión (8-13).

Todos los participantes cubrieron la encuesta y valoraron la EL con notas entre 4.06 (traslado desde el domicilio) y 4.91/5 (trato recibido). El 81% repetiría el programa.

Las sugerencias de mejora más repetidas fueron: realizar el programa más cerca de la cirugía, realizar seguimiento, aumentar su duración y realizarlo en otras sedes como centros de salud y hospitales comarcales.

Conclusión: La mayoría de los pacientes derivados asistieron a la EL, puntuaron positivamente el programa y lo repetirían.

El perfil del asistente concuerda con los datos nacionales sobre pacientes con cáncer de mama.

ESTRATEGIA DE PREVENCIÓN DEL LINFEDEMA ASOCIADO A CÁNCER DE MAMA DESDE LA PREHABILITACIÓN

YOLANDA ROBLEDO DO NASCIMENTO; SARA GÓMEZ VALERO; VIRGINIA DÍAZ DE MIGUEL; JAVIER J. CABRERIZO FERNÁNDEZ - *Hospital Universitario del Henares, Coslada, España*

Objetivos:

- Prevenir el linfedema mediante herramientas para el auto-manejo y seguimiento prospectivo.
- Mejorar la funcionalidad, disminuyendo posibles secuelas y tasa de visitas.
- Valorar el impacto de la prehabilitación en la calidad de vida de pacientes sometidas a cirugía por cáncer de mama.

Material/Método: El Servicio de Rehabilitación ha desarrollado un protocolo interdisciplinario que incorpora la prehabilitación para pacientes con cáncer de mama que se someterán a tratamiento quirúrgico como primer tratamiento oncológico.

Resultados: *Plan estratégico:

- Establecimiento de una consulta interdisciplinar y taller prequirúrgico enfocado en la prehabilitación.
- Implementación de cuestionarios para evaluar la calidad de vida, el dolor y la discapacidad en todas las fases.
- Monitoreo de tasa de complicaciones y frecuencia de consultas.
- Seguimiento prospectivo, desde el diagnóstico y tras cada una de las fases del proceso oncológico hasta 2 años tras el último tratamiento activo.

Conclusión: La prehabilitación mejora los resultados postquirúrgicos al proporcionar atención temprana, que se traduce menos incidencia de linfedema, en mejor calidad de vida y más opciones terapéuticas. Reduciendo la cronificación de efectos secundarios y la necesidad de consultas a especialistas.

Estos resultados destacan la importancia de un enfoque interdisciplinario en la rehabilitación del paciente oncológico, asegurando un acompañamiento continuo y la anticipación de posibles efectos secundarios como el linfedema.

DOCUMENTACIÓN E INFORMACIÓN DEL PROGRAMA DE PREVENCIÓN DEL LINFEDEMA POSTMASTECTOMIA (LPM) Y RECUPERACIÓN FUNCIONAL: NOS PONEMOS AL DÍA

SONIA LÓPEZ MEDINA; MARÍA JOSÉ SÁNCHEZ PÉREZ; GENOVEVA GONZÁLEZ PARRA; ÁNGELA GONZÁLEZ VELADO; CRISTINA MARTÍNEZ MARTÍNEZ; MARTA ESTÉBANEZ SÁNCHEZ; CRISTINA PÉREZ ALONSO
Hospital Marqués de Valdecilla, Santander, España

Objetivos:

- Revisar la documentación e información que entregamos a las pacientes sobre la prevención del LPM.
- Actualizar y modernizar dicha documentación en las formas y el acceso.

Material/Método: Desde hace 28 años el programa de prevención del LPM ha atendido a las mujeres tratadas de cáncer de mama en nuestra comunidad. Consistente en: 1.- Información escrita tras cirugía en cuidados postoperatorios con ejercicios de movilidad de hombro. 2.- Valoración individualizada al mes con información escrita de medidas preventivas y ejercicios linfomiotónicos. 3.- Seguimiento durante 3 años para detección precoz. 4.- Tratamiento específico precoz según hallazgos clínicos.

Hemos actualizado la información que entregamos a las pacientes para lo cual analizamos las revisiones sistemáticas sobre prevención de linfedema en postmastectomía de los últimos 5 años.

Hemos modificado la documentación introduciendo el ejercicio como pieza fundamental en prevención de linfedema, añadiendo ejercicio de fuerza y aeróbico de forma individualizada.

La utilización de nuevas tecnologías (IA, animación) nos ha permitido presentar la información de forma más atractiva y facilitar el acceso a través de código QR.

Resultados:

- Presentamos el tríptico explicativo del programa y recomendaciones para la prevención del LPM y de recuperación funcional.
- Presentamos una tabla de ejercicios linfomiotónicos con animación y acceso QR.

Conclusión: Los programas de prevención del LPM deben actualizarse a nuevas formas de acceso y documentación más accesibles y comprensibles, para mejorar la comprensión del proceso de prevención del LPM y la fidelización con el ejercicio.

MORFEA SOBRE LINFEDEMA SECUNDARIO A CÁNCER DE MAMA: UN DESAFÍO DIAGNÓSTICO Y FUNCIONAL

AZUSENA ESTEFANIA RODRÍGUEZ GARCÍA; M PILAR CRESPO COBO; M SUSANA GIL HERNÁNDEZ
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Objetivos: Describir un caso excepcional de coexistencia de morfea y linfedema secundario tras tratamiento de cáncer de mama. Resaltar la importancia del diagnóstico diferencial ante una evolución tórpida y cambios cutáneos atípicos en el linfedema.

Material/Método: Diseño: Reporte de un caso clínico.

Sujeto: Mujer de 66 años con antecedentes de mastectomía, linfadenectomía axilar, quimioterapia, radioterapia y hormonoterapia.

Evaluación: Se empleó circometría (suma de siete puntos), pruebas de imagen (PET-TC) y biopsia cutánea para confirmar el diagnóstico tras la aparición de placas induradas y un aumento drástico del volumen del miembro (de 7,5 cm a 18,1 cm de diferencia).

Resultados: La biopsia descartó recidiva tumoral y confirmó morfea.

El tratamiento inicial con terapia física descongestiva (drenaje, vendaje y manga de tejido plano) fue insuficiente tras la aparición de la esclerosis.

El tratamiento con tacrolimus tópico logró una mejoría discreta de las lesiones inflamatorias.

A pesar de la reconstrucción con colgajo DIEP y transferencia de ganglios, persistió una fibrosis importante con limitación funcional significativa en hombro y mano debido a la naturaleza de la morfea.

Conclusión: La morfea es un reto diagnóstico que debe sospecharse ante un linfedema que no responde al tratamiento habitual o presenta un aumento marcado de consistencia.

Esta patología agrava el pronóstico funcional y limita la eficacia de las terapias descongestivas convencionales.

Se requiere un abordaje multidisciplinar (rehabilitación, dermatología y cirugía) para el manejo de estas complicaciones post-tratamiento oncológico.

LINFEDEMA RUBRA COMO DIAGNÓSTICO DIFERENCIAL DE CELULITIS RECURRENTE EN LINFEDEMA SECUNDARIO DE MIEMBRO SUPERIOR: A PROPÓSITO DE UN CASO

CARMEN URBANEJA DORADO; ANA BELÉN PUENTES GUTIÉRREZ; ELENA VAQUERO RAMIRO; MARÍA GARCÍA BASCONES; STELLA MARTÍN VILLALVILLA; REBECA PUENTES GUTIÉRREZ; MERCEDES RAMÍREZ ORTEGA - *H. U Fundación Jiménez Díaz, Madrid, España*

Objetivos: Describir las características clínicas del linfedema rubra como causa de eritema no infeccioso en linfedema secundario de miembro superior, y el diagnóstico diferencial de celulitis en pacientes con perfil vasculorrenal complejo (sometidos a tratamientos antibióticos reiterados sin respuesta).

Material/Método: Descripción de caso clínico de mujer de 67 años con enfermedad renal crónica por poliquistosis renal, hemodiálisis (2023-2025), trasplante renal (abril 2025) y postoperatorio complejo (dos reintervenciones, shock séptico y trombosis venosa yugular derecha). En noviembre de

2025 comenzó con clínica de inflamación y enrojecimiento de miembro superior derecho (MSD) y mama, sin desencadenante agudo previo. Diagnosticada de "celulitis" de repetición, refractaria a múltiples ciclos antibióticos, se realizó ligadura de fístula arteriovenosa humerocefálica derecha en febrero de 2026 por presentar estenosis/trombosis, para intentar la resolución del cuadro.

Derivada desde cirugía vascular al Servicio de Rehabilitación para valoración, la paciente refería pesadez, aumento de volumen y enrojecimiento global de MSD y mama, con ausencia de síntomas sistémicos. Presentaba en MSD eritema difuso mínimamente blanqueable (respetando mano), leve hipertermia, piel de naranja y empastamiento global con signo de Stemmer positivo, fóvea débil distal y piel íntegra, sin circulación colateral. La circometría reflejó diferencias de 6 cm distal y 10 cm proximal respecto al contralateral. Clasificación ecográfica SEF2 y SEG2 con líquido libre profundo ≥2 cm. En la mama se observó leve eritema y empastamiento con imágenes compatibles con SEG1 y SEF1 en ecografía. Ante los hallazgos exploratorios y la historia clínica previa, fue diagnosticada de linfedema rubra y se pautó tratamiento de choque descongestivo con drenaje linfático manual, vendaje multicapa de baja presión y sistema autoajustable de velcros.

Resultados: La paciente presentó buena respuesta a terapia descongestiva, desde los primeros días, con reducción del eritema, volumen y empastamiento en MSD y mama, además de buena tolerancia a los vendajes multicapa a pesar de la complejidad del caso.

Conclusión: El linfedema rubra es una manifestación inflamatoria no infecciosa del linfedema secundario. En pacientes con perfil vasculorrenal complejo, la confluencia de factores linfovascular, quirúrgico y farmacológico crea un sustrato especialmente propicio para su desarrollo. Su identificación clínica precoz permite reconducir el tratamiento, evitar antibioticoterapia innecesaria y prevenir el desarrollo de resistencias.

BLOQUEO FUNCIONAL CON TOXINA BOTULÍNICA DEL COLGAJO MUSCULOCUTÁNEO DE DORSAL ANCHO EN PACIENTES MASTECTOMIZADAS CON DOLOR Y CONTRACTURA DINÁMICA

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Objetivos: Evaluar la eficacia de la infiltración de toxina botulínica tipo A (incobotulinumtoxinA) en pacientes mastectomizadas reconstruidas con colgajo musculocutáneo de dorsal ancho que presentan dolor y contractura dinámica del colgajo durante la movilización del hombro, secundario a la ausencia de denervación quirúrgica.

Material/Método: Estudio descriptivo retrospectivo de una serie de casos realizado en un hospital terciario durante un periodo de un año. Se incluyen cuatro pacientes mujeres con reconstrucción mamaria mediante colgajo musculocutáneo de dorsal ancho tras mastectomía, que presentan dolor y contracción del colgajo al realizar movimientos de extensión del hombro debido a que este no ha sido denervado durante la cirugía. Se realiza infiltración intramuscular de toxina botulínica tipo A (incobotulinumtoxinA) en múltiples puntos del colgajo musculocutáneo de dorsal ancho guiado por ecografía, con dosis entre 100 y 300 UI diluidos en suero salino fisiológico al 1% (50UI por punto). Se evalúa la intensidad del dolor mediante la Escala Visual Analógica (EVA) antes y después del tratamiento.

Resultados: La edad media es de 58 años y el 100% mujeres. Las pacientes presentan una EVA medio basal pretratamiento de 7 puntos (dolor intenso). Tras la infiltración de toxina botulínica, al mes, se observa una reducción media del dolor de 4 puntos en la EVA (llegando a una media de EVA 3- dolor leve). Dos pacientes precisan una segunda infiltración con dosis de 200 y 300 UI repartidos en varios puntos, consiguiendo posteriormente un EVA de 0 al mes postinfiltración, una paciente llega a EVA 0 tras la primera infiltración con 150 UI de toxina botulínica tipo A y otra paciente se mantiene en EVA 3 pero prefiere no realizar más infiltraciones de toxina, ya que no es una limitación funcional en su rutina diaria. Todas las pacientes refirieron mejoría clínica de la contractura dinámica del colgajo y de la sintomatología dolorosa asociada (dosis media de toxina botulínica tipo A de 150UI).

Conclusión: La infiltración de toxina botulínica tipo A (incobotulinumtoxinA) en el colgajo musculocutáneo de dorsal ancho parece ser una alternativa terapéutica eficaz y segura para el tratamiento del dolor y la contractura dinámica en pacientes mastectomizadas reconstruidas con esta técnica. La mejoría clínica observada sugiere un beneficio funcional y analgésico relevante, aunque son necesarios estudios con mayor tamaño muestral para confirmar estos hallazgos.

LINFEDEMA GENITAL POST-CIRUGÍA DE CÁNCER DE PENE: ESTRATEGIAS DE COMPRESIÓN INDIVIDUALIZADA EN UN CASO COMPLEJO

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Objetivos: Describir un caso de linfedema genital secundario a linfadenectomía inguinal bilateral por carcinoma de pene y analizar su evolución clínica, así como las estrategias de manejo interdisciplinar empleadas.

Material/Método: Se presenta un paciente varón con antecedente de carcinoma de pene (2006) y linfedema crónico progresivo de genitales y miembros inferiores, previamente tratado con múltiples cirugías reconstructivas. En 2025, se realizaron procedimientos complejos con exéresis de fibrosis peneo-escrotal, epiplón libre e injertos cutáneos, complicándose el postoperatorio por imposibilidad de aplicar compresión sobre el injerto, con empeoramiento clínico y limitación funcional severa.
En 2026 se planificó cirugía de debulking con compresión adaptativa: vendajes multicapas en miembros inferiores y vendaje escrotal con baja elasticidad y silicona, evitando el pene. Se estimuló movilidad activa y se ajustaron los vendajes diariamente según la anatomía y evolución de las heridas. El caso ilustra la complejidad del linfedema genital severo postquirúrgico y destaca la importancia de estrategias de compresión individualizada para preservar función, optimizar cicatrización y adaptar el tratamiento a la anatomía y evolución tórpida de la lesión.

Resultados: Se observo mejoría global tras el tratamiento combinado médico-quirúrgico y fisioterapia, con reducción del edema genital y miembros inferiores, así como mejora funcional significativa.

Conclusión: El linfedema genital secundario a linfadenectomía inguinal representa una complicación que requiere manejo multimodal. La combinación de cirugía reductora, fisioterapia y compresión individualizada permite mejorar la función y prevenir la progresión a formes irreversibles y discapacitantes.

TRATAMIENTO DEL LINFEDEMA GENITAL MASCULINO MEDIANTE ONDAS DE CHOQUE

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Objetivos: Evaluar el impacto de las ondas de choque focales desfocalizadas, como adyuvante del tratamiento de un caso de linfedema genital secundario a neoplasia de próstata, refractario a la terapia descongestiva compleja convencional.

Material/Método: Aplicación de 3 sesiones, 1 sesión/semanal, de ondas focales electromagnéticas mediante un transductor planar (desfocalizadas) con los parámetros de Intensidad hasta 12. Frecuencia 8 Hz. 3000 pulsos. Equivalente a 0.079 - 0.160 mj/mm2. combinado mediante drenaje linfático manual y autovendaje diario mediante vendas cohesivas.

Resultados: Se obtuvo una mejoría clínica en cuanto al volumen y la rigidez acompañado de una mejoría de la calidad de vida, a las 4 semanas de tratamiento y fue bien tolerado por el paciente.

Conclusión: El tratamiento convencional conservador del linfedema, en estadíos avanzados, tiene una pobre respuesta. El efecto de las ondas desfocalizadas, combinado con la terapia descongestiva compleja, parece aportar buenos resultados a corto plazo en regiones anatómicas de difícil abordaje y es bien tolerado.

Bibliografía: Tsai YL, I TJ, Chuang YC, Cheng YY, Lee YC. Extracorporeal Shock Wave Therapy Combined with Complex Decongestive Therapy in Patients with Breast Cancer-Related Lymphedema: A Systemic Review and Meta-Analysis. J Clin Med. 2021 Dec 19;10(24):5970. doi: 10.3390/jcm10245970. PMID: 34945266; PMCID: PMC8705697.

MONITORIZACIÓN MEDIANTE BIOIMPEDANCIA MULTIFRECUENCIA DE LA MICROCIRUGÍA LINFÁTICA EN LINFEDEMA BILATERAL DE MIEMBROS INFERIORES: A PROPÓSITO DE UN CASO

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Objetivos: Analizar la utilidad de la bioimpedanciometría segmentaria multifrecuencia (DSM-BIA) para cuantificar la evolución hídrica y tisular en una paciente con linfedema bilateral tras tratamiento descongestivo complejo (TDC) y posterior microcirugía reconstructiva, estableciendo una comparativa directa con la circometría clásica cada 4 cm.

Material/Método: Se presenta el caso de una mujer con linfedema bilateral de miembros inferiores (MMII). Se realizaron cuatro mediciones con DSM-BIA (InBody S10) y tres evaluaciones volumétricas mediante circometría (fórmula del cono truncado) en hitos clave: basal (T0), post-TDC (T1), al mes de la cirugía (T2) y a los dos meses (T3, solo BIA). Las variables de estudio incluyeron el volumen total de MMII, el agua extracelular (AEC), el ratio de edema (AEC/Agua corporal total) y el ángulo de fase segmental.

Resultados: Tras la fase inicial de TDC (T1), se registró una reducción volumétrica del 12,1% (de 16.544 ml a 14.538 ml) y del AEC (de 14,1 a 13,8 L). No obstante, en el control post-microcirugía (T2), se objetivó un incremento del volumen total (+31,2% respecto a T1) y del AEC (14,5 L), tendencia que progresó a los dos meses (T3) alcanzando un AEC de 15,0 L y un ratio de edema de 0,411. El ángulo de fase segmental mostró un descenso progresivo en el miembro izquierdo (de 5,4° basal a 4,3° en T3), reflejando el proceso inflamatorio y el aumento de presión intersticial postquirúrgico. La DSM-BIA permitió identificar de forma precoz y objetiva esta fase de edema postoperatorio, la cual presentó una latencia diagnóstica mediante exploración clínica convencional.

Conclusión: La DSM-BIA constituye una herramienta esencial en el seguimiento tras microcirugía linfática. Su sensibilidad para detectar incrementos en el agua extracelular y variaciones en el ángulo de fase facilita una monitorización precisa de la respuesta inflamatoria postoperatoria. Los resultados sugieren la necesidad de mantener la terapia descongestiva completa tras la intervención, siendo imperativo un seguimiento longitudinal (proyectado a 6 meses) para monitorizar la estabilidad hídrica y optimizar el resultado reconstructivo final.

EXPERIENCIA DE LA REHABILITACIÓN ASSOCIADA AL TRATAMIENTO QUIRÚRGICO INNOVADOR DEL LINFEDEMA MEDIANTE LA TÉCNICA BIOBRIDGE®: A PROPÓSITO DE UN CASO

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Objetivos: Valorar el efecto, seguridad y tolerancia de la terapia descongestiva compleja asociada a la cirugía de anastomosis linfático-venosas combinada mediante el BioBridge®, en el linfedema secundario crónico severo de extremidad superior.

Material/Método: Mujer de 62 años afecta de linfedema extremidad superior severo crónico de 14 años de evolución. Realiza tratamiento de mantenimiento mediante prendas de compresión, guante y manga de tejido plano, CCL 2, y prenda autoajustable de uso tarde-noche, con buena adherencia. Fue intervendida mediante reconstrucción con DIEP precoz; en 2014 un trasplante ganglionar inguinal y 11/2025 anastomosis linfático-venosas (ALV) y BioBridge desde la axila contralateral. Previo a la cirugía, presentaba un exceso de volumen de 1349cc. Indurado, no doloroso, Godet +.

Resultados: Tras la cirugía, inicialmente ha mantenido el uso de sus prendas habituales. Presentó un episodio de linfangitis. Ha realizado vendaje multicapa y drenaje linfático. A los 6 meses de la intervención,el exceso de volumen es 1172cc no indurado. No ha presentado nuevas infecciones ni dolor.

Conclusión: El BioBridge® es una técnica novedosa que, junto a las ALV y la rehabilitación parece mejorar clínicamente el linfedema a corto plazo, es bien tolerado y no ha presentado complicaciones.

Bibliografía: Zhang C, Lodi M. Immediate and delayed lymphatic reconstruction of breast-cancer related lymphedema: A systematic review and network meta-analysis. Eur J Surg Oncol. 2026 Apr;52(4):111394. doi: 10.1016/j.ejso.2026.111394. Epub 2026 Feb 5. PMID: 41672023.

INFLUENCIA DE LA CALIDAD TÉCNICA DE LA LINFOGAMMAGRAFÍA EN EL DIAGNÓSTICO DE PATOLOGÍA LINFÁTICA PERIFÉRICA: A PROPÓSITO DE UN CASO

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Objetivos: El edema crónico de extremidad inferior en personas mayores suele atribuirse a insuficiencia venosa o linfática secundaria a alteraciones del drenaje local. Sin embargo, causas compresivas extrínsecas pueden pasar desapercibidas si no existe correlación clínico-radiológica adecuada. La exploración física rigurosa es esencial para orientar e interpretar correctamente la linfogammagrafía, considerada la técnica patrón oro en la evaluación del linfedema.

Material/Método: Mujer de 83 años con limitación funcional por coxartrosis derecha, que tras una caída casual en domicilio presenta edema progresivo de toda la extremidad inferior derecha de meses de evolución. La valoración vascular descartó patología arterial o venosa aguda, diagnosticándose insuficiencia venosa crónica avanzada con componente linfático secundario y fue enviada al servicio de rehabilitación.

Se realizó una primera linfogammagrafía con infiltración dérmica, cuyo resultado mostraba ausencia de drenaje en la extremidad contralateral, sin correlación clínica. Ante esta discordancia, se repitió el estudio utilizando inyección intradérmica, objetivándose una fuga linfática en la ingle derecha. Se amplió estudio con SPECT-TC, que evidenció distensión de la bursa del iliopsoas con extensión pélvica y hacia el tercio proximal del muslo, generando compresión de la vena ilíaca externa/femoral derecha.

Resultados: El cuadro se diagnosticó como edema mixto venoso-linfático secundario a compresión extrínseca. La paciente fue derivada al servicio de traumatología para drenaje bursal y colocación de una prótesis de cadera

Conclusión: Este caso pone de manifiesto la necesidad de una adecuada estandarización técnica en la realización de la linfogammagrafía, así como la importancia de su interpretación en el contexto clínico, para una correcta identificación de la etiología del linfedema y la reducción de errores diagnósticos.

LINFEDEMA EN MIEMBRO INFERIOR COMO SECUELA DE FASCITIS NECROTIZANTE

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Objetivos: Descripción y manejo de un caso de linfedema en miembro inferior secundario al tratamiento quirúrgico con injerto tras una fascitis necrotizante.

Material/Método: La fascitis necrosante es una infección bacteriana destructiva, de rápida progresión y potencialmente mortal, que se caracteriza por la inflamación y necrosis extensa de los tejidos blandos y la fascia profunda, que requiere tratamiento quirúrgico agresivo con secuelas funcionales y cutáneas significativas tras amplios desbridamientos e injertos.

Se describe el caso de una paciente de 72 años que presentó una fascitis necrotizante en la extremidad inferior derecha, que precisó múltiples intervenciones con desbridamientos e injertos cutáneos en 2019.

Posteriormente, presentó úlceras persistentes que requirieron un seguimiento prolongado en la Unidad de Úlceras Complejas, lográndose el cierre completo de las heridas en noviembre de 2025. En el proceso, desarrolló un aumento progresivo del tamaño y consistencia a nivel del tobillo y pie, con deformidad e hiperqueratosis dura de los dedos que le limitaba la higiene interdigital, el calzado y la marcha.

Al no presentar mejoría con el tratamiento compresivo mediante vendaje URGO K2, fue derivada a nuestra unidad para su valoración, siendo diagnosticada de linfedema e instaurándose tratamiento específico mediante terapia descongestiva compleja, que incluyó drenaje linfático manual, cuidados de la piel y vendaje multicapa.

El principal reto terapéutico fue la uniformización progresiva de los volúmenes del pie y del tobillo respecto a la zona tibial de los injertos a través del vendaje multicapa y multicomponente, con el objetivo de permitir una distribución homogénea de la presión y respetar la ley de Laplace, especialmente en zonas distales con morfología irregular.

Resultados: Tras 15 sesiones de tratamiento, se objetiva una mejoría significativa del estado cutáneo, con mayor hidratación y reducción de la hiperqueratosis. Asimismo, se observó una mejora en la morfología y funcionalidad de los dedos del pie con recuperación de la separación interdigital. Se mantuvo estable

el volumen de los colgajos a nivel del tobillo y presentó mejoría en el dorso de pie y dedos permitiendo un mejor calzado y tolerancia a las prendas de compresión autoajustables con velcro.

Conclusión: El linfedema puede ser una secuela de los tratamientos quirúrgicos de la fascitis necrotizante y su tratamiento supone un desafío terapéutico. La correcta aplicación del vendaje multicapa, con especial atención a la uniformización de diámetros para cumplir la ley de Laplace, resulta clave para un tratamiento adecuado.

IMPACTO DE LOS HÁBITOS DE VIDA EN LA PROGRESIÓN DEL LINFEDEMA PRIMARIO EN LA ADOLESCENCIA

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Objetivos: Analizar la progresión del linfedema primario en la adolescencia y el impacto de factores modificables, especialmente la adherencia al seguimiento y los hábitos de vida, en su evolución clínica.

Material/Método: Se presenta el caso de una paciente de 17 años, sin antecedentes de interés, diagnosticada a los 6 años de linfedema primario tras la aparición de edema en el dorso del pie izquierdo. El estudio inicial incluyó linfografía que evidenció drenaje linfático normal en el miembro inferior derecho y disminuido con patrón subcutáneo en el izquierdo, sin hallazgos patológicos en ecografía Doppler ni abdominal, y resonancia magnética compatible con edema difuso sin lesiones focales. La paciente siguió tratamiento conservador con medias de compresión y revisiones semestrales, manteniendo actividad física regular (yoga y waterpolo). Durante la evolución presentó una pérdida de seguimiento de aproximadamente dos años coincidiendo con una estancia en el extranjero. En este periodo refiere abandono de la actividad física habitual, aumento del sedentarismo y empeoramiento de los hábitos dietéticos. A su regreso, se objetiva empeoramiento clínico significativo, con progresión del linfedema y aparición de afectación en el miembro inferior contralateral, previamente asintomático.

Resultados: En diciembre de 2023 la paciente presentaba normopeso (IMC 23,31), mientras que en 2025 mostró aumento ponderal (IMC 25,26). La circometría evidenció progresión del linfedema, con incremento de perímetros especialmente en el miembro inferior izquierdo, destacando diferencias a nivel de rodilla (39 vs 42 cm), muslo medio (51 vs 55,5 cm) y tercio proximal (60 vs 69 cm). Asimismo, se objetivó incremento de perímetros en el miembro contralateral, previamente no afecto, en relación con la evolución clínica tras el periodo sin seguimiento.

Conclusión: Este caso pone de manifiesto el papel determinante de los factores modificables en la evolución del linfedema primario. La interrupción del seguimiento, junto con el sedentarismo y el aumento ponderal, se asocian no solo a la progresión del miembro afecto, sino también a la aparición de compromiso contralateral. Estos hallazgos refuerzan la necesidad de un abordaje precoz, continuo y multidisciplinar, donde la educación del paciente y la adherencia terapéutica constituyen pilares fundamentales para modificar la historia natural de la enfermedad.

SEGUIMIENTO TELEMÁTICO DEL LINFEDEMA ESTABLE MEDIANTE APLICACIÓN MÓVIL

MERCEDES RAMÍREZ ORTEGA; CARMEN URBANEJA DORADO; PAULA MARÍA GARCÍA; ALEJANDRO PLAZA MERCHAN; CARMELO FERNÁNDEZ GARCÍA - *Hospital Fundación Jiménez Díaz, Madrid, España*

Objetivos: Evaluar la utilidad y seguridad del seguimiento digital mediante una aplicación móvil en pacientes con linfedema estable, analizando la detección de cambios clínicos y la necesidad de valoración presencial.

Material/Método: Estudio transversal descriptivo realizado en un hospital terciario durante un año. Se incluyen 61 pacientes con linfedema estable en seguimiento mediante una aplicación móvil. Los pacientes completan en su domicilio un formulario de autovaloración previamente explicado de forma presencial por el equipo rehabilitador. Se analizan variables demográficas, adherencia al tratamiento compresivo, ejercicio físico, complicaciones y necesidad de revisión presencial o renovación de prendas.

Resultados: La edad media es de 60 años y el 83% son mujeres. El 70% realiza ejercicio físico de manera habitual, con una media de 2 horas semanales. La revisión digital es indicada por el médico rehabilitador en el 41% de los casos tras una revisión digital previa y por el fisioterapeuta en el 29% tras objetivar estabilidad clínica en consulta presencial.

El 16% de los pacientes refiere percepción subjetiva de aumento de volumen. Sin embargo, tras valoración presencial, el 42% no presenta incremento objetivable en la circometría y permanece clínicamente estable, sin precisar terapia física compleja. Entre los pacientes que refieren empeoramiento de volumen en el formulario completado por la aplicación móvil, en la revision presencial, el 57% presenta baja adherencia al uso de la prenda compresiva por intolerancia.

Respecto al tratamiento conservador, el 78% utiliza la prenda compresiva según la prescripción y el 65% mantiene la misma media de compresión durante más de seis meses. Solo el 6% realiza autovendajes. El 19% presenta incidencias cutáneas y únicamente el 3% precisa tratamiento antibiótico. El 13% requiere renovación de la prenda compresiva, gestionándose telemáticamente mediante envío digital de la documentación a través de la aplicación, evitando desplazamientos hospitalarios y favoreciendo una comunicación bidireccional.

Conclusión: El seguimiento digital mediante aplicación móvil en pacientes con linfedema estable constituye una alternativa eficiente y segura para el control evolutivo de pacientes crónicos. La autopercepción de empeoramiento no siempre se correlaciona con cambios clínicos objetivables, lo que refuerza la utilidad de la telemonitorización para optimizar revisiones presenciales y promover el autocuidado y empoderamiento del paciente.

ATENCIÓN PRIMARÍA FRENTE AL LIPEDEMA COMPLEJO: VALORACIÓN INTEGRAL Y VENDAJE DE BAJA ELASTICIDAD

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Objetivos: Describir el abordaje integral en atención primaria de una paciente con lipedema complejo y comorbilidades, analizando el manejo clínico, la indicación de vendaje compresivo de baja elasticidad y la evolución de las lesiones, así como el papel de atención primaria en la coordinación asistencial.

Material/Método: Estudio descriptivo tipo caso clínico en atención primaria. Se realizó valoración integral (clínica, vascular, cardiaca, cutánea y biopsicosocial). Se instauró tratamiento local de las úlceras y terapia compresiva mediante vendaje de baja elasticidad, con seguimiento evolutivo periódico y registro de cambios en edema y lesiones a través de la escala validada RESVECH 2.0.

Se obtuvo consentimiento informado y se garantizó la confidencialidad y anonimización de los datos, conforme a la normativa vigente y a los principios de la Declaración de Helsinki.

Resultados: Tras la intervención, se observó mejoría progresiva del edema en extremidades inferiores. Las úlceras mostraron una evolución favorable, con reducción de tamaño, exudado y signos inflamatorios, e incluso llegando a la cicatrización completa en 2 semanas de tratamiento local. La paciente presentó buena tolerancia al vendaje inelástico, sin incidencias relevantes. Asimismo, se evidenció mejoría funcional y en la calidad de vida percibida, junto con un adecuado control clínico de las comorbilidades mediante seguimiento en atención primaria.

Conclusión: El abordaje integral desde atención primaria permite un manejo eficaz del lipedema complejo con comorbilidades, favoreciendo la coordinación asistencial y la continuidad de cuidados. El vendaje compresivo inelástico se muestra como una opción terapéutica segura y efectiva en la reducción del edema y la mejoría de las úlceras en este contexto clínico. Este caso refuerza el papel clave de atención primaria en la atención de pacientes complejos.

PARÁLISIS DEL NERVIO PERONEO COMÚN TRAS LIPOSUCCIÓN POR LIPEDEMA: SERIE DE CASOS Y PROPUESTA DE MECANISMO MULTIFACTORIAL

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Objetivos: Describir la aparición de disfunción del nervio peroneo común tras liposucción bilateral de miembros inferiores en pacientes con lipedema y analizar factores perioperatorios potencialmente implicados desde una perspectiva clínico-funcional.

Material/Método: Serie de casos retrospectiva descriptiva de dos mujeres con lipedema grado I evaluadas en práctica clínica tras liposucción bilateral de miembros inferiores mediante técnica water-assisted liposuction (WAL). Se recogieron edad, índice de masa corporal, volumen aspirado, tiempo hasta la valoración (30–60 días), patrón de marcha, capacidad de apoyo del talón, síntomas sensitivos, hallazgos tisulares locales y manejo postoperatorio, con especial atención al tipo de compresión y a la presencia de fisioterapia descongestiva estructurada.

Resultados: Ambas pacientes desarrollaron en el postoperatorio precoz un cuadro clínico compatible con afectación del nervio peroneo común, caracterizado por incapacidad para el apoyo del talón y marcha en equino con repercusión funcional significativa. Las pacientes (26 y 30 años; IMC 23 y 24 kg/m²) fueron sometidas a aspiración bilateral de 4 litros en total mediante WAL. Una presentó afectación bilateral y la otra unilateral izquierda, ambas con dependencia de muletas. Se asociaron parestesias en territorio peroneo, alteración del patrón de carga e incapacidad para la deambulación normal. La exploración mostró induración marcada de pantorrilla, edema distal con afectación de dedos y signos sugestivos de aumento de presión tisular; en un caso se objetivó fibrosis precoz. En ambos casos se identificó un manejo postoperatorio no estructurado, con compresión no individualizada mediante prendas altamente elásticas y ausencia de fisioterapia descongestiva especializada.

Conclusión: La disfunción del nervio peroneo común tras liposucción mediante WAL en lipedema puede estar infradiagnosticada y tener un impacto funcional relevante. Los hallazgos apoyan un mecanismo multifactorial que combina vulnerabilidad anatómica, factores mecánicos intraoperatorios y cambios tisulares postoperatorios, potencialmente agravados por un manejo perioperatorio no estructurado. La identificación precoz y la optimización de la compresión y la fisioterapia postoperatoria podrían desempeñar un papel clave en su prevención y recuperación.

¿QUÉ DICE LA LITERATURA SOBRE EL USO DE PRENDAS DE CONTENCIÓN DURANTE EL EJERCICIO EN LINFEDEMA POR CÁNCER DE MAMA?

MARTA FERNÁNDEZ GONZÁLEZ; MÓNICA GÓMEZ MARTÍNEZ; LAURA SÁNCHEZ IGLESIAS; MARTA DURÁN ÁLVARO; VICENTA PUJOL BLAYA - *Hospital Universitario Vall d›Hebrón y Fisiodinámica, Barcelona, España*

Objetivos: Evaluar, mediante una revisión bibliográfica si el uso de prenda de contención durante ejercicio de intensidad baja - moderada influye en el volumen del brazo con linfedema relacionado con cáncer de mama (BCRL).

Material/Método: Se realizó una búsqueda en PubMed, PEDro, Medline y Embase. Se incluyeron cuatro estudios (ensayos cruzados aleatorizados y ensayos controlados) que analizaban entrenamiento de fuerza de intensidad baja - moderada con y sin prenda de contención. El volumen del miembro se evaluó mediante bioimpedanciometría, perimetría y desplazamiento de agua. Los resultados se analizaron a corto plazo (24 horas) y a largo plazo (8 semanas-1 año).

Resultados: Los estudios a corto plazo muestran que realizar ejercicio sin prenda de contención no aumenta el volumen del miembro ni empeora los síntomas de forma aguda ($p>0,05$). Singh et al. observaron una reducción inmediata significativa ($p=0,03$) del líquido extracelular únicamente con prenda de contención. Johansson et al. describieron un aumento inmediato del volumen ($p\leq0,01$), recuperándose en 24 horas. A medio plazo, Omar et al. encontraron reducciones similares del exceso de volumen entre grupos (10,77% con manga vs. 9,37% sin manga; $p>0,05$), indicando que la contención no determina el éxito del ejercicio terapéutico. Ochalek et al. mostró una menor incidencia tras un programa de ejercicio con prenda de contención preventiva (17% vs. 27%; p

Conclusión: En pacientes con linfedema clínico, el uso de prenda de contención durante el ejercicio físico de baja a moderada intensidad no parece imprescindible para asegurar la seguridad inmediata. Su indicación debe individualizarse según las características y preferencias de la paciente, priorizando la adherencia al ejercicio terapéutico, que es el componente clave del abordaje funcional.

Asimismo, se requieren estudios con mayor tamaño muestral y diseños metodológicos más sólidos que permitan confirmar estos hallazgos con un mayor nivel de evidencia científica.

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ABSTRACT - SESSION:
48th Congress Of European Society Of Lymphology ESL 2026

Friday, September 25th, 2026

Salon De Actos

SESSION 1: CLINICAL FEATURES

CHAIRS: ETELKA FÖLDI, JEAN-PAUL BELGRADO, DOLORES MALDONADO GARRIDO.

BREAST EDEMA AFTER CONSERVATIVE SURGERY FOR EARLY-STAGE BREAST CANCER: A SINGLE-CENTER ASSESSMENT OF RISK FACTORS

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Background: Breast edema, or breast cancer-related lymphedema of the breast (BCRL-B), is an under-recognized complication of breast-conserving treatment. Its reported incidence varies widely, partly because standardized diagnostic criteria are lacking. This study aimed to assess the prevalence of BCRL-B after breast-conserving surgery and identify patient-, tumor-, and treatment-related risk factors.

Methods: We retrospectively evaluated 530 women with invasive breast cancer who underwent breastconserving surgery between January 2018 and December 2019 at a single tertiary referral center. Demographic, pathological, surgical, and adjuvant treatment variables were collected. Patients withsigns and symptoms suggestive of breast edema underwent clinical examination, measurement of local tissue water using tissue dielectric constant (TDC), and assessment of tissue induration. Logistic regression analysis was performed to identify independent risk factors for BCRL-B.

Results: Breast edema was identified in 31 patients, corresponding to a prevalence of 5.8%. Axillary lymph node dissection (ALND) was performed more frequently in patients with BCRL-B than in those without breast edema (29.0% vs. 12.0%; p=0.010). Among patients undergoing ALND, breast edema occurred in 13.0%, compared with 4.8% after sentinel lymph node biopsy. In multivariate analysis, lumpectomy combined with ALND was independently associated with BCRL-B (OR 2.43; 95% CI 0.97–5.60; p=0.044), as was subsequent axillary lymph node removal surgery (OR 4.26; 95% CI 1.07–14.04; p=0.024). A threshold of more than 6.5 removed lymph nodes was associated with an increased risk of breast edema. Patients treated with ALND also showed significantly higher local tissue water values than those undergoing sentinel lymph node biopsy (p=0.046). No significant associations were found with age, body mass index, tumor characteristics, oncoplastic surgery, chemotherapy, endocrine therapy, or radiotherapy.

Conclusions: The extent and repetition of axillary surgery appear to be the main determinants of breast edema following breast-conserving treatment. Limiting ALND whenever oncologically appropriate may reduce lymphatic morbidity. Structured clinical surveillance and objective tissue-water assessment may facilitate early recognition and timely conservative treatment of this still underdiagnosed complication.

Keywords: Breast edema; breast lymphedema; breast-conserving surgery; axillary lymph node dissection; risk factors; tissue dielectric constant.

THE BENEFITS OF COMBINING MANUAL LYMPHATIC DRAINAGE WITH BANDAGING TECHNIQUES IN THE TREATMENT OF LYMPHEDEMA

O. LEDUC[1, 2]; R. BARBIEUX[1, 2]; C. MANERO[3]; P. GARCIA[3]; N. DUARTE[4]; P. BOURGEOIS[5]

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For over 50 years, the teams in the laboratories of Professors Albert and Olivier Leduc have been working on developing techniques for the physical treatment of lymphedema.
This presentation focuses on the complementary nature of manual lymphatic drainage techniques and multilayer bandaging. These two techniques, developed in our laboratories, were proposed based on experiments conducted on patients using lymphoscintigraphy. The author provides a brief summary, defining the role of each.

The author also illustrates recent work demonstrating, through three-dimensional imaging of lymphatic function, the capacity of patients to open lymphatic drainage pathways during manual lymphatic drainage sessions using the Leduc method.
The proposed lymphatic drainage technique is performed on areas inaccessible with multilayer bandaging. At this level, the opening of new drainage pathways is recorded, and thanks to three- dimensional imaging of the lymphatic vessels, previously undescribed pathways are identified. Using lymphatic function imaging on the patient, the author emphasizes the necessity of combining lymphatic drainage with multilayer bandaging.

LYMPHATIC DISORDERS IN HEROIN ADDICTS

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The incidence of vascular complications due to drug abuse is at an all-time increase, new drugs regularly being synthesized for a regrettable success in consumers. Intra-venous Heroin abuse may affect a plethora of vessels as venous, arterious as lymphatic resulting in a large variety of vascular complications: ischemia following intra-arterial injection, arterial and venous pseudoaneurysm, septic thrombophlebitis and puffy hand syndrome.

We report the cases of 8 patients, 6 men and 2 women of an average age of 35.5 years old (from 28 to 44), all long-term intravenous heroin users, who presented puffy hands. These patients had been heroin addicts for 8 to 15 years for an average of 11. Seven of these patients were participating in a buprenorphine substitution program. The edema appeared several years after heroin cessation (3 to 5 years) at an average of 3.8 years. The puffiness was bilateral, and the hand swollen from the proximal segments of the fingers to the wrist.

Artery Duplex ultrasound of upper limbs was normal, 3 patients presented sequelae of superficial venous thrombosis of upper leg. For 5 of the patients, the lymphoscintigraphies detected alterations of the upper limb lymphatic flow. Repeated injections of heroin in or even outside the veins destroy the lymphatics . Puffy hand syndrome appearing to be the end result of such lymphatic obstructions.

Keywords: Heroin, Puffy Hand

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PRIMARY LYMPHEDEMA AND ASSOCIATED SYNDROMES

MIGUEL AMORE

IMPLEMENTATION OF PROSPECTIVE SURVEILLANCE MODEL FOR EARLY INTERVENTION STRATEGIES IN BREAST CANCER RELATED ARM LYMPHEDEMA

KARIN JOHANSSON, ASSOCIATE PROFESSOR, PHD, RPT - *Department of Health Sciences, Lund University, Sweden.*

Background: Chronic lymphedema (LE) in the arm is a rather common side-effect of breast cancer treatment, and the patients experience a lower Health-Related-Quality of Life than those without LE, and thus prevention is desired. Cancer treatment with axillary lymph node surgery and radiotherapy, as well as high BMI and physical inactivity, are risk factors (DiSipio et al. 2013). Patients at risk can be included in a surveillance program for early diagnosis defined by assessment of skinfold thickness, local tissue water (TDC rate 1.3-1.45) and/or arm volume (lymphedema relative volume, LRV ≥5%). The follow-ups are made 4-5 weeks post-surgery due to the damage by axillary/breast surgery, and 3 months post-radiotherapy due to the development of fibrotic tissue. The most important and evidence-based treatment of arm LE is daily use of compression sleeve. In a 10-year surveillance program, it was found at mean 4.1 years, that 28% of the patients no longer had lymphedema by definition (Johansson & Branje 2010), and it was questioned whether these patients needed any treatment at all. Thus, an RCT evaluating early compression treatment was carried through.

Methods: Seventy-five patients diagnosed with mild arm LE (LRV ≥5%-≤8%) (at Skåne University Hospital and Karolinska University Hospital in Sweden) within the surveillance program were included in the RCT for 6 months. They were randomly assigned to wear compression sleeve ccl 1 (CG n=33) or not (NCG n=37). Primary outcome was progression/no progression of arm LE defined as increase of LRV >2% from start of RCT. End of RCT was followed by a one-month treatment break in CG after which only women with progression resumed compression. Changes in LRV were examined at the end of RCT, and then at 9- and 12-months.

Results: A larger proportion of women in the NCG ($p<0.001$, 0.005, 0.012) showed progression (57%, 61%, 67%) compared to the CG (16%, 22%, 31%) at 6, 9 and 12 months, respectively. In the NCG 43% did not progress at all. No changes of LRV and local tissue water were found at any follow-ups after the RCT but were stable on a low level (Johansson et al. 2023).

Conclusion: A surveillance program may identify early and mild arm LE in patients at risk. To avoid progression of mild arm LE to become chronic, compression sleeve ccl 1 may be applied immediately at early diagnosis of mild BCRL.

ADAPTIVE VELCRO COMPRESSION DEVICES IN LYMPHEDEMA: AN EVOLVING STRATEGY IN PATIENT-CENTERED APPROACH TO COMPRESSION THERAPY

PINAR BORMAN, MD - *Professor of PMR, Department of Physical Medicine and Rehabilitation & Algology, Faculty of Medicine, University of Ankara Medipol, Ankara, Turkey*

Compression therapy remains the fundamental component of conservative lymphedema treatment throughout all disease stages. Nevertheless, conventional compression modalities frequently present challenges related to application complexity, patient adherence, physical limitations, and long-term sustainability. These barriers have driven the evolution of compression therapy toward more individualized and patient-centered approaches. Adaptive Velcro Compression Devices (AVCDs), also known as adjustable compression wraps, have emerged as an important innovation by enabling patients and caregivers to actively participate in compression management while maintaining therapeutic effectiveness.

This lecture reviews the current evidence regarding the clinical role of AVCDs within contemporary lymphedema care and discusses their integration into personalized treatment strategies. Recent randomized controlled trials, systematic reviews, international consensus documents, and clinical guidelines published over the past decade consistently demonstrate that AVCDs provide limb volume reduction comparable to conventional multi-

layer compression bandaging while significantly improving ease of application, treatment adherence, patient autonomy, comfort, and health-related quality of life (1-3). Their adjustability allows rapid adaptation to fluctuations in limb volume, supporting continuous therapeutic pressure during both intensive and maintenance phases of treatment. Clinical experience further suggests particular benefits for elderly individuals, patients with obesity, impaired hand function, bilateral lymphedema, limited caregiver support, and those requiring lifelong compression therapy.

Beyond clinical outcomes, AVCDs represent a paradigm shift toward self-management and shared decision-making, two increasingly recognized pillars of chronic disease management. Successful implementation requires individualized patient selection, structured education, regular follow-up, and integration into comprehensive decongestive therapy rather than considering these devices as stand-alone interventions. Emerging evidence also indicates potential reductions in healthcare utilization and treatment costs through decreased clinician time and improved long-term adherence.

Adaptive Velcro Compression Devices have become an important component of modern compression therapy, reflecting the transition from standardized treatment toward precision, patient-centered lymphedema care. Future research should focus on long-term comparative effectiveness, objective adherence monitoring, digital pressure optimization, and cost-effectiveness analyses to better define their role within evolving international treatment algorithms.

References:

1. Executive Committee of the International Society of Lymphology. The Diagnosis and Treatment of Peripheral Lymphedema: 2023 Consensus Document of The International Society of Lymphology. Lymphology. 2023;56(4):133-151.
2. Borman P, Koyuncu EG, Yaman A, Calp E, Koç F, Sargut R, Karahan S. The Comparative Efficacy of Conventional Short-Stretch Multilayer Bandages and Velcro Adjustable Compression Wraps in Active Treatment Phase of Patients with Lower Limb Lymphedema. Lymphat Res Biol. 2021 Jun;19(3):286-294.
3. Moffatt CJ, Burian E, Karlsmark T, Keeley V, Vignes S, Doiron S, Tilley A, Liebl M, Reißhauer A, Murray S, Sykorova M, Quéré I, Franks PJ. Factors Predicting Limb Volume Reduction Using Compression Bandaging Within Decongestive Lymphatic Therapy in Lymphedema: A Multicountry Prospective Study. Lymphat Res Biol. 2021 Oct;19(5):412-422.

HEAD AND NECK LYMPHEDEMA MANAGEMENT

FRANZ-JOSEF SCHINGALE - *Lympho-Opt GmbH*

Facial lymphoedema continues to pose a challenge for therapists today. Both primary and secondary lymphoedema occur, with oncological post-treatment causes being the most common. The oedema largely causes facial disfigurement and also leads to significant depression, and in some cases even apathy. In addition to other significant complications such as vision, speech, swallowing, breathing, loss of taste, dry mouth, and similar issues, lymphoedema represents a massive change in a person's physical appearance. Complex physical decongestive therapy, in its full form comprising skin care, manual lymphatic drainage, compression therapy and exercise, can only be carried out to a limited extent in this way, as compression further impairs quality of life. In such cases, compression can be modified using lymphatic tape and various other treatment options.

Facial lymphedema can sometimes be treated surgically, but only in selected cases and usually after conservative therapies have been tried without sufficient success and there are only a few reports (LVA: with 3 cases, 1 case with BioBridge).

SESSION 2: DIAGNOSIS

CHAIRS: PIERRE BOURGEOIS, EVANGELOS DIMAKAKOS, FERNANDO GÓMEZ-MUÑOZ

NON-INVASIVE DIAGNOSTIC OF LYMPHEDEMA

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Introduction: Lymphedema is a chronic and progressive disorder characterized by impaired lymphatic drainage, interstitial fluid accumulation, and subsequent tissue remodeling. Although clinical examination remains the cornerstone of diagnosis, objective assessment is essential for accurate characterization, staging, differential diagnosis, treatment planning, and follow-up. Imaging techniques such as lymphoscintigraphy and magnetic resonance lymphangiography provide valuable information but are not always readily available and may not be suitable for routine serial assessment. The integration of complementary non-invasive technologies may therefore improve the diagnostic evaluation of patients with suspected or established lymphedema.

Objective: To describe an integrated multimodal diagnostic approach combining three-dimensional perometry, segmental bioelectrical impedance analysis, and shear-wave elastosonography for the comprehensive non-invasive assessment of lymphedema. Materials and Methods: Patients underwent a standardized diagnostic pathway beginning with clinical evaluation and followed by three complementary non-invasive examinations. Three-dimensional perometry was used for digital limb reconstruction and objective volumetric assessment. Segmental bioelectrical impedance analysis provided information on extracellular fluid distribution and body composition, allowing limb findings to be interpreted in relation to systemic and patient-specific factors. Shear-wave elastosonography was employed to assess tissue stiffness and structural changes associated with chronic edema and fibrosis.

Results: The integration of these techniques provided complementary information beyond clinical examination and conventional circumferential measurements. Three-dimensional perometry enabled objective and repeatable volumetric assessment. Segmental bioelectrical impedance analysis supported the identification of extracellular fluid accumulation and systemic or body-compositionrelated factors potentially influencing limb volume. Shear-wave elastosonography improved tissue characterization by detecting changes in tissue stiffness associated with edema progression and fibrotic remodeling. The combined approach facilitated differentiation among fluid accumulation, adipose tissue expansion, and fibrotic tissue changes, thereby supporting more accurate clinical staging and individualized therapeutic planning.

Conclusion: An integrated multimodal approach combining three-dimensional perometry, segmental bioelectrical impedance analysis, and shear-wave elastosonography provides a practical and comprehensive non-invasive strategy for the assessment of lymphedema. These complementary techniques improve objective measurement and tissue characterization, support differential diagnosis and personalized treatment planning, and may help identify patients who require further lymphatic imaging or more advanced diagnostic investigations.

Keywords: Lymphedema; Non-invasive diagnosis; Three-dimensional perometry; Segmental bioelectrical impedance analysis; Shear-wave elastosonography.

TECHNICAL DIAGNOSIS OF LYMPHEDEMA

ERIKA MENDOZA

THE STANDARDIZATION OF LYMPHOSCINTIGRAPHIC IMAGINGS, THEIR ANALYSIS, AND REPORTING

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2) LEDUC OLIVIER,
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Summary:
Lymphedema remains a heterogeneous condition for which numerous clinical and imaging-based classifications have been proposed. Most existing systems describe only one aspect of the disease, such as clinical severity, tissue alterations, anatomical abnormalities, or imaging findings, and therefore provide only a partial characterization of the underlying lymphatic disorder.
The presentation will propose the BeSL (Belgian Society of Lymphology) vTLaMf characterization, a multidimensional framework inspired by the philosophy of the TNM cancer classification. The approach combines information regarding the affected organ, etiology, edema distribution and volume (v), tissue characteristics (T), lymphatic anatomical abnormalities identified by lymphoscintigraphy (La), and lymphatic functional status (Mf) assessed by a standardized three-phase lymphoscintigraphic protocol.
By integrating clinical, anatomical, and functional findings within a single descriptive system, the BeSL vTLaMf charactérization-classification aims to improve patient phenotyping, facilitate communication between healthcare professionals, standardize reporting, and enhance comparability between studies. It may also provide a framework for future clinical databases and multicenter investigations devoted to lymphedema.

ASSESSMENT OF LYMPHEDEMA USING TISSUE DIELECTRIC CONSTANT (TDC) TECHNOLOGY

MIA NIINIMÄKI
Physiotherapist specializing in lymphology, cancer rehabilitation, and conservative lymphedema treatment. Advanced training in lymphedema assessment techniques, including measurement via Tissue Dielectric Constant (TDC) and complex decongestive therapy.

MR LYMPHOGRAPHY: NEW DATA FOR ITS USEFUL FOR THE DIAGNOSIS AND DIFFERENTIAL DIAGNOSIS OF LYMPHEDEMA

PROF. EVANGELOS P. DIMAKAKOS, MD, PHD, EDA / VM, MLD / CDT (P)
Vascular Internist. President of International Society of Lymphology. Head of Vascular Unit-Training Center of Angiology of UEMS-of 3rd Department of Internal Medicine of National Kapodistrian University of Athens Public Hospital 'SOTIRIA' Responsible Prof. of Anatomy -Physiology , Nursing Department, Faculty of Health and Wellness Sciences of University of West Attika Athens. Director of Center of Prevention, Diagnosis and Treatment of Lymphedema -Lymphatic Diseases for Adults and Children of Metropolitan Hospital. Greek Delegate and Member of UEMS of Angiology / Vascular Medicine

Magnetic resonance imaging (MRI) is a non invasive tomographic imaging method. Images are obtained without the use of ionizing radiation by placing the body in a magnetic field and measuring relaxation of hydrogen protons (e.g. in water, fat etc.) as a function of their location. We performed MRL in different patients especially with the suspicion of the lymphedema in lower extremities. The most important thing is that we did not administrate any intravenous or subcutaneous drugs for the depiction of the Lymphatic system. In all patients we had diagnosis or not of lymphedema and it helped us to take the correct decisions for the diagnosis and the differential diagnosis and the treatment of lymphedema. Studies will continue for MRL with the goals of the improvements of the technique of MRL and the improvements of the depiction of the Lymphatic system all the body until MRL will become the gold standard examination for the Lymphatic system and its diseases.

THE PERIKIT: STANDARDIZING THE MEASURING AND MONITORING OF LYMPHOEDEMA AFTER 10 YEARS OF RESEARCH AND DEVELOPMENT

JOE HARFOUCHE

Background: Accurate, Reproducible, repeatable, practical, fast and affordable measurements in Lymphology and oncology are mandatory to assessing and understanding the development of the pathology and the effectiveness of treatments.

If you do not measure you cannot prove, and if you cannot prove, you cannot improve.

Integrating the assessments in our practice is mandatory to help us improve our technics in the treatment, to have accurate garments and to monitor the evolution of our patients. In every day practice as well as in research studies, Being able to standardize the measurements is mandatory. Normal tape-line is the mostly used because it is practical, but the reproducibility and the accuracy are not easy to obtain: the reference point is on a moving skin, the perpendicularity is not always easy to be confirmed, the tension applied on the limb or on the tape-line can impair the accuracy and reproducibility... And the time needed to take these measurements is considerable, and that time is abducted of the patients' treatment time.

Methods: Single-blind, cross-sectional studies compared three assessment methods for perimetry and volumetry of the upper limbs[(1)] and lower limbs[(2)]: conventional tape measure, the optoelectronic infrared volumeter (Perometer®; and PeriKit®).

Results: The Interclass correlation coefficients (ICC) between the measurements were «very strong» for the PeriKit: the upper limb[1] as well as lower limb[2] were (0.995). PeriKit® had the lowest dispersion of results for all segments[2]. The Bland and Altman test confirmed the reproducibility of the system[1]

Discussion and conclusion: Despite its poor reliability, the conventional tape measure is widely used because of its low cost and portability. The optoelectronic scanner is simple, ergonomic and does not require calibration, but suffers from handicaps such as the price, the absence of hands, fingers and feet measurements[3]. The water displacement is now advised for hands and feet only, because it is bulky when used on the whole limbs[4]. The PeriKit® has succeeded to standardize the measurements in reducing many of the problems and the bias associated, (The PeriTape is equipped with an isotonic spiral, that guaranties the same tension every time. Thanks to the PeriBase, to the steady "Reference Point" and to the "Confirmation point" (Harfouche methodology),[5] Coming back "exactly" at the same place when retaking the measurements is now possible, which is mandatory, (because of conical shape limbs). These details offers high accuracy, repeatability and reproducibility. The engineering of the PeriTape allows it to standardize the fingers too.

PeriKit® succeeded to Standardize the whole Upper and Lower limb measurements from the fingers till the root of the limb. Other studies are undergoing to standardize trunk and the Breasts.

The PeriKit is not interchangeable with other methods because they are more dispersed and less accurate[2].

SESSION 3: LIPEDEMA

CHAIRS: SANDRO MICHELINI, ISABEL FORNER-CORDERO, LOURDES REINA-GUTIÉRREZ.

ALTERATION OF SUBCUTANEOUS ADIPOSE TISSUE FUNCTION IN LIPEDEMA

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Background: Lipedema is a painful, chronic disorder characterized by the disproportionate, bilateral accumulation of subcutaneous adipose tissue (SAT) in the extremities, predominantly affecting women. Unlike diet-induced obesity, patients with lipedema frequently exhibit a paradoxically healthy systemic metabolic profile, yet suffer from localized inflammation, fibrosis, and severe pain within the SAT.

Objective: Because the underlying molecular mechanisms driving this localized tissue dysregulation remain largely obscure, this lecture aims to decode the distinct cellular alterations within the SAT microenvironment that actively drive lipedema pathogenesis.

Key Molecular and Cellular Insights

- Adipocyte Heterogeneity: Recent single-cell transcriptomic analyses reveal profound cellular diversity in lipedema SAT. Notably, a unique, highly hypertrophic adipocyte subpopulation has been identified, characterized by elevated expression of both classical adipocyte markers and inflammatory genes.
- Dysregulated Stem Cell Niche: The stromal-vascular fraction exhibits skewed adipogenic stem and progenitor cell (ASPC) differentiation. Rather than developing into healthy preadipocytes, these cells show a shift toward perivascular lineages. This aberrant developmental programming directly contributes to endothelial barrier dysfunction and hypervascularization in the affected tissue.
- Progressive Immune Remodeling: The structural aberrations in the tissue are compounded by dynamic immune infiltration. Disease progression is marked by a transition from early-stage anti-inflammatory M2 macrophages to a distinct accumulation of pro-inflammatory M1 macrophages in advanced stages, driving chronic localized inflammation and fibrotic tissue remodeling.

Conclusion: Current evidence suggests that lipedema is not primarily a disorder of systemic energy imbalance, but rather a profound, localized dysregulation of the adipose microenvironment. The complex interplay between altered ASPC differentiation, distinct adipocyte subpopulations, and localized immune infiltration provides critical molecular insights necessary for distinguishing lipedema from classical obesity and for developing targeted diagnostic biomarkers and therapeutic strategies.

LYMPHEDEMA AND LIPEDEMA: DIFFERENT DIAGNOSTIC AND THERAPEUTICAL APPROACH

SANDRO MICHELINI

Lower libs oedema recognizes more etiological factors that are frequently confused during differential diagnosis. Sometimes there are more causes with preponderance of one over the other, either local or systemic.

The elements that induce doubts in the diagnostic definition derive from an insufficient evaluation of clinical symptomatological aspects and of any instrumental and hematochemical tests performed in individual cases.

From a correct clinical and consequently etiopathogenetic classification derives the most appropriate therapeutic decision. Pharmacological, physical and rehabilitative or surgical therapies not inspired by oedema correction principles based on its etiopathogenesis may result in therapeutic failure or even in the worsening of local or systemic clinical status.

Lipedema and lymphoedema are still often confused with one another today. The former is hereditary in 100 per cent of cases, whilst the latter is hereditary in fewer than 10 per cent; the former occurs almost exclusively in women, whilst the latter affects both sexes; and, unlike the latter, the former does not involve the extremities of the limbs. The diagnostic tests themselves reveal very different clinical pictures (particularly lymphoscintigraphy). Lipoedema does not lead to inflammatory or infectious complications, which are, however, common in lymphoedema. In lipoedema, pain is a key diagnostic feature, whereas it is often absent in lymphoedema.

But the aspect that perhaps most distinguishes the two conditions from a practical point of view is their response to treatment. The response to pharmacological treatments is poor in both conditions; the response to physical therapy is good in lymphoedema but less effective in lipoedema; the response to surgical treatment in lymphoedema remains to be better defined, whilst the response in this regard is generally good in lipoedema. These aspects all require further investigation, not least in light of the new findings emerging from the intensive clinical and scientific research currently being carried out on these conditions.

LIPEDEMA AND INFLAMMATION: USEFULNESS OF THE RESISTIVE INDEX

MARINA CESTARI[1], DOMENICO PERRONE[2]
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Objective: Lipedema is increasingly recognized as a chronic inflammatory disorder of the subcutaneous adipose tissue, but diagnosis still relies mainly on clinical assessment.

This study presents the rationale for using the Resistive Index (RI) as a non-invasive functional ultrasound parameter to support the evaluation of tissue inflammation in lipedema and to compare affected tissue with healthy adipose tissue.

Materials and Methods: The study included 140 female patients with lipedema, across clinical stages and types II-III, and 50 healthy controls. Participants with obesity, chronic venous insufficiency, lymphoedema, pregnancy, peripheral arterial disease, peripheral neuropathy or major systemic diseases were excluded.

High-resolution B-mode ultrasound was used to assess standardized bilateral subcutaneous areas. Power Doppler Imaging visualized lobular arteries within the interlobular septa, and Pulsed Wave Doppler automatically calculated Pourcelot's RI.

The statistical analysis was based on mean RI values, comparisons between patients and controls, between types and stages, and, in type II lipedema, between clinically affected and spared areas. P-values were interpreted to evaluate the relevance of the observed differences.

Results: In healthy adipose tissue at rest, small peripheral arteries generally show high vascular resistance, low or absent end-diastolic velocity and therefore high RI values. Chronic inflammation reduces vascular resistance, increases end-diastolic flow and lowers RI.

In this cohort, clinically affected lipedema areas showed significantly lower RI values than healthy controls, supporting the presence of tissue inflammation. RI reduction was not simply related to clinical stage, but showed a heterogeneous anatomical distribution.

In type II lipedema, the comparison between affected and spared areas suggested that inflammation is mainly expressed in clinically involved regions, while spared areas behave differently.

Conclusion: These findings support the interpretation of lipedema not as passive fat accumulation, but as a complex inflammatory adipose-fascial disease.

Integrated with clinical examination and three-dimensional ultrasound assessment, RI may offer an objective, repeatable and non-invasive contribution to the detection and monitoring of inflammation. Its potential role is particularly relevant for therapeutic follow-up, helping clinicians evaluate the response to anti-inflammatory diet, pharmacological strategies, adapted physical exercise and physical treatments.

Keywords: Lipedema; Inflammation; Power Doppler Imaging; Resistive Index; Subcutaneous adipose tissue.

References:

1. Herbst KL, Kahn LA, Iker E, et al. Standard of care for lipedema in the United States. Phlebology. 2021
2. Erich Brenner, Isabel Forner-Cordero, Gabriele Faerber, et al. Body mass index vs. Waist-to-height-ratio in patients with lipohyperplasia dolorosa (vulgo lipedema). J Dtsch Dermatol Ges., 2023.
3. Philipp Kruppa, Sabrina Gohlke, Kamila Łapiński, et al. Lipedema stage affects adipocyte hypertrophy, subcutaneous adipose tissue inflammation and interstitial fibrosis. Front. Immunol., 2023.
4. Cestari M. Lipedema: usefulness of 3D ultrasound diagnostics. Lymphat Res Biol. 2023.

DIETARY MANAGEMENT IN PATIENTS WITH LIPEDEMA

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As recommended in the German S2k guidelines on lipoedema, the overall aims of nutritional interventions in patients with lipoedema shall be to help maintain or regain mobility and functionality, prevent the disease from progressing, and most and foremost reduce pain and other symptoms.

Since overweight and obesity can lead to progression in the volume of the limbs and aggravation of the disease, treatment includes weight management or reduction, but notably the focus shall not be on weight, but on a healthy body composition characterised by a balance between fat mass and fat-free mass, especially body cell mass. In the context of obesity as well as in eating disorders, frequently observed in lipoedema patients, sarcopenia, and most importantly sarcopenic obesity should be recognised and treated. In case of coincident obesity nutritional interventions shall always be accompanied by physical activity and possibly behaviour therapy, if appropriate. After the actual weight reduction phase, long term follow up is essential for sustainable weight loss.

A holistic treatment of lipoedema involves guidance for an active lifestyle and healthy eating habits that positively influence lipoedema pain and symptoms. Patients must be advised to adapt their eating habits permanently to a healthy, individually tailored diet instead of following short-term diets which tend to increase weight in the long term.

Since high insulin levels promote lipogenesis and the retention of sodium and water and have proinflammatory effects, spikes of blood glucose and insulin are to be avoided and sufficient intervals between meals observed.

Following a growing number of RCT´s in recent years, both an anti-inflammatory and a ketogenic diet, ideally a combination of the two, can be recommended and have been shown to be beneficial regarding weight management as well as, importantly, symptom relief.

BEYOND EMOTIONAL EATING: THE NEUROINFLAMMATORY ROOT OF HEDONIC HUNGER IN LIPEDEMA

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Background: Lipedema is a chronic inflammatory disorder of subcutaneous adipose tissue. Patients commonly report intense cravings, night eating and binge-like episodes, together with a sense that a meal feels incomplete without refined carbohydrate. These behaviours are often misclassified as emotional eating or as a primary eating disorder, with clinical consequences: ineffective treatment, therapeutic frustration and patient stigmatisation.

Objective. We propose a falsifiable mechanistic framework in which hedonic hunger in lipedema can be understood as the behavioural expression of hypothalamic microinflammation of peripheral origin, and which helps distinguish it clinically from primary eating-disorder pathology.

Methods. Narrative review integrating peripheral-to-central inflammatory signalling, the specialised blood–hypothalamus interface, dopaminergic control of feeding and the wanting/liking dissociation framework, anchored in clinical observation from a cohort of 1,803 women with lipedema assessed between January 2022 and November 2024, of whom 31.9% were of normal weight.

Results: We propose the following chain. Chronic low-grade peripheral inflammation signals to the arcuate nucleus, which lies at a specialised blood–hypothalamus interface with regulated access to circulating metabolic signals; tanycytes at this interface act as active transducers rather than passive barriers. Sustained rather than acute exposure shifts the central response from transient sickness anorexia towards chronic microinflammatory dysfunction — a temporal distinction that resolves the apparent paradox of inflammation coexisting with hyperphagia. Weakened leptin and insulin signalling erodes homeostatic restraint, while gut-derived sugar-sensing pathways continue to drive dopaminergic reward, producing craving with marked specificity for refined carbohydrate. What is primarily altered is wanting, or incentive salience, rather than liking or consumption — a distinction not captured by existing instruments. That nearly one-third of this cohort were of normal weight argues that the phenotype is not reducible to obesity.

Conclusion: This is presented as a reasoned, mechanistically coherent and falsifiable hypothesis rather than established fact; direct evidence is stronger for the central neurobiological steps than for peripheral-to-central signalling in lipedema specifically. If the model is correct, reframing these behaviours as neurobiologically driven rather than as a failure of willpower has direct implications for clinical management and patient dignity. We present the CHHL, a phenotype-specific instrument currently in pilot phase, within a proposed multicentre case-control design, and invite collaborating centres.

Keywords: lipedema; hedonic hunger; hypothalamic microinflammation; blood–hypothalamus interface; incentive salience; multicentre validation

SURGICAL TREATMENT OF LIPEDEMA

MANUEL CORNELY

For Lipohyperplasia dolorosa (LiDo) [Lipoedema], there are both conservative and surgical treatment options. An established procedure since 1997 is surgical treatment using Lymphological Liposculpture™. The procedure is called ‹Lymphological Liposculpture› to distinguish it from liposuction used in aesthetic surgery. It is characterised by the following individual steps:

- Introduction of the lipophilic tumescence local anaesthesia
- Preparation phase of the lipophilic solution for 90 minutes
- Suprafascial, subcutaneous, subtotal aspiration-vibration excision

The suction must be performed in three dimensions: starting close to the fascia, it is carried out axis-parallel and layer by layer, initially removing the deep adipocyte layer after the tumescence local anaesthesia preparation phase, with additional central analgosedation. Subsequently, the middle fat layer is gradually removed down to a superficial layer of 0.5 cm to 10 mm (subtotal), immediately beneath the skin. Criss-cross manoeuvres must be strictly avoided.

After the removal of the adipose tissue in the arms and legs in LiDo, the concept of lymphological liposculpture includes an immediate subsequent four-week treatment with intensified manual lymphatic drainage (AMLD) to balance the imbalance between lymph production and lymph transport, which underpins the high-volume transport insufficiency [Marsch thesis] of LiDo[1].

Through appropriate postoperative management, as well as the administration of antibiotics and antithrombotic agents, local complications related to the operation are rare[2].

This resective technique was examined on cadavers for lymphological indications and tested in vivo on 140 LiDo patients to assess its effect on the lymphological condition[3]. Following methodological specifications and the development of special vessel-sparing techniques, the surgical procedure is now performed under tumescence local anaesthesia as power-assisted liposuction for the resective treatment of subcutaneous tissue in medical indications such as Lipohyperplasia dolorosa, primary lymphedema, and secondary lymphedema.

The introduction of this surgical method in LiDo is regarded as a paradigm shift in the treatment of this epidemiologically relevant disease, with a prevalence of 10% to 19%. This change in perspective leads to improvement and, in some cases, cure of the condition through resection of the subcutaneous tissue. The most important outcome of consistent surgical treatment of Lipohyperplasia dolorosa is its impact on quality of life: “It ruined her life” becomes “It improves her life.”

Keynotes:

- The introduction of the surgical procedure marks a fundamental shift in thinking in the otherwise conservative lymphological therapy.
- The suction must be performed in three dimensions, initially close to the fascia, layer by layer, axis-parallel, and without criss-cross manoeuvres.

References

1. Cornely ME. Lipohyperplasia Dolorosa. In: Cornely ME, Marsch W, Brenner E, Hrsg. Applied Lymphology: Basics | Daily practice | Perspectives. Cham: Springer Nature Switzerland; 2025: 497–565. doi:10.1007/978-3-031-77734-9_26
2. Gensior M, Cornely M. [Complications and their management in the surgical treatment of lipohyperplasia dolorosa]. Dermatologie (Heidelb) 2023; 74: 114–120. doi:10.1007/s00105-022-05073-7
3. Cornely ME. Liposuktion bei Lipödem (Cellulite) Follow–up bei 140 operierten Patienten nach 7 Jahren. Aktuelle Dermatologie 2004; 30. doi:10.1055/s-2004-835547

AN UPDATE ON LIPEDEMA RESEARCH: CURRENT EVIDENCE AND FUTURE CHALLENGES

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Lipedema is a chronic adipose disorder that predominantly affects women and is characterized by symmetrical, painful accumulation of subcutaneous fat in the limbs, leading to disability and psychosocial distress. Despite an estimated prevalence up to 10–20%, it remains underrecognized and often misdiagnosed as obesity or lymphedema.

Recent work has defined a distinct adipose phenotype with stage dependent adipocyte hypertrophy, progressive interstitial fibrosis and an M2 skewed macrophage infiltrate, differentiating lipedema from primary obesity.

Pathophysiology appears multifactorial, involving genetic susceptibility, estrogen-related mechanisms, chronic inflammation and microvascular/lymphatic dysfunction.

Diagnosis still relies mainly on clinical criteria, while ultrasound, MRI, MR lymphangiography, lymphoscintigraphy and DXA characterize fat distribution but have limited validated diagnostic accuracy.

Conservative approaches (specialized diets, compression, exercise, decongestive lymphatic therapy) yield partial symptom relief, whereas lipedema reduction surgery shows results for sustained improvements in pain, edema, mobility and quality of life in refractory cases, though it is not curative.

Key future challenges include standardizing diagnostic criteria, validating biomarkers and imaging tools, conducting randomized trials of conservative and surgical treatments, and elucidating biological mechanisms to enable targeted, disease modifying therapies.

17:10 – 17:40 H. ORAL COMMUNICATIONS

CHAIRS: SANDRO MICHELINI, ISABEL FORNER-CORDERO, LOURDES REINA-GUTIÉRREZ.

COMPARING FLAT AND CIRCULAR-KNIT GARMENTS IN LIPEDEMA MANAGEMENT

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Objectives: We present a feasibility analysis of a proof-of-concept, randomized and crossover study to assess the effectiveness of two types of compression garments in lipedema.

Material/Method: Thirty-four patients suffering from type-3 stage-1-or-2 lipedema in maintenance phase with a circular-knit garment are being recruited. Exclusion criteria: pitting edema, obesity and edema-facilitating conditions.
Patients who consent participating are randomized to wear a flat-knit pantyhose/legging or a circular-knit garment, both for 6 consecutive months, after which they will cross over to the other garment type and repeat the protocol. Results from both garment types will be compared.
Participants will undergo clinical evaluation before and after wearing the designated garment:

- Primary endpoint: percentage change in lower-limb volume.
- Secondary endpoints: anthropometric values, pressure pain, tissue dielectric constant, symptoms, quality of life, compliance and subjective evaluation of the worn garment

This research has been accepted by the hospital's ethics committee, registered in clinicaltrials.gov (NCT06964828) and lacks external funding.

Results: The study is currently ongoing and we expect it to conclude in mid-2027. However, we have already been able to assess in depth its core strengths and weaknesses:

Main strengths:

- We visit a large number of patients with lipedema, most of them very compliant with compression.
- The use of automated surveys is facilitating data recording for both participants and researchers.
- Our study examines both signs, symptoms, quality of life and participation, acknowledging the whole spectrum from the physical impairment to its effect on daily living.

Main weaknesses:

- Finding eligible subjects has been challenging: concurrent obesity is frequent and several patients have been already wearing flat-knit garments.
- Pressure pain determination has been protocolized in just one point bilaterally, not accounting for location variability among subjects.
- Pressure exerted by the garments is measured only during the visits, not continuously throughout the follow-up period.

Conclusion: This is the first study to our knowledge that directly compares fabric types used in compression for lipedema by determining key variables related to symptom relief and progression prevention. By performing a thorough analysis of our research protocol, we enable other clinicians to further refine and expand this research path among their population.

ASSESSING THE CLINICAL IMPLICATIONS OF COMORBIDITIES PREVALENCE IN A PROSPECTIVE COHORT STUDY OF LIPEDEMA PATIENTS

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Objectives: To identify the most prevalent comorbidities in women with lipedema, to compare findings with available data from the general population, and to explore potential relationships between comorbidities and lipedema etiopathogenesis.

Material/Method: We performed a prospective, observational cohort study to describe the prevalence of comorbidities present in patients with lipedema. Patients with signs and symptoms of lipedema: symmetrical involvement; disproportion between the upper and lower part of the body; spared feet; pain; bruising; were included in the study, from September-2012 to March-2026.

Results: We recruited 195 patients; median age was 43.8 years (range:18–80). Mean BMI was 27.78 Kg/m² (95%CI:26.99–28.57) and waist-to-height ratio 0.49 (95%CI:0.48–0.50). Type III lipedema predominated (72.3%), with stages 1 (47.2%) and 2 (37.9%). Family history was reported in 84.5%.

Obesity prevalence was 28.7% (BMI) and 11.4% (using waist-to-height ratio). Joint hypermobility was the most frequent comorbidity (63.1%), followed by anxiety/depression (42.1%), insomnia (31.8%), migraine (30.8%), obesity (28.7%), hypothyroidism (20.0%), irritable bowel syndrome (19.0%), hypertension (13.3%), polycystic ovary syndrome (14.4%), fibromyalgia (10.8%), chronic fatigue syndrome (10.8%), and diabetes (1.5%). Compared to the general population, joint hypermobility, anxiety/depression, migraine, hypothyroidism, fibromyalgia and chronic fatigue syndrome were markedly more prevalent, while hypertension and diabetes were lower.

Significant associations were observed. Hypertension was associated with older age (58.2 vs 41.6 years; p

Conclusion: Lipedema patients present a high prevalence of comorbidities. The most frequent was joint hypermobility, probably related with colagenopathy as an etiopathogenic mechanism of the disease.

The low prevalence of hypertension and diabetes show the low cardiometabolic risk of these patients. These findings highlight the importance of a comprehensive clinical approach that considers both the physical and psychological burden associated with lipedema. Understanding the comorbid profile may contribute to improving diagnosis, patient management, and the development of multidisciplinary treatment strategies.

Bibliography:

Blüher M. Understanding Adipose Tissue Dysfunction. J Obes Metab Syndr. 2024 Dec 30;33(4):275-288. doi: 10.7570/jomes24013.
Forner-Cordero I, et al. Prevalence of clinical manifestations and orthopedic alterations in patients with lipedema: A prospective cohort study. Lymphology. 2021;54(4):170-181.
Hardy D, Williams A. Best practice guidelines for the management of lipoedema. Br J Community Nurs. 2017 Oct 1;22(Sup10):S44-S48. doi: 10.12968/bjcn.2017.22.Sup10.S44.
Ghods M, et al. Disease progression and comorbidities in lipedema patients: A 10-year retrospective analysis. Dermatol Ther. 2020 Nov;33(6):e14534. doi: 10.1111/dth.14534. Keith L, et al. Proposed Framework for Research Case Definitions of Lipedema. Lymphat Res Biol. 2024 Apr;22(2):93-105. doi: 10.1089/lrb.2023.0062.
Luta X, et al. Clinical characteristics, comorbidities, and correlation with advanced lipedema stages: A retrospective study from a Swiss referral centre. PLoS One. 2025 Mar 20;20(3):e0319099.
Forner-Cordero I, Forner-Cordero A, Szolnoky G. Update in the management of lipedema. Int Angiol 2021;40:345-57. DOI: 10.23736/S0392-9590.21.04604-6
Sanlier N, Baltacı S. Therapeutic Applications of Ketogenic Diets in Lipedema: A Narrative Review of Current Evidence. Curr Obes Rep. 2025 May 26;14(1):49. doi: 10.1007/s13679-025-00642-y.

PSYCHIATRIC CONDITIONS AND PSYCHOSOCIAL BURDEN IN LYMPHEDEMA AND LIPEDEMA: A SYSTEMATIC REVIEW

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Objectives: To systematically review the available evidence regarding psychiatric conditions and psychosocial burden in patients with lymphedema and lipedema, with particular focus on depression, anxiety, body image disturbance, and eating disorder-related literature.

Material/Method: A systematic review of PubMed-indexed literature was conducted in two stages.
The primary search strategy combined Medical Subject Headings (MeSH) with Boolean operators: “psychiatric”, “depression”, “anxiety”, “mental health”, “psychosocial”, “stigma”. Inclusion criteria comprised original peer-reviewed studies evaluating psychiatric, psychological, or psychosocial outcomes in patients with lymphedema or lipedema, including quantitative, qualitative, and mixed-methods designs. Of 861 identified records, 363 underwent screening, 47 full-texts were assessed, and 25 studies were included in the qualitative synthesis.
An additional search was focused on eating disorder-related literature using the terms: “feeding disorder*”, “eating disorder*”, “anorexia nervosa”, “bulimia”, “eating behavior”, “binge eating”. Sixteen records were identified, 11 screened, and 5 full texts reviewed; no studies met inclusion criteria.

Results: Fifty-six percent of included studies were published after 2020, with a predominance of lipedema-focused research. Studies originated mainly from Turkey and Scandinavian countries. The overall quality of evidence was limited, as only one longitudinal study was identified; most studies were cross-sectional quantitative studies, alongside qualitative and mixed-methods designs. Methodologically, studies relied predominantly on self-reported outcomes assessed through heterogeneous psychometric questionnaires: six instruments evaluating depression/anxiety, six quality-of-life scales, four stigma/body image instruments, and three social support measures. Interpretation was limited by methodological heterogeneity.
Substantial psychosocial burden was associated with disease severity, pain, mobility limitation, delayed diagnosis, and healthcare-related stigma. Moderate-to-severe depressive symptoms were reported in 20-50% of lipedema patients and in 15–35% of lymphedema patients. Advanced-stage disease was associated with greater depression, loneliness, eating disorder symptoms, and social isolation. Multiple studies identified body image disturbance, internalized weight bias, and perceived stigma as significant contributors to impaired quality of life. However, three studies found no statistically significant differences in depression or anxiety compared with control groups.
No studies specifically designed to evaluate eating disorders, binge eating, anorexia nervosa, or bulimia in lymphedema or lipedema populations were identified.

Conclusion: Current evidence suggests that lymphedema and lipedema are frequently associated with psychosocial distress, stigma, body image disturbance, and depressive symptoms. Nevertheless, interpretation remains limited by predominantly cross-sectional methodologies, heterogeneous psychometric tools, and variability in study populations. The absence of dedicated eating disorder studies highlights a significant gap in understanding the psychiatric and behavioral dimensions of these conditions.

SESSION 4: INNOVATIONS IN LYMPHOLOGY

CHAIRS: SARAH THOMIS, MICHAEL BERNAS, AMER HAMADÉ.

POTENTIAL FUTURE DISCOVERIES IN LYMPHOLOGY: A RESEARCH ROADMAP FOR CONSENSUS DOCUMENT

MICHAEL BERNAS, M.S.

Objective: Define and recognize future areas for research and discovery concerning the lymphatic system and patients with lymphatic disease.

Material and methods: Discovery through formal and informal in-person and group discussions as well as solicited individual online submissions.

Results: «Multiple focus areas have been identified where future discoveries and changes in practice will occur and/or are needed.
Genetics- Despite continued success in identifying new genes and pathways, lack of mechanisms to correct these defects exist (except genetic counseling). Perhaps pathways in the future? Is there potential for screening patients for a lymphatic-defective genotype before cancer operation/ irradiation?
Molecular lymphology- Can we find molecule(s) key for tissue development in response to stasis? Are there molecules (or a milieu) appropriate to prevent lymphedema in the setting of operation, irradiation, or even genetic profile? Perhaps exciting work on cholesterol-lowering drugs for LE could be a model?
Manual Lymphatic Drainage- This is ALWAYS a controversy since some have shown no benefit compared to compression (although some MLD practitioners do not agree with restrictions placed on the MLD component). What about the future with the g-lymphatic system? Does MLD have a role in ameliorating Alzheimer›s and other dementias? Does ICG imaging add to the "correct" application of MLD? Could MLD have a place in prevention? What about situations where compression is impossible or inappropriate?
Imaging- Will LAS ever be replaced as the gold standard? Yes, often surgeons (and others) prefer to use ICG which only demonstrates the superficial system (is this enough?). No, depicting the deeper system is fundamental to understanding the lymphatic abnormalities. Imaging of the deep system particularly in cases of chylous or non-chylous reflux is extremely important. -Will specialized MRI replace LAS (or LAS-SPECT CT) in some of these cases? Is there a potential to link imaging with genetics? Could imaging provide the optimal choice for treatment? Will photoacoustic imaging become more easily utilized and widespread?
Can we develop an all-encompassing definition for diagnosis and staging? Will it include clinical presentation with genetic underpinning, imaging of lymphatic system and dysfunction, understanding of tissue environment, and signaling in stasis? Are there components necessary for certain conditions and not others? Will this be the gold standard for diagnosis, treatment, and prognosis?»

Conclusions: Many areas of lymphology exist where research is needed to discover and unlock unknowns. Curiosity, questioning skills, and patient needs will continue to drive lymphology forward.

Consensus; Lymphology; Research

LYMPHATIC EMBOLIZATION IN IATROGENIC AND CONGENITAL DISORDERS

FERNANDO GÓMEZ MUÑOZ - *Servicio de Radiología Intervencionista, Hospital Universitari i Politécnic La Fe, Valencia, SPAIN.*

Introduction: Iatrogenic lymphatic leaks and congenital lymphatic anomalies are associated with substantial morbidity and mortality. Advances in lymphangiography and lymphatic embolization techniques have transformed their therapeutic management, establishing minimally invasive alternatives to conventional surgical ligation.

Methods: A narrative review of the recent literature on lymphatic embolization was performed, including thoracic duct embolization (TDE), intranodal embolization, and selective lymphatic duct embolization for both postoperative iatrogenic lymphatic leaks and congenital lymphatic disorders.

Results: In iatrogenic chylothorax, TDE achieves technical success rates of 48–90% and clinical success rates of 60–94%, with an estimated incidence of minor acute complications of 2–6%. In postoperative chylous ascites, intranodal lymphangiography with or without embolization provides clinical success rates of 56–86%. Intranodal embolization using n-butyl cyanoacrylate for postoperative lymphorrhea has demonstrated a clinical success rate of 92%, although it may exacerbate pre-existing lymphedema in 23% of patients. In congenital disorders, embolization with ethiodized oil (Lipiodol) resolves isolated neonatal chylothorax in all reported cases, whereas central conducting lymphatic flow disorders show more heterogeneous outcomes, with complete resolution in approximately 45% of patients. In the pediatric population with congenital heart disease and plastic bronchitis, selective lymphatic duct embolization achieves complete symptom resolution or significant clinical improvement in 98% of cases while preserving thoracic duct patency. Molecular targeted therapies, including mTOR and MEK inhibitors, complement endolymphatic interventions in congenital lymphatic anomalies.

Conclusions: Lymphatic embolization is a safe and effective treatment for both iatrogenic lymphatic leaks and congenital lymphatic disorders. The choice of technique should be individualized according to the underlying etiology, anatomical location, and patient age.

CERVICAL LV ANASTOMOSIS IN ALZHEIMER›S DISEASE: PRELIMINARY RESULTS OF THE ALCEA STUDY

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Background: Experimental evidence suggests that impaired meningeal-to-cervical lymphatic drainage may contribute to amyloid accumulation, neuroinflammation, and cognitive decline in Alzheimer's disease (AD). Cervical lymphatic surgery has emerged as a potential strategy to enhance brain protein clearance, although clinical evidence remains limited.

Methods: ALCEA is the first European prospective, open-label, single-center Phase I clinical trial evaluating the safety, feasibility, and preliminary efficacy of bilateral deep cervical lymph node–venous anastomosis (LNVA) in patients with mild AD. The study includes ten sequentially enrolled

patients with biomarker-confirmed mild AD and a minimum follow-up of 12 months. The surgical approach was developed through anatomical studies, literature review, international collaboration, and intraoperative lymphatic mapping, identifying level IIA deep cervical lymph nodes as the optimal target. Primary outcomes are surgical safety and feasibility. Secondary outcomes include changes in amyloid PET, plasma pTau217, neuropsychological performance, functional status, behavioural symptoms, and caregiver-reported outcomes.

Results: Five patients have undergone surgery to date. All procedures were successfully completed without intraoperative or postoperative complications, postoperative delirium, or prolonged hospitalization. Early follow-up demonstrated excellent surgical tolerance. The patient with the longest follow-up showed improvements in verbal fluency, mood, and recovery of writing ability, whereas the remaining patients remained clinically stable during the available follow-up. Biomarker and imaging analyses are ongoing.

Conclusions: Preliminary findings indicate that bilateral deep cervical LNVA is a feasible and safe procedure in patients with mild AD. Although efficacy cannot yet be established from this limited cohort, the initial clinical observations support continued investigation. Completion of the trial and larger controlled studies are warranted to determine whether enhancement of cervical lymphatic drainage may represent a novel therapeutic strategy for slowing disease progression in Alzheimer's disease.

RESEARCH HORIZONS IN LYMPHEDEMA: CURRENT FOCUS AND FUTURE DIRECTIONS

SARAH THOMIS

LYMPH-V FOR EARLY DETECTION OF BREAST CANCER-RELATED LYMPHEDEMA: REPRODUCIBILITY OF A WEARABLE ARM-VOLUME MONITORING DEVICE

ISMAIL TOYGAR, GÜLCAN BAĞCIVAN, AYŞE ARIKAN DÖNMEZ, ELIF DENIZ KAÇMAZ, FURKAN BILEK, MEHMET DURMUŞ ÇALIŞIR, YASIN KARAN, PINAR BORMAN
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Objectives: Breast cancer-related lymphedema (BCRL) is a common complication following lymph node dissection and may negatively affect physical function, symptom burden, and quality of life. Regular monitoring of arm-volume changes is important for recognizing early alterations and supporting timely follow-up in individuals at risk. Conventional circumferential tape measurement is widely used for arm-volume assessment; however, it requires trained personnel and may not be suitable for frequent home-based monitoring. LYMPH-V is a wearable device developed to monitor arm volume and support the identification of BCRL at a preclinical stage. This study aimed to evaluate the reproducibility of LYMPH-V compared with the circumferential tape-measurement method.

Material/Method: Thirty breast cancer survivors who had undergone lymph node dissection and had no clinical BCRL were included. Arm volume was measured using two methods: manual circumferential tape measurement and LYMPH-V. In both methods, arm circumferences were assessed at 5-cm intervals, and arm volume was calculated using the cylindrical volume calculation method. LYMPH-V was worn along the arm and automatically obtained circumferential measurements via integrated stretch sensors, transmitting the data to a synchronized mobile application. All measurements were performed sequentially by the same investigator to ensure consistency and minimize inter-rater variability. Agreement between the two methods was assessed using Bland-Altman analysis.

Results: Participants had a mean age of 53.5 years. Mean arm volume was 1564.4 mL with the circumferential tape-measurement method and 1574.8 mL with LYMPH-V. Bland-Altman analysis showed a mean difference (bias) of –10.4 mL (95% CI: –98.0 to 8.2 mL), with no statistically significant difference between the methods ($p = 0.2614$). The limits of agreement ranged from –111.3 to +90.5 mL, indicating acceptable agreement between the two approaches.

Conclusion: LYMPH-V demonstrated good agreement with the circumferential tape-measurement method for arm-volume assessment in breast cancer survivors at risk of BCRL. By enabling automated, mobile-connected, and potentially repeatable arm-volume monitoring, LYMPH-V may support earlier identification of volume changes compatible with BCRL at a preclinical stage and contribute to home-based follow-up strategies for individuals at risk.

IS IT POSSIBLE TO ENHANCE THE ALLEGED REDUCING PROPERTIES OF MLD?

SLAWOMIR PYSZNIAK - *Diagnostic Center for Lymphatic and Venous Flow Disorders – JCC, Warsaw, Poland*

Objectives: Manual lymphatic drainage (MLD) is widely used and recognized as part of conservative decongestive therapy (CDT). MLD is a demanding therapy whose hypothetical reduction efficiency depends on the skills of the therapist and is extremely difficult to confirm objectively.
Modern diagnostic methods should help objectify the effects of MLD and enable the personalization of this therapy, leading to groundbreaking changes in the MLD technique (MMLD).
The aim of the study was to determine whether personalized MMLD, planned based on fluorescent lymphography, improves its therapeutical efficacy

Material/Method: The assessment of Modified Manual Lymph Drainage (MMLD) effectiveness in comparison to MLD performed according to E. Vodder›s was conducted on a qualified group of 40 patients. All patients were diagnosed with unilateral leg edema, grade 2 according to the ISL, confirmed by a harmonized tonometric pitting test. All qualified patients were randomly divided into two groups of 20. All patients in the study group underwent ICG lymphography (*PDE-GEN3, Hamamatsu, Japan) with lymphomapping. In both groups, 3D body scanning (*BodyLux 3D, ViALUX, Germany) was performed immediately before and after manual drainage to objectively assess limb circumference and volume before and after treatment. The duration of manual therapy was measured for each patient in both groups

Results: The analysis of limb volume before and after manual therapy showed that the group with MMLD achieved a 4-times better reduction of volume, comparing to the the control group with classic MLD. The mean time required to perform MMLD was 2-times shorter comparing to classic MLD.

Conclusion: Thanks to a highly personalized approach based on ICG lymphography, the MMLD shows significantly higher efficacy than classic MLD while significantly shortening the time needed for therapy. ICG lymphography should be considered as an effective tool for personalizing and optimizing CDT.

Bibliography:
1. Imai T., Yamamoto T.: A new indocyanine green fluorescence lymphography protocol for identification of the lymphatic drainage pathway for patients with breast cancer-related lymphedema. BMC Cancer. 2023: 44-50.
2. Yamashita K., Suzuki Y.: New clinical application of indocyanine green in fluorescence-guided laparoscopic lymp-node biopsy in case of ly phoma. BMC Surgery. 2023: 33-38
3. Vodder E.: Manual lymph drainage: A new approach. In A. Smith (Ed.).: Therapeutic massage and bodywork. 2020: 45-67.
4. Foldi M. i wsp.: Foldis textbook of lymphology: For physicians and lymphedema therapists. 2021, 3: 200-220.
5. Suami H, et al.: A new indocyanine green fluorescence lymphography protocol for diagnostic assessment of lower limb lymphoedema. Journal of Plastic, Recon.&Aesthetic Surgery 2022, https://doi.org/10.1016/j.bjps.2022.08.017
6. Suami H , Heydon-White A , Mackie H , Czerniec S , Koelmeyer L , Boyages J . A new indocyanine green fluorescence lymphography protocol for identification of the lymphatic drainage path- way for patients with breast cancer-related lymphoedema. BMC Cancer 2019; 19 :985

ORIGINAL PROTOCOL COVERING QUALIFICATION, PLANNING, AND EVALUATION OF MICROSURGICAL LVA SURGERY, ALONG WITH RECOMMENDATIONS AND POSTOPERATIVE MANAGEMENT IMPROVES THE PROGNOSIS OF MICROSURGICAL TREATMENT OF LYMPHEDEMA

SLAWOMIR PYSZNIAK, PIOTR GIEREJ, MARZANNA T. ZALESKA
Diagnostic Center for Lymphatic and Venous Flow Disorders - JCC, Warsaw, Poland

Objectives: Lymphedema is a progressive disease of lymphatic flow disorder that can cause severe exacerbations and recurrent, dangerous infections. In addition to conservative therapy, surgical treatment options such as lymphatic-venous anastomosis (LVA) are increasingly available. However, choosing the optimal timing for LVA in conjunction with personalized comprehensive decongestive therapy (CDT) and postoperative management remains a significant dilemma. The aim of the study was to assess the impact of the algorithmization of the qualification process, personalization of CDT and the lymphatic-venous mapping process before LVA microsurgery on the results of surgical treatment of the upper extremity lymphedema.

Material/Method: Twenty-five patients with stage I upper extremity lymphedema (ISL staging) who underwent a total of 175 lymphaticovenous anastomosis (LVA) procedures according to the original protocol were monitored and evaluated for 6 months following LVA procedures (PG – protocol group). The comparison group consisted of 25 patients who underwent LVA procedures (a total of 90 anastomoses) at other centers no earlier than 6 months before the evaluation date (CG – comparison group). The primary outcome parameters were the anastomosis survival rate in both groups at 6 months postoperatively and the lymphedema volume reduction rate in both groups at this time.

Results: In the PG group, a significantly higher rate of anastomosis survival (98.85%) was observed than in the CG group (30%), and a significantly higher reduction rate was observed, which was 30% in the PG group and 10% in the CG group at 6 months after LVA.

Conclusion: Algorithmization (original protocol) of the qualification process, personalization, planning with mapping and postoperative management in the microsurgical treatment of stage I lymphedema of the upper extremities results in better treatment outcomes. The described observations highlight the potential benefits of fully personalizing the entire process to improve the prognosis of microsurgical treatment of lymphedema

Bibliography:
1. Document C. The diagnosis and treatment of peripheral lymphedema: 2020 consensus document of the international society of lymphology. Lymphology 2020;53:3-19
2. Yamamoto T, Yamamoto N, Hara H, Mihara M, Narushima M, Koshima I. Upper extremity lymphedema index: a simple method for severity evaluation of upper extremity lymphedema. Ann Plast Surg 2013;70:47-9.
3. de Sire A, Losco L, Lippi L, et al. Surgical treatment and rehabilitation strategies for upper and lower extremity lymphedema: a comprehensive review. Medicina 2022;58:954.
4. Maegawa J, Yabuki Y, Tomoeda H, Hosono M, Yasumura K. Outcomes of lymphaticovenous side-to-end anastomosis in peripheral lymphed ma. J Vasc Surg 2012;55:753-60
5. Koshima I, Kawada S, Moriguchi T, Kajiwara Y. Ultrastructural observations of lymphatic vessels in lymphedema in human extremities. Plast Reconstr Surg 1996;97:397-405; discussion 406
6. Seki Y, Kajikawa A, Yamamoto T, Takeuchi T, Terashima T, Kurogi N. The dynamic-lymphaticovenular anastomosis method for breast cancer treatment-related lymphedema: creation of functional lymphaticovenular anastomoses with use of preoperative dynamic ultrasonography. J Plast Reconstr Aesthet Surg 2019;72:62-70

ABTRACT – ORAL COMMUNICACION:
48th Congress of European Society of Lymphology | ESL 2026

Room H004

8:30 – 9:10 H. ORAL COMMUNICATIONS

CHAIRS: MARINA CESTARI, BLANCA PARDO SIEVERS, HELENA MARTÍNEZ-RAMOS.

A VALIDATED METHOD TO ASSESS UPPER LIMB LYMPHEDEMA MEASURING SKIN THICKNESS WITH ULTRASOUND

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Objectives: Evaluation of the severity and progression of lymphedema is challenging and there is no universal, simple and accurate established method. We propose the use of ultra-high frequency ultrasound (UHFUS) to measure skin thickness to assess lymphedema.

Material/Method: Skin thickness was measured twice at 8 points in the upper limbs of 40 women using UHFUS (20 with unilateral lymphedema secondary to breast cancer and 20 healthy volunteers). Measurements were statistically compared with limb circumferences. A ROC curve analysis and a multivariate linear regression were also performed.

Results: Differences were found in the skin thickness between the two limbs of lymphedema patients (p).

Conclusion: measuring skin thickness using UHFUS is a reproducible, reliable, objective and fast method to assess lymphedema, even in initial stages, and to identify the most affected areas in upper limbs. In addition, it gives more information than limb circumferences, especially at the hand, and it would be potentially useful for the follow-up.

ALTERATIONS OF LYMPHATIC DRAINAGE IN UPPER LIMB LYMPHEDEMA OBSERVED IN ICG LYMPHOGRAPHY COMPARED WITH TISSUE CHANGES IN DIFFERENT STAGES

MARZANNA TERESA ZALESKA, NATALIA E. KRZESNIAK
Mossakowski Medical Research Institute, Dept. of Applied Physiology, Polish Academy of Sciences, Warsaw, Polska

Objectives: Upper limb lymphedema occurs in 50-60% of patients undergoing treatment for breast cancer. Procedures such as surgery, lymphadenectomy, and radiation cause permanent changes in lymph drainage in the affected arm. Alterations in lymph drainage and the accumulation of edema fluid can be observed as early as a few months after surgery using ICG. The accumulation of fluid leads to hyperkeratosis, fibrosis, and chronic inflammatory conditions. As a result, the skin and subcutaneous tissues become hard, stiff, and heavy.

Aim: To analyze changes in lymph drainage in the ICG images of upper-limb lymphedema at different stages and compare them with the tissue changes.

Material/Method: We analyzed ICG in 113 patients with upper-limb lymphedema after breast cancer treatment at stages 0-III. In our analysis, we focused on the presence of LVs, dermal backflow across the 7 regions (hand, lower and upper forearm, lower and upper arm, armpit, and chest), and, eventually, the presence of LNs. Additionally, we measured skin water concentration and the stiffness of the skin and subcutaneous tissue, and analyzed how these parameters changed across the different stages.

Results: We investigated 7 patients with clinical stage 0, 36 with stage I, 51 with stage II, and 19 with stage III. In stage 0, dilated lymphatic vessels are present throughout the limb, with dermal backflow mostly in the upper arm and armpit area. In stage I, dermal backflow in the hand was detected in 47% of patients (17). In most patients, we observed both LVs and DB across all analyzed regions. In stage II, we still observed LVs and DB in some patients; DB dominated across the limb, with 61% of patients having DB in the hand. In stage III-dominated DB, only 5% of patients had LV observed in the hand and upper arm. The values of skin water concentration, skin, and subcutaneous tissue stiffness measured in the hand, middle forearm, and middle arm vary across the stages, with the highest values in stage III (skin water concentration in the middle forearm: 57.1%, skin stiffness 0.13 N, and subcutaneous tissue stiffness 0.77 gx103/cm2 compared with 36.6%,0.07N, and 0.4 gx103/cm2in stage 0, respectively).

Conclusion: The number of LVs decreased systematically with staging, and the areas covered by DB increased. All measured parameters increased with lymphedema stage. The most pronounced changes were observed in skin water concentration and subcutaneous tissue stiffness.

Bibliography:

1. Martínez-Jaimez P, Verdú M.A., Forero C.G., et al. Breast cancer- related lymphoedema: Risk factors and prediction model. J Adv Nurs 2022; 78(3):765-775. doi: 10.1111/jan.15005.
2. Yamamoto T, Yamamoto N, Doi K, et all. Indocyanine Green-Enhanced Lymphography for Upper Extremity Lymphedema: A Novel Severity Staging System Using Dermal Backflow Patterns. Plastic and Reconstructive Surgery 2011; 128(4);941-947. DOI: 10.1097/PRS.0b013e3182268cd9
3. Suami H, Koelmeyera L, Mackie H, et all. Patterns of lymphatic drainage after axillary node dissection impact arm lymphoedema severity: A review of animal and clinical imaging studies. Surg Oncol.2018; 27(4):743-750. doi: 10.1016/j.suronc.2018.10.006. Epub 2018 Oct 12.

ESTABLISHING QUANTITATIVE DIAGNOSTIC CRITERIA FOR BREAST LYMPHEDEMA VIA B-MODE ULTRASONOGRAPHY AND ELASTOGRAPHY: A SYSTEMATIC REVIEW AND PRELIMINARY SYNTHESIS

URSZULA JANIUK, LUCA IMPROTA - *Sant'Andrea University Hospital, Sapienza University of Rome, Rome, Italy*

Objectives: Breast lymphedema (BLE) is an under-recognized complication following breast-conserving therapy that significantly impacts patient quality of life. Currently, its diagnosis remains primarily clinical and lacks standardized, objective benchmarks. This systematic review aims to synthesize current evidence from high-resolution B-mode ultrasound and Shear Wave Elastography (SWE) to propose a quantitative framework for identifying BLE, while specifically addressing the current lack of consensus on breast-specific diagnostic thresholds.

Material/Method: A systematic literature search was conducted in accordance with PRISMA 2020 guidelines across PubMed, Scopus, and Cochrane CENTRAL. The review included studies evaluating dermal thickness and tissue stiffness in patients following oncological treatment. Methodological quality was assessed using QUADAS-2 for diagnostic accuracy and the Newcastle-Ottawa Scale for observational studies. To address the current paucity of breast-specific data, elastographic findings from limb lymphedema were extrapolated to serve as a surrogate model for tissue remodeling. Data extraction focused on comparing absolute measurements and inter-breast ratios, while accounting for heterogeneity in equipment and measurement protocols.

Results: Preliminary synthesis demonstrates that dermal thickness is a robust biomarker for BLE, with an inter-breast difference ≥0.3 mm or absolute thickness >2.1 mm frequently reported as indicative of pathology. In contrast, while breast-specific elastography data remain limited, robust evidence from limb studies suggests that stiffness values are effective for subclinical detection of lymphatic congestion. The analysis identifies the lower mammary quadrants as the most sensitive sites for early detection. A clear correlation was observed between the extent of surgery and the severity of tissue remodeling, although inter-platform variability necessitates a cautious interpretation of absolute values.

Conclusion: Quantitative ultrasonography and elastography provide highly reproducible biomarkers that could bridge the diagnostic gap in BLE. While B-mode ultrasound offers established morphological benchmarks, this review identifies a significant research gap regarding standardized elastographic protocols specifically for breast tissue. We propose an integrated diagnostic framework based on objective inter-breast ratios to facilitate early clinical intervention and improve long-term monitoring for patients at risk of breast lymphedema.

Bibliography:

Kerrigan AM, et al. Breast Lymphedema Following Breast-Conserving Therapy: Dermal Thickness Measurements Using Ultrasound. Lymphat Res Biol. 2022.
Landoni V, et al. Skin thickness as a surrogate marker of breast fibrosis after hypofractionated radiotherapy. Int J Radiat Oncol Biol Phys. 2013.
Dylke ES, et al. Reliability and diagnostic thresholds for ultrasound measurements of dermal thickness in breast lymphedema. Lymphat Res Biol. 2018;16(3):258–62.
Kilbreath SL, et al. Ultrasound: assessment of breast dermal thickness: Reliability and responsiveness to change. Ultrasound Med Biol. 2022.
Chan LW, et al. Diagnostic accuracy of shear wave elastography in the evaluation of lymphedema. J Magn Reson Imaging. 2018.
olat AK, et al. Shear wave elastography for the diagnosis of subclinical lymphedema. Lymphology. 2020.
Chen D, et al. Quantitative assessment of skin toxicity during breast radiotherapy using ultrasound and shear wave elastography. Radiat Oncol. 2023.
Sanli DE, Yildirim N. Normal values of breast parenchyma stiffness measured by shear wave elastography. Eur J Radiol. 2022.
Verbelen H, et al. Development and clinimetric properties of the Dutch Breast Edema Questionnaire (BrEQ-Dutch version). Qual Life Res. 2020;29(2):569–78.
Whiting PF, et al. QUADAS-2: a revised tool for the quality assessment of diagnostic accuracy studies. Ann Intern Med. 2011.

MODIFIED LYMPHOSCINTIGRAPHY REFINES THE DIAGNOSIS OF DISTAL PRIMARY LYMPHATIC INSUFFICIENCY OF THE LOWER LIMB

WALD M.[1, 2]

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Introduction: Standard lymphoscintigraphy of the superficial lymphatic system of the lower limb is performed by injecting a radiopharmaceutical into the first interdigital space of the foot. In patients with primary lymphedema limited only to the foot and toes, this protocol may result in non-visualization of lymphatic collectors in the lower limb and may suggest severe lymphatic insufficiency of the entire limb, even though the lower leg and thigh are not clinically affected. This discrepancy may lead to overestimation of the extent of the disease and to the indication of unnecessarily extensive conservative or surgical treatment.

Objective: To assess whether a modified lymphoscintigraphic protocol, with an additional radiopharmaceutical injection above the medial malleolus into clinically unaffected tissue, allows a more accurate determination of the anatomical and functional extent of primary lymphatic insufficiency in patients with distal lymphedema of the lower limb.

Methods: Fourteen patients, comprising a total of 16 affected lower limbs, with primary swelling limited to the foot and toes underwent standard lymphoscintigraphy. In cases where a discrepancy was identified between severe lymphoscintigraphic findings and the absence of clinical involvement of the lower leg and thigh, modified lymphoscintigraphy was subsequently performed after an interval of at least 48 hours. The second dose of the radiopharmaceutical was administered subdermally above the medial malleolus, and imaging was performed at rest and after walking.

Results: Standard lymphoscintigraphy demonstrated severe insufficiency of the superficial lymphatic system in all examined affected limbs, with absent or markedly limited visualization of lymphatic collectors and inguinal lymph nodes. In contrast, modified lymphoscintigraphy revealed nearly normal morphology of the superficial lymphatic vessels and visualization of the inguinal lymph nodes in 11 patients, corresponding to 13 affected limbs. In only three patients, the modified radiopharmaceutical application confirmed severe lymphatic insufficiency, as observed with the standard radiopharmaceutical application.

Conclusion: In distal primary lymphedema limited to the foot and toes, pathological findings on standard lymphoscintigraphy do not necessarily indicate generalized lymphatic insufficiency of the entire lower limb. Modified lymphoscintigraphy can refine the diagnosis, distinguish localized distal lymphatic dysfunction from more extensive involvement of the lymphatic system, and support more targeted treatment planning. In particular, it may allow compression therapy to be limited to the clinically affected region and help prevent unnecessarily extensive compression or premature surgical indication.

Keywords: primary lymphedema; lymphatic insufficiency; lymphoscintigraphy; modified lymphoscintigraphy; lower limb; distal lymphedema; compression therapy.

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Saturday, September 26th, 2026

Assembly Hall

08:00 – 08:40 H. ORAL COMMUNICATIONS

CHAIRS: ALBERTO MACCIÒ, MARTA FERNÁNDEZ GONZÁLEZ.

A PRELIMINARY STUDY ON THE IMMEDIATE EFFECTS OF MULTI-LAYER BANDAGING ON BALANCE, MOBILITY, QUALITY OF LIFE AND RISK OF FALLING IN PATIENTS WITH LOWER LIMB LYMPHOEDEMA: A PRE AND POST INTERVENTION ANALYSIS

TACCONI CLAUDIA, ROMALDINI FABIO, VETRANO MARIO, MICHELINI SERENA, MICHELINI SANDRO
San Giuseppe Hospital Marino, S. Andrea Hospital La Sapienza University, San Giovanni Battista Hospital, Rome, Italy

Objectives: The aim of this study was to assess the immediate effects of multi-layer compression bandaging on static and dynamic balance, functional mobility, subjective perception of stability, and the risk of falling in patients with lower limb lymphoedema. In particular, the study analysed functional changes before and after the application of the bandage, also considering the influence of clinical staging, the side affected by lymphoedema, and the extent of the bandage.

Material/Method: A prospective pre-post observational study was conducted at the Vascular Rehabilitation Department of San Giuseppe Hospital in Marino between May and December 2025. The sample consisted of 38 patients with lower limb lymphoedema, aged between 27 and 88 years, with primary or secondary, unilateral or bilateral forms of the condition.

Participants underwent a functional assessment under two experimental conditions: without bandaging and immediately after the application of multi-layer compression bandaging. The tools used included the Timed Up and Go (TUG), the Tinetti Scale (POMA), the Berg Balance Scale (BBS), the Activities-specific Balance Confidence Scale (ABC) and the Lower Extremity Functional Scale (LEFS), in order to assess mobility, balance, perceived safety and lower limb function.

Results: The results showed that multi-layer compression bandaging leads to immediate changes in balance and functional performance. In several patients, an improvement in the perception of stability and proprioceptive support was observed, associated with greater subjective confidence during daily activities. However, in subjects with more severe lymphoedema or with bandages extending to the groin, reductions in fluidity of movement, slower walking speed and greater difficulty in changing direction and performing dynamic activities were observed.

Subgroup analysis revealed differences related to the lateralisation of the lymphoedema, the extent of the bandage and the clinical severity of the condition, suggesting that the functional effects of compression therapy are strongly influenced by the individual characteristics of the patient.

Conclusion: Multi-layer compression bandaging produces immediate effects on balance and mobility in patients with lower limb lymphoedema, with responses varying according to individual clinical characteristics. The results highlight the importance of personalising compression therapy and incorporating fall risk assessment into rehabilitation protocols.

The study supports the value of a multidisciplinary approach and proposes the development of a specific predictive tool for fall risk in lower limb lymphoedema, with the aim of improving patient safety, therapeutic efficacy and quality of life.

HEAD AND NECK LYMPHEDEMA AFTER RADIOTHERAPY - PREVALENCE, CHANGES AND ASSOCIATED FACTORS - A PROSPECTIVE OBSERVATIONAL COHORT STUDY

AGNETA HAGREN, JOHANNA SJÖVALL, CHRISTINA BROGÅRDH, KARIN JOHANSSON, EVA EKVALL HANSSON
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Objectives: This study aimed to determine (i) the prevalence of external head and neck lymphedema, (ii) changes in head and neck lymphedema over a nine-month period post-treatment, and (iii) factors associated with head and neck lymphedema among patients with oropharyngeal cancer treated with (chemo)radiotherapy.

Material/Method: Fifty patients were recruited. Head and neck lymphedema (HNL) was assessed with a lymph scanner in seven facial points, and with a measuring tape at three levels, before treatment, and three and nine months post-treatment. Paired sample t-test was used to calculate changes in HNL and logistic regression analysis identified factors associated with HNL, including age, gender, BMI, physical activity, addition of chemotherapy and radiation dose.

Results: At three months post-treatment, 80 % of patients had HNL, which decreased to 69 % nine months post-treatment. The submental point was the most common location for HNL and showed the greatest change over the nine-month period. Differences in circumferential measurements were small. Low physical activity increased the odds of developing HNL ($p = 0.011$).

Conclusion: HNL is a common side effect after (chemo)radiotherapy treatment. The changes in HNL at the submental point seem to be greatest while the changes in neck circumferential are small. Since a low level of physical activity increased the risk of developing HNL, it may be important to encourage physical activity in this population.

Bibliography: Some of the references used in the article are listed below:
Hagren A, Brogårdh C, Johansson K, Sjövall J, Ekvall Hansson E. Test-Retest Reliability of Local Tissue Water and Circumference Measurements in the Head and Neck Area of Healthy Women and Men. Lymphat Res Biol. 2023 Aug;21(4):381-387. doi: 10.1089/lrb.2022.0081. S.H. Ridner, et al. A prospective Study of the Lymphedema and Fibrosis Continuum in patients with Head and Neck Cancer. Lymphat. Res. Biol., 14 (4) (2016), pp. 198-205
A. Purcell, et al. Measuring head and neck lymphedema: the "ALOHA" trial Head Neck, 38 (1) (2016), pp. 79-84
J. Deng, et al. Prevalence of Secondary Lymphedema in patients with Head and Neck Cancer J. Pain Symptom Manage., 43 (2) (2012), pp. 244-252
C. Jeans, et al. A prospective, Longitudinal and Exploratory Study of Head and Neck Lymphoedema and Dysphagia following Chemoradiotherapy for Head and Neck Cancer. Dysphagia, 38 (4) (2023), pp. 1059-1071
S. Tribius, et al.. Prognostic factors for lymphedema in patients with locally advanced head and neck cancer after combined radio(chemo)therapy-results of a longitudinal study. Oral Oncol., 109 (2020), Article 104856

THE EFFECT OF BOSU BALL BALANCE EXERCISES ADDED TO COMPLETE DECONGESTIVE THERAPY ON STATIC AND DYNAMIC BALANCE IN BREAST CANCER-RELATED LYMPHEDEMA

ESRA KARAKÖSELI YILDIZ, OYA TOPUZ, HAKAN ALKAN, AYŞE SARSAN
Pamukkale University Medicine Faculty, Department of Physical Medicine and Rehabilitation, Denizli, Turkey

Objectives: Breast cancer-related lymphedema (BCRL) occurs due to the accumulation of fluid in the interstitial tissue following lymphatic system damage caused by surgery, radiation therapy, or tumor-induced neolymphangiogenesis (1). BCRL negatively affects balance (2–5), and women with BCRL have a higher risk of falls and greater fear of movement compared to healthy controls (4). To date, no studies have investigated the effects of BOSU ball exercises on balance in patients with BCRL. This study aimed to investigate the effects of BOSU ball balance exercises adding to complex decongestive therapy (CDT) on static and dynamic balance in patients with BCRL.

Material/Method: Forty patients with unilateral BCRL, diagnosed according to the 2020 International Society of Lymphology criteria, were recruited from Pamukkale University Hospital and randomized into two groups. Both groups received 15 treatment sessions over 3 weeks, 5 days per week. The intervention group received CDT-including manual lymphatic drainage (MLD), multilayer bandaging, skin and nail care, and exercise therapy-plus BOSU ball balance exercises, whereas the control group received CDT only. One patient from each group dropped out due to cancer recurrence. Demographic and clinical data were recorded. Arm circumference and volume, static and dynamic balance, Falls Efficacy Scale (FES), Tampa Scale for Kinesiophobia (TSK), Fullerton Advanced Balance Scale (FAB), Timed Up and Go Test (TUG), Upper Limb Lymphedema-27(ULL-27) Quality of Life Questionnaire and Hospital Anxiety and Depression Scale (HADS) scores were assessed before and after treatment. Balance parameters were measured using the TecnoBody Prokin 252 system.

Results: Thirty-eight patients (mean age 56.21 ± 7.30 years) completed the study. No significant differences were found between the groups in sociodemographic or clinical characteristics. Both groups showed improvements in upper extremity circumference and volume, FES, FAB, the global score and all subparameters of ULL-27, and the anxiety subscale of HADS. The intervention group improved in Tecnobody measurements (forward–backward standard deviation and average forward–backward speed with eyes open, mediolateral standard deviation and ellipse area with eyes closed, stability index, average track error), TSK, and the depression subscale of HADS. Compared with the control group, the intervention group demonstrated significantly greater improvements in forward–backward standard deviation and average forward–backward speed, stability index, TSK, FAB.

Conclusion: BOSU ball balance exercises added to CDT improved static and dynamic balance and reduced kinesiophobia in patients with BCRL. İmproving balance may help reduce functional limitations and fear of movement in these patients.

Bibliography:
1. Mortimer P. Arm lymphoedema after breast cancer. Lancet Oncol 2013;14:423-442.
2. Angin S, Karadibak D, Yavuzşen T, Demirbüken I. Unilateral upper extremity lymphedema deteriorates the postural stability in breast cancer survivors. Contemp Oncol (Pozn) 2014;18(4):279-84.
3. Başar S, Bakar Y, Keser İ, Kaba H, Güzel NA, Çinar Özdemir Ö, Düzgün İ. Does lymphedema affect the postural stability in women after breast cancer? Top Geriatr Rehabil 2012;28(4):287–294
4. Altas EU, Demirdal ÜS. The effects of postmastectomy lymphedema on balance, Kinesiophobia and fear of falling, Journal of Community Health Nursing 2021;38:2,130-138.
5. Karasimav O, Borman P, Dalyan M, Yalcin E, Eliuz ZB, Koc SS, Turhan S. Static and Dynamic Imbalance in Patients with Breast Cancer-Related Lymphedema. Lymphat Res Biol 2023;21(6):601-607.

IMPACT OF A SUPERVISED EXERCISE PROGRAM IN PATIENTS WITH CANCER-RELATED LYMPHEDEMA: FUNCTIONAL OUTCOMES, SAFETY PERCEPTION, AND 6-MONTH ADHERENCE

AZUSENA ESTEFANIA RODRÍGUEZ GARCÍA, M PILAR CRESPO COBO, M SUSANA GIL HERNÁNDEZ, JOSÉ ANTONIO DÍAZ MACÍAS - *Hospital General Universitario Gregorio Marañon, Madrid, España*

Objectives: Lymphedema is a condition that impacts the functionality and quality of life of cancer survivors. Traditionally, limiting beliefs among both patients and professionals regarding the risks of physical exercise have persisted. This study evaluates the impact of a supervised program on physical capacity and emotional well-being, analyzing whether professional supervision eliminates the fear of exercise and ensures long-term adherence.

Material/Method: Prospective study with 60 patients (mean age 61.7 ± 7.8 years; BMI 28.09 ± 2.2 kg/m²).

Sample: 53 patients with upper-limb lymphedema (breast cancer) and 7 with lower-limb lymphedema (gynecological cancer).

Intervention: 8-week supervised combined exercise program (strength and aerobic) led by a physical therapist. Assessment: Pre- and post-program measurements included the 6-minute walk test (6MWT); handgrip dynamometry and 30-sec sit-to-stand test; and the EORTC QLQ-C30, BFI (fatigue), and HADS (anxiety/depression) scales. Semi-structured interviews on safety perception and a 6-month adherence follow-up were conducted.

Results: At baseline, patients showed good aerobic capacity (508.7 ± 78.7 m), but specific muscular deficits were detected: 23 patients exhibited a strength asymmetry >15% in the affected upper limb, 5 lower-limb patients showed severe impairment in the sit-to-stand test, and another 23 patients from the total sample were within a functional range at the lower limit for their age group (baseline mean 17.8 ± 5.2).

Post-intervention, significant improvements were observed:

Functional capacity: 6MWT increased to 544 ± 68.1 m and sit-to-stand repetitions to 20.4 ± 5.3
Strength recovery: Patients with significant asymmetry in dynamometry decreased from 23 to 14. Regarding lower-limb strength (sit-to-stand test), of the 28 patients with reduced baseline levels, most progressed to «good» or «excellent» levels; only 3 remained in a low functional state, although showing improvement from baseline.

Quality of Life: Significant improvements in health perception, fatigue, and depression, while anxiety levels remained stable.

Qualitatively, 100% of participants reported improved self-efficacy and, most importantly, the disappearance of the fear of exercising. At 6 months, 75% (n=45) of the sample remained active, with 58.3% strictly meeting international strength exercise guidelines regarding intensity and frequency.

Conclusion: A supervised program not only effectively corrects strength deficits and asymmetries but also serves as a key tool to eliminate the fear of physical exercise. Professional supervision ensures a safe transition toward self-management, achieving high adherence and comprehensive improvement in quality of life.

Bibliography: Singh, Ben, et al. "Systematic Review and Meta-Analysis of the Effects of Exercise for Those with Cancer-Related Lymphedema." Archives of Physical Medicine and Rehabilitation, vol. 97, no. 2, Feb. 2016, pp. 302-315.e13, https://doi.org/10.1016/j.apmr.2015.09.012.

08:40 – 09:00 H. KEYNOTE LECTURE

PIONEERING PATHS: THE FOUNDATIONAL LEGACY OF DR.E. FÖLDI IN LYMPHOLOGY
CDT: THE CORNERSTONE OF MODERN LYMPHOEDEMA CARE

DR. ETELKA FÖLDI

SESSION 5: SURGERY

CHAIRS: FRANCESCO BOCCARDO, GURUSAMI MANOKARAN, JOE HARFOUCHE.

PATHOPHYSIOLOGICAL BASES OF THE SURGICAL TREATMENT OF LYMPHATIC DISEASES

FRANCESCO BOCCARDO, MD, PHD
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Objective: The modern surgical management of lymphatic diseases is increasingly based on a pathophysiological understanding of lymphatic dysfunction, tissue remodeling, and disease progression. Microsurgical and reductive procedures should not be considered isolated technical interventions, but rather targeted therapeutic strategies tailored to the specific stage and biological characteristics of lymphatic disease. The aim of this presentation is to review the pathophysiological rationale underlying current surgical approaches for lymphedema and related lymphatic disorders.

Material/Method: A narrative and clinically oriented review of the pathophysiological mechanisms involved in primary and secondary lymphatic diseases was performed, integrating current evidence and the authors' surgical experience in lymphatic microsurgery. Particular attention was focused on the relationship between lymphatic transport impairment, inflammatory and adipose tissue remodeling, fibrosis, recurrent infections, and progressive tissue degeneration. Surgical indications and treatment algorithms for lymphaticovenous anastomosis (LVA), vascularized lymph node transfer (VLNT), liposuction, and hybrid surgical approaches were analyzed according to disease stage and lymphatic functional reserve.

Results: Early-stage lymphatic disease is predominantly characterized by functional lymphatic insufficiency with residual patent lymphatic vessels, making lymphaticovenous anastomosis (LVA) the most physiologically appropriate surgical option when performed before irreversible fibrosis develops. LVA directly restores lymphatic drainage through microsurgical lymphatic-venous shunts and is based on a clear pathophysiological rationale supported by functional lymphatic imaging. In contrast, vascularized lymph node transfer (VLNT) remains characterized by a controversial mechanism of action. The procedure does not include lymphatic anastomoses but only vascular anastomoses of the transferred flap, while lymph nodes are harvested from healthy donor sites with a potential risk of donor-site lymphatic complications, including secondary lymphedema. Furthermore, clinical improvement after VLNT is often delayed for several months, with initial results commonly observed after at least 6 months. Chronic lymphostasis in advanced disease induces adipose tissue hypertrophy, inflammation, fibrosis, and immune dysregulation, requiring individualized integration of derivative procedures and reductive approaches such as liposuction. The integration of imaging techniques, particularly indocyanine green lymphography and lymphoscintigraphy, allows pathophysiology-driven surgical planning based on lymphatic anatomy, vessel functionality, and tissue composition.

Conclusion: The surgical treatment of lymphatic diseases should be guided by the underlying pathophysiological mechanisms rather than by a purely anatomical or symptomatic approach. Lymphaticovenous anastomosis currently represents the procedure most closely aligned with lymphological principles, as it directly restores lymphatic drainage through functional bypasses. Conversely, the role of vascularized lymph node transfer remains controversial because of its uncertain mechanism of action, delayed clinical response, and potential donor-site morbidity. Understanding the interaction between lymphatic dysfunction, inflammation, adipose deposition, and fibrosis is essential for selecting the appropriate surgical strategy and timing. A pathophysiology-based approach may improve patient selection, optimize outcomes, and contribute to more rational and standardized treatment algorithms in lymphatic surgery.

Keywords: Lymphedema; Lymphatic surgery; Lymphaticovenous anastomosis; Vascularized lymph node transfer; Pathophysiology; Microsurgery.

PERI-OPERATIVE COMPLEX PHYSICAL THERAPY IN LYMPHATICOVENOUS ANASTOMOSIS: SURVEY FINDINGS AND UPDATED EVIDENCE

NELE ADRIAENSSENS

Background: Lymphaticovenous anastomosis (LVA) is increasingly used for peripheral lymphedema, but surgery does not replace conservative care; rather, both must work together in a multidisciplinary pathway. As surgical activity expands, peri-operative complex physical therapy/ complete decongestive therapy (CDT) deserves greater attention as a necessary team-based component of care.

Methods: We summarised our 2018 international survey of 12 expert centres and updated it with post-2019 evidence and consensus documents on surgical lymphedema care, rehabilitation, and postoperative management. The survey assessed manual lymph drainage (MLD), compression, exercise, skin care, and immobilisation around LVA and lymph node transfer (LNT).

Results: In the survey, preoperative MLD was used in 83% of LVA and 89% of LNT patients, compression bandaging in 64% and 80%, compression sleeves in 75% and 90%, exercise therapy in 83% and 78%, and skin care advice in 91% of cases. Postoperatively, MLD remained common (58% after LVA; 70% after LNT), compression was reintroduced progressively, and exercise was usually restarted after 3 to 4 weeks. These patterns align with the International Society of Lymphology consensus, which continues to position CDT as the foundation of lymphedema management. They also match the 2024 expert-consensus on lymphedema surgeries, which explicitly includes candidacy, prehabilitation, and postoperative care, and the 2024 expert-consensus on postoperative care, which states that surgical treatment is not a cure and that compression therapy, MLD, and CDT in general remain essential after surgery. A 2023 systematic review found major heterogeneity in peri-microsurgical rehabilitation and concluded that standardized guidelines are still needed to bridge the care gap between surgeons and physical therapists. More recent literature supports this integrated approach: perioperative reduction treatment after LVA improved edema reduction, and a 2024 randomized interim analysis reported better physical and mental quality-of-life domains after LVA, with reduced compression use in some patients. Our 2026 prospective cohort likewise supports combined surgical treatment pathways and reinforces the need for coordinated rehabilitation.

Conclusion: As lymphedema surgery becomes more widely applied, structured collaboration between surgeons and lymphedema therapists becomes even more important. Future research should define optimal peri-operative CDT timing, dose, and content, and quantify the additive and synergistic effects of combined surgical-rehabilitation pathways.

References

1. Adriaenssens, N. and Vandyck, E. (2018) ‘Complex decongestive therapy in the pre-, peri- and postoperative setting of reconstructive microsurgery’, in Harder, Y., Hirche, C., Seidenstücker, K. and Hamdi, M. (eds.) Modern Surgical Management of Chronic Lymphedema. New York and Stuttgart: Thieme Publishers.
2. Executive Committee of the International Society of Lymphology (2023) ‘The diagnosis and treatment of peripheral lymphedema: 2023 consensus document of the International Society of Lymphology’, Lymphology, 56(4), pp. 133–151.
3. Sacks, J., Riley, B., Doubblestein, D., et al. (2024) ‘Expert-consensus on lymphedema surgeries: candidacy, prehabilitation, and postoperative care’, Medical Oncology, 41, 266. doi:10.1007/s12032-024-02449-8.
4. Flores, A.M., Fu, M.R., Bock, K.J., Campione, E., Francis, K., Kellerman, C., Norris, T.L. and Tylka, S. (2024) ‘Post-operative care for patients following surgical treatment of lymphedema’, Medical Oncology, 41(11), 296. doi:10.1007/s12032-024-02420-7.
5. Doubblestein, D., Campione, E., Hunley, J. and Schaverien, M. (2023) ‘Pre- and Post-Microsurgical Rehabilitation Interventions and Outcomes on Breast Cancer-Related Lymphedema: a Systematic Review’, Current Physical Medicine and Rehabilitation Reports, 11, pp. 1031–1046. doi:10.1007/s11912-023-01439-9.
6. Onishi F, Tsugu W, Okuda N, Minabe T. (2021) ‘Integration of perioperative reduction treatment with lymphaticovenular anastomosis for the management of lower extremity lymphedema’, Plastic and Aesthetic Research, 8. doi:10.2147/PRS.S315792.
7. Jonis YMJ, Wolfs JAGN, Hummelink S, Tielemans HJP, Keuter XHA, van Kuijk S, Ulrich DJO, van der Hulst RRWJ, Qiu SS. The 6 month interim analysis of a randomized controlled trial assessing the quality of life in patients with breast cancer related lymphedema undergoing lymphaticovenous anastomosis vs. conservative therapy. Sci Rep. 2024 Jan 26;14(1):2238. doi: 10.1038/s41598-024-52489-3. PMID: 38278856; PMCID: PMC10817972.
8. Zeltzer, A.A., Nistor, A., Adriaenssens, N., Deleuze, J., Giunta, G. and Hamdi, M. (2026) ‘Outcomes of lymphovenous anastomoses and vascularized lymph node transplant in the combined surgical treatment of lymphedema: a prospective cohort study’, Plastic and Reconstructive Surgery, 157(1), pp. 163–175. doi:10.1097/PRS.0000000000012326.

RECONSTRUCTIVE LIPOSUCTION FOR LARGE, CHRONIC LYMPHEDEMA: TWENTY-FIVE-YEAR OUTCOMES DEMONSTRATING COMPLETE REDUCTION WITHOUT RECURRENCE

HÅKAN BRORSON MD, PHD; KARIN OHLIN OT; BARBRO SVENSSON PT, LT; MATTIAS HOFFNER MD, PHD; FAROKH COLLANDER FARZANEH ZARDOSHTI MD, PHD

Department of Plastic and Reconstructive Surgery, Skåne University Hospital, Malmö Sweden

Objective: Absent lymph flow and chronic inflammation leads to excess subcutaneous adipose tissue deposition. Chronic non-pitting lymphedema does not respond to conservative treatment or microsurgical procedures because they do not target the adipose tissue. Removing the adipose tissue using liposuction seems thus to be a logic treatment strategy.

Methods and material: Arms: 190 women, mean±SEM age of 62±0.8 years, with a duration of arm swelling of 8.6±0.5 years underwent liposuction. Age at breast cancer operation, interval between breast cancer operation and lymphedema start, and duration of lymphedema were 51±0.8 years, 2.8±0.4 years, and 8.6±0.5 years respectively (Figure1, 2) Legs: 128 patients with a mean age of 49±1.4 years and with a duration of leg swelling of 13±0.9 years underwent liposuction. There were 64 primary (PL) and 64 secondary lymphedemas (SL) following cancer therapy. Age at cancer treatment and interval between cancer treatment and lymphedema start were 2.5±0.7 years and 42±1.7 years respectively. Age at onset of PL was 10 years.

Results: Arms: Preoperative mean excess volume was 1404±52 ml. Postoperative reduction was 104±2.0% at 3 months and 117±2.1% at 1 year, and more than 100% during 28 years' follow-up Figure 1, 2)

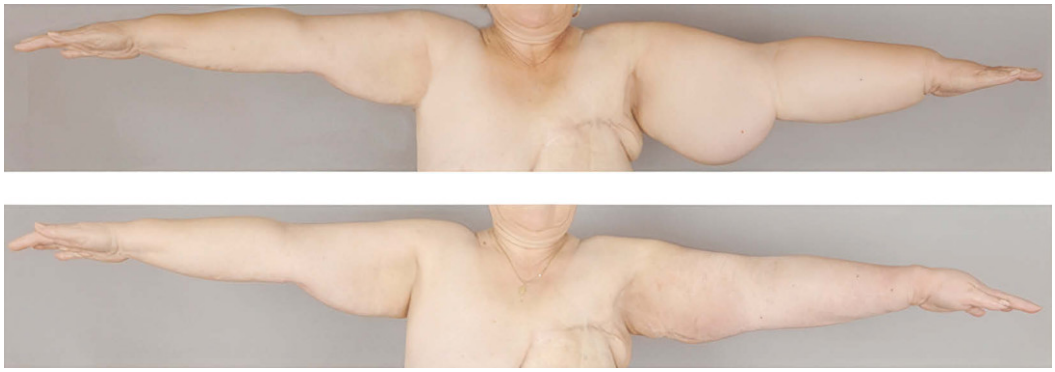


Figure. 1. A 57-years-old woman with a non-pitting secondary lymphedema of 4 235 ml since 5 years following breast cancer treatment. Complete reduction 6 months after liposuction.

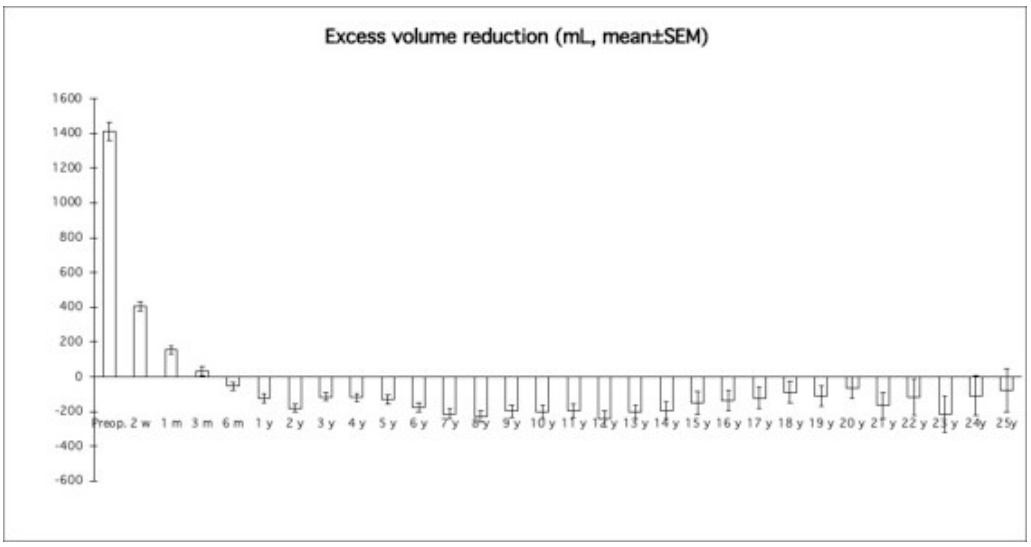


Figure 2. Mean pre- and postoperative excess volume reduction following liposuction of arm lymphedema.

Legs: Preoperative excess volume was 3580±153 ml. Postoperative reduction was 82%±2.3% at 3 months and 101±2.3% at 1 year, and more than 100% during 23 years' follow-up (Figure 3, 4)



Figure 3. A 32-years-old woman with a non-pitting secondary leg lymphedema of 7 070 ml since 12 years following treatment of a synovial sarcoma in the right groin (left). Postoperative result 6 months after liposuction (right).

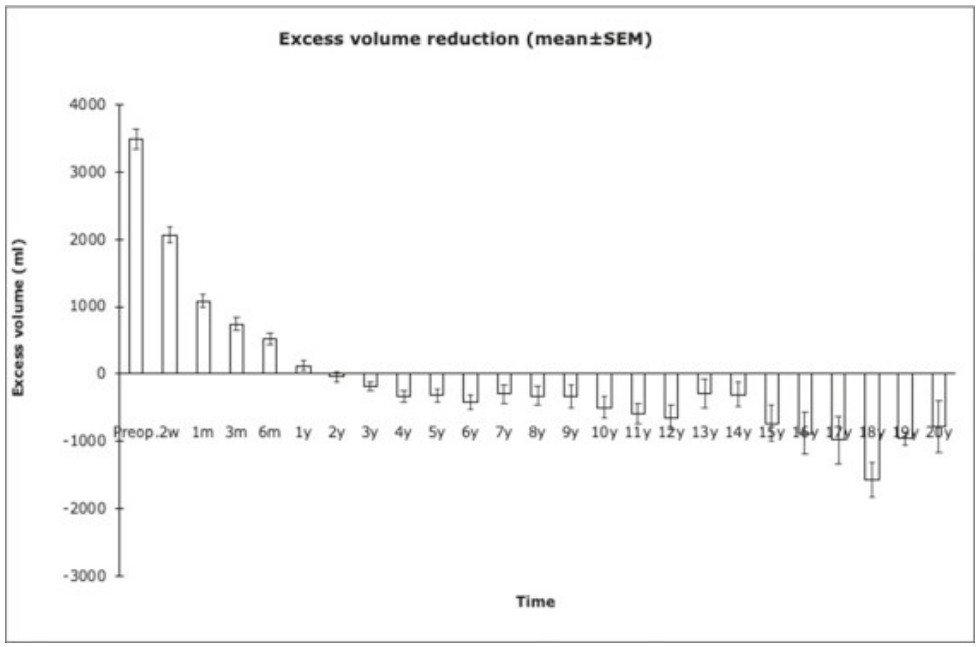


Figure 4. Mean pre- and postoperative excess volume reduction following liposuction of leg lymphedema.

Conclusion: Liposuction is effective for treatment of chronic lymphedema in patients who do not respond to conservative treatment. Removal of the hypertrophied adipose tissue leads to complete reduction. Constant use of compression garments maintains the outcome.

ROLE OF MICROSURGERY IN LYMPHEDEMA MANAGEMENT

PROF. GURUSAMY MANOKARAN, DR. NARAYANAMURTHY SUNDARAMURTHY

Background: Lymphedema is a chronic, progressive disorder that significantly affects limb function, quality of life, and psychosocial well-being. While conservative therapies remain the cornerstone of treatment, advances in microsurgical techniques have transformed the management of selected patients by addressing the underlying lymphatic dysfunction.

Objective: To review the current applications, indications, and outcomes of microsurgical interventions in the comprehensive management of lymphedema.

Methods: This presentation provides an overview of contemporary microsurgical procedures, including lymphaticovenous anastomosis (LVA), vascularized lymph node transfer (VLNT), and emerging physiological techniques. Patient selection, preoperative lymphatic imaging, surgical principles, postoperative rehabilitation, and integration with conservative therapy are discussed based on current evidence and clinical experience.

Results: Microsurgical interventions have demonstrated encouraging outcomes, including reduction in limb volume, decreased incidence of cellulitis, improvement in symptoms, and enhanced quality of life. LVA is particularly beneficial in early-stage disease with functional lymphatics,

whereas VLNT offers promising results in more advanced cases. Optimal outcomes depend on meticulous patient selection, multidisciplinary care, and continued postoperative compression and physiotherapy.

Conclusion: Microsurgery has become an integral component of modern lymphedema management, complementing conservative treatment rather than replacing it. Appropriate patient selection, advanced imaging, and specialized microsurgical expertise enable individualized treatment strategies that improve functional outcomes and long-term quality of life for patients with lymphedema

1973–2026: A LONG SURGICAL ACTIVITY AND CONTINUOUS RESEARCH FOR THE PROGRESS OF CLINICAL LYMPHOLOGY AND LYMPHATIC SURGERY

CORRADINO CAMPISI

The Authors report on their school contributions from the pioneer beginning to the technological advances in lymphatic surgery & microsurgery and in plastic & reconstructive surgery, with related pre-& post-operative procedures and long-term clinical outcomes, underlining above all the use of minimally invasive techniques.

The Authors emphasize the new horizons and the future perspectives for the effective treatment of the lymphatic disorders, with the international partnerships all over the world.

SESSION 6: MISCELLANEOUS

CHAIRS: MARTIN WALD, KARIN JOHANSSON, GIOVANNI MONETTA.

LYMPHEDEMA OF MALE GENITALS: A 360 DEGREES APPROACH

GIOVANNI MONETTA - *San Giovanni Battista Hospital – Rome – Italy | gmoneta@alice.it*

Objective: Primary and secondary lymphoedema involving male genitals, always represent a real challenge due to different aspects.

First of all, locations are rather different among the different cases notwithstanding the limited interested area (scrotum only, penis only, both or half section of them)

Also consistency can create an obstacle for a proper compression, because, for example, a soft oedema could be reduced in few hours but in this case is necessary to renew the bandage to adapt it to the new dimensions, but this is not possible in the majority of cases.

Hard consistency (generally of the scrotum), on the contrary, is an advantage for the permanence of bandage for a longer time, but results are expected not so early.

A real problem is represented in case of penectomy or in case of a real big dimension of the scrotum up to include penis inside, covering it. It is the situation in which bandage, covering all the surface, became wet at the first urination and must be removed.

Social and way of living aspects are also to take into a great consideration. Limitations of working activities, intimate relations with partner, difficulties in finding therapists able on these specific treatments could lead also to psychological diseases.

Material and Methods: Materials of bandage in male genitals are, due to the shapes, for the most part, cohesive, integrated often with short stretch bandage for, i.d., overlapping around hips. Also thin polyurethane is useful to avoid slipping between bandage and skin without creat an excessive volume.

In case of acute DLA, zinc oxide base layer is useful too, with its peculiar action against the phlogosys .

Also in choice of the final garment, customization is fundamental. Great difficulties are represented again by the shape of the area. In the most part of cases most effectiveness tissue is made of tubular knitting, to obtain a passive effect of compression.

Results: Among 31 treated cases, 18 showed an oedema involving scrotum and penis, 7 involved penis and upper pubis, in 6 was located only on scrotum. In 5 patients conditions are worsened by overweight and obesity.

In 15 cases also tigh was proximally bilaterally swollen. This put important conditions to project a garment considering the interaction of the two different needing.

Conclusions: Lymphedema of the male genitals represents a great challenge in all affected patients, not depending on dimensions but on difficulties to apply a compression above all the final one represented by garment.

A social and psychological support sometimes make the difference in results achievement.

LET US NOT WAIT FOR LYMPHOEDEMA. RECOGNIZING LYMPHATIC INSUFFICIENCY BEFORE IRREVERSIBLE DAMAGE OCCURS

WALD M[1, 2], VLASÁK J.[1], KOTLÁŘOVÁ A[1]

[1]*Department of Surgery 2nd Medical Faculty, Charles University Prague, Czech Republic*

[2]*Czech Society of Lymphology*

Background: Lymphoedema is traditionally defined as clinically visible swelling. In itself, however, it does not constitute a diagnosis in the strict sense of the word, because swelling may arise from a wide range of pathophysiological mechanisms that are not necessarily directly related to the lymphatic system. In order to classify swelling as lymphoedema, it is necessary to objectively demonstrate impairment of lymphatic transport, for example by lymphoscintigraphy, ICG lymphography, or other diagnostic methods, and to confirm that the cause of the swelling is lymphatic insufficiency.

If we accept this line of reasoning, we must also acknowledge that by the time clinically evident lymphoedema is present, an important therapeutic window may already have been missed. This window, particularly characteristic of secondary lymphatic insufficiency, lies between the onset of lymphatic insufficiency and its late, or even final, clinical stage: visible lymphoedema.

Lymphatic insufficiency can be understood as a functional failure of lymphatic transport and interstitial clearance that may precede manifest swelling by months or years. Persistent reliance on the term “lymphoedema” and on diagnostic algorithms focused primarily on visible swelling may lead

to delayed diagnosis, under-recognition of subclinical disease, and missed opportunities for preventive or early therapeutic intervention.

Objective: This lecture critically examines the clinical and conceptual limitations of the term "lymphoedema" and argues for a paradigm shift towards a more pathophysiologically accurate and, from the perspective of contemporary medicine, more logical concept: lymphatic insufficiency. It proposes that lymphatic insufficiency should be understood as the primary pathophysiological condition, while lymphoedema should be regarded as one of its late clinical manifestations.

Methods: A narrative review of the clinical literature, staging systems, and diagnostic approaches in lymphology was conducted, supplemented by a conceptual analysis of current terminology and clinical decision-making. Particular attention was paid to the limitations of oedema-based staging and to the potential role of objective diagnostic tools in detecting early lymphatic dysfunction.

Results: Current clinical practice often remains focused on the presence of clinically visible swelling. This approach is insufficient, because lymphatic insufficiency may exist — and in fact does exist — long before swelling becomes clinically apparent. In addition to swelling, lymphatic insufficiency may also manifest through other clinical consequences, including recurrent infections, impaired immune clearance, chronic inflammation, fibrosis, tissue remodelling, and probably also degenerative changes associated with ageing of tissues and organ systems.

The term "lymphoedema" may therefore unintentionally narrow clinical attention to a late-stage symptom rather than to the underlying pathophysiological disorder. A more precise framework based on the concept of "lymphatic insufficiency" could support earlier diagnosis, more accurate staging, and proactive management before irreversible damage to the lymphatic system and tissues occurs.

Conclusion: Swelling is not a disease in itself; it is a clinical sign. Likewise, lymphoedema should not be understood as the primary disease entity, but rather as a late manifestation of lymphatic insufficiency. Initiating treatment only once lymphoedema is clinically evident represents a delayed and reactive intervention.

Contemporary medicine is increasingly focused on identifying and influencing pathological processes before irreversible clinical damage develops. Lymphology should follow the same principle: early detection of lymphatic insufficiency, objective staging of lymphatic dysfunction, and timely intervention aimed at preventing progression to manifest lymphoedema and its complications.

Keywords: lymphatic insufficiency; lymphoedema; early diagnosis; lymphatic dysfunction; interstitial homeostasis; preventive lymphology; lymphatic system staging.

SUMMARY OF 44 YEARS EXPERIENCE OF UNIT OF TREATMENT OF EDEMA: NECESSARY OR NOT? REAL JUSTIFICATION

ALEXANDRE PISSAS

PRIMARY AND PAEDIATRIC LYMPHOEDEMA AT VASCERN: WHEN HEALTHCARE PROFESSIONALS AND EPAG ADVOCATES WORK AS A TEAM

MANUELA LOURENÇO MARQUES

European Patient Advocate, Co-Chair of the VASCERN European Patient Advocacy Group (ePAG) and Lead of the PPL Patient Working Group. Chair and founder of andLINFA – Associação Nacional de Doentes Linfáticos, Portugal.

Introduction: VASCERN is the European Reference Network (ERN) for Rare Multisystemic Vascular Diseases, established by the European Commission to connect highly specialised healthcare providers and patient representatives across Europe. Its mission is to improve the diagnosis, treatment and care of people living with rare vascular diseases by promoting multidisciplinary collaboration, sharing expertise and developing best clinical practices. Within VASCERN, the Paediatric and Primary Lymphoedema (PPL) Working Group brings together healthcare professionals (HCPs) and European Patient Advocacy Group (ePAG) Advocates to ensure that patient perspectives are integrated into every stage of resource development and dissemination. (vascern.eu)

Aim: Rare disease patients and carers often struggle to access reliable information, and when available, medical terminology can be difficult to understand. Together with HCPs, the PPL ePAG aimed to transform evidence-based recommendations into clear, practical and engaging educational resources that support children, parents, carers and healthcare professionals, while facilitating communication and shared decision-making.

Methods: The educational materials were co-designed by ePAG Advocates and HCPs within the PPL Working Group and validated by the entire multidisciplinary team. Patient representatives contributed their lived experience to ensure that the resources addressed real-life needs while maintaining scientific accuracy. The materials are being translated into several European languages through the collaboration of the wider ePAG community and national patient organisations, increasing accessibility and dissemination across Europe.

Results: This partnership has produced a range of patient-centred educational resources, including the Do's and Don'ts factsheets, the Pills of Knowledge, video series and webinars covering key aspects of primary lymphoedema management. These resources present complex clinical information in an accessible format, empowering patients and carers while supporting healthcare professionals in delivering consistent, evidence-based messages.

Conclusion: The collaboration between healthcare professionals and ePAG Advocates within the VASCERN PPL Working Group demonstrates the value of combining clinical expertise with lived experience. Co-creation has enabled the development of educational resources that are scientifically robust, understandable and relevant to everyday life. Ongoing translation and dissemination across Europe will further strengthen health literacy, patient empowerment and equitable access to high-quality information, illustrating how genuine partnerships between professionals and patient advocates can improve care for rare diseases.

Room H004

OPTIMISING THE DESIGN AND MANUFACTURE OF MULTI-COMPONENT BANDAGES USING THE LATEST MATERIALS AND MEASUREMENT SYSTEMS

JEAN-PAUL BELGRADO

For decades, the implementation of compression systems designed to reduce oedema has relied heavily on the empirical transmission of expertise. Bandaging techniques have evolved over generations, shaped by clinical experience, trial and error, guidance from mentors, and even adherence to certain schools of thought embodied by leading figures.

However, for technical reasons that are more complex than they appear, the precise characterisation of pressure profiles — as well as their evolution over time under a bandage — has long remained beyond the reach of practitioners. Only certain research laboratories had access to suitable measuring tools, yet significant metrological constraints remained unresolved.

This predominantly empirical approach has, in fact, hindered both the development of bandaging techniques, and the emergence of innovative materials and strategies aimed at optimising the effectiveness of decongestion and patient comfort. Even today, important misconceptions regarding pressure levels and their dynamics persist in clinical practice.

This workshop begins with a practical and critical analysis of the technical difficulties involved in measuring pressures beneath a compression bandage applied to a moving human limb. Current solutions will be presented, along with their strengths and limitations, aimed at enabling participants to develop an informed understanding of scientific literature in parallel to acquiring fundamental skills for applying rigorous measurements in clinical practice.

12:30 – 14:10 H. ORAL COMMUNICATIONS

CHAIRS: EVANGELOS DIMAKAKOS, PIERRE BOURGEOIS, NELE ADRIANSSEN.

IMMUNOHISTOCHEMICAL STUDY USING ANTI-PODOPLANIN AND ANTI-CD31 ANTIBODIES ON ADVANCED COLORECTAL ADENOCARCINOMA, THE SECOND REPORT

EIKICHI OKADA, H HAYASHI, M MAKINO, S TERABE, A TAKEMOTO
Toyama City Medical Association Health Control Center, Dept of Clinical Pathology, Toyama, Japan

Objectives: We presented a preliminary study on distribution of podoplanin expression in advanced colorectal adenocarcinoma mainly focused on distribution of lymphatic and blood vessels. This time, we confirmed the former data regarding distribution of the vessels in the last study, and we studied the relation between lymphatic vascular invasion of the cancer cells and the situation of regional lymph node metastasis in addition.

Material/Method: Thirty surgically resected materials from human cases of advanced colorectal adenocarcinoma were studied. Immunohistochemistry using anti-podoplanin antibody (D2-40, Dako M3619) and anti-CD31 antibody (Dako M0823), and elastica van Gieson staining were performed on the paraffin sections of the resected materials. The distribution densities of the lymphatic vessels depicted by podoplanin and blood vessels by CD31 in cancer stroma (CS) and non-cancerous submucosa (NCS) were measured by point interception method. We statistically analyzed the relation between vascular densities of CS and NCS. We analyzed relation between lymphatic vascular densities in CS, presence of cancer cell invasion in lymphatic vessels, and situation of regional lymph node cancer metastasis.

Results: The lymphatic vessel densities in CS were higher than those of NCS. There was significant increase in blood capillary densities of CS compared to those of NCS.

Although there was no statistically significant correlation between the status of cancer metastasis in regional lymph nodes and the density of lymphatic vessel distribution in the cancer stroma, a significant positive correlation was observed with the presence of lymphatic vessel invasion by cancer cells.

Conclusion: In advanced colorectal adenocarcinoma, the densities of lymphatic vessels and blood capillaries in CS are higher than those in NCS. Although there was no statistically significant correlation between the status of cancer metastasis in regional lymph nodes and the density of lymphatic vessel in the cancer stroma, a significant positive correlation was observed with the presence of lymphatic vessel invasion by cancer cells.

Bibliography:

1. Laboratory Invest: 82(9),2002,1255-1257 H J Kahn,A Marks. A New Monoclonal Antibody, D2-40, for Detection of Lymphatic Invasion in Primary Tumors
2. Anticancer Res: 21, 2001,2351-2356 SF Schoppmann, P Birner, P Studer, S Breiteneder-Geleff. Lymphatic microvessel density and lymphovascular invasion assessed by anti-podoplanin immunostaining in human breast cancer

AXILLARY WEB SYNDROME: INCIDENCE AND CLINICAL EVOLUTION IN A BREAST CANCER COHORT

AZUSENA ESTEFANIA RODRÍGUEZ GARCÍA, M SUSANA GIL HERNÁNDEZ, M PILAR CRESPO COBO, MONICA CABO SANTIAGO - *Hospital General Universitario Gregorio Marañon, Madrid, España*

Objectives: To evaluate the incidence of AWS in a cohort of breast cancer patients undergoing lymph node dissection and to analyze its long-term clinical evolution, recurrence rates, and associated risk factors.

Material/Method: A retrospective study was conducted on a series of 178 patients diagnosed with breast cancer who underwent breast-conserving surgery or mastectomy and lymphadenectomy between 2018 and 2024. All patients were followed up in a specialized Lymphedema Unit for 2 years. Variables analyzed included: type of surgery, number of lymph nodes removed, BMI, physical activity, development of lymphedema, and the need for specific physical or pharmacological treatment.

Results: The incidence of AWS was 121 cases, 67.98%. Among these cases:

Mobility: 30.34% presented shoulder range of motion (ROM) limitation.
Recurrence: Recurrent cords were observed in 11.8% of cases.
Comorbidities: A significant correlation was found between Normal BMI (54.54%) Mastectomy (58.68%) and AWS development.
Lymphedema: A significant association was found between the occurrence of AWS and the subsequent development of lymphedema (32.23%).
Adjuvant therapy: 108 (89.3%) received chemotherapy and radiotherapy, and 103 (85.1%) received hormone therapy as adjuvant treatment.
Specific treatment: Only 25.62% of patients required specific physical therapy or pharmacological intervention, as most cases reached total resolution around 19 weeks.

Conclusion: AWS is a frequent, benign, and often self-limiting condition. Despite its potential for recurrence, it rarely requires intensive treatment. While other series identify a low BMI as a risk factor, our results differ as the majority of our patients presented a normal BMI. Furthermore, our findings indicate that mastectomy (58.68%) and the use of chemo/radiotherapy (89.3%) may be significant risk factors, while AWS could serve as a predictor for lymphedema, although larger studies are required to further evaluate this correlation. Patient education regarding the benign nature of this syndrome is essential to reduce anxiety and improve postoperative recovery.

Bibliography:

Baltasar, Jesús, et al. Effectiveness of Physical Therapy in Axillary Web Syndrome after Breast Cancer: A Systematic Review and Meta-Analysis. Vol. 31, no. 5, 12 Apr. 2023, https://doi.org/10.1007/s00520-023-07666-x.

"Axillary Web Syndrome: Incidence, Pathogenesis, and Management." Current Problems in Cancer, vol. 43, no. 6, 1 Dec. 2019, p. 100470, www.sciencedirect.com/science/article/pii/S0147027218303489#bib0004, https://doi.org/10.1016/j.currproblcancer.2019.02.002.

Agostini, Francesco, et al. "Web Axillary Pain Syndrome-Literature Evidence and Novel Rehabilitative Suggestions: A Narrative Review." International Journal of Environmental Research and Public Health, vol. 18, no. 19, 2 Oct. 2021, p. 10383, pubmed.ncbi.nlm.nih.gov/34639683/, https://doi.org/10.3390/ijerph181910383.

BREAST LYMPHEDEMA FOLLOWING CANCER TREATMENT: A COMPREHENSIVE NARRATIVE REVIEW OF CURRENT EVIDENCE AND CLINICAL CHALLENGES

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Objectives: Breast lymphedema (BLE) is a significant but often under-reported complication of breast-conserving therapy, affecting patient comfort, body image, and quality of life. Unlike limb lymphedema, BLE remains poorly standardized in terms of diagnosis and management. This narrative review aims to synthesize current knowledge on the pathophysiology, risk factors, and multidisciplinary management of BLE to enhance clinical awareness and patient care.

Material/Method: A comprehensive literature review was conducted, targeting studies published over the last two decades. The analysis integrated evidence regarding the anatomical and physiological changes in the breast following surgery and radiotherapy. We reviewed clinical staging systems, diagnostic modalities (including clinical palpation and emerging imaging), and the efficacy of conservative and surgical therapeutic interventions.

Results: The review identifies axillary lymph node dissection (ALND) and regional nodal irradiation as the primary risk factors for BLE development. Pathophysiologically, the transition from acute post-surgical edema to chronic protein-rich lymphedema leads to progressive tissue fibrosis and skin thickening. Current evidence highlights a significant diagnostic gap, as many cases remain subclinical or are misidentified as temporary post-radiation effects. Management strategies, although largely extrapolated from limb lymphedema protocols, emphasize the importance of Complex Decongestive Therapy (CDT), specialized compression bras, and patient education. Emerging data suggest that early identification of tissue changes is crucial for preventing permanent structural damage and secondary complications.

Conclusion: Breast lymphedema requires a dedicated clinical focus distinct from arm lymphedema. An urgent need exists for standardized diagnostic criteria and breast-specific patient-reported outcome measures (PROMs). A multidisciplinary approach, integrating oncology, surgery, and specialized physiotherapy, is essential to mitigate the long-term impact of BLE on breast cancer survivors.

Bibliography:

1. Rockson SG. Am J Med 2001;110:460-9.
2. Warren AG, et al. Ann Plast Surg 2007;59:21-31.
3. Kerrigan AM, et al. Lymphat Res Biol 2022.
4. Verbelen H, et al. Breast 2014;23:224-31.
5. Dylke ES, et al. J Lymphedema 2015;10:14-20.
6. Chen D, et al. Radiat Oncol 2023;18:120.
7. Gartner R, et al. JNCI 2009;101:1466-76.

ASSESSING TISSUE STIFFNESS IN LOWER EXTREMITY LYMPHEDEMA: A COMPARATIVE ANALYSIS OF INDENTOMETER-BASED INDURATION AND ULTRASONOGRAPHIC COMPLIANCE - A CROSS-SECTIONAL STUDY

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Objectives: Lower Extremity Lymphedema (LEL) leads to complex fibrotic changes in skin and subcutaneous tissue 1. While various tools exist to measure tissue stiffness, the relationship between different measurement techniques remains a subject of investigation 2,3. This study aimed to investigate the correlation between induration values obtained via SkinFibroMeter (SFM) and ultrasonographic tissue compliance.

Material/Method: 31 extremities with stage 2 and 3 LEL (n=12 primary, n=19 secondary) were assessed at nine standardized anatomical points: the foot dorsum and four circumferential aspects (anterior, posterior, medial, lateral) at both the distal (5 cm proximal of lateral malleolus) and proximal (10 cm distal of inferior border of patella) segments of the crural region. Skin and subcutaneous thickness were measured using ultrasonography under both minimal and maximal compression 4. Skin, subcutaneous, and total tissue compliance (skin + subcutaneous) were obtained by calculating the difference between thickness at minimum and maximum compression. 4. For the SFM assessment, five consecutive measurements were performed, and the mean induration value was recorded 5.

Results: Induration values showed no significant correlation with skin compliance at any site, nor with subcutaneous or total tissue compliance in the distal crural region and the dorsum of the foot ($p > 0.05$). However, significant low-to-moderate negative correlations were found between induration values and both subcutaneous and total tissue compliance in the proximal crural region. The strongest associations with induration values were identified at the posterior aspect (rho: -0.534, $p = 0.003$ for subcutaneous compliance, -0.526, $p = 0.003$ for the total tissue compliance) and the lateral aspect (rho: -0.508, $p = 0.004$ for subcutaneous compliance; rho: -0.506, $p = 0.004$ for the total tissue compliance). In the medial aspect of the same region, induration values significantly and negatively correlated with total tissue compliance (rho=-0.381, p=0.035).

Conclusion: While the negative direction of these correlations confirms the relationship between tissue resistance and compliance, the low-to-moderate strength of the association may suggest that these tools may capture different biomechanical properties. The moderate nature of these findings may reflect the inherent limitations or measurement variabilities of both techniques, as neither has been established as a definitive gold standard. Non-significant results in the distal crural region and foot dorsum could be due to the high density of bony and tendinous structures, which may have compromised the measurement accuracy and reliability. Future research utilizing shear-wave elastography as a comparative reference is required to further establish the reliability and comparative validity of both induration and ultrasonographic compliance metrics in larger cohorts.

Bibliography:

1. Brown, S.; Dayan, J. H.; Kataru, R. P.; Mehrara, B. J. The Vicious Circle of Stasis, Inflammation, and Fibrosis in Lymphedema. Plast. Reconstr. Surg. 2023, 151 (2), 330e–341e.
2. Mayrovitz, H. N. Historical Review and Clinical Uses of Skin Indentation to Assess Limb Lymphedema. Cureus 2025, 17 (2).
3. Hashemi, H. S.; Fallone, S.; Boily, M.; Towers, A.; Kilgour, R. D.; Rivaz, H. Assessment of Mechanical Properties of Tissue in Breast Cancer-Related Lymphedema Using Ultrasound Elastography. IEEE Trans. Ultrason. Ferroelectr. Freq. Control 2018, 66 (3), 541–550.
4. Kim, S.-Y.; Lee, C.-H.; Heo, S. J.; Moon, M.-H. The Clinical Usefulness of Lymphedema Measurement Technique Using Ultrasound. Lymphat. Res. Biol. 2021, 19 (4), 340–346.
5. Sun, D.; Yu, Z.; Chen, J.; Wang, L.; Han, L.; Liu, N. The Value of Using a SkinFibroMeter for Diagnosis and Assessment of Secondary Lymphedema and Associated Fibrosis of Lower Limb Skin. Lymphat. Res. Biol. 2017, 15 (1), 70–76.

GENITAL LYMPHEDEMA: CLINICAL CHARACTERISTICS, SEVERITY, AND THERAPEUTIC APPROACHES IN A 10-YEAR RETROSPECTIVE COHORT

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Objectives: To describe the clinical characteristics of patients with genital lymphedema in an outpatient clinic and to analyze the relationship between disease severity and therapeutic decisions. To assess how appropriate two different classification systems describe our sample (Genital Lymphedema Classification regarding G Felmerer and Genital Lymphedema Severity Scoring System Based on Subjective Symptoms (GLS) regarding T Yamamoto).

Material/Method: A retrospective observational study to describe the characteristics of genital lymphedema and the treatments required by patients diagnosed in our unit over 10 years (March 2016-March 2026) was performed. Demographic, clinical, and treatment variables were collected. Severity was assessed using the Genital Lymphedema Classification and the GLS. Descriptive and inferential analyses were performed.

Results: A total of 44 patients were included (65.9% women, 34.1% men), with a mean age of 44.25 years (range:0-72.7). Mean disease duration was 11.52 years (range 0-53.4). Mean BMI was 25.61 Kg/m2 (95%CI:23.92-27.30). Lymphedema was secondary in 54.5% of cases, predominantly of tumoral causes (43.2% of total cases) and with gynecological origin (73.7%). Complications were more frequent in men, including cutaneous cysts (40% vs 17.2%), genital lymphangitis (33.3% vs 10.3%), verrucosis (33.3% vs 10.3%), urinary dysfunction (26.7% vs 13.8%) and sexual dysfunction (33.3% vs 24.1%). Women presented specific complications such as vaginal lymphorrhea (13.8%) and obstetric issues (6.9%).
Genital involvement predominantly affected the pubis (93.1% in women, 86.7% in men). According to Felmerer classification, many cases could not be classified, mainly due to isolated pubic involvement. Mean GLS was 3.62 (95%CI:2.71-4.53), indicating predominantly mild-to-moderate severity. Higher GLS was associated with more intensive management. Patients receiving dietary interventions showed significantly higher GLS (no diet: 3.41 vs medium-chain triglycerides: 5.22; p

Conclusion: Genital lymphedema in this cohort is predominantly mild to moderate and managed conservatively. Disease severity, rather than demographic factors, determines treatment intensity and patient involvement. The high prevalence of isolated pubic involvement highlights limitations of current classifications, suggesting the need for adaptation in early-stage disease.

IS SECONDARY LYMPHOEDEMA ALWAYS SECONDARY?

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Objectives: Lymphoedema secondary to cancer, treated surgically and/or with radiotherapy, shares certain characteristics with primary forms in some cases. There is much debate regarding the genetic predisposition associated with the onset of secondary lymphoedema, and studies are underway to demonstrate this theoretical premise.

Material/Method: In clinical practice, the authors observed 175 cases of secondary lymphoedema: 121 affecting the lower limbs following surgery for uterine, ovarian or prostate cancer, and 54 affecting the upper limbs following axillary lymphadenectomy for breast cancer.

Results: In patients with upper limb lymphoedema, lymphoscintigraphy revealed the presence of multiple lymph node blockages on the unaffected side in 78% of cases. In patients with lower limb lymphoedema, lymphoscintigraphic examination in cases with a positive Stemmer's sign revealed a more or less significant uptake defect at the ipsilateral inguinal station, and in some cases also at the contralateral inguinal station.

Conclusion: This experience suggests that lymphoscintigraphic and, where possible, genetic surveillance should be increased in pre-operative cases to identify potential post-operative developments, also with a view to effective primary prevention of secondary lymphoedema.

DIFFERENCES IN FLUID DISTRIBUTION, TISSUE ALTERATIONS, AND RESPONSE TO COMPRESSION THERAPY BETWEEN CANCER-RELATED AND NON-CANCER-RELATED LOWER LIMB LYMPHEDEMA

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Objectives: In the Western World, the primary causes of lower-limb lymphedema are cancer treatment and inflammation of the skin or subcutaneous tissue. Despite their different origins, lymphedema usually involves two main features: the buildup of interstitial fluid and secondary changes in the skin and tissues. Fluid tends to accumulate in various areas, and tissue changes occur at different rates depending on the cause and the stage of lymphedema. These differences can affect how well IPC therapy works.

Aim: The studies aimed to investigate the fluid distribution and tissue changes in the lower limbs affected by lymphedema of different etiologies, and to assess their response to pneumatic compression.

Material/Method: The study included 22 patients with stage II-III lower limb lymphedema: 13 with cancer-related lymphedema and 9 with non-cancer-related lymphedema. In each patient, we performed ICG Lymphography, measured dermal and subcutaneous tissue thickness, evaluated subcutaneous echogenicity grade (SEG) and Echo Free-Space (EFS), and conducted Strain Elastography (SE) using ultrasound at the mid-medial calf and thigh. Additionally, we measured skin water content and the stiffness of skin and subcutaneous tissue at these sites. All measurements were repeated after 45 minutes of IPC.

Results: In the cancer-related group, SEG grades 1 and 2 in the calf were nearly evenly distributed (53% and 47%, respectively), and EFS grades 1 and 2 each accounted for 47%. In the post-inflammatory group, SEG grade 1 was predominant (87%), as was EFS grade 1 (87%). Skin thickness was greater in the cancer-related group in both the calf and thigh (2.45 vs. 2.36 mm in the calf), but subcutaneous thickness was higher in the post-inflammatory group (18.8 vs. 19.3 mm in the calf). Skin water content and tissue stiffness were elevated in the cancer-related group at both sites, with notable differences in skin stiffness (0.34 and 0.17 N; $p = .049$) in the calf. After 45 minutes of IPC, the most pronounced decreases were in skin stiffness within the cancer-related group—47% in the calf (0.34 vs. 0.18 N, $p=.0097$) and 33% in the thigh (0.15 vs. 1.1 N, $p=.02$).

Conclusion: All parameters indicate that secondary tissue changes are most progressed in the cancer-related group, even though they have a shorter duration of lymphedema. IPC significantly decreases dermal and subcutaneous tissue thickness, skin water content, and tissue stiffness regardless of etiology.

Bibliography: References

1. Olszewski WL, Zaleska MT. Tissue Overgrowth in Lymphedema. In Liu N., ed. Peripheral Lymphedema. Pathophysiology, Modern Diagnosis and Management. Singapore: Beach Road, 2021:63-69.
2. Suami H. Anatomical Theories of the Pathophysiology of Cancer-Related Lymphoedema. Cancers (Basel) 2020;12(5):1338.
3. Suehiro K, Morikage N, Yamashita O, et al. Skin and subcutaneous tissue ultrasonography features in breast cancer-related lymphedema. Ann Vasc Dis 2016; 9:312–316.
4. Son JH, Min JH, Kim IH, Lee SY, Lee CH. The clinical usefulness of ultrasonographic measurement technique in patients with lower extremity lymphedema. Lymphat Res Biol 2023; 21:20-27.
5. Zaleska MT, Olszewski WL. The Effectiveness of Intermittent Pneumatic Compression in Therapy of Lymphedema of Lower Limbs: Methods of Evaluation and Results. Lymphat Res Biol. 2019 Feb;17(1): 60-69.doi: 10.1089/lrb.2018.0005.

COMPREHENSIVE CARE FOR PATIENTS WITH SECONDARY LYMPHEDEMA

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Following the successful treatment of oncological diseases (such as prostate cancer), insufficient attention is frequently paid to the prevention and early detection of lymphatic insufficiency. This presentation introduces two case studies demonstrating the critical importance of a comprehensive approach to the management and treatment of secondary lymphedema.

The presentation outlines the complete patient journey and continuum of care:

Initial phase: From the first clinical contact with the patient through to targeted education.

Conservative management: Training in and consistent execution of Complex Decongestive Therapy (CDT).

Surgical intervention: Indications for and outcomes of both reconstructive and resectional surgical procedures.

Keywords: Secondary lymphedema, Complex Decongestive Therapy (CDT), Lymphatic insufficiency, Reconstructive surgery, Resection, Case study, Prostate cancer

NUTRITIONAL TREATMENT OF CHYLOUS DYSPLASIAS: CLINICAL EXPERIENCE WITH A HYPOLIPIDIC DIET AND MEDIUM-CHAIN TRIGLYCERIDES

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Objectives: Nutritional management plays a central role in the conservative treatment of chylous dysplasias by reducing chyle production, preventing metabolic and immune complications, and improving quality of life. We report our clinical experience with a hypolipidic diet supplemented with medium-chain triglycerides (MCT) in patients with chylous dysplasias.

Material/Method: Ten patients with chylous dysplasia presenting with various combinations of chyluria, chylothorax, chylous ascites, supraclavicular lymphatic engorgement, and intestinal protein loss were retrospectively evaluated. All patients underwent a hypolipidic diet supplemented with MCT and were followed longitudinally for 6 up to 12 months. Body composition and fluid distribution were assessed through bioimpedance analysis, together with lipid and protein metabolic profiles, at baseline and during follow-up.

Results: Patients showed clinical and instrumental improvement of chylous manifestations after 2 to 3 weeks of diet, including reduction of lymphatic effusions and improvement of ultrasound findings. Biochemical parameters, including protein balance, immunoglobulin levels, lymphocytes levels and lipid profile, improved during follow-up, together with body fluid distribution and fat-free mass assessed by bioimpedance analysis. In 2 patients who achieved stable clinical conditions, gradual reintroduction of small amounts of extra-virgin olive oil was possible while maintaining metabolic and clinical stability. None of the patients required surgery.

Conclusion: A hypolipidic diet supplemented with MCT represents a cornerstone of conservative management in chylous dysplasias and may contribute to long-term clinical and metabolic stabilization. Progressive and individualized reintroduction of long-chain dietary fats may improve long-term adherence while preserving disease control.

CIRCUMFERENTIAL ARM AND FOREARM CONTOURING IN LIPEDEMA PATIENTS USING DYNAMIC ANATOMICAL LIPOSUCTION TECHNIQUES

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«To present surgical strategies for circumferential arm and forearm contouring in lipedema patients, focusing on symptom improvement, contour optimization, skin retraction enhancement, and reduction of the need for brachioplasty through dynamic anatomical liposuction techniques and adjunctive technologies.

«A circumferential liposuction approach of the arms and forearms was applied in patients with upper-extremity lipedema. Preoperative planning included dynamic assessment of fat distribution, skin quality, and upper-limb contour transitions.

Different surgical concepts and techniques were reviewed, including CAST circumferential liposuction, multi-positional approaches, selective liposuction, and RF-assisted skin retraction technologies. In selected cases, circumferential liposuction was combined with radiofrequency-assisted liposuction (RFAL) to optimize skin contraction and reduce postoperative flaccidity.

Postoperative management included compression garments, manual lymphatic drainage, supervised exercises, and complex decongestive therapy.

«Circumferential liposuction significantly improved arm contour, symptom burden, and quality of life in lipedema patients. Enhanced skin retraction and reduction in arm circumference were observed, especially when combining circumferential liposuction with RF-assisted technologies.

The use of RFAL improved postoperative skin contraction and reduced the need for secondary brachioplasty procedures in patients with mild to moderate skin laxity. High patient satisfaction and improved upper-limb proportions were consistently achieved. “

«Circumferential arm and forearm liposuction represents an effective surgical option for lipedema patients, improving symptoms, contour harmony, and quality of life.

Dynamic anatomical evaluation and selective use of skin retraction technologies may optimize aesthetic outcomes while reducing the need for more aggressive excisional procedures such as brachioplasty. “

Lipedema; Arm liposuction; Circumferential liposuction; WAL liposuction; PAL liposuction; RFAL; Skin retraction; Brachioplasty; Body contouring

Reductive and excisional surgery

ABSTRACT – E-POSTERS:
48th Congress of European Society of Lymphology | ESL 2026

Upper Limb Lymphedema

PP1 - EFFECTIVENESS OF PREOPERATIVE PHYSIOTHERAPY IN BREAST CANCER SURGERY: A RETROSPECTIVE STUDY OF OUTCOMES AND CONTEXTUAL FACTORS

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Objectives: This study evaluated the impact of preoperative Therapeutic Education in Physiotherapy (TEP) on reducing referrals to Rehabilitation Services. A secondary aim was to explore contextual factors for those with and without TEP.

Material/Method: A retrospective cohort study included 6-month follow-up chart reviews of women with breast cancer who underwent surgery with immediate breast reconstruction and/or axillary lymphadenectomy between August 2021 and August 2022. Participants were divided into 2 groups: Group 1 (G1), which received TEP, and Group 2 (G2), which did not receive TEP. TEP included a 30-minute session on shoulder mobility exercises, stretching, skin care, and lymphedema prevention. The primary outcome measure was requiring postoperative rehabilitation based on clinical sequelae. Secondary variables included age, comorbidity index, surgery type, in-hospital physical therapy, hospital stay, prior surgeries, complications, and radiotherapy.

Results: Of the 129 women (62 in G1, 67 in G2), 44 (34%) required Rehabilitation referrals. G1 had significantly lower referral rates (32% n:14) compared to G2 (62.8% n: 30) ($P < .01$). Referrals were associated with adjuvant radiotherapy (93.2%) and axillary surgery type (81.8%) both with $P < .001$.

Conclusion: Preoperative TEP reduces Rehabilitation referrals in women undergoing immediate DIEP flap reconstruction and/or axillary lymphadenectomy.

PP2 - LONGITUDINAL EVOLUTION OF ARM VOLUMETRY IN BREAST CANCER-RELATED LYMPHEDEMA: MONITORING USING MIXED REALITY TECHNOLOGY

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Objectives: To analyze the longitudinal evolution of arm volume in patients with breast cancer-related lymphedema (BCRL) a physiotherapy program, and to compare the sensitivity of traditional tape measurement with a mixed reality (MR) digital assessment system.

Material/Method: A prospective longitudinal observational study was conducted in 21 breast cancer survivors who underwent axillary lymph node dissection (≥3 nodes). Follow-up was performed across three time points (V1, V2, V3) at 4-week intervals over several months. The affected limb (AL) and contralateral limb (CL) volumes were assessed using two methods: traditional tape measurement (TM) based on truncated cone calculations, and three-dimensional digital capture using mixed reality through TREVOL Software developed by IMPULSAME CONSULTORÍA Y ESTRATEGIA S.L. Clinical execution was carried out at Fenix Fisioterapia, and data analysis was performed by European University Miguel de Cervantes (UEMC). Measurements followed international clinical guidelines (International Society of Lymphology; Armer et al.).

Results: Longitudinal analysis showed a global trend toward stabilization and slight reduction in AL volume. From V1 to V3, mean volume change was −3.5% using MR compared to −2.6% with TM. The most dynamic phase occurred between V1 and V2 (−2.4% vs −4.8%), accounting for 65.4% of total change. Interlimb asymmetry decreased in 14 out of 21 patients (66.6%), and 65% achieved volumetric stabilization by the final assessment (V3). The mean absolute error between methods decreased from 412.5 cm^3 at V1 to 188.4 cm^3 at V3, indicating improved measurement reliability. MR technology detected micro-variations

Conclusion: Longitudinal follow-up shows that physiotherapy interventions help stabilise arm volume in patients with BCRL, highlighting the importance of regular monitoring for the early detection of lymphoedema. In this context, the mixed reality technology used by TREVOL provides a more sensitive, objective and reproducible assessment than traditional methods, enabling the identification of early subclinical changes (3–5%) and optimising clinical decision-making.

PP3 - EFFECTS OF A COMBINED STRENGTH AND HIIT PROGRAM ON ARM VOLUME PROGRESSION IN BREAST CANCER-RELATED LYMPHEDEMA

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Objectives: To evaluate the influence of a combined strength training and High-Intensity Interval Training (HIIT) program performed 1–2 days per week on arm volume progression in patients with breast cancer-related lymphedema (BCRL), using both clinical and digital monitoring methods.

Material/Method: A prospective longitudinal observational study was conducted in 21 breast cancer survivors who underwent axillary lymph node dissection (≥3 nodes). Participants completed a 12-week intervention consisting of progressive strength training combined with HIIT (1–2 sessions/

week). Arm volume of the affected limb (AL) and contralateral limb (CL) was assessed at three time points (V1, V2, V3) at 4-week intervals using both tape measurement (TM) and three-dimensional digital capture through mixed reality (MR) using Software TREVOL developed by IMPULSAME CONSULTORÍA Y ESTRATEGIA S.L. The intervention was executed at Fenix Fisioterapia, and data analysis was performed by European University Miguel de Cervantes (UEMC). Assessment followed international clinical guidelines (International Society of Lymphology; Armer et al.).

Results: Longitudinal analysis demonstrated an overall trend toward stabilization and reduction of affected arm volume. From V1 to V3, arm volume decreased by 3.5% using MR compared to 2.6% with TM. The most dynamic phase occurred between V1 and V2 (−2.4% vs −4.8%). A total of 65% of patients showed volumetric stabilization at V2, while 45% achieved volume reduction or interlimb symmetry at V3. Interlimb asymmetry decreased in 14 out of 21 patients (66.6%). The mean absolute error between methods decreased from 412.5 cm^3 at V1 to 188.4 cm^3 at V3, indicating improved measurement consistency. MR technology detected micro-variations (

Conclusion: A combined strength and HIIT program performed 1–2 times per week contributes to arm volume stabilization or reduction and improves interlimb symmetry in patients with BCRL without adverse effects. Mixed reality technology using TREVOL provides a sensitive, objective, and reproducible tool for clinical monitoring, supporting early detection and personalized management of lymphedema.

PP4 - BE CAREFUL WITH WATER. ATYPICAL INFECTION IN LYMPHEDEMA SECONDARY TO BREAST CANCER

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Objectives: The most common infections in patients with lymphoedema are caused by Staphylococcus aureus or Streptococcus pyogenes, but other possible bacterial, fungal, and parasitic infections should also be considered. The aim is to present an unusual type of infection in patients with breast cancer related lymphedema and its treatment.

Material/Method: Clinical case report

Results: A 40-year-old woman with stage IV breast cancer and lymphedema of the right upper limb stage II following axillary lymph node dissection, currently undergoing treatment with letrozole and abemaciclib, and being monitored by the Rehabilitation Department
She presented with papules on the back of her hand, which progressively spread to the entire upper limb. This was accompanied by an initial worsening of her lymphoedema with no systemic symptoms. Initial improvement was seen with treatment involving oral corticosteroids prescribed by the General Practice, but the infection recurred after treatment was completed, spreading to the lower limbs and the contralateral hand. Following assessment by the Dermatology department, a skin biopsy was performed to rule out infiltration by an epithelial neoplasm. The biopsy showed moderate inflammatory infiltration, and consequently, treatment continued with oral and topical corticosteroids, as well as topical antibiotics. The culture results detected Mycobacterium marinum. Upon reviewing possible risk factors, contact with water while cleaning a fish tank was identified as the cause. The antibiotic regimen was changed to clarithromycin and ethambutol, and a satisfactory response was observed after five months of treatment. During the infection, lymphedema was managed with a custom-made compression garment. Once the infection was under control, no course of decongestive therapy was required, as clinical improvement was observed in the measurements.

Conclusion: Mycobacterium marinum infection is uncommon, with only a few cases documented in the literature. It can easily be mistaken for a common bacterial infection. An accurate diagnosis requires a detailed history of exposure to aquatic environments and microbiological findings. Multidisciplinary management is sometimes necessary for diagnosing and treating infections in patients with lymphedema secondary to breast cancer.

Bibliography:
Canetti D, Riccardi N, Antonello RM, Nozza S, Sotgiu G Mycobacterium Marinum: A Brief Update for Clinical Purposes. Eur J Intern Med. 2022 Nov;105:15-19. doi: 10.1016/j.ejim.2022.07.013.
Schliemann S, Rässler F, Tittelbach J, Kranzer K, Zollmann C, Elsner P, Disseminated Mycobacterium marinum skin infection due to chronic lymphedema in an immunocompetent patient. J Dtsch Dermatol Ges. 2018 May;16(5):614-616. doi: 10.1111/ddg.13491. Epub 2018 Mar 30.

PP5 - LYMPHEDEMA SCHOOL IN BREAST CANCER: MORE THAN SIX YEARS OF PREVENTION

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Objectives: To describe the profile of patients attending the Lymphedema School (LS) between October 2018 and December 2024, to analyse LS-related activity, and to assess participant satisfaction.

Material/Method: Observational descriptive study including breast cancer patients from the Rehabilitation Department of a tertiary-care hospital. Medical records were reviewed to collect demographic, oncological, lymphedema-related and LS-related variables.
An anonymous satisfaction survey evaluating different aspects of the programme was administered to participants.

Results: Of the 618 patients referred to the LS, 89% attended. The predominant profile was a woman with a mean age of 56.87 years, resident in A Coruña, without lymphedema, with left-sided breast cancer, in the post-surgical period, and treated with radiotherapy and lumpectomy with sentinel lymph node biopsy. Mean waiting time was ≤2 months.
An average of 13.42 LS sessions were held annually, with a mean attendance of 6.43 patients persession.
A mean of 13.42 LS sessions were conducted annually, with an average attendance of 6.43 patients per session. A total of 493 patients completed the survey, rating the LS between 4.10 and 4.86 out of 5; 77.3% reported willingness to re-engage.

Conclusion: Lymphedema prevention is essential, and the LS effectively meets this objective, achieving high levels of participant satisfaction.
The attendee profile is consistent with national data on breast cancer patients.

Bibliography:

1. Executive Committee of the International Society of Lymphology. The Diagnosis and Treatment of Peripheral Lymphedema: 2023 Consensus Document of The International Society of Lymphology. Lymphology. 2023;56(4):133-151. PMID: 39207406. Avaliable on: THE-DIAGNOSIS-AND-TREATMENT-OF-PERIPHERAL-LYMPHEDEMA-2023-CONSENSUS-DOCUMENT-OF-THE-INTERNATIONAL-SOCIETY-OF-LYMPHOLOGY.pdf
2. Martínez-Jaimez Patricia, Fuster Linares Pilar y col. Multidisciplinary preventive intervention for breast cancer-related lymphedema: An international consensus. Eur J Cancer Care. 2022;31(6).
3. López-Martín M, De Carlos Iriarte E. El papel de la escuela de linfedema y la cinesiterapia en la prevención y el tratamiento del linfedema, Rehabilitación. 2010; 44(51): 49-53

Diagnosis

PP6 - COMPREHENSIVE DIAGNOSIS IS CRUCIAL FOR EFFECTIVE THERAPY IN LYMPHEDEMA

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Objectives: Lymphedema of the extremities is a complex disease involving fluid accumulation, secondary tissue changes, and inflammation, and requiring lifelong therapy. Therapy effectiveness depends on early and comprehensive diagnosis of lymphedema. However, diagnosis is usually based on clinical investigation, estimation of limb volume, pitting test, and Stemmer's sign. This information is too general and subjective. Although conservative therapy for limb lymphedema includes MLD, IPC, compression bandages, and stockings, it should not be the same for every patient. Critical parameters such as external pressure and the order of individual therapy elements should be adjusted for each patient, depending on lymph drainage status, the sites and depth of fluid accumulation, and tissue biophysical properties.
Aim. To investigate the effectiveness of individually adjusted reduction therapy in patients with lower limb lymphedema of different etiology lasting for 3-5 days.

Material/Method: We investigated 18 patients with lower-limb lymphedema, stages II and III, of various etiologies. At the beginning of therapy, in all patients, we performed ICG lymphography, USG (Canon APLIO i800), measured limb circumference and volume (BadyLux 3D), and measured skin water concentration (LympScanner; Delfin Technologies Ltd.) and skin and subcutaneous tissue stiffness (SkinFibrometer; Delfin Technologies Ltd., Wagner, Seattle, WA). Based on the results, a customized therapy plan was developed. After each treatment day, we repeated all measurements to assess the effect.

Results: Of the 18 patients, 12 had stage II lymphedema, while 6 had stage III. Treatment duration varied: 12 patients received 5 days, 4 received 4 days, and 2 received only 3 days. After 3-5 days of therapy, which included MLD guided by ICG investigation and IPC with pressure adjusted to tissue stiffness between 80 and 120 mmHg, all measured parameters decreased across all patients. The initial mean limb volume was 9.47 ± 3.01 liters. The most significant volume reduction, 12%, occurred in a patient with stage II lymphedema after 5 days. Additionally, the mean reduction in skin water content in the middle calf was 37%. Skin and subcutaneous tissue stiffness in the middle calf decreased by 38% and 42%, respectively.

Conclusion: Accurate diagnosis, based on visualizing still-active lymphatics, fluid buildup sites, and changes in tissue properties, is essential for developing personalized treatment plans. Using individually tailored therapy elements and settings is effective and may reduce the treatment duration.

Bibliography:

1. Kayıran O, De La Cruz C., Tane K, et al. Lymphedema: From diagnosis to treatment. Turk. J. Surg. 2017, 33, 51–57.
2. Vargo M, Aldrich M, Donahue P, et al. Current diagnostic and quantitative techniques in the field of lymphedema management: a critical review. Med Oncol. 2024 Sep 5;41(10): 241. doi: 10.1007/s12032-024-02472-9.
3. Zaleska M.T, Krzesniak N.E. The Intermittent Pneumatic Compression Influences Edema Fluid Movement and Promotes the Compensatory Drainage Pathways in Patients with Breast Cancer Related Lymphedema. Lymphat Res Biol. 2025 Jun;23(3):160-168.
4. Zaleska MT, Olszewski WL, Durlik M, et all. Tonometry of Deep Tissues for Setting Effective Compression Pressures in Lymphedema of Limbs. Lymphat Res Biol. 2018 Apr;16(2):193-200. doi: 10.1089/lrb.2016.0069.
5. Zaleska MT, Olszewski WL. The Effectiveness of Intermittent Pneumatic Compression in Therapy of Lymphedema of Lower Limbs: Methods of Evaluation and Results. Lymphat Res Biol. 2019 Feb;17(1): 60-69.doi: 10.1089/lrb.2018.0005.

PP7 - UTILITY OF MULTIFREQUENCY BIOIMPEDANCE ANALYSIS IN THE DIAGNOSIS AND FOLLOW-UP OF LOWER LIMB LYMPHEDEMA

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Objectives: Lymphedema causes an accumulation of lymphatic fluid in the interstitial space of the affected segment. Multifrequency bioimpedance analysis (MFBIA) measures tissue hydration by distinguishing between extra- and intracellular compartments, providing information for each upper and lower limb as well as the trunk. The aim of this study was to evaluate the usefulness of MFBIA in the diagnosis and follow-up of lower limb lymphedema.

Material/Method: A prospective observational study was conducted in patients with lower limb lymphedema treated at the lymphedema unit of a university hospital. Measurements were performed at the start of rehabilitation treatment (t1), after completion of 10 sessions (t2), and at one

month (t3). Circumferences of both lower limbs were recorded, and limb volume was calculated using the truncated cone formula. Using MFBIA, total water content (H_2OL, in liters) and segmental extracellular water ratio (ECWs, percentage of extracellular water relative to total body water) were measured in each limb. Correlations were analyzed, considering $p < 0.05$ as statistically significant. The diagnostic validity of ECWs was also assessed by calculating sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV), using the clinical diagnosis as the reference standard.

Results: Twenty-eight patients were included (20 women; mean age 63.8 years, SD 15.3; BMI 30.5 kg/m², SD 7.5), with a total of 69 measurements (t1 = 27, t2 = 23, t3 = 19). H_2OL showed a positive correlation with the sum of circumferences ($r = 0.286$; $p = 0.017$) and with the volume of the affected limb ($r = 0.323$; $p = 0.007$). ECWs also correlated positively with the sum of circumferences ($r = 0.265$; $p = 0.028$) and with the volume of the affected limb ($r = 0.242$; $p = 0.045$). Changes in limb volume and sum of circumferences between t1, t2, and t3 did not correlate with changes in H_2OL or ECWs. ECWs showed a sensitivity of 54.5% and a specificity of 47.1%. Their PPV was 51.6% and the NPV was 50.0%.

Conclusion: In this sample, the MFBIA variables H_2OL and ECWs showed a positive, albeit weak, correlation with limb volume and the sum of circumferences in lower limbs with lymphedema. The diagnostic performance of ECWs did not reach desirable levels. Further studies are needed to determine the usefulness of MFBIA in the diagnosis and follow-up of lymphedema.

Bibliography: Yasunana Y et al. Extracellular Water Ratio as an Indicator of the Development and Severity of Leg Lymphedema Using Bioelectrical Impedance Analysis.Lymphat Res Biol. 2021 Jun;19(3):223-230. doi: 10.1089/lrb.2020.0074.

PP8 - SEGMENTAL TISSUE DIELECTRIC CONSTANT(TDC) PROTOCOL FOR STRATIFICATION OF BREAST OEDEMA AFTER BREAST CANCER TREATMENT UTILIZING PORTABLE DIELECTRIC DEVICES

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Objectives: Main objective:This study aims to establish quadrant-specific TDC-ratio thresholds (affected vs. contralateral healthy breast) utilizing portable dielectric devices (PDD) for the early detection and severity stratification of breast edema in a Spanish cohort of breast cancer patients treated with breast-conserving surgery and radiotherapy.
Secondary objectives: To characterize quadrant-specific fluid accumulation patterns to map regional edema distribution.
To validate the clinical viability and utility of a standardized segmental measurement protocol in outpatient consultation

Material/Method: A retrospective, observational, within-subject comparison study was conducted on 110 women with unilateral breast cancer treated with breast-conserving surgery and radiotherapy (February 2019–January 2025). Following a 10-minute stabilization in the supine position, TDC was measured using a compact dielectric device across all four quadrants—upper-outer (UOQ), upper-inner (UIQ), lower-outer (LOQ), and lower-inner (LIQ)—of both breasts. The TDC-Ratio (affected/healthy breast) was calculated globally and per quadrant. Friedman and Wilcoxon non-parametric tests analyzed inter-quadrant variability. Severity stages were defined using P5, P10, and P25 population percentiles

Results: The median global TDC-Ratio was 1.44 (interquartile range: 1.31–1.61). Inter-quadrant analysis revealed a heterogeneous edema distribution ($p < 0.001$$), with the highest accumulation in the LOQ (median: 1.60). Stratification thresholds were defined as: absent/very mild (TDC ratio1.31)

Conclusion: Segmental absolute TDC measurement provides objective quantification of breast edema, establishing a TDC-Ratio cutoff of 1.18 for early diagnosis in the Spanish population. The heterogeneous distribution, with a clear predominance in the lower quadrants, justifies a segmental approach over global measurements. Furthermore, severity categorization based on percentiles optimizes clinical decision-making and longitudinal follow-up in the outpatient setting.

Bibliography:
1. 1. Adriaenssens N, et al. Lymphedema of the operated and irradiated breast in breast cancer patients following breast conserving surgery and radiotherapy. Lymphology. 2012; 45(4):154-164.
2. 2. Mayrovitz HN. Inter-breast Ratios of Tissue Dielectric Constant Values to Detect and Track Unilateral Breast Edema or Lymphedema. Cureus. 2025; 17(11). doi:10.7759/cureus.97657.
3. 3. Toro-Echagüe J, et al. Tissue Dielectric Constant (TDC) as a Tool for Localized Lymphedema Assessment: A Systematic Review. Cureus. 2024.
4. 4. Johansson K, et al. Breast edema following breast conserving surgery and radiotherapy. Eur J Lymphology. 2014; 25(70):1-5.
5. 5. Riches K, et al. Objective assessment of breast edema: A comparison of Tissue Dielectric Constant and Ultrasound. Cancers. 2023.
6. 6. Mayrovitz HN, et al. Assessment of localized tissue water changes: role of arm handedness and truncal ratios. Lymphology. 2018; 51:132-145.

PP9 - BODY POSITION INFLUENCES TISSUE DIELECTRIC CONSTANT DISCRIMINATION OF CLINICAL BREAST OEDEMA SEVERITY AFTER CONSERVATIVE BREAST CANCER

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Objectives: To evaluate the impact of body position (sitting versus supine) on quadrant-specific tissue dielectric constant (TDC) measurements in both the treated and contralateral breasts of women with unilateral breast cancer following breast-conserving surgery and radiotherapy. Secondary objectives aimed to investigate clinical determinants and confounding factors (age, BMI, radiation dose, time since treatment, surgical scarring, and radiation dermatitis) associated with breast oedema within this Spanish cohort

Material/Method: A retrospective, within-subject observational study was conducted on 110 women (mean age: 58.9±12.8 years; BMI: 28.4±5.8 kg/m²) treated between February 2019 and January 2025. TDC was measured using a compact dielectric device across all four quadrants—up-

per-outer (UOQ), upper-inner (UIQ), lower-outer (LOQ), and lower-inner (LIQ)—of both breasts, 1 cm from the areola along the quadrant bisector. Measurements were taken in the sitting position and after a 10-minute supine stabilization period. Paired-sample comparisons were performed using Student's t-test or the Wilcoxon signed-rank test. Significance was set at $p < 0.05$

Results: In the contralateral healthy breast, no significant postural differences were observed across quadrants ($p > 0.15$; global mean difference: +0.20). Conversely, in the treated breast, sitting TDC values were consistently higher than supine values (global mean difference: -1.01; $p = 0.005$). Statistically significant postural changes were concentrated in the LOQ (62.30 vs. 60.86; $p = 0.009$) and UOQ (55.35 vs. 54.17; $p = 0.023$), revealing a non-homogeneous regional fluid accumulation pattern with peak values in the LOQ. Regarding clinical determinants, no statistically significant correlations were found between TDC variations and age, BMI, radiation dose, time elapsed since treatment, or presence of surgical scarring ($p > 0.05$). However, patients presenting with grade 2–3 radiation dermatitis exhibited significantly higher TDC values specifically in the seated position ($p < 0.05$).

Conclusion: Body position significantly influences TDC measurements exclusively in the treated breast, demonstrating greater hydrostatic fluid accumulation in the sitting position with a clear outer-quadrant predominance whereas diagnostic thresholds remain stable across postures. Severe acute radiation dermatitis is associated with a higher absolute water content, whereas age, BMI, oncological therapies, and scarring do not act as relevant modifiers. The homeostatic stability of the healthy contralateral breast confirms that these postural variations reflect a localized pathological phenomenon rather than a physiological shift.

Bibliography:

Johansson K, Lathinen T, Björk-Eriksson T. Breast edema following breast conserving surgery and radiotherapy. Eur J Lymphol. 2014;25(70):1-5.
Yi A, Kim HH, Shin HJ, Huh MO, Ahn SD, Seo BK. Radiation-induced complications after breast cancer radiation therapy: a pictorial review of multimodality imaging findings. Korean J Radiol. 2009;10(5):496-507. doi:10.3348/kjr.2009.10.5.496
Mayrovitz HN. Inter-breast ratios of tissue dielectric constant values to detect and track unilateral breast edema or lymphedema. Cureus. 2025;17(11):e97657. doi:10.7759/cureus.97657.

Conservative Treatment

PP10- PROGRESS AFTER INTEGRATED REHABILITATION TREATMENT FOR A HEAD AND NECK CANCER PATIENT.

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Objectives: To describe the primary complications observed, the treatments provided, and the results.

Material/Method: 52-year-old male patient with a medical history of psoriasis, psoriatic arthritis (on Humira), and anxiety-depressive disorder. Surgical history includes cholecystectomy (2002) and right inguinal herniorrhaphy (2015). The patient was diagnosed with pT3N0 infiltrating squamous cell carcinoma of the right anterior floor of the mouth. Treatment involved tumor excision and right functional neck dissection (FND), followed by 32 sessions of radiotherapy (completed Feb 4, 2026).

He was referred to Rehabilitation on January 29, 2026, presenting with:

- Musculoskeletal: Right scapular pain, winged scapula (suggesting spinal accessory nerve injury confirmed by electromyography (EMG)), and limited shoulder ROM (Flexion 140º, ABD 80º active).
- Lymphedema: Submental (Stage 1) and right lateral cervical edema with post-radiation erythema. Initial neck circumferences: Upper 45, Middle 44, Lower 42 cm.
- Orofacial: Dysphagia and dysarthria. Partial right hemi-tongue defect with tethered tongue and hypoesthesia.

Interventions:

1. Lymphedema: Complete Decongestive Therapy (CDT) including MLD, kinesiology taping, and nocturnal cervical compression.
2. Dysphagia/Speech: Sensorial stimulation, supraglottic technique, double swallowing, and chin-down maneuver.
3. Medical: Pregabalin (82.5mg/night) for neuropathic tongue pain and nebulizer for xerostomia.

Results: The comprehensive rehabilitation intervention led to significant functional recovery:

- Lymphedema: Neck circumference reduction of 1 cm (upper) and 1.8 cm (middle). Complete resolution of Stage 1 submental and lateral edema.
- Shoulder: Improved active ROM to 160º (flexion/ABD). Muscle strength increased to 4+/5 in the trapezius and deltoid, with improved scapular stability.
- Orofacial: Safe oral intake of soft diet achieved through compensatory maneuvers. Increased salivation and nasal decongestion noted with nebulizer use.
- Neuropathic Pain: Successfully stabilized with pharmacological adjustment.

Conclusion: A multidisciplinary and integrated rehabilitation approach—combining Complete Decongestive Therapy, specialized physical therapy, and speech therapy—is essential for managing the complex sequelae of head and neck cancer treatment. Despite the presence of spinal accessory nerve injury and post-radiation fibrosis, early and personalized intervention significantly reduces lymphedema volume, restores shoulder mobility, and ensures swallowing safety, thereby improving the patient's functional outcomes and quality of life.

PP11 - LYMPHEDEMA OF THE LOWER LEGS AND ULCERS: EXPERIENCE IN

A WIDE THERAPEUTIC VISION

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Objectives: Lymphedema is often not a pure lymphedema. Venous associated diseases, cardiac failures, hepatic and kidney coexisting lacks of balance request always a proper differential diagnosis to avoid time loss in the resolution of leg lesions when associated. Properly recognizing the wound's position, dimensions, and base, as well as the presence or absence of exudate, allows for the immediate implementation of proper wound occlusion, always combined with the best elastic compression bandage, to begin activating the healing process as soon as possible. A wound swab, when the wound is not healing and is very painful when cleaned, with persistent fibrin or a foul odor, is essential as it reveals bacterial contamination requiring the use of topical and oral antibiotics. Abnormal lesions, those located far from typical areas such as the perimalleolar area, or those that arise without apparent cause, whether mechanical or pressure-induced, and especially those that do not resolve despite appropriate treatment protocols, should be investigated for the same reasons. In this case, oncological skin lesions should be ruled out. Addressing social causes, often encountered in personal experience, such as compulsive hoarding behaviors in one's home, almost always associated with poor hygiene, even when there are numerous pets, is crucial. In this case, a caregiver or a family leader can help.

Material/Method: The observation refers to 36 patients who presented with these problems in varying degrees of association. Sixteen revealed positive wound swabs with various contaminations (streptococcus, pseudomonas, enterococcus faecalis, candida, staphylococcus aureus). Two cases were diagnosed with skin metastases from previous cancers (prostate, penile). Seven lesions were caused by neglected lymphatic discharge following blunt cutaneous trauma to a limb in an advanced clinical stage. In the majority of cases, the main problem was marked venous insufficiency, obesity, and poor motor function, resulting in insufficient muscle pump.

Results: The dressing and occlusion material is primarily based on silver sulfadiazine, in spray form where the wound base is moist, or in cream form on dry bases. Initial cleansing is almost always performed with saline solution or, in cases of severe contamination, with bleach. Elastic compression bandaging is highly personalized for each patient, but given the predominantly weekly frequency of operations, a bielastic zinc oxide bandage is used primarily in contact with the limb, overlaid with a short-stretch cohesive bandage. Maximum physical exercise that the patient can perform under elastic compression completes the treatment plan for this type of problem.

The dressing and occlusion material is primarily based on silver sulfadiazine, in spray form where the wound base is moist, or in cream form on dry bases. Initial cleansing is almost always performed with saline solution or, in cases of severe contamination, with bleach.

Aim for maximum physical exercise that the patient can perform under elastic compression completes the treatment plan for this type of problem.

Conclusion: Correct clinical assessment, and above all broadening the perspective of the problem to include all the aspects described above, allows for the treatment of clinical conditions that sometimes persist for months or years. Patient compliance and adjustments to lifestyle or conditions effectively represent a therapeutic tool.

Bibliography: No references

PP12 - PROPER COMPRESSION THERAPY IS THE KEY IN MAINTAINING RESULTS OF LYMPHEDEMA TREATMENT - DIFFICULTIES AND SOLUTIONS

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Objectives: Lymphedema is a chronic disease requiring long-term management and sustained patient adherence. It is important not only to remove volume, but also to maintain the treatment results to prevent the oedema from recurring (which is often more challenging than edema eliminating). Compression garments (CG) play a critical role in maintaining treatment outcomes.
However, improper garment measurement, selection, fitting can undermine long-term results. Poorly fitting/uncomfortable garments reduce patient compliance, inadequate compression fails to prevent oedema recurrence. Despite the critical role of compression, often garment selection/fitting are performed by non-medical personnel, with little or absent long-term supervision by lymphology specialists. This lack of professional oversight can lead to a "yo-yo effect," where patients experience edema relapse, necessitating repeated CDT cycles. This study aimed to identify the most common compression-related issues in the maintenance phase and propose strategies to optimise long-term oedema control.

Material/Method: A total of 150 patients with upper/lower limb lymphedema were observed over three years. 85 patients underwent regular follow-up every six months, 65 were reviewed sporadically. The evaluation included detailed analysis of compression therapy variables in maintenance phase: garment type (e.g.flat/round-knit, standard/custom-made, single/multi-layer,etc.), who made measurements, renewal frequency, patient-reported discomfort, non-compliance reasons,etc.

Results: The most significant determinant of long-term oedema stability was professional oversight by an experienced lymphology-trained clinician—often the treating physician/physiotherapist. 55 patients who consistently adhered to properly fitted compression therapy that was chosen and supervised by a lymphedema specialist did not require a repeat of the first CDT phase over the entire observation period.

The most common weaknesses in compression management included:
- Garment measurement performed by non-specialists without consideration of disease-specific factors/oedema relapse in previous garments
- Lack of structured long-term follow-up to assess garment performance after initial fitting.
- Patient discomfort due to design or measurements flaws, leading to reduced compliance.
- Infrequent garment renewal

Conclusion: Optimal maintenance of lymphedema treatment outcomes requires that CG parameters selection, measurement, and supervision be managed by a lymphology-trained professional.

Professional oversight should include:
- Accurate measurement with allowance for disease-specific adjustments (e.g., added layers, CCL, reduction of circumferences,etc.).
- Supervised first fitting to teach donning/doffing, assess comfort, and check for manufacturing defects.
- A follow-up within 2–7 days to measure limb volume, evaluate pitting, and confirm effective compression with possibility to adjust the garment
- Timely garment replacement, with adjustments as needed.

This structured, specialist-led approach reduces the risk of oedema recurrence. In our observations, patients managed with this protocol maintained stable limb volume over years.

PP13 - LYMPHATIC MICROSURGERY AFTER PROGRESSION DESPITE CONSERVATIVE TREATMENT IN ADOLESCENT PRIMARY LYMPHEDEMA: A REPORT OF TWO COMPLEX CASES

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Objectives: To describe the clinical course, imaging findings, and surgical management of two adolescent patients with primary lymphedema who exhibited disease progression despite optimized conservative treatment.

Material/Method: Two clinical cases are presented: a 12-year-old female with left lower limb (LLL) involvement (Emberger syndrome, GATA2 mutation), and a 15-year-old male with short stature (below the 3rd percentile). Initial lymph-SPECT/CT demonstrated distal dermal backflow in the LLL with absence of identifiable lymphatic channels and subclinical contralateral insufficiency in the first case; in the second case, it demonstrated bilateral lymphedema with dermal backflow toward the inguinoscrotal and pelvic regions. Both patients initiated treatment with complex decongestive therapy (CDT) and flat-knit compression garments. After six months, both exhibited disease progression: increased limb volume in the first case, and worsening tissue consistency with genital skin thickening and proximal progression of edema to the LLL in the second case. Given the lack of response to conservative management, surgical intervention was indicated.

Results: In Case 1, proximal and distal lymphaticovenous anastomoses (LVA) were performed in the LLL, along with a preventive proximal LVA in the contralateral limb. In Case 2, surgery included omental flap transposition (free and pedicled), LVA in the penis and lower limb, and genital skin remodeling. Following surgery, both patients underwent CDT according to a standardized post-surgical protocol. At the last assessment (9-month follow-up), Case 1 showed a reduction in the circumferential difference (sum of 7 points) from 32.2 to 24.1 cm. Case 2 demonstrated a marked improvement in tissue consistency and genital involvement. Notably, in this patient, an 11 cm increase in height between surgery and follow-up limited accurate quantification of circumferential reduction, influencing the interpretation of limb perimeters relative to musculoskeletal growth. Both patients remain clinically stable with class 2 compression garments.

Conclusion: Progression of volume and fibrosis after conservative treatment supports surgical intervention in adolescent primary lymphedema. Lymphatic microsurgery, combined with post-surgical CDT, appears effective in reversing fibrosis and improving genital involvement, achieving disease stabilization even during periods of active growth.

PP14 - THE NOVEL APPROACH IN LYMPHEDEMA TREATMENT: COMBINING BIOBRIDGE AND COMPLEX DECONGESTIVE THERAPY – PRELIMINARY RESULTS

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Objectives: Effective treatments for lymphedema of the limb(s) are limited. Traditionally, the golden standard of care is the Complete Decongestive Therapy (CDT) which includes manual lymph drainage, multilayer short stretch bandaging/flat knit compression garments, exercise, and skin care. While CDT has been shown to successfully reduce excess limb volumes, it cannot restore the functional capacity of the lymphatic system. The challenges of CDT are that it requires patient commitment to a life-long diligence to limit the progression of the disease and maintain treatment results and creates a costly and time-consuming dependency on compression garments and ongoing CDT sessions.
Microsurgery for lymphedema treatment has shown promising results but has many limitations and requires highly qualified personnel and specific equipment, and may not be easily accessible and affordable. Combination of microsurgery with BioBridge® Collagen Matrix (BioBridge) - aligned nanofibrillar collagen scaffold - has already demonstrated its safety and efficacy in further reducing limb volume and tissue fibrosis, but still has similar issues with accessibility and cost because includes microsurgery.

Aims: To develop a new therapeutic approach to complement and improve the long-term outcome of CDT through utilization of recent advancements in diagnostics and research on lymphatic drainage by combining CDT with a minimally invasive implantation of BioBridge. To develop and validate a treatment protocol to evaluate the efficacy of the combination therapy and to serve as a basis for application in clinical practice.

Material/Method: 20 patients are in implantation group and 20 patients are in control group. ICG lymphography will be used to map the lymph drainage pattern in lymphedema patients, and BioBridge scaffolds will be implanted to enhance the existing and/or create a complementary drainage routes and to direct the flow of extracellular fluid along the BioBridge to the regions with identified viable lymphatic system with the help of CDT. Identification of the functional lymph drainage route increases the efficacy of CDT; BioBridge scaffold implantation increases lymph drainage along the scaffold, therefore the efficacy of this approach will be evaluated by comparing pre- and post-treatment lymph flow pattern by ICG lymphography and limb volume with the help of Perometer, as well as quality of life will be evaluated with the help of questionnaire before surgery and one year after surgery. The control group to be checked with the same protocol – ICG lymphograpy, perometer and QOL initially and after 1 year. During this year both groups continue the same CDT treatment as they had before study.

Results: A single-arm, prospective, open-label pilot study has been designed to evaluate efficacy of combining CDT with the BioBridge implantation in patients with unilateral secondary lymphedema of the upper limb, based on ICG lymphography, volumetric analysis and QOL assesment. A treatment protocol has been developed to implement the combination of CDT with BioBridge in clinical practice. 20 patients went through the implantation and were examined a year after surgery. 20 patients from the control group were initially checked in 2024 and examined further after one year, in 2025. The study is still ongoing, but first results look promising: though there were almost no differences in ICG pattern, in implantation group the scores in QOF questionnaire improved significantly, 6 out of 10 patients were able to stay longer hours not wearing compression without edema recurrence, 7 out of 20 patients managed to discontinue to wear compression glove, wearing only sleeve (before implantation wearing a sleeve without a glove led to almost immediate edema of hand). In control group there were no changes in QOF questionnaire and patients had to continue the same regime of wearing compression garment as before implantation.

Conclusion: BioBridge is a promising novel approach in lymphedema treatment that can be an effective option for patients who want to improve results of CDT and quality of life with minimal invasive procedures.

PP15 - THE KEY ROLE OF PRE- AND POSTOPERATIVE CONSERVATIVE PROTOCOLS IN LYMPHEDEMA SURGERY TO PREVENT COMPLICATIONS AND IMPROVE OUTCOMES

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Objectives: Nowadays lymphatic surgery(LS) is developing rapidly and becoming very popular, as it can give the results that conservative treatment cannot achieve (microsurgery can partly restore the damaged lymphatic transport, provide more independence from compression garments; liposuction can remove excessive fat/fibrotic tissues). The problem is that concentrating attention only on surgical treatment and neglecting or not putting enough attention to conservative pre-op preparation /post-op care can lead to significant decrease in efficacy of LS and increase of adverse effects. Aims: to analyze the current existing protocols for pre-op/post-op care in scientific literature, to analyze the situation in Russia with pre-op/post-op care in LS, to work out a draft of recommendations for pre-op/post-op care for LVA, LNT and liposuction.

Material/Method: A systemaic literature resources - PubMed, Medline, Cochrane, ALF, ILF, LE&RN, LSN - were observed to collect the different approaches in pre-op/post-op care in LS. The data was collected from patient treated in Russian clinics who are performing LS – pre-op/post-op care, changes in limb size before/after surgery, adverse effects – 5 clinics, 76 patients. Referring to approaches in literature to discuss with the members of the Russian Lymphology Association(RLA) possible pre-op and post-op protocol guidelines.

Results: In literature there is relatively little information regarding pre-op and post-op procedures in LS, though there is a major opinion that a patient before LS should be fully decongested (CDT). Skin care and physical exercises are recommended, though there are no details. Regarding compression therapy and MLD the information is controversial or not sufficient. Analysis of Russian clinics showed that only one clinic is following strict pre-op/post-op protocols, and the results of surgery are very good with very few slight adverse effects (liposuction protocol of H.Brorson). Clinics without proper specialists in CDT have poorer results after surgery or there are adverse effects (increasing/developing of edema, severe seromas, infections, etc.). RLA prepared a draft of the pre-op/post-op protocol guidelines.

Conclusion: Preoperative and postoperative care is very significant in LS, in case of poor care the results of surgery may be lost and risk of side effects increases. There should be a consensus on pre-op/post-op protocol guidelines that lymphatic surgeons should follow. RLA prepared a draft of such protocol, based on the best international experience, and is currently in process of working out of national consensus on this matter. Lymphatic surgeons should always work in collaboration with qualified CDT specialists to provide the best and safest treatment outcomes.

LIPEDEMA

PP16 - FULL LEGS AC: A REPRODUCIBLE TECHNIQUE FOR LEG LIPOSCULPTURE

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Objectives: To present a reproducible high-definition circumferential leg sculpting system for lipedema patients based on dynamic anatomical visualization, compartment-oriented fat management, and strategic preservation of residual thickness to enhance muscular readability and natural contour transition.

Material/Method: A surgical concept based on circumferential liposuction was applied in lipedema patients undergoing full-leg contouring. Preoperative planning included dynamic anatomical assessment during standing and gait analysis, identification of muscular landmarks, and compartment-based mapping of superficial and deep fat pads.
Selective reduction and strategic preservation of adipose tissue were performed to create anatomical definition while maintaining feminine contour harmony. Particular attention was directed to the peri-knee region, medial distal thigh, lateral thigh transition zones, and posterior leg aesthetics.
Skin retraction optimization and contour refinement strategies were integrated according to tissue quality and severity of lipedema involvement.

Results: The technique allowed improved anatomical leg definition, enhanced contour transitions, and increased muscular readability while preserving natural aesthetics. Consistent improvement in lower limb proportions and peri-knee definition was achieved without producing an over-resected appearance.

The compartment-based approach facilitated individualized treatment planning according to fat distribution patterns and tissue characteristics commonly observed in lipedema patients.

Conclusion: Dynamic anatomical evaluation combined with selective compartment-oriented liposuction may improve contour precision and aesthetic outcomes in circumferential leg sculpting for lipedema patients.

The Full Legs AC concept proposes a reproducible framework focused not only on fat removal, but on strategic residual tissue modulation to enhance lower limb anatomy while preserving natural feminine morphology.

PP17 - POSTBARIATRIC LIPEDEMA PATIENTS: COMBINED STRATEGIC APPROACH TO ABDOMEN AND THIGH CONTOURING.

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Objectives: To present a strategic surgical approach for postbariatric patients with lipedema, combining body contouring procedures of the abdomen and thighs to improve physical symptoms, contour harmony, skin excess management, and overall quality of life.

Material/Method: Patients with lipedema and previous massive weight loss underwent staged body contouring procedures including circumferential abdominoplasty, thigh lifting techniques, circumferential liposuction, and selective skin resection.
Preoperative evaluation included assessment of residual painful adipose tissue, skin laxity, obesity status, and lower-limb contour deformities. Surgical planning prioritized treatment sequencing: obesity control, lipedema reduction, and subsequent skin management.

Different surgical strategies were analyzed, including abdominal-first approaches, circumferential abdominoplasty, spiral thigh lifting concepts, vertical extensions, and gluteal contour refinement in selected cases.

Results: Combined staged surgical treatment improved body contour, mobility, skin redundancy, and patient quality of life. Sequential management of obesity, lipedema tissue, and skin excess facilitated better contour optimization and more predictable postoperative outcomes.
Circumferential body contouring techniques and strategic thigh lifting approaches allowed improved lower-body proportions while addressing severe skin laxity commonly observed in postbariatric lipedema patients.

Conclusion: Postbariatric patients with lipedema require a strategic and staged body contouring approach rather than isolated procedures.
Correct diagnosis of lipedema before excisional surgery and adequate sequencing of obesity treatment, lipedema reduction, and skin resection may optimize functional and aesthetic outcomes while reducing contour deformities and surgical dissatisfaction.

PP18 - LIPEDEMA AND PELVIC FLOOR DYSFUNCTION: A PILOT STUDY

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Objectives: Despite the significant impact that pelvic floor dysfunction has on women's quality of life, research into lipedema patients has largely been overlooked. Pelvic floor disorders (PFD), including urinary incontinence (UI), pelvic organ prolapse (POP), faecal incontinence, and chronic pelvic pain, affect around 25% of women of childbearing age. Recent studies suggest that lipedema may share common aetiopathogenic mechanisms with these conditions, including hypermobility, hormonal dysregulation, or obesity. This pilot study aims to describe the prevalence and distribution of pelvic floor symptoms in a sample of lipedema patients, and to assess the need for specialised care in this population.

Material/Method: A cross-sectional study was conducted using an anonymous, self-administered online questionnaire distributed through the Spanish lipedema patient association. Variables collected included age, hormonal status, and pelvic floor symptoms (urinary and faecal incontinence, POP, dyspareunia, and pelvic pain), assessed with ordinal scales. Medical confirmation of the lipedema diagnosis was also recorded.
Statistical analysis was performed with Stata v15. Descriptive statistics were calculated for the variables, with qualitative variables represented as absolute and relative frequencies, and quantitative variables represented as mean ± standard deviation (SD) for normal distributions and median and interquartile range for non-normal distributions.

Results: A total of 105 responses were obtained. The mean age of the patients was 43.7 years (SD ± 8.9). 92% of patients had a diagnosis of lipedema confirmed by a physician. Regarding hormonal status, 28.7% of patients were in perimenopause, 17.8% premenopausal, and 16.8% postmenopausal. Urinary incontinence was reported by 68.9% of participants, predominantly stress urinary incontinence (33.0%). Nocturia was present in 69.2%, irritative urinary symptoms in 62.5%, and faecal urgency affected 55.9% of women. 22.1% of patients reported symptomatic vaginal prolapse, and 53.8% persistent pelvic heaviness. Dyspareunia was present in 72.1%, and chronic vulvar pain in 26.0%. Joint hypermobility was self-reported by 64.4%, with a significant dose-response association between hypermobility level and UI prevalence (OR 2.31, 95% CI: 0.90–5.96). Despite this high symptom burden, 50.5% of participants had never sought healthcare attention for their pelvic floor symptoms.

Conclusion: Women with lipedema present a high prevalence of PFD, and joint hypermobility appears to be a significant contributing factor. The low consultation rate underscores the need for systematic pelvic floor assessment within the multidisciplinary management of lipedema. Prospective studies with larger samples, adjusted for confounding factors such as obesity, and objective pelvic floor evaluation are warranted.

PP19 - A CASE SERIES OF THE EFFICACY OF A LOW-CARBOHYDRAT DIET COMBINED WITH TIRZEPATIDE PHARMACOTHERAPY AND OMEGA-3-6-9 SUPPLEMENTATION IN WOMEN WITH OVERWEIGHT/ OBESITY AND LIPEDEMA

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Objectives: The aim of the study was to evaluate the efficacy and safety of tirzepatide in combination with a low-carbohydrate diet, omega 3-6-9 fatty acid supplementation, and regular physical activity in patients with lipedema.

Material/Method: A single-center, observational outpatient study was conducted in 7 adult women with diagnosed lipoedema and excess body weight. All participants completed a standardized non-pharmacological program including a low-carbohydrate diet, regular physical activity, and omega-3-6-9 supplementation. After one month of dietary intervention, weekly tirzepatide (2.5–7.5 mg) was initiated with individualized titration based on tolerability. Over six months, changes in body weight, lower-limb circumferences, ultrasound-measured subcutaneous fat thickness, metabolic parameters (fasting glucose, HOMA-IR, lipid profile), pain intensity (pain pressure threshold), quality of life and treatment safety were assessed.

Results: Participants achieved a mean body weight reduction of approximately 12 kg. Significant decreases in lower-limb circumferences and subcutaneous fat thickness were observed. Glycemic control improved and HOMA-IR decreased. Tirzepatide was well tolerated, and all participants reported reduced lower limb pain intensity.

Conclusion: A multimodal approach combining tirzepatide, a low-carbohydrate diet, structured physical activity, and omega-3-6-9 supplementation was associated with improvement in anthropometric and selected clinical outcomes in patients with lipedema. These results require confirmation in larger, randomized clinical trials.

PP20 - LOW-CARBOHYDRATE MEDITERRANEAN-STYLE NUTRITIONAL APPROACH AS FIRST-LINE INTERVENTION IN PATIENTS WITH LIPEDEMA

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Objectives: Although lipedema subcutaneous adipose tissue is commonly considered poorly responsive to conventional weight-loss strategies, low-carbohydrate nutritional approaches have been associated with improvements in lipedema-related symptoms and body composition. Ketogenic diets may be effective but are often difficult to maintain long term. We report our clinical experience using a low-carbohydrate Mediterranean-style diet as a first-line nutritional intervention in patients with lipedema.

Objective: Although lipedema subcutaneous adipose tissue is commonly considered poorly responsive to conventional weight-loss strategies, low-carbohydrate nutritional approaches have been associated with improvements in lipedema-related symptoms and body composition. Ketogenic diets may be effective but are often difficult to maintain long term. We report our clinical experience using a low- carbohydrate Mediterranean-style diet as a first-line nutritional intervention in patients with lipedema.

Material/Method: We retrospectively evaluated 53 women diagnosed with lipedema who underwent a low-carbohydrate Mediterranean-style diet and were followed for 6 to 18 months. Anthropometric measurements and body composition assessed by bioimpedance analysis were recorded at baseline and during follow- up. In patients with insufficient fat-loss response, a ketogenic diet was introduced as a temporary or alternating strategy. One patient underwent a one-month reverse diet before starting the low- carbohydrate Mediterranean-style diet.

Results: Forty-seven of 53 patients were managed with the low-carbohydrate Mediterranean-style diet alone, while 5 required ketogenic diet support because of insufficient response. Patients treated with the Mediterranean-style low-carbohydrate approach showed improvement in body weight (on average - 8,8 kg after 6 months, -16,5 kg after 10 months, -22 kg after 18 months), waist and hips circumferences, fat mass (on average -8,1 kg after 6 months, -14,2 kg after 10 months, -21,0 kg after 18 months), extra-cellular fluids (on average -2,2 L after 6 months, -3,1 L after 10 months, -5,4 L after 18 months) and lipedema-related symptoms at follow-up. The ketogenic subgroup showed comparable improvements.

Conclusion: A low-carbohydrate Mediterranean-style diet may represent a sustainable first-line nutritional strategy for patients with lipedema, providing clinical and body-composition improvements while limiting the need for more restrictive ketogenic approaches. These preliminary real-world data support the development of standardized, long-term nutritional protocols for lipedema.

PP21 - MULTIDISCIPLINARY PROTOCOL FOR THE DIAGNOSIS AND MANAGEMENT OF LIPEDEMA IN PHYSICAL AND REHABILITATION MEDICINE CLINICS

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Objectives: Lipedema is a chronic disorder characterized by disproportionate adipose tissue accumulation in the extremities, usually bilateral and symmetrical, and associated with pain and tenderness. The diagnosis is mainly clinical and is frequently confused with obesity, lipohypertrophy or lymphedema, which often leads to delayed diagnosis and inadequate management. The aim of this study is to describe the development of a clinical protocol for the diagnosis and management of lipedema in Physical Medicine and Rehabilitation consultations.

Material/Method: A clinical protocol was developed based on a review of current literature and recent international consensus guidelines. The protocol integrates clinical diagnostic criteria, differential diagnosis and therapeutic recommendations. An algorithm for clinical decision-making was established, including initial clinical assessment, exclusion of other conditions such as venous insufficiency or lymphedema, and the implementation of conservative therapeutic strategies.

Results: The proposed protocol establishes a structured clinical pathway to facilitate the identification and management of lipedema in routine clinical practice. The management approach is mainly conservative and includes weight control, regular physical exercise, the use of compression garments and psychological support when required. The protocol also considers criteria for surgical assessment in selected patients presenting significant functional limitation and persistent symptoms despite prolonged conservative treatment.

Conclusion: The implementation of a structured clinical protocol may improve the identification of lipedema and support a multidisciplinary management approach focused on symptom control and functional improvement in affected patients.

PP22 - DEVELOPMENT OF PATIENT EDUCATIONAL MATERIAL FOR LIPEDEMA: DESIGN OF AN INFORMATIONAL LEAFLET

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Objectives: Lipedema is a chronic condition characterized by disproportionate adipose tissue accumulation in the extremities, usually bilateral and symmetrical, and associated with pain and tenderness. Lack of adequate patient information may hinder disease understanding and adherence to therapeutic recommendations. The aim of this study is to develop educational material for patients with lipedema to improve disease awareness and promote self-care strategies.

Material/Method: Educational material for patients was developed based on a review of the current literature and recommendations for the conservative management of lipedema. The information was organized into an informational leaflet designed for distribution in clinical consultations. The material includes information about the disease, conservative treatment strategies and practical recommendations for self-management.

Results: The developed leaflet provides clear and accessible information about lipedema and addresses key aspects of patient self-care. Recommendations include weight management, regular physical exercise, particularly progressive aerobic exercise, aquatic activity and moderate resistance training—, the use of compression garments, skin care and psychological support when necessary. Nutritional recommendations are also included, focusing on a balanced diet rich in fiber, antioxidants and omega-3 fatty acids, as well as strategies aimed at reducing inflammation and improving treatment adherence.

Conclusion: The development of structured patient educational material may improve disease understanding and encourage active patient participation in the management of lipedema through the adoption of healthy lifestyle habits and self-care strategies.

PP23 - PHENOTYPIC RELEVANCE AND THE ROLE OF REHABILITATION IN THE MANAGEMENT OF LYMPHEDEMA IN NOONAN SYNDROME: A CASE REPORT

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Objectives: To review the clinical and genetic spectrum of Noonan syndrome (NS) and to analyze a case of delayed diagnosis. Additionally, to evaluate the management of systemic complications (lymphatic, musculoskeletal, and cardiorespiratory) from a rehabilitation perspective.

Material/Method: A narrative review of NS and RASopathies was conducted, addressing their genetic basis, potential clinical manifestations—with particular focus on lymphatic involvement—and therapeutic management. A clinical case of a 17-year-old male with suspected NS was analyzed, including data from clinical examination, biochemical studies, imaging tests, and genetic analyses.

Results: A 17-year-old male with a history of a neonatal posterior cervical cyst and an initial suspicion of NS, without subsequent follow-up, was evaluated. Since childhood, he presented dysmorphic features consistent with NS (webbed neck, low-set ears, downslanting palpebral fissures, mild hypertelorism, retrognathia, and pectus carinatum). At age of 10, he experienced an episode of increased volume in the lower limbs. At age 17, bilateral lower limb edema was confirmed, prompting referral for genetic evaluation and assessment by the Lymphedema Unit of our Hospital.

Initial diagnostic orientation suggested Marfan syndrome, which was ruled out based on a normal echocardiogram and a low systemic score. Initial genetic testing (FBN1 gene) was negative, revealing a variant of uncertain significance and a normal karyotype. Doppler ultrasound demonstrated primary chronic venous insufficiency with reflux. Lymphoscintigraphy showed preserved drainage in the right lower limb and dysfunction in the left, consistent with unilateral lymphatic hypofunction.

Clinical reassessment redirected the case toward a RASopathy, with Noonan syndrome considered the most likely diagnosis, pending genetic confirmation.

From a rehabilitation standpoint, decongestive lymphatic therapy was initiated, including manual lymphatic drainage, multicomponent bandaging, and progressive use of flat-knit compression garments (class 2–3), extending to the hip and incorporating overlapping compression stockings as needed.

Conclusion: Patients with incomplete syndromic expression may experience significant diagnostic delay, as illustrated by this case of Noonan syndrome. In the presence of compatible phenotypes, early genetic testing should be considered. Furthermore, early multidisciplinary management—including rehabilitation—can mitigate potential disease-related complications.

PP24 - PSEUDOCHYLOTHORAX ASSOCIATED WITH MALIGNANCY: A CASE REPORT

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Objectives: Introduction
Pseudochylothorax is a pleural effusion with a milky or cloudy appearance and high lipidic content, unrelated to thoracic duct injury, unlike chylothorax. Although less frequent, it is important to identify it, given its diagnostic and etiological implications.

Material/Method: Case Report
A 64-year-old woman with a history of cervical adenocarcinoma treated in 2018 with chemotherapy and radiotherapy was admitted for increased severeness of her bilateral lower limb lymphedema and progressive dyspnea for the last three weeks. The chest X-ray revealed a right pleural effusion. A thoraco-abdomino-pelvic CT scan showed anasarca, bilateral pleural effusion (predominantly on the right), and thrombosis of the right subclavian vein. A diagnostic-therapeutic ultrasound-guided thoracentesis was performed, showing a milky pleural fluid without chylomicrons, rich in colesterol, por in triglycerides, containing cholesterol crystals, consistent with pseudochylothorax. Cytological examination revealed malignant cells consistent with adenocarcinoma signet ring cells, likely to have a gastric origin.

Results: Discussion
Pseudochylothorax is usually associated with chronic pleural processes, although in this case it was related to advanced neoplastic disease. Its diagnosis is based on pleural fluid analysis and must be differentiated from chylothorax. The therapeutic management mainly aims at the underlying cause, generally with a conservative and non-surgical approach.

Conclusion:
- Pseudochylothorax is a rare but relevant entity in the differential diagnosis of milky pleural effusions.
- It can be associated with advanced malignant pathology, as in this case.
- Early diagnosis allows for guiding the appropriate therapeutic management, usually conservative

Bibliography:
- Valdés L, Pose A, Suarez A, San José E, Martínez M, Alvarez D, et al. Cholesterol pleurisy: a study of 50 patients. Chest. 1997;111(3):718–721. doi:10.1378/chest.111.3.718
- McGrath EE, Anderson PB. Chylothorax and pseudochylothorax. Thorax. 2010;65:856–860. doi:10.1136/thx.2009.126899
- Feller-Kopman D, Light RW. Pleural effusions. N Engl J Med. 2018;378:1761–1770. doi:10.1056/NEJMra1701633
- Porcel JM, Esquerda A, Vives M, Bielsa S. Pseudochylothorax: an updated review. Curr Opin Pulm Med. 2019;25:361–367. doi:10.1097/MCP.0000000000000602
- Valdés L, San José E, Alvarez D, Martínez M, Pose A. Pseudochylothorax in malignancy: case reports and review of the literature. Respiration. 2001;68:373–376. doi:10.1159/000050261
- Multidisciplinary management of adult patients with chylothorax: a consensus statement. Abhinav A et al. Eur Respir J 2024 Nov 7;64(5):2400470. doi: 10.1183/13993003.00470-2024

PP25 - REFRACTORY PRIMARY GENITAL LYMPHEDEMA: FOLLOW-UP, TREATMENT OPTIMIZATION, AND SURGICAL INDICATION IN A COMPLEX CASE

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Objectives: To describe the clinical course and care pathway of a patient with primary genital lymphedema refractory to conservative and interventional treatments, and to analyze the final indication for resection surgery.

Material/Method: Descriptive study of a clinical case with 15 years of longitudinal follow-up. Clinical data, imaging studies (lymphoscintigraphy, indocyanine green (ICG) lymphography), conservative treatments, minimally invasive interventions, and resection surgery were collected. Complications, clinical progression, and therapeutic response were analyzed.

Results: A male patient with primary genital lymphedema, with onset at 30 years of age, showed progression from grade II to grade III disease. He presented persistent lymphorrhea and recurrent episodes of lymphangitis despite antibiotic prophylaxis (up to 5 episodes per year in early stages, later stabilizing at 2–3 episodes per year). Clinical management was unsatisfactory, with persistent edema and lymphorrhea despite optimized conservative treatment (manual lymphatic drainage, self-drainage, compression garments, jockstrap use, and strict hygienic and dietary measures) and multiple interventional procedures between 2011 and 2021, including therapeutic transnodal lymphography, lymph node sclerosis, radiofrequency ablation, and cryoablation.

Finally, in 2024 suprapubic resection surgery combined with liposuction was performed, achieving significant volume reduction and resolution of lymphorrhea in that region. A lymphatic reconstruction approach was ruled out after ICG lymphography demonstrated the absence of functional lymphatic channels.

However, residual scrotal lymphedema and episodes of lymphangitis persisted (2 episodes during 20-month follow-up).

Conclusion: Some cases of primary genital lymphedema may progress to advanced, refractory forms despite optimal conservative and interventional management. The absence of functional lymphatic channels, frequency of lymphangitis, and significant functional impairment and impact on quality of life determine the indication for resection surgery. This approach provides partial but not curative improvement. This case highlights the complexity of surgical decision-making, the importance of a multidisciplinary approach, and the need for individualized management with periodic reassessment.

PP26 - PRIMARY LYMPHEDEMA ASSOCIATED WITH CONGENITAL DISORDERS OF GLYCOSYLATION

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Objectives: Congenital disorders of glycosylation (CDG) are a group of metabolic disorders caused by deficient protein glycosylation. The most common CDG is caused by phosphomannomutase deficiency. Clinical symptoms often include neurological involvement in addition to dysmorphic features, failure to thrive, cardiac failure, renal, endocrine abnormalities and primary lymphedema.

Material/Method: We report the case of a 29-year-old woman who has a history of primary ovarian failure. During her first pregnancy (oocyte donation) in June 2023, she developed placental thrombosis and heart failure. The thrombophilia testing was negative. The heart failure was secondary to cardiomyopathy, which was complicated by cardiogenic shock, leading to a transplant in September 2023. Genetic testing showed the presence of two variants in the DOLK gene in compound heterozygous state confirmed the CDG syndrome.
Her brother 27-year-old brother has the same syndrome; he needed a heart transplant. Her sister, 25-year-old sister is healthy.

Results: The patient had been taking Everolimus, which was stopped after the development of stage 2 lymphedema in the left lower limb in February 2025, confirmed by lymphoscintigraphy.
Her mother 56-year-old mother has lymphedema of the left lower limb for more than 25 years. She is a healthy carrier in the heterozygous recessive state of ChR9 (GRCh38). Her father also presents the recessive state of same gene.

Conclusion: CDG sydrome can provoke lymphedema. Primary development of the lymphatic system can be disturbed due to hypoglycosylation of the numerous glycoproteins involved in lymphangiogenesis including podoplanin, PROX1 (prospero-related homeobox), LYVE1 (lymphatic vessel endothelial hyaluronan receptor) and VEGFC (vascular endothelial growth factor C). VEGFC, and N-glycosylated protein involved in the regulation of growth and regulation in lymphangiogenesis.

Bibliography: R.Verstgen et al. Lymphatic edema in congenital disorders of glycosylation. JIMD Rep.2012.4.113-6

PP27 - YELLOW NAIL SYNDROME AS A SYSTEMIC LYMPHATIC DISORDER: CHALLENGES IN THE REHABILITATION MANAGEMENT OF MULTISEGMENTAL LYMPHEDEMA

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Objectives: To describe the rehabilitation approach in a complex case of Yellow Nail Syndrome (YNS) with early onset, multisystem involvement, and extensive lymphedema, highlighting the role of lymphoscintigraphy and individualized conservative treatment.

Material/Method: Descriptive study of a clinical case with longitudinal follow-up from childhood. Clinical data and complementary studies were collected. The evolution of lymphedema, multisystem involvement, and response to decongestive lymphatic therapy were analyzed.

Results: A 49-year-old woman presenting with lower limb lymphedema, with onset at 8 years of age, with progression to upper limbs and genital region, associated with characteristic yellow nails. She was evaluated in the Lymphedema Unit at an advanced stage, with established multisegmen-

tal involvement. She presented significant systemic involvement, including congenital intestinal lymphangiectasia with chronic malabsorption and persistent hypoproteinemia requiring periodic intravenous albumin replacement. She also had combined cellular and humoral immunodeficiency with hypogammaglobulinemia, recurrent respiratory infections, and chronic respiratory disease (asthma, sinusitis, and nasal polyposis), as well as a history of constrictive pericarditis with suspected serosal lymphatic involvement.

Lymphoscintigraphy revealed a heterogeneous and asymmetric pattern, with lymphatic aplasia in the right upper limb, hypoplasia in the left upper limb, and mild dysfunction in the lower limbs with preserved drainage, consistent with structural lymphatic impairment, which guided territory-specific treatment adaptation.

From a rehabilitation perspective, decongestive lymphatic therapy was implemented, including manual lymphatic drainage and multicomponent bandaging, along with prescription of flat-knit compression garments for the upper and lower limbs. The patient was trained in self-drainage and self-bandaging. Genital compression was considered, with limited tolerance. Due to the complexity of the condition, intensive treatment was planned in an inpatient setting. Intermittent pneumatic compression was not indicated due to systemic involvement, structural lymphatic impairment, and the risk of uncontrolled fluid mobilization in the context of hypoproteinemia. The systemic complications that can appear in this syndrome and can compromise the patient›s life require an approach from other specialists who are key to its overall management.

Conclusion: YNS may present as a multisystem lymphatic disorder with early onset and chronic course. In this context, rehabilitation management should focus on sustained functional control rather than isolated volume reduction. Decongestive lymphatic therapy, individualized compression, and patient education are the mainstays of treatment, requiring continuous adaptation according to clinical evolution and comorbidities. Lymphoscintigraphy plays a key role in characterizing lymphatic dysfunction and guiding therapeutic decision-making.

PP28 - REFRACTORY NON-TRAUMATIC CHYLOTHORAX IN PRIMARY INTESTINAL LYMPHANGIECTASIA: INTENSIVE CONSERVATIVE MANAGEMENT

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Objectives: Primary intestinal lymphangiectasia (PIL), also known as Waldmann disease, is a rare primary lymphatic disorder causing impaired lymphatic transport and may present as non-traumatic chylothorax secondary to lymphatic vessel hyperpermeability. Chylothorax and chylous ascites are severe complications that compromise the patient's nutritional and immunological status. Recent consensus statements emphasize the importance of a multidisciplinary approach, prioritizing conservative treatment in non-traumatic cases.

Material/Method: A 28-year-old man with PIL diagnosed in 2012, with a history of chylous hydrocele and umbilical hernia associated with chylous ascites, was admitted due to dyspnea, tense ascites, and lower-limb lymphedema following dietary transgression.

Results: Physical examination revealed massive bilateral pleural effusion, tense ascites, and pitting edema in both lower limbs. Pleural and peritoneal drains were placed. Laboratory findings showed severe hypoproteinemia and hypogammaglobulinemia. Inguinal lymphangiography did not demonstrate an active focal leak, suggesting diffuse lymphatic leakage secondary to lymphatic hypertension. Due to initial refractoriness to conservative treatment with a fat-free diet and octreotide, therapy was intensified with total parenteral nutrition (TPN) and complete enteral rest while maintaining octreotide and loop diuretics. Complete cessation of chylous drainage was achieved within 72 hours after initiation of TPN. Progressive reintroduction of a strict low-fat diet supplemented with medium-chain triglycerides (MCT) was subsequently performed. Complete resolution of chylothorax and ascites was achieved, allowing removal of both drains without recurrence. The patient was discharged with coordinated follow-up by Internal Medicine, Nutrition, and Rehabilitation teams.

Conclusion: This case demonstrates that even in high-output chylous manifestations of diffuse lymphatic origin, intensive conservative management may avoid invasive procedures. The absence of a focal leak supported the diagnosis of systemic lymphatic dysfunction. TPN, octreotide, and MCT constitute the cornerstone of conservative treatment. From a Physical Medicine and Rehabilitation perspective, functional and nutritional follow-up, together with therapeutic education, are essential to prevent malnutrition and recurrence, optimizing functional outcomes and minimizing the need for future invasive interventions.

PP29 - A CONGENITAL HEART DISEASE (EBSTEIN) AND A PRIMARY LYMPHEDEMA: A NEW SYNDROME?

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Objectives: The congenital disease Ebstein is a disease of the heart and it consists of a) of an abnormal protrusion of the posterior tongue of tricuspid valve of heart. b) of a big but normal anterior tongue of tricuspid valve of heart and c) of the right ventricular of the heart is like atrial.

Material/Method: A 15-year-old patient presented with edema of the right leg after 15 years with congenital cardiologic disease called Ebstein. He underwent blood tests and imaging examinations.

Results: The lymphoscintigraphy of lower extremities depicted hypoplasia of his lymphatic system of both lower extremities

Conclusion: A 15 years old patient with a combination of congenital diseases included the heart and the lymphatic system of the lower extremities. This is the first reported case. A new syndrome?

Bibliography:

1. Webb G, Redington A. Congenital heart disease in children and in adults. In: Braunwald's Heart Disease, 7th ed. Zipes DP, et al., eds. Philadelphia: Saunders; 2005.
2. The Diagnosis and Treatment of Peripheral Lymphedema: 2023 Consensus Document of the International Society of Lymphology. Lymphology. 2023;56:133-151.

PP30 - PATIENT AWARENESS, ACCESS TO CARE, AND INFORMATION NEEDS IN CANCER-RELATED LYMPHEDEMA: A CROSS-SECTIONAL STUDY

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Objectives: Cancer-related lymphedema is a chronic condition requiring early recognition and timely management; however, patient awareness and access to appropriate information across the care pathway remain limited. This study aimed to evaluate patient awareness prior to symptom onset, pathways to care, and information needs among individuals with cancer-related lymphedema.

Material/Method: A cross-sectional questionnaire-based study was conducted in 2025 among 22 patients with cancer-related lymphedema referred to a rehabilitation physician in a tertiary care setting. The questionnaire assessed patient characteristics, lymphedema onset and recognition, access to care, prior counseling, and information needs.

Results: The majority of participants were female (91%), breast cancer was the most common diagnosis (73%), and participants were predominantly aged 50–79 years (68%). Nearly all participants had undergone cancer-related surgery (96%), and 86% had received radiotherapy.
Lymphedema most commonly developed within the first 3 months after cancer treatment. However, onset varied considerably over time, with additional cases occurring throughout the first year and a substantial proportion developing later, including 2–3 years and more than 3 years after treatment.

In 82% of cases, patients themselves first recognized the onset of swelling, whereas healthcare professionals were less likely to identify it first.

Only 23% of participants reported receiving information about lymphedema prior to its onset, and only one participant considered the information sufficient.

Delays in accessing specialized care were common, with time to reaching a rehabilitation physician ranging from 1 week to 7 years after symptom onset. Notably, 32% of patients reported receiving lymphedema therapy in the private sector before reaching a rehabilitation physician.
Healthcare professionals were consistently identified as the primary and most trusted source of information, particularly in the postoperative period (96%), while preoperative information was considered less important by half of participants (50%).

Conclusion: Patient awareness of lymphedema prior to symptom onset remains limited, and access to timely, adequate information is insufficient. The findings highlight gaps in early detection and patient education, as well as the central role of healthcare professionals. Structured, patient-centered education strategies across the care pathway, including long-term follow-up, are needed to improve early recognition and treatment.

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