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# 47<sup>th</sup> Congress of European Society of Lymphology

May 30 - June 1, 2024

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***ACCEPTED POSTER PRESENTATIONS***

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**Group:** General / Complete Decongestive Therapy, all aspects

## **Complex decongestive therapy for lower extremity lymphedema: results from a tertiary care center**

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Ece Cinar / Ege University School of Medicine, Dept. of Physical Medicine and Rehabilitation

**Objectives:** In this retrospective study, we aimed to evaluate the effectiveness of CDT in patients with lower extremity lymphedema.

**Background:** Lymphedema continues to be a hard-to-treat condition that may result from surgery, venous insufficiency, infections or congenital abnormalities of the lymphatic system. Golden standard of conservative treatment is Complex Decongestive Therapy (CDT) which includes compression therapy and manual drainage of the lymph fluid. Most studies assessing the effectiveness of CDT are carried out in patients with upper extremity lymphedema caused by breast cancer.

**Methods:** We have reviewed and recorded data from the patient files of those patients that had received at least one cycle of treatment for lower extremity lymphedema in the lymphedema care and treatment unit of our university hospital. Demographic data, disease characteristics, percentage of excess volume (PEV), lymphedema volume to body mass index ratio (LV/BMI) and treatment duration were recorded. Statistical analyses were carried out to compare results from patients with different etiologies and from patients that received different treatment modalities.

**Results:** Treatment outcomes from a total of 198 extremities from 127 patients were recorded and analyzed. Nearly half of subjects (44%) had cancer related lymphedema, followed by lymphedema related to venous insufficiency (23.6 %). Pre- and post-treatment LV/BMI values were significantly higher in the venous insufficiency group, although comparison of decreased volume percentages between the two groups was found to be insignificant ( $p>0.05$ ). Lymphedema grade was found to have a positive and significant correlation with BMI ( $p<0.05$ ).



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BMI was also positively correlated with the number of removed lymph nodes as well as number of chemotherapy cycles and radiotherapy sessions ( $p < 0.05$ ). Pre-treatment LV/BMI ratio was not found to correlate with any clinical parameters, but post-treatment LV/BMI values showed a positive correlation with patients' activity levels and number of radiotherapy sessions ( $p < 0.05$ ).

**Conclusions:** In this retrospective analysis of treatment results from a tertiary lymphedema clinic, we have observed that primary lymphedema responds equally well to CDT as cancer related lymphedema. We have also detected similar volume reduction values with CDT in patients with chronic venous insufficiency, although differences in BMI and body composition may have an additional effect on treatment outcomes.

**Keywords:** lymphedema, lower extremity, cancer rehabilitation

## References

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**Group:** General / Cancer rehabilitation

## **The Effect of Treatment With Tumor Type on Lymphedema Volume in Breast Cancer Patients Undergoing Complex Decongestive Lymphedema Therapy - Retrospective Study**

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Kubra Turker / Institute of Senology

**Objectives:** In the current thesis study, it is aimed to investigate the hormonal tumor type relationship between the results of complex decongestive lymphedema therapy applied to patients with breast cancer and subsequently developed lymphedema, before and after treatment.

**Background:** Lymphedema is a common disease in women with breast cancer. Finding different related causes of lymphedema. To associate it with the type of tumor or the medications and treatment methods taken.

**Methods:** This study included 100 patients over the age of 18 with grade I-II-III breast cancer and at least 2 cm of lymphedema who applied to the Acbadem Maslak Hospital Breast Unit and received complex decongestive lymphedema therapy in the clinic. Sociodemographic, clinical disease information, anthropometric measurements and pain assessments of the patients were scanned and recorded from their files.

**Results:** Low educational status of the patients before the treatment, having cancer in the premenopausal period, aggressive type of surgery, duration of lymphedema, and being human epidermal growth factor receptor 2 positive (HER2+) were found to be factors that increase the severity of lymphedema (p=0,014). In addition, as the severity of lymphedema increased in the area above the lateral epicondyle, the pain values of the patients during activity were higher (p=0,009). In the evaluation of treatment efficacy, lymphedema severity improved less in patients with estrogen receptor positive (p=0,034). Factors associated with treatment



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effectiveness were determined as low educational status, cancer in the premenopausal period, aggressive type of surgery, duration of lymphedema, and estrogen receptor negativity ( $p < 0.05$ ).

**Conclusions:** Patients with low educational status, cancer in the premenopausal period, more aggressive type of surgery, long lymphedema duration, estrogen receptor positive and HER2+ should be more carefully evaluated and followed up for lymphedema.

**Keywords:** Breast cancer, Lymphedema, Hormone, Complex Decongestive Lymphedema Therapy

## References

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**Group:** General / Complete Decongestive Therapy, all aspects

## The Treatment of Elephantiasis Nostras Verrucosa with Complete Decongestive Therapy

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**Objectives:** Elephantiasis nostras verrucosa (ENV) is a chronic, progressive, and rare secondary lymphedema syndrome described by cutaneous hypertrophy and deformation. ENV is characterized by non-pitting edema, verrucous lesions, and cobblestone-like hyperkeratotic papulonodules. The aim of this case presentation is to emphasize the effectiveness of complete decongestive therapy (CDT) used in the treatment of lymphedema associated with ENV.

**Background:** .

**Methods:** A 31-year-old male patient was admitted to the lymphedema unit with the complaint of swelling and deformity in the right leg. His medical history revealed onset of swelling following right inguinal lipoma excision at the age of 7, while deformity and verrucous lesions had been present for 5-6 years. The patient had experienced 6 cellulitis attacks in the past year, with the most recent occurrence being 1 month prior, necessitating antibiotic use. In the physical examination of the patient, it was observed that there was non-pitting edema extending from the right inguinal region to the foot, as well as scattered pigmented sclerotic skin changes and widespread multiple hypertrophic nodules with a verrucous appearance. Systemic examination was unremarkable. The patient had a body mass index (BMI) of 46.9 kg/m<sup>2</sup>, and laboratory findings showed WBC: 5250/mm<sup>3</sup>, Hb: 12.8g/dl, ESR: 33 mm/s, and CRP: 20 g/L.



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Ultrasonographic examination of the right lower extremity venous system demonstrated venous insufficiency of right saphenofemoral junction and perforator veins. According to the International Society of Lymphology (ISL) classification, the patient was evaluated as stage 4 lymphedema. A diagnosis of ENV was made by dermatology based on clinical findings. Medical treatment for skin ulcers was regulated by dermatology and infectious diseases. Within the scope of CDT, 40 sessions of multilayer bandaging and manual lymphatic drainage were applied and self-care methods were trained. After the treatment, there was a significant reduction in right lower extremity volume (40729 cm<sup>3</sup> vs 26297 cm<sup>3</sup>; 54.9%). After the treatment, daily activities and gait pattern were improved. A proper tailored compression garment with was prescribed and self-care methods were recommended. Control examination was recommended 6 months later.

Non-pitting edema, scattered pigmented sclerotic skin changes, widespread multiple hypertrophic nodules with a verrucous appearance



Before and after treatment of the right lower extremity



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**Results:** .

**Conclusions:** ENV is a significant problem that can affect functionality and quality of life if left untreated. It can lead to permanent disfigurement and chronic skin infections, as well as life-threatening complications such as malignancy and sepsis. The results indicate that diagnosis and prompt application of CDT are recommended as effective methods for reducing extremity volume, improving daily life activities, and preventing complications in these patients.

**Keywords:** Elephantiasis nostras verrucosa, Complete Decongestive Therapy, Lymphedema

## References

**Author Note:** vaka sunumu formatı olmadığından bu şekilde çalışma formatında göndermek zorunda kaldık Pınar hocanın bilgisi dahilindedir. Vaka sunumudur. teşekkürler



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**Group:** General / Treatment for main complications of Lymphedema

## **A case of very early skin wound complications after lymphedema bandaging**

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<sup>2</sup>SBÜ Van Training and Research Hospital, Physical Medicine and Rehabilitation Clinic, Van, Türkiye

Sedat Öztürk / Van Private Urartu Eye Medical Center, Van, Türkiye

**Objectives:** The purpose of this case report is to keep in mind that, especially in patients with a high age group (over 65 years of age), even if bandaging is started with low tension, skin wounds may occur even at a very early stage

**Background:** A 68-year-old male patient applied to our clinic with a complaint of swelling in his left leg and foot that had been going on for 5 years. He had hypertension in his medical history and had no history of any surgery. No heart failure, renal dysfunction or thyroid dysfunction were detected in the examinations. No thrombosis was detected in lower extremity Doppler USG. Increased interstitial edema in the subcutaneous tissue was reported in lower extremity superficial tissue USG. On physical examination, Stemmer's test was positive. There was 3+ pitting edema in the left lower extremity. There was no genital involvement in the patient. In the patient's lower extremity measurements, left compared to right; An increased diameter difference of 1, 1.5, 3.5 and 4.5 cm was detected from the foot level, from the level 2 cm above the medial malleolus, from the level 10 cm distal to the lower end of the patella, and from the level 10 cm proximal to the upper end of the patella, respectively. Afterwards, compression bandaging was applied. During compression bandaging, an extra layer of bandage was applied to the malleolus and popliteal fossa. Due to the age of the patient, the tension of the winding was kept low. The compression bandage was kept for 12 hours on the first day. The patient continued manual lymphatic drainage and low-tension compression bandaging on the 2nd day. In this application, the compression bandage was kept for 20 hours. When the compression bandage was removed in the third session, an erythematous lesion measuring 3x3 cm was observed on the anterior aspect of the ankle. Treatment was interrupted. At the follow-up visit 2 days later, although the compression bandaging was discontinued, a stage 2 pressure ulcer with

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the same size in the epidermis and descending to the dermis was observed. The patient was treated with silver wound care spray, moisturizing cream containing hyaluronic acid and silver wound dressing.

skin wound



skin wound



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**Methods:** case report

**Results:** case report

**Conclusions:** In this study, we wanted to emphasize that pressure ulcers can occur even in the very early stages of compression bandage application.

**Keywords:** Lymphedema, complex decongestive treatment, complications, skin wound

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**Group:** General / Complete Decongestive Therapy, all aspects

## **THE EFFECTS OF TWO DIFFERENT TYPES OF COMPRESSION GARMENTS ON EXTREMITY VOLUME AND PATIENT SATISFACTION IN LYMPHEDEMA PATIENTS**

Orçın TELLİ ATALAY<sup>1</sup>, Sozdar SÖĞÜT TEKİN<sup>2</sup>, Atiye KAŞ ÖZDEMİR<sup>3</sup>, Sevda YILMAZ<sup>4</sup>

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Sozdar SÖĞÜT TEKİN / Pamukkale University Enstitute of Health Sciences

**Objectives:** OBJECTIVES: The main purpose of the study is to compare the effects of two different types of compression garments on extremity volume in patients with lymph edema. Secondly, it was aimed to find out how the usage of these garments affect patients' adaptation and satisfaction in phase two treatment of complex decongestive physiotherapy (CDP)

**Background:** BACKGROUND: Complex decongestive physiotherapy plays important role on the management of lymphedema. In the first phase of CDP, a reduction in extremity volume is targeted and preventing the volume decrease is the main purpose of the second phase. For this purpose, compression garments are advised to be worn. The compression garments may, ideally be custom size or as an alternative standard size. This study was planned to compare the effects of these two different garments.

**Methods:** Twenty-one patients with lymphedema was included in the study. The patients in group I ( n=9) used custom size compression garment in phase 2 CDP. The patients in group II (n=12) preferred to use standard size compression garments. All patients received phase I CDP including, manual drainage, exercise, compression bandages and skin care. The circumference of extremities was measured on nine different points and the extremity volume was calculated by Frustum formula. The patients' satisfaction was measured with visual analog scale (VAS) and was also assessed by a short questionnaire prepared related to the daily usage, discomfort,



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difficulties and satisfaction. All the measurements done at the beginning of the phase 2 treatment, as soon as the patients wore the garment and 6 weeks after.

**Results:** There was a significant difference in the measurement of extremity circumference at styloid, 15cm above, 15 cm above wrist measurement points between two groups in favor of Group I ( $p < 0,05$ ). The extremity volume of patients in group I was also significantly lower than the patients in Group II ( $p < 0,05$ ). Any significance was not found between groups in terms of patient satisfaction ( $p > 0,05$ ).

**Conclusions:** The results of this study showed that custom size compression garments were more effective for preventing the extremity volumes in lymphedema. The patient satisfaction did not differ according to the type of compression garments. Factors affecting the use of compression garments are recommended to be studied in further studies.

**Keywords:** Lymphedema, Decongestive Physiotherapy, Compression Garment

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**Group:** General / Complete Decongestive Therapy, all aspects

## Complete Decongestive Therapy in the Estonian Healthcare: An Overview

Katrin Kõre<sup>1</sup>

<sup>1</sup>North Estonia Medical Centre

Katrin Kõre / North Estonia Medical Centre

**Objectives:** The aim of the research is to give an overview of the provision of CDT in the Estonian health care system during the period 2014-2023. Within ten years, the number of patients receiving CDT has increased over the years, exceeding the limit of 1,000 patients in 2022 and 2023. The volume of CDT has also increased over the years, from 572 therapies in 2014 to 8,533 in 2023. Over the last few years in Estonia, approximately 1000 patients have received CDT annually. According to data, the prevalence of secondary lymphedema in America is reported to be 1 in 1,000. Based on this data, it can be expected that there are approximately 1,300 patients with lymphedema in Estonia. Although the provision of CDT as a healthcare service could be greater, it is still on the rise, and the number of providers has increased from four in 2014 to 14 in 2022 and 13 in 2023.

**Background:** Complete decongestive therapy (CDT) is the gold standard for treatment of lymphedema. CDT has been provided in Estonia as a healthcare service since 2014.

**Methods:** The database of the Estonian Health Insurance Fund on the provision of CDT for the period 2014-2023 was analyzed.

**Results:** The provision of CDT in the healthcare system has increased over the years. CDT was prescribed to 75 patients in 2014 and to 1,094 patients in 2023. The volume of sessions provided annually has increased from 572 to 8533 services over this period. The volume of therapies provided per person is rather small. This was the lowest in 2019 (6,2 sessions per person per year) and the highest in 2023 (7,8 sessions per person per year). The number of healthcare providers providing CDT has increased over the years, reaching its highest level in 2022 with 14 providers. The largest providers are regional and central hospitals, with smaller providers having



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been added over time. The majority of CDT is provided to outpatients, with less than 5% of total services provided to inpatients.

**Conclusions:** Over the past ten years, the number of patients receiving CDT and the volume of therapies provided have increased significantly. This indicates that the service is well-implemented within the healthcare system. Given the studies carried out worldwide on the cases of lymphedema, it can be assumed that there are some extent more patients in need of CDT in Estonia. Research on the prevalence of lymphedema in Estonia would be needed in the future.

**Keywords:** Complete decongestive therapy, Lymphedema

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**Group:** General / Complete Decongestive Therapy, all aspects

## **Complete Decongestive Therapy Provided at the North Estonia Medical Centre, 2014-2023**

Katrin Kõre<sup>1</sup>

<sup>1</sup>North Estonia Medical Centre

Katrin Kõre / North Estonia Medical Centre

**Objectives:** The aim of the study is to provide an overview of the use of CDT in the North Estonia Medical Centre (NEMC). NEMC is the largest provider of complete decongestive therapy (CDT) in Estonia, the service has been provided since its addition to the list of health services of the Estonian Health Insurance Fund in 2014. In total, more than 16000 CDT sessions have been provided in the past ten years. Considering the overall number of patients at NEMC (more than 130,000 patients per year), the specificity (the hospital hosts the largest oncology centre in Estonia), and the total number of individuals receiving CDT, it is evident that some of the patients requiring CDT do not receive treatment. The volume of CDT provided per patient ranges from 5.21 to 8.85 sessions between 2014 and 2023. Based on international recommendations, the number of CDT sessions per person is rather small.

**Background:** The largest cancer treatment center in Estonia is located at NEMC. The hospital's rehabilitation center provides CDT, which has been offered since 2014 when the service was added to the list of health services covered by the Estonian Health Insurance Fund.

**Methods:** CDT usage data at North Estonia Medical Centre (2014-2023) and Estonian Health Insurance Fund's nationwide data (2014-2023) were analyzed.

**Results:** Over the past ten years, the hospital's share of all CDT providers in Estonia has ranged from 21% to 58%. Both the number of patients and the volume of CDT sessions provided have increased during this period. From 2014 to 2023, CDT was administered to more than 1000 patients, with the vast majority being cancer patients. In total, over the course of ten years, more than 16,000 lymphatic therapy sessions have been provided. On average, there have been 100



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new lymphatic therapy patients added each year in recent years. The number of CDT sessions per patient varies from 5.21 to 8.85 per year.

**Conclusions:** In the light of the overall number of patients, the specificity and the circumstances of the hospital, the number of persons receiving CDT and the total volume of CDT sessions, it can be assumed that there is a higher number of patients requiring lymphatic therapy and that the need of CDT is higher. Based on world practice, the number of services per person is rather small. There is a need to increase the CDT capacity in NEMC.

**Keywords:** Complete decongestive therapy, Lymphedema

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**Group:** General / Breast cancer related lymphedema (all aspects including axillary web syndrome, musculoskeletal problems)

## **Experience of Bursa City Hospital Lymphedema Rehabilitation Center: What did we do to the patients with breast cancer related lymphedema?**

Erkan KAYA<sup>1</sup>, Nehar SAHIN<sup>1</sup>, Beyza ISIK<sup>1</sup>, Selma KIZILTOPRAK<sup>1</sup>, Demet CANBAZ<sup>1</sup>, Tolga CANBAZ<sup>1</sup>, Ömer Berkan OZCAN<sup>1</sup>, Ismail Oguz HUR<sup>1</sup>, Dogukan YAMAN<sup>1</sup>, Bulut CAKIR<sup>1</sup>, Taner DANDINOGLU<sup>1</sup>

<sup>1</sup>Bursa City Hospital, Physical Medicine and Rehabilitation, Bursa, Türkiye

Nehar SAHIN / Bursa City Hospital, Physical Medicine and Rehabilitation, Bursa, Türkiye

**Objectives:** The aim of this study is to analyze the effectiveness of complete decongestive therapy in the treatment of postmastectomy lymphedema in order to reduce the circumference of lymphoedema and evaluate the improvement of the concomitant symptomatology.

**Background:** More than one in five patients who undergo treatment for breast cancer will develop breast cancer-related lymphedema (BCRL). BCRL can occur as a result of breast cancer surgery and/or radiation therapy. BCRL can negatively impact comfort, function, and quality of life (QoL). Complex decongestive therapy (CDT) is a fourfold conservative treatment which includes manual lymphatic , compression therapy (consisting of compression bandages, compression sleeves, or other types of compression garments), skin care, and lymph-reducing exercises

**Methods:** Lymphedema patients who underwent either complete decongestive therapy (CDT) or kinesiologic taping (KT) between 2021 and 2023 were retrospectively included. CDT group received complex decongestive physiotherapy (manual lymphatic drainage, compression bandages, skin care, and exercises). The intervention was conducted five sessions per week for 4 weeks. KT group received web shaped kinesiologic tape one session per week for 4 weeks. Outcomes evaluations used the circumferential reduction rate.

**Results:** One hundred thirty-eight unilateral extremity lymphedema patients, including 68 patients in the CDT group and 10 patients in the KT group, were included. The mean



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circumferential reduction rate of  $5,05 \pm 2.5$  percent in the complete decongestive therapy group was statistically greater than the  $3.2 \pm 1.1$  percent rate in the complete decongestive therapy group ( $p = 0.01$ ).

**Conclusions:** The majority of the patients showed a clinical improvement in the intensity of symptoms after CDT. CDT is an effective treatment modality for early stage BCRL. Further study is required with respect to comparing breast cancer related lymphedema treatment modalities.

**Keywords:** postmastectomy; lymphedema, kinesiology taping; complex decongestive therapy

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**Group:** General / Lymphedema

## First Steps to Becoming a Lymphedema Rehabilitation Center: Case Series

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**Objectives:** Lymphedema is an important clinical condition that affects individuals' activities of daily living and quality of life. However, many patients remain untreated due to reasons such as low awareness of lymphedema, failure to diagnose it at an early stage, and inability to reach the appropriate center for treatment. For this reason, we started lymphedema treatment in our hospital after the necessary training.

**Background:** The purpose of this case series is to share our data about the patients we are currently following and treating.

**Methods:** Patients who applied to the Physical Medicine and Rehabilitation (PMR) out-patient clinic of our hospital from September 2023 to January 2024 and were diagnosed with lymphedema after anamnesis, physical examination and tests were followed up for lymphedema. Demographic data of the patients were recorded such as the cause of lymphedema, the body part of the lymphedema, its stage, and previous treatments for lymphedema.

**Results:** A total of 8 patients were followed and treated due to lymphedema. All patients were women and the average age was 53.5 (min: 44, max: 79) years. 7 of the patients (87.5%) had upper extremity lymphedema after breast cancer, and 1 (12.5%) patient had bilateral lower extremity lymphedema due to immobilization and obesity. When we evaluated in terms of the stages of lymphedema, Stage 3 lymphedema was detected in 3 (37.5%) patients, Stage 2 lymphedema was detected in 3 (37.5%) patients, and Stage 1 lymphedema was detected in 2



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(25%) patients. Of the patients with lymphedema detected in the upper extremity, 4 (57.14%) had lymphedema in the left extremity and 3 (42.86%) had lymphedema in the right extremity. The mean duration of swelling in the extremities was 64.75 (min: 1 month, max: 168 months) months. Only 2 of the patients (25%) had previously received lymphedema treatment. All patients were given skin care, weight loss and exercise advice. Ready-made upper extremity compression garments were recommended after kinesiotope treatment for 2 patients with stage 1 and upper extremity lymphedema. Ready-made compression garments were recommended in Phase 2 after complete decongestive therapy (CDT) for 3 patients with stage 2 and upper extremity lymphedema. Custom-made compression garments were applied to all 3 patients with stage 3 lymphedema in Phase 2 after CDT, and it was recommended to continue bandaging at night.

**Conclusions:** Lymphedema is one of the most important areas of rehabilitation that requires a multidisciplinary approach and experience. Even though we are not a fully equipped center yet, helping our patients by taking the first steps is our greatest source of motivation and happiness.

**Keywords:** lymphedema, rehabilitation

## **References**

## **Author Note:**



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**Group:** General / Quality of Life

## **The influence of social determinants of health on lymphedema outcomes**

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<sup>1</sup>AUGUSTA UNIVERSITY

HARI KASHYAP / AUGUSTA UNIVERSITY

**Objectives:** The objective is to conduct 3 studies 1) systematic review to examine the influence of social determinants of health on lymphedema 2) retrospective review to examine whether social determinants of health predict recovery and 3) to investigate the relationship between social determinants of health and treatment adherence.

**Background:** Despite lymphedema being a significant burden, there is little scientific documentation reporting the influence of social determinants of health on lymphedema outcomes.

**Methods:** For study 1, the electronic databases CINAHL, PubMed, Web of Science were searched using relevant terms. 336 studies examining influence of social determinants of health on lymphedema were included. Inclusion criteria included lymphedema diagnosis, adults' patients (21 -79 yrs.), with lymphedema diagnosis, receiving care at GCC from 2019 – 2023. Exclusion criteria included, children, pregnant females. One author will remove duplicates. Two authors will screen the search result articles on their eligibility criteria. Two authors will also use a designated extraction sheet to screen the articles that will then be compared to each other. If disagreements occur among the two authors that cannot be resolved, a third party will become involved to settle the difference. For study 2 & 3, retrospective chart review of lymphedema patients (n ≥300) will be conducted from April 2019 to December 2023

**Results:** These three studies are currently undergoing and results are expected to come out later this year.

NA



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**Conclusions:** This thesis aims to contribute to the fundamental knowledge about the influence of social determinants of health on lymphedema and its application to enhance policy, improve human life, reduce illness and disability.

**Keywords:** LYMPHEDEMA, SOCIAL DETERMINANTS OF HEALTH, BREAST CANCER RELATED LYMPHEDEMA, SOCIOECONOMIC STATUS

## References

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**Group:** General / Lymphedema

## **LYMPHEDEMA AND OBESITY: A SYSTEMATIC REVIEW.**

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Isabel Forner-Cordero / University of Valencia, SPAIN.

**Objectives:** The purpose of this systematic review was to analyze the link between obesity and lymphedema

**Background:** Lymphedema is a long-term condition that cannot be cured. It occurs due to abnormal development of the lymphatic system (primary lymphedema) or damage to the lymphatic vessels or nodes (secondary lymphedema). These conditions cause an accumulation of fluid in the body's tissues, leading to fibrosis, continuous inflammation, and increased fat deposits. This can cause significant enlargement of the affected area. Increasing evidence suggests a reciprocal relationship between obesity and lymphedema: obesity can decrease the lymphatic system's ability of fluid transport, and impaired lymphatic function can lead to the accumulation of fat. This association may explain why primary lymphedema can develop in patients with severe obesity and why obese patients face a higher risk of lymphedema.

**Methods:** We conducted a search in Web of Science, Pubmed and Cochrane Library with the key-words: Lymphedema AND Obesity. Clinical trials published in the last 10 years, written in English, French or Spanish were included. Trial protocols, redundant papers and those who were not focusing on our objective after reading the abstract were excluded.

**Results:** Altogether, 10 studies were included in the review. Six papers were randomized clinical trials, 1 a non-randomized clinical trial, 1 a cohort study and 2 descriptive studies. The different topics of the publications were the effects of exercise in lymphedema, the addition of symbiotics to diet, the efficacy of manual lymphatic drainage and compression garments, electrotherapy, and consequences of obesity in lymphedema severity.



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**Conclusions:** Well-designed studies in obesity and lymphedema are scarce. Elevated BMI is associated with the development and severity of lymphedema in breast cancer survivors, and it is also a barrier to physical activity. Whenever there is a previous education, the combination of a home-based exercise program with a hypocaloric diet was shown to be an effective and applicable tool for reducing BMI and lymphedema volume. The use of symbiotic supplements can help decrease inflammatory markers, edema volume, and BMI. The use of preventive garments does not prevent lymphedema, its presentation is related to BMI. Obese individuals with lymphedema are more likely to have infections, hospitalizations, and larger extremities compared to subjects with a normal BMI.

**Keywords:** lymphedema, obesity, systematic review, clinical trials

## References

## Author Note:



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## The Clinical Characteristics of Lower Extremity Lymphedema in 116 Patients

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Feyza Akan Begođlu / Fatih Sultan Mehmet Research and Training Hospital

**Objectives:** In our study, we aimed to present the etiological, demographic and clinical characteristics of 116 patients who applied to our lymphedema outpatient clinic due to swelling in the lower extremities and were diagnosed with lymphedema.

**Background:** While cancer is claimed to be the most common cause of lower extremity lymphedema in developing and developed countries, primary lymphedema is perhaps often overlooked as a potential cause.

**Methods:** The files of patients who came to lymphedema clinic with complaints of swelling in the lower extremities and were diagnosed with lymphedema between 2019 and 2024 were retrospectively examined.

**Results:** The four most common causes of lower extremity lymphedema are primary lymphedema (PLE) (51.7%), cancer-related lymphedema (CRLE) (27.6%), lipedema with secondary lymphedema (LIPL) (12.1%), and phlebolympedema (CVI) (8.6%). 79.3% of the cases were female, 68.1% were stage 2, and 50% were bilateral. The duration of lymphedema varied between 1 and 50 years, the average was 10.01±9.04 and the median was 6 years. As expected, in terms of gender distribution, the proportion of LIPL patients being female (100%) was statistically significantly higher than that of CRLE (75%) and CVI (50%) patients ( $p<0.05$ ). Obesity was common (mean weight and body mass index; 85.43 kg and 32.16 kg/m<sup>2</sup>, respectively) and there was no statistically significant difference in BMI means between stages ( $p>0.05$ ). The mean BMI of LIPL patients was statistically significantly higher ( $p<0.05$ ) than PLE ( $p:0.005$ ), CRLE ( $p:0.013$ ) and CVI ( $p:0.039$ ) patients. There was no statistically significant difference in terms of the distribution rates of stages according to lymphedema etiologies, side of lymphedema involvement and cellulite attack ( $p>0.05$ ). There was a statistically significant



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difference in lymphedema duration according to lymphedema etiologies (p:0.008; p<0.05). The duration of lymphedema in the CRLE group was significantly shorter (p<0.05) than the PLE (p:0.002), CVI (p:0.016) and LIPLE (p:0.030) groups.

## Demographic and clinical variables of Primary and Secondary Lymphedema

		Primary(n=60)	Secondary(n=56)	Total(n=116)	p
		X±S	X±S	X±S	
Age		51,53±17,89	59,11±12,25	55,19±15,82	<sup>1</sup> 0,009*
Weight(kg)		83,53±21,05	87,46±18,52	85,43±19,88	<sup>1</sup> 0,289
BMI (kg/m <sup>2</sup> )		31,42±6,87	32,96±7,14	32,16±7,01	<sup>1</sup> 0,237
Gender n (%)	Female	49 (%81,7)	43 (%76,8)	92 (%79,3)	<sup>2</sup> 0,675
	Male	11 (%18,3)	13 (%23,2)	24 (%20,7)	
Stage n (%)	0	0 (%0)	1 (%1,8)	1 (%0,9)	<sup>3</sup> 0,975
	1	15 (%25)	14 (%25)	29 (%25)	
	2	41 (%68,3)	38 (%67,9)	79 (%68,1)	
	3	4 (%6,7)	3 (%5,4)	7 (%6)	
Limb Distribution n (%)	Right	7 (%11,7)	10 (%17,9)	17 (%14,7)	<sup>4</sup> 0,083
	Left	17 (%28,3)	24 (%42,9)	41 (%35,3)	
	Bilateral	36 (%60)	22 (%39,3)	58 (%50)	
Cellulite episode n (%)	Yes	26 (%43,3)	19 (%33,9)	45 (%38,8)	<sup>2</sup> 0,396
	No	34 (%56,7)	37 (%66,1)	71 (%61,2)	
Duration of Lymphedema		11,86±10,78	8,03±6,20 (6)	10,01±9,04 (6)	<sup>5</sup> 0,062



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(year)		(8,5)			
Min-Max, X ±S (median)					

1Student t test 2Continuity (yates) test 3Fisher Freeman Halton Exact Test 4Ki-kare test 5Mann Whitney U test \*p<0.05 X ±S: Mean±standard deviation (min-max); BMI:Body mass index

## Demographic and clinical variables of PLE, CRLE, CVI and LIPLE

		PLE(n=60)	CRLE(n=32)	CVI(n=10)	LIPLE(n=14)	p
		X±S	X±S	X±S	X±S	
Age		51,53±17,89	59,13±11,68	64,6±12,93	55,14±12,41	<sup>1</sup> 0,031*
Weight (kg)		83,53±21,05	83,66±17,11	88,6±25,55	95,36±14,07	<sup>1</sup> 0,209
BMI (kg/m <sup>2</sup> )		31,42±6,87	31,64±6,53	31,27±7,65	37,2±6,88	<sup>1</sup> 0,039*
Gender <sub>n(%)</sub>	Female	49 (%81,7)	24 (%75)	5 (%50)	14 (%100)	<sup>2</sup> 0,019*
	Male	11 (%18,3)	8 (%25)	5 (%50)	0 (%0)	
Stage <sub>n(%)</sub>	0	0 (%0)	0 (%0)	0 (%0)	1 (%7,1)	<sup>3</sup> 0,310
	1	15 (%25)	7 (%21,9)	2 (%20)	5 (%35,7)	
	2	41 (%68,3)	24 (%75)	6 (%60)	8 (%57,1)	
	3	4 (%6,7)	1 (%3,1)	2 (%20)	0 (%0)	
Lymphedema distribution <sub>n(%)</sub>	Right	7 (%11,7)	6 (%18,8)	1 (%10)	3 (%21,4)	<sup>4</sup> 0,254
	Left	17 (%28,3)	16 (%50)	4 (%40)	4 (%28,6)	
	Bilateral	36 (%60)	10 (%31,3)	4 (%40)	7 (%50)	
Cellulite	Yes	26 (%43,3)	13 (%40,6)	4 (%40)	2 (%14,3)	<sup>4</sup> 0,249



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episode						
n (%)						
	No	34 (%56,7)	19 (%59,4)	6 (%60)	12 (%85,7)	
Duration of Lymphedema (year)		11,86±10,78	5,70±3,37	12,80±9,47	9,93±6,22	<sup>5</sup> 0,008*
Min-Max, ±S (median)		(8,5)	(5)	(9)	(9,5)	

1Oneway ANOVA test 2Fisher Freeman Halton Exact Test 3Fisher's Exact test 4Ki-karetest 5Kruskal Wallis test \*p<0.05 X̄±S: Mean±standard deviation (min-max); BMI:Body mass index PLE: Primary Lymphedema , CRLE: Cancer Related Lymphedema, CVI: Phlebolymphe'dema LIPLLE: Lipedema with secondary lymphedema

**Conclusions:** Among the notable clinical features, CRLE is among the most common causes in developing and developed countries. The majority of patients who applied to our clinic with complaints of swelling in the lower extremities were primary lymphedema patients. The reason for this can be interpreted as the fact that we are a specific polyclinic and therefore the primary etiology cannot be overlooked. In addition, other notable features were the majority of female gender in all groups except the CVI group, bilateral involvement in all groups except the CRLE group, stage 2 involvement and the presence of obesity in all groups.

**Keywords:** lower extremity lymphedema, lipolymphe'dema, phlebolymphe'dema, cancer-related lymphedema

## References

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**Group:** General / Breast cancer related lymphedema (all aspects including axillary web syndrome, musculoskeletal problems)

## Often Ignored: Breast Edema

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**Objectives:** -To draw attention to breast edema, which may occur after breast cancer treatment and is ignored.-To understand the effect of complex decongestive therapy in the treatment of breast edema that may occur during adjuvant radiotherapy after breast-conserving surgery.

**Background:** Breast cancer is the most common type of cancer in women worldwide, representing 25% of all cancers. Breast-conserving surgery (BCS) and radiotherapy after lymph node biopsy are widely used in the treatment of breast cancer. In some patients, breast edema occurs in the breast that has undergone surgery and radiotherapy.

**Methods:** 46-year-old female patient; On the 10th day of radiotherapy, she applied to the outpatient clinic with complaints of swelling, heaviness and redness in her left breast. In the patient who had left breast-conserving surgery 1.5 months ago and had 5 lymph nodes excised and sentinel lymph node biopsy performed, breast edema, redness, and pore enlargement in the breast skin were detected on the 10th day of radiotherapy. In physical examination; In the upper extremity circumference measurements made with a tape measure at standard points, no significant difference in circumference was detected on the left side compared to the right side (<1 cm). Again, using a measure, the chest circumference was determined as 114 cm. No limitation was detected in the patient's shoulder joint range of motion. Objective edema, fibrosis, redness, and enlargement of breast skin pores were detected in the patient's left breast. Examination findings of other systems were normal. Complex decongestive therapy including 20 sessions of manual lymph drainage, self-drainage and exercise training was applied. Treatment was terminated with self-drainage, exercise and protection recommendations.



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**Results:** -After complex decongestive therapy, the patient's breast edema, feeling of heaviness, redness and pore enlargement in the breast skin decreased.-The patient's chest circumference decreased by 2cm.

Picture 1



Skin pores appearance before complex decongestive therapy

Picture 2



Skin pores appearance after complex decongestive therapy

Table 1

Before Treatment	114 cm
10th seance	112 cm
3 Months After Radiotherapy (After 20 Seance)	112 cm



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## Breast volume circumference measurement

**Conclusions:** • Breast-conserving surgery with lymph node biopsy causes damage to the lymphatic pathways not only in the upper extremity but also in the breast. • The risk of developing breast edema increases due to radiotherapy following breast-conserving surgery in which lymph node biopsy is performed. • The importance of early intervention in breast edema during radiotherapy should be taken into consideration. • Complex decongestive therapy is effective in the treatment of breast edema, which may occur in patients who have undergone breast-conserving surgery and received adjuvant radiotherapy.

**Keywords:** lymphedema, breast edema, complex decongestive therapy

### References

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## **The Effect of Postmastectomy Lymphedema on Upper Extremity Function: Preliminary Results**

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**Objectives:** Lymphedema is a common complication following breast cancer treatment with physical and psychosocial consequences.

**Background:** The aim of this study is to evaluate upper extremity function in post-mastectomy lymphedema patients and to investigate the relationships between upper extremity function and several demographic/clinical characteristics.

**Methods:** Twenty women with post-mastectomy lymphedema were included in this study. Demographic and clinical characteristics such as age, body mass index (BMI), dominant hand, affected side, cancer treatment methods, duration of lymphedema and volume difference between upper extremities were recorded. Arm circumferences were tape-measured at 4-cm intervals from wrist to axilla, then limb volume was estimated using the truncated cone formula. Inter-limb volume difference was expressed both in milliliters (ml) and percentages (%). According to the volume increase in the affected extremity, the severity of lymphedema was categorized as mild (<20%), moderate (20–40%), or severe (>40%). The Arm, Shoulder, and Hand Disability Survey (DASH) was used to assess upper extremity function.

**Results:** The mean age of the participants was 58.8±10.6 years. Of the 20 patients with a mean BMI of 28.8±4.0 kg/cm<sup>2</sup>, 40% were classified as obese (BMI≥30 kg/cm<sup>2</sup>). In addition to mastectomy, the percentage of patients whom were given chemotherapy and radiotherapy were 85% and 95%, respectively. All patients except one were right-handed and lymphedema developed in the dominant extremity in 40% of them. The median value of lymphedema duration



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was 68.9 months (ranged widely from 2 month to 20 years). Seven patients had mild, 4 had moderate, and 9 had severe lymphedema. The mean value of volume difference of the patients' arm was  $610.5 \pm 426.1$  ml. The mean value of DASH score was  $27.2 \pm 18.1$ . There were no statistically significant relationships between DASH score and side of lymphedema, whether the dominant side was affected or not, and BMI. On the other hand, DASH score positively correlated with the patients' age ( $p=0.017$ ), duration of lymphedema ( $p=0.07$ ), and volume difference (ml) ( $p=0.021$ ).

**Conclusions:** The presence of postmastectomy lymphedema negatively affects upper extremity function of breast cancer survivors. The findings indicate that older patients with longer duration of lymphedema and higher inter-limb volume difference have more severe disability. Therefore, early management of lymphedema with complex decongestive therapy is crucial not only for reducing the limb volume both also improving its function in these patients.

**Keywords:** Lymphedema Rehabilitation, Postmastectomy Lymphedema, Lymphedema, Upper Extremity Lymphedema

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**Group:** General / Breast cancer related lymphedema (all aspects including axillary web syndrome, musculoskeletal problems)

## **The Determination of Factors Associated with Lymphedema in Women Who Have Undergone Breast Cancer Surgery**

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**Objectives:** We predict that high body mass index (BMI) and radiotherapy application duration may be risk factors for the development of lymphedema. These factors may increase the occurrence and severity of lymphedema. Weight control should be included in the prevention of lymphedema.

**Background:** The aim of the study was to determine factors associated with lymphedema in women undergoing breast cancer surgery.

**Methods:** Fifty women with lymphedema (age, 54.34±9.08 years; body mass index, 30.10±4.03 kg/cm<sup>2</sup>) and 57 women without lymphedema (age, 53.68±9.41 years; body mass index, 29.0±5.44 kg/cm<sup>2</sup>) after unilateral surgery for breast cancer were included. The demographic and lymphedema disease-related data were collected. Age, height, weight, exercise habit, smoking, and the dominant side of all patients were noted via face-to-face interviews. Family



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history, the treatment process, the type and time of surgery related to cancer history, affected side related to lymphedema, and location were questioned. The severity of edema was assessed with perimeter measurements (Frustum model). The t test,  $\chi^2$  test, and Mann-Whitney U test were used for analyses.

## Physical characteristics of participants

**Table 1.** Physical characteristics of participants

Characteristics	With Lymphoedema	Without Lymphoedema	p
	(n = 50)	(n = 57)	
Age (year, mean±SD)	54.34 ± 9.08	53.68 ± 9.41	0.716 <sup>a</sup>
Height (m, mean±SD)	1.59 ± 0.05	1.58 ± 0.072	
Weight (kg, mean±SD)	77.38 ± 10.16	73.88 ± 14.43	0.265 <sup>a</sup>
BMI (kg/m <sup>2</sup> , mean±SD)	30.10 ± 4.03	29.40 ± 5.44	0.156 <sup>a</sup>
Weight gain after surgery (kg, mean±SD)	4.96 ± 4.73	5.45 ± 5.52	0.452 <sup>a</sup>
Post-op duration (year, mean±SD)	4.24 ± 2.97	3.19 ± 1.76	0.622 <sup>a</sup>
Dominant side (n; %)			
Right	44.0; 88.0	49.0; 86.0	0.783 <sup>b</sup>
Left	6.0; 12.0	8.0; 14.0	
Affected side (n; %)			
Right	26.0; 52.0	30.0; 52.6	1,00 <sup>b</sup>
Left	24.0; 48.0	27.0; 47.4	



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$p > 0.05$ , n: number of patients, SD: Standard deviation, BMI: Body mass index, Values are presented as number (%), a: Independent sample *t*-test, b: *Chi-square* test

## Physical characteristics of participants

### Physical characteristics of participants

**Results:** The follow-up duration after the surgery was  $4.24 \pm 2.97$  years and  $3.19 \pm 1.76$  years, and the upper extremity volume was  $2106.65 \pm 510.82$  cm<sup>3</sup> and  $1725.92 \pm 342.49$  cm<sup>3</sup> in the lymphedema group and in the no-lymphedema group, respectively. In the group developing lymphedema, total number of days of radiotherapy taken and the duration of lymphedema development after surgery scores were found different ( $p < 0.05$ ). In our study, 52% of women who developed lymphedema were found to be obese, and higher BMI results were found in the group with lymphedema.

### The comparisons of circumference measurements

**Table 2.** The comparisons of circumference measurements

Characteristics	With Lymphoedema (n = 50) Median (IQR 25-75))	Without Lymphoedema (n = 57) Median (IQR 25-75)	p
<b>Circumference measurements</b> (cm <sup>3</sup> )			
Unaffected side	1802.08 (1560.39-1931.89)	1707.34 (1441.44-1949.99)	0.235 <sup>a</sup>
Surgical side			



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	2023.93 (1720.83-2339.12)	1679.94 (1468.81-1913.33)	0.000 <sup>a*</sup>
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\*p < 0.05, n: number of patients, IQR 25-75: Interquartile range (25% -75 %), a: Mann-Whitney U test

The comparisons of circumference measurements

**Conclusions:** The number of received radiotherapy days increased the risk of developing lymphedema after surgery. In addition, it was found that as the body mass index of women who develop lymphedema increases, the incidence of developing lymphedema increases. Knowing these effects caused by lymphedema will be important in preventing problems and planning treatment approaches.

**Keywords:** Breast cancer, Lymphedema, Body mass index, Obesity

## References

**Author Note:** Dear Editor, We are submitting a manuscript entitled "The Determination of Factors Associated with Lymphedema in Women Who Have Undergone Breast Cancer Surgery". The authors state that they are responsible for the research that they have designed and carried out; that they have participated in drafting and revising the manuscript submitted, which they approve in its contents. They also state that the research reported in the paper was undertaken in compliance with the Helsinki Declaration and the International Principles governing research on animals. Moreover, there is no conflicts of interest. Tugce Sirin KORUCU Sevtap GUNAY UCURUM Derya OZER KAYA Engin TASTABAN Hedef OZGUN



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**Ref No:** 2582

**Pub No:** PP-016

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**Presentation Type:** Poster Presentation

**Group:** General / Complete Decongestive Therapy, all aspects

## **A RARE CASE OF BREAST CANCER RELATED LYMPHEDEMA: CUTANEUS METASTASIS**

Aslı Turan<sup>1</sup>, Sibel Ünsal Delialioğlu<sup>1</sup>, Esra Uçaryılmaz Özhamam<sup>2</sup>, Meltem Dalyan<sup>1</sup>

<sup>1</sup>Ankara Bilkent City Hospital, Physical Medicine and Rehabilitation Hospital, Lymphedema Clinic

<sup>2</sup>Ankara Bilkent City Hospital, Pathology Department

Aslı Turan / Ankara Bilkent City Hospital, Physical Medicine and Rehabilitation Hospital, Lymphedema Clinic

**Objectives:** ---

**Background:** The gold standard treatment method for lymphedema is Complete Decongestive Therapy (CDT), currently. A detailed evaluation should be made before CDT. Symptoms such as skin changes, redness, increased temperature, pain and sudden increased volume in the extremity with lymphedema should be a warning sign for the clinicians. These symptoms may frequently occur in infectious conditions such as cellulitis and erysipelas, or more rarely, in breast cancer recurrence, lymphangiosarcoma or cutaneous metastasis of breast cancer.

**Methods:** A 63-year-old female patient presented with pain and swelling in her right arm. She had modified radical mastectomy, 2 years ago and received chemotherapy and radiotherapy. She had lymphedema diagnosis in the right arm at the postoperative 15th month. The patient underwent upper extremity Doppler USG and PET scan. Doppler USG was normal. PET revealed multiple hypermetabolic lesion areas in the soft tissue adjacent to the right shoulder joint, which could be compatible with tumoral involvement that cannot be distinguished from inflammatory changes secondary to radiotherapy, and a nodular lesion in the posterior of the pectoralis major muscle, which could be compatible with a pathological lymph node. With these findings, recurrence was not considered. The patient's skin lesions were evaluated as cellulitis and antibiotic therapy was administered for 10 days. When the symptoms did not change with this treatment, she was referred to the lymphedema clinic. On physical examination, there was swelling, redness and minimal temperature increase, radiating from the right chest area to the



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armpit and the right side of the abdomen, which was more prominent in the right shoulder and proximal right arm. In addition, sharply circumscribed erythematous and occasionally dry skin lesions were observed on the right chest and right side of the abdomen, right upper arm, and right upper back (Figure 1). The patient could not move his right arm due to severe pain and his right shoulder movements were severely restricted. No acute infection was detected. A punch biopsy was taken and pathology was invasive carcinoma metastasis of the breast. The patient was referred to the Oncology department and chemotherapy was started.

Figure 1



Cutaneous lesion and right arm lymphedema

**Results:** ---

**Conclusions:** Patients with BCRL should be carefully evaluated for new-onset skin lesions before undergoing CDT. After conditions such as infection and radiation dermatitis are ruled out, a skin biopsy should be planned if necessary. Early diagnosis of cutaneous metastasis and timely initiation of malignancy treatment are important for the survival of patients.

**Keywords:** Lymphedema, cutaneous metastasis, complete decongestive therapy

**References**

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**Presentation Type:** Poster Presentation

**Group:** General / Cancer and Pain

## Evaluation Of Fibromyalgia In Patients With Operated Breast Cancer - Preliminary Study Results

Filiz Meryem Sertpoyraz<sup>1</sup>, Murat Akyol<sup>2</sup>, Ecem Beytorun<sup>1</sup>, Elif Umay Altaş<sup>1</sup>, Ömer Faruk Aslan<sup>1</sup>

<sup>1</sup>İzmir Bakırçay University, Medicine Faculty, Departement of Physical Medicine and Rehabilitation

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Filiz Meryem Sertpoyraz / İzmir Bakırçay University, Medicine Faculty, Departement of Physical Medicine and Rehabilitation

**Objectives:** Breast cancer is the most common cancer type in women and the second most common cause of cancer-related deaths. Fibromyalgia is defined as a chronic syndrome of unknown etiology characterized by widespread body pain, fatigue, sleep disturbances, cognitive dysfunction, and anxiety.

**Background:** Our aim is to evaluate fibromyalgia in women with operated breast cancer and to assess the emotional status, sleep, and severity of fibromyalgia in patients with fibromyalgia.

**Methods:** Fifty female patients who applied to the Department of Physical Medicine and Rehabilitation at Izmir Bakırçay University Medical Faculty were included. Demographic data and clinical characteristics of the patients were recorded. Patients with complaints of widespread pain were evaluated for fibromyalgia. Patients diagnosed with fibromyalgia were assessed using the Beck Depression Inventory, Jenkins Sleep Scale, and Fibromyalgia Impact Questionnaire.

**Results:** Fifty female patients with operated breast cancer aged 25 and above were included in the study. The mean age of the patients was  $60.2 \pm 10.2$  years. The demographic data of the patients are shown in Table 1. Twenty-seven (54%) patients with operated breast cancer were diagnosed with fibromyalgia. When emotional status was evaluated, depression was detected in 93% ranging from mild to severe. "In %45 of the patients with fibromyalgia, sleep disorders were present."



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## Demographic Characteristics of Patients with Operable Breast Cancer

	n (%)
<b>Education</b>	6 (12)
Primary School	37 (74)
Secondary School Higher Education	7 (14)
<b>Body Mass Index</b>	0 (0)
Underweigh	17 (34)
Normal	24 (48)
Overweight	7 (14)
Obese	2 (4)
Morbidly Obese	
<b>Direction of Surgery</b>	20 (40)
Right	30 (60)
Left	
<b>Radiotherapy</b>	
Yes	42 (84)
No	6 (12)
<b>Chemotherapy</b>	
Yes	37 (74)
No	13 (26)
<b>Medical Treatment</b>	44 (88)
Yes	6 (12)
No	



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Table 2: Characteristics of Patients Diagnosed with Fibromyalgia among Patients with Operable Breast Cancer

	n (%)
<b>Beck Depression Inventory</b>	
Normal	2 (7)
Mild Depression	11 (41)
Moderate Depression	9 (33)
Severe Depression	5 (19)
<b>Jenkins Sleep Scale</b>	
Below 15	15 (55)
15 and above	12 (45)

**Conclusions:** Conclusion: Fibromyalgia was detected in 54% of the patients. Depression tendency was observed in 93% of those diagnosed with fibromyalgia and 45% had sleep disturbances. We believe that the evaluation of the presence of fibromyalgia and the creation of treatment plans accordingly are important when evaluating patients with operated breast cancer."

**Keywords:** Breast cancer, Fibromyalgia

## References

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**Presentation Type:** Poster Presentation

**Group:** General / Breast cancer related lymphedema (all aspects including axillary web syndrome, musculoskeletal problems)

## **Anterior Interosseous Nerve Syndrome Following Breast Cancer Related Lymphedema: A Rare Case**

Fatma Betül Kıvanç İnanöz<sup>1</sup>, Ekin İlke Şen<sup>1</sup>, Merih Akpınar<sup>1</sup>, Sina Arman<sup>1</sup>, Dilşad Sindel<sup>1</sup>

<sup>1</sup>Istanbul Faculty of Medicine Department of Physical Medicine and Rehabilitation

Ekin İlke Şen / Istanbul Faculty of Medicine Department of Physical Medicine and Rehabilitation

**Objectives:** The anterior interosseous nerve (AIN) syndrome following breast cancer related lymphedema is a rare occurrence. In this case report, we aim to review the clinical findings of AIN paralysis and raise awareness regarding peripheral nerve paralysis in patients with lymphedema.

**Background:** The anterior interosseous nerve (AIN) syndrome following breast cancer related lymphedema is a rare occurrence.

**Methods:** A 70-year-old female patient presented to our clinic in 2022 with complaints of numbness and weakness in the first three fingers of her left hand, which began during a period of being unfollowed. She underwent modified radical surgery and lymph node dissection due to left breast cancer 25 years ago, subsequently resulting in lymphedema in the left upper extremity. The patient has undergone complex decongestive at our lymphedema rehabilitation clinic in 2021. A custom compression garment has been prescribed, along with instructions to continue with a home exercise program and self-lymphatic drainage massage. Additionally, the patient has maintained periodic compression bandaging at home and has adhered to regular use of the compression garment.

**Results:** During the examination, passive range of motion of the upper extremity joints was fully assessed. Muscle strength examination revealed normal findings except for the following: Pronator quadratus muscle strength in the left hand was graded as 3/5, while the flexor digitorum profundus (FDP) muscle strength of the index finger and flexor pollicis longus (FPL) muscle



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strength were both graded as 1/5. Evaluation for thenar atrophy was inconclusive due to lymphedema. The patient was unable to perform the "OK sign". There was no reported pain in the left forearm. Sensory and motor conduction studies of the median nerve showed normal but relatively decreased amplitudes compared to the right side. MRI imaging showed no specific features apart from edema in the common extensor tendon sheath.

**Conclusions:** AIN syndrome accounts for less than 1% of upper extremity nerve palsies (1). It can occur spontaneously (brachial plexus neuritis, compartment syndrome, compression neuropathy) or following trauma (2). Typically, it manifests with pain in the forearm and weakness in pinch movements of the first and second fingers. Sensory disturbances are not expected (1). The relationship between breast cancer-related lymphedema and entrapment neuropathies is debated (3). However, cases in the literature associate compression garments with radial nerve paralysis and common peroneal nerve paralysis (4,5).

**Keywords:**

**References**

**Author Note:**



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**Group:** General / Breast cancer related lymphedema (all aspects including axillary web syndrome, musculoskeletal problems)

## **Development of the wearable arm volume measurement device and mobile application (mobiLenf) in the prevention and early detection of breast cancer-related lymphedema and evaluation of their efficiency: A protocol for a randomized trial**

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Ayşe Arikan Donmez / Hacettepe University, Faculty of Nursing, Department of Medical Nursing, Ankara, Turkey

**Objectives:** To prevent breast cancer-related lymphedema with the mobile application to be developed and to detect the volume increase in the arm before clinical findings with an arm volume measurement device that will work with this mobile application.

**Background:** One of the main problems in breast cancer survivors is lymphedema. Breast cancer-related lymphedema is a condition that can be treated when detected early but has a very low success rate when detected in advanced stages. Therefore, the prevention and early detection is crucial.

**Methods:** The Project consists of two main steps; (a)development of the arm volume measuring device and mobile application (b)evaluation of the effectiveness of the products. Five



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components will be involved in the development of the mobile application: (I)exercise, (II)education, (III)coping mechanisms, (IV)arm volume measurement/records, and (V)reminder for exercise, measurement, and follow-ups. Exercise videos will include stretching exercises for the shoulder and arm area as recommended in the guides. The training content will be created in line with the guides and opinions will be taken from an expert panel. In support of coping mechanisms, existing problem areas in people will be determined with a qualitative study. People who have gone through a similar process in the past will be asked about the coping strategies they have developed for these problem areas. Themes obtained from patients who have gone through a similar process and suggestions of the guidelines will be presented in the mobile application. In arm volume measurement, a wearable technology product to be designed in the form of an arm cuff and strain sensors to be placed on the arm will detect the increase in arm circumference. After measuring the arm circumference with the sensors located every five centimeters, the arm volume will be calculated with the cylindrical volume calculation method. When there is an increase of 5% or more in the arm of the individual (preclinical lymphedema), a notification will be sent to the person and his/her physician via the mobile application. The person will also be able to follow the past measurement results via the mobile application.

**Results:** As this is a protocol study, the results will be available after finalised

**Conclusions:** Evaluation of the product's efficacy will be based on a pilot randomized controlled trial, a reproducibility study, and patient feedback. This product to be developed will provide a new arm volume measurement method to reduce patients' hospital admissions and contribute to the prevention and early detection of lymphedema.

**Keywords:** Breast Cancer, Lymphedema, Wearable Technology, Mobile Application

## References

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**Presentation Type:** Oral Presentation

**Group:** General / Lipedema

## **Demographic and Clinical Characteristics Of The Patients We Follow With The Diagnosis Of Lipedema**

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Ayla Cagliyan Turk / Hitit University Faculty of Medicine Physical Medicine and Rehabilitation  
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**Objectives:** Our aim is to contribute to determining the lipedema case profile of our country by determining the demographic and clinical characteristics of our lipedema cases who applied to our polyclinic from Corum city center.

**Background:** Lipedema is an adipofascial disease that almost exclusively affects women. Lipedema causes chronic pain, swelling and other discomfort due to bilateral and asymmetric expansion of subcutaneous fatty tissue. In the clinic, lipedema is often misdiagnosed as obesity, lymphedema, lipodystrophies, or other fatty disorders.

**Methods:** Eighty female patients who applied to Hitit University Faculty of Medicine Erol Olçok Training and Research Hospital Physical Medicine and Rehabilitation outpatient clinic between January 2020 and July 2023 and were diagnosed with lipedema were included in the study. Age, height, weight, body mass index, lipedema type and stage of the cases were obtained from the records. Laboratory evaluations such as hemogram, Vitamin D, vitamin B12, erythrocyte sedimentation rate (ESR), C-reactive protein (CRP) and imaging evaluations, venous doppler ultrasound results of the lower extremity, were obtained from the records.

**Results:** The average age of the patients was 46.46±9.72 years. The average body mass index was determined as 32.12±4.84. The most common type of lipedema was Type 2, followed by Type 1 and Type 3 lipedema. 63.8% of our patients had stage 2 lipedema, 21.2% had stage 1 lipedema, and 15% had stage 3 lipedema. The average CRP level was 4.88±2.89 and ESR level



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was  $18.58 \pm 10.06$ . 43.8% of the patients had abnormal Doppler findings such as short-term reflux or venous insufficiency. The average Vitamin D level was  $18.73 \pm 12.95$  ng/dl and Vitamin B12 level was  $359.74 \pm 155.12$  pg/ml. Average Hb was  $13.36 \pm 1.03$ , Wbc was  $7.22 \pm 1.83$ , Plt was  $300.97 \pm 76.99$ . There was a positive correlation between BMI and CRP.

## Demographic and Clinical Characteristics Data

Parameter	Lipedema
Age (years)	$46,46 \pm 9,72$
BMI (kg/m <sup>2</sup> )	$32,12 \pm 4,84$
Hemoglobin (g/dL)	$13,36 \pm 1,03$
Leukocyte ( $\times 10^9/L$ )	$7,22 \pm 1,83$
Neutrophil ( $\times 10^9/L$ )	$4,12 \pm 1,41$
Lymphocyte ( $\times 10^9/L$ )	$2,38 \pm 0,67$
Monocytes ( $\times 10^9/L$ )	$0,59 \pm 0,78$
Platelet ( $\times 10^9/L$ )	$300,97 \pm 76,99$
MPV (fL)	$10,5 \pm 0,87$
PDW (fL)	$12,4 \pm 1,91$
NLR	$1,84 \pm 0,79$
25 OH vitamin D (ng/dL)	$18,73 \pm 12,9$
Vitamin B12	$359,74 \pm 155,12$
ESR (mm/saat)	$18,58 \pm 10,06$
CRP (mg/L)	$4,88 \pm 2,89$
Abnormal Doppler	35 (43,8)



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## Lipedema stage and type

Lipedema Stage	
Stage 1	17 (21,3)
Stage 2	51 (63,8)
Stage 3	12(15)
Lipedema Type	
Type 1	34 (42,5)
Type 2	70 (87,5)
Type 3	31 (38,8)
Type 4	2 (2,5)
Type 5	0 (0)

**Conclusions:** Patients presenting with swelling and pain in the lower extremities should be evaluated for lipedema, and it should also be taken into consideration that venous insufficiency may be present in these patients.

**Keywords:** lipedema, Vitamin D, vitamin B12, venous insufficiency

### References

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**Group:** General / Lipedema

## **The Effect of Low-Intensity Extracorporeal Shock Wave Therapy on Lower Extremity Circumference Measurement in Lipedema: A Case Series**

Hatice Durmuş<sup>1</sup>, Ayşe Nur Benlibay<sup>2</sup>, Zeynep Çelik<sup>3</sup>, Rengin Yılmaz<sup>4</sup>, Suat Doğançcı<sup>3</sup>

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<sup>3</sup>Prof. Dr. Suat Doğançcı Muayenehanesi

<sup>4</sup>Dr. Rengin Yılmaz Muayenehanesi

Hatice Durmuş / Hacettepe Üniversitesi Fizik Tedavi ve Rehabilitasyon Fakültesi

**Objectives:** The aim of this study is to investigate the effectiveness of a multidimensional treatment that includes Low Intensity Extracorporeal Shock Wave Therapy (LiESWT) in the treatment of lipedema disease, which causes irregular fat deposition in the lower extremity, in the circumference measurement.

**Background:** We aimed to see whether the versatile designed treatment is effective in the treatment of lipedema and to measure the effect of LiESWT on lower extremity circumference measurement.

**Methods:** A total of 11 female patients diagnosed with lipedema were included in the study. Patients participated regularly in a treatment protocol that would last a total of 10 sessions, attending twice a week for five weeks. At the beginning of the treatment, patients were advised to exercise and follow a diet under the guidance of a dietitian. The sessions consisted of Low-Intensity Extracorporeal Shock Wave Therapy (LiESWT) applied using the Modus ESWT Radial Shockwave Therapy (İnceler Medikal Ankara) device, targeting the anterior part of the lower extremities in one session and the posterior part in another session. This was followed by a 30-minute pneumatic compression device application. The LiESWT application involved a total of 6000 pulses, delivered at a rate of 10 pulses per second with an average intensity of 4 bars. Circumference measurements were taken from specific points for the comparison of effectiveness.



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**Results:** According to the circumference measurement results of the patients with a mean age of  $38.4 \pm 13.5$ , significant improvements were observed in both right and left extremities, at all levels ( $p < 0.005$ ). The demographic data and treatment outcomes of the patients are presented in Table-1.

Table-1

	Right Ankle 1	Left Ankle 1	Right Below Knee 1	Left Below Knee 1	Right Thigh 1	Left Thigh 1	Right Ankle 2	Left Ankle 2	Right Below Knee 2	Left Below Knee 2	Right Thigh 2	Left Thigh 2
1	20,5	20,5	34,5	34	48	48	20	20	32	32	46	46
2	31	31	52	52	67	67	31	29	50	49	62	58
3	22	22,5	39,5	39	51,5	51,5	22	22	38,5	37,5	51	51
4	23	22	38	38,5	56	56	22,5	22	37,5	36,5	53	54
5	25,5	26	47	48	53,5	53	23	23	43,5	44	47,5	48
6	23	22,5	40,5	40	55	54,5	22,5	22,5	39,5	39	53	53
7	23	22,5	39	38,5	61	58	23	22,5	39	38	61	59
8	27,5	28	44	44,5	63	64,5	25	25	42	42	59	59
9	22	21,5	35,5	35,5	50,5	50,5	20	20	33,5	33,5	48	48
10	20,5	20,5	34	34	47,5	47,5	19,5	19,5	34	34	46,5	46,5
11	24,5	23,5	44	44,5	62,5	62,5	23,5	23	43	42	58	58,5

## Lower Extremity Circumference Measurement

**Conclusions:** The multidisciplinary treatment protocol including LiESWT is an effective, reliable and applicable method for the treatment of lipedema.



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**Keywords:** Lipedema, Low-Intensity Extracorporeal Shock Wave Therapy, Modus ESWT  
Radial Shockwave Therapy

## **References**

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**Group:** General / Lipedema

## **PREVALENCE OF JOINT HYPERMOBILITY IN LIPEDEMA PATIENTS.**

Isabel Forner-Cordero<sup>1</sup>, Juan Vazquez-Diez<sup>2</sup>, Jose Muñoz-Langa<sup>3</sup>

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<sup>3</sup>Hospital Arnau de Vilanova, Valencia, Spain.

Isabel Forner-Cordero / Hospital Universitari i Politècnic La Fe, University of Valencia, Valencia, SPAIN

**Objectives:** Aim: To analyze the prevalence of hypermobility in lipedema patients.

**Background:** The pathophysiology of lipedema is unknown. One of the theories is the alteration of collagen in the subcutaneous tissue that leads to the leakage of fluid and deposits of fat. Recent studies point at a possible association between lipedema and joint hypermobility, but research is still scarce. Hypermobility is diagnosed through the Beighton scale when the score is greater than 3. The estimated prevalence of hypermobility in general population is between 3-20%.

**Methods:** We performed a prospective descriptive study of patients meeting lipedema criteria who attended the Lymphedema Unit. Data were analyzed using SPSS and mean, median and 95% confidence-intervals were obtained. The correlation between the Beighton Score and the rest of variables was obtained through ANOVA and Chi-square tests. P-values <0.05 were considered statistically significant.

**Results:** Among 206 lipedema patients recruited in our prospective study, 144 were included. The median age was 43.8 yrs (Range:18-68). Mean BMI was 27.7 (95% CI:26.8-28.6). Mean Waist-to-Height-Ratio (WHtR) was 0.49 (95% CI:0.47-0.49), according to the WHtR-categorization, 13.9% of the patients were underweight, 38.9% were normal weight, 36.8% were overweight, and 10.4% were obese. Lipedema type frequencies were: type I: 1.4% (2 patients), type II: 10.4% (15), type III: 75.7% (109), type IV: 11.1% (16), and type V: 1.4% (2). Lipedema stage distribution was: stage 1: 46.5% (67 patients), stage 2: 38.2% (55), stage 3: 12.5% (18),



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and stage 4: 2.8% (4). Mean Beighton Score was 4.51 (95% CI:4.11-4.90). Fifty-three (53.5%) percent of our patients (77) showed a Beighton Score >3. We discovered that being hypermobile had a negative linear correlation with age ( $p<0.001$ ), BMI ( $p<0.001$ ) and Waist-to-Height ratio ( $p<0.001$ ). No correlation was found between hypermobility and volume ( $p=0.621$ ), lipedema type ( $p=0.282$ ) nor lipedema stage ( $p=0.120$ ).

**Conclusions:** Lipedema may have other clinical manifestations besides those widely known. Joint hypermobility seems to be more prevalent among these patients as compared to the general population. This supports the etiopathogenic theory that links lipedema with collagen abnormalities.

**Keywords:** lipedema, Hypermobility, collagen abnormalities, diagnosis

## References

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**Group:** General / Etiology/epidemiology of lymphedema

## The Clinical Characteristics of Lipedema Patients Evaluated in a Tertiary Lymphedema Outpatient Clinic

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**Objectives:** This study aimed to evaluate the characteristics of lipedema patients and determine the conditions associated with lipedema in a tertiary university hospital lymphedema unit.

**Background:** Lipedema is a chronic disabling condition characterized by bilateral swelling and pain in the legs and/or arms, affecting the subcutaneous fat of the extremities in women.

**Methods:** All lipedema patients who admitted to the lymphedema unit during the last 6 months were screened and demographic and clinical characteristics were recorded.

**Results:** There were 314 women with lipedema. The mean age was 52.12±11.92. The obesity frequency was quite high, at 95.9%. The most common types of lipedema were types 2 and 1. Approximately 60% of patients had stage 2 lipedema. More than half of the patients had at least two different types of lipedema together. The prevalence of lipolymphedema was 10%, and the prevalence of pain was about 60%. 40% of the patients had venous insufficiency. B12 deficiency was present in 4.5% of patients, and vitamin D deficiency was present in 54.1% of patients. The frequency of venous insufficiency was similar between patients with different lipedema stage (p=0.164). In patients with stage 2 and 3 lymphedemas, the frequency of lipolymphedema was



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higher than in the stage 1 lipedema group ( $p < 0.01$ ). BMI was positively associated with presence of lipolymphedema ( $p = 0.024$ , OR: 1.061).

**Conclusions:** Patients with lipoedema were commonly obese and the most common types of the disease are type 1 and type 2. The presence of pain, vitamin D deficiency and venous insufficiency were quite common. Also, high BMI was a significant risk factor for lipedema and lipolymphedema. Weight-loss therapies with educational programs must be provided as a primary therapy for patients with lipedema.

**Keywords:** Lipedema, Lipolymphedema, Venous insufficiency, Pain

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**Group:** General / Lipedema

## **The impact of lipedema on female sexual function, quality of life, and mood: A cross-sectional study**

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<sup>1</sup>Afyonkarahisar Health Sciences University

Hilal Yesil / Afyonkarahisar Health Sciences University

**Objectives:** We aimed to evaluate sexual function, quality of life, and depression in women with lipedema

**Background:** There are very limited publications in the literature about the effect of lipedema on depression and quality of life; however, it has been observed that the effect of lipedema on sexual dysfunction has never been investigated.

**Methods:** A total of twenty women with lipedema and 20 age-matched controls were included in the study. History and clinical findings of patients with lipedema were recorded. Sociodemographic form, female sexual function scale (FSFI), SF-36 quality of life (QoL) scale, and Beck depression inventory (BDI) were applied to both groups.

**Results:** There was no difference in terms of the ages of the participants between the lipedema and control groups ( $p=0.868$ ). The FSFI, and QoL-SF 36 scores of the lipedema group were significantly lower than the control group ( $p<0.05$ ). BDI scores of the lipedema group were significantly higher than the control group ( $p<0.001$ ). A negative correlation was found between lipedema stage and all subgroups of the FSFI questionnaire except the satisfaction subgroup score ( $p<0.05$ ). The age of the patients, QoL-SF 36 scores, and BDI scores were also significantly correlated with sexual dysfunction ( $p<0.05$ ).

**Conclusions:** It was determined that female lipedema patients may be at risk for sexual dysfunction. These patients should be informed about possible sexual dysfunction during follow-up. Moreover, disease-related mood changes and poor quality of life may be associated with this



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condition. The quality of life of patients should be improved and necessary measures should be taken to provide psychosocial support.

**Keywords:** lipedema, quality of life, depression, sexual dysfunction

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**Presentation Type:** Poster Presentation

**Group:** General / Lipedema

## NUTRITIONAL INTERVENTION IN PATIENTS WITH LIPEDEMA: A CLINICAL CASE

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<sup>1</sup>hospital universitari i politécnica La Fe

<sup>2</sup>Universidad Católica de Valencia

Eraci Drehmer Rieger / Universidad Católica de Valencia

**Objectives:** G.O.1. To evaluate the efficacy of an anti-inflammatory diet and the body composition in patients with lipedema. G.O.2. To evaluate the efficacy of an anti-inflammatory diet and the pain.

**Background:** Many diets have been recommended for lipedema patients, but none of them have clearly shown to be effective. Although the main comorbidity in lipedema is obesity, many patients have normal weight. The influence of weight loss on the volume of lipedema is controversial. The benefits of nutrition are undeniable: a better general health status; better mobility, less joint pain; and less difficulty in wearing compression garments. There is no specific evidence-based diet for people with lipedema, as no randomized controlled trials have been published yet. Although lipedema is a disease of the subcutaneous adipose tissue, the study of body composition is extremely useful in providing information on fat mass, lean mass, bone mass and other relevant anatomical points.

**Methods:** A 34-year-old woman with stage 3, type III Lipedema, who was prescribed a gluten-free, anti-inflammatory diet of 1800 calories. The quality of the diet was calibrated by using the Easy Diet® management software. Body weight, height, waist perimeter and hip perimeter, percentage of body fat and muscle fat using ISAK method. The functional assessment was carried out with a pre- and post-study analysis of the grip strength of the upper limbs using the Jamar Plus device, and in lower limbs 10 min -walking-test. The DASH questionnaire was carried out to measure the variables of arm, shoulder and hand disabilities, and the ABC questionnaire of the Balance Scale Activities.



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**Results:** Baseline examination showed a weight of 88.3 kg, BMI. 30.1 kg/cm<sup>2</sup>, Waist-to-Height-Ratio 0.46 (classified as Healthy), volume of the right LL was 16,312 ml; and left LL: 16,577 ml. After 3 months of diet, the patient lost 6.7 kg, the WtHR was 0.43, the percentage of fat decreased from 23.07% to 17.56%, the percentage of muscle mass increased from 39.39% to 43.64%, and the volume lower limbs reduced significantly (Right LL: 15,494 ml, Left LL: 14,956 ml). Functional test also showed an improvement after diet intervention. These results demonstrate a global improvement in anthropometric parameters: a decrease in LL volume, in body fat and increase in muscle mass, as well and functional status.

**Conclusions:** These results demonstrate a global improvement in anthropometric parameters: a decrease in LL volume, in body fat and an increase in muscle mass, as well as in the functional status.

**Keywords:** lipedema, nutrition, body composition, and functional assessment.

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**Group:** General / Lymphedema

## **Management of lipedema with biphasic ketogenic diet/lowcarb diet, follow up after surgical intervention**

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<sup>1</sup>Università della Calabria

Roberto Cannataro / Università della Calabria

**Objectives:** Lipedema is a multifactorial pathology with a negative evolutionary trend. Mainly present in women with a 10% incidence<sup>1</sup>.

**Background:** Herein, we reported a 41-year-old woman diagnosed with lipedema type II-III stage II; she complains of widespread pain, particularly in the lower limbs, heaviness, and difficulty in operating various movements. She refuses any type of treatment if not nutritional. Therefore, it used a ketogenic diet (KD) for two months, then a low-carb approach until three weeks before surgery and, continuing with KD up to three days of surgery and, finally, repressed KD again.

**Methods:** The results in ponderal terms were striking: the subject lost 12 kg, with a change of about 10 Bf%, as shown in Figure 1 panels A and B, and maintained a healthy condition. After surgery, with the KD approach, the patients returned to a physical activity condition after only 15 days (Figure 2 panels A and B).

**Results:** limiting condition, as shown for RAND-36 in Figure 3. The WOMAC score had a decrease of 92.8 %. However, SQS increased 6.9 %. We could not directly measure pain, but from the VAS scale, it was evident that the overall improvement was 75%, up to a condition of normality.

**Conclusions:** Herein, we reported a subject diagnosed with lipedema who underwent first a KD and then a low-carb approach, keeping the good results obtained regarding quality of life improvement, weight control, and pain management; she trained regularly.



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**Keywords:** surgical intervention, lipedema, diet, biphasic ketogenic diet/lowcarb diet

## **References**

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**Status:** Accepted: Poster Presentation

**Presentation Type:** Poster Presentation

**Group:** General / Breast cancer related lymphedema (all aspects including axillary web syndrome, musculoskeletal problems)

## **Proximal Nail Unit Changes in Lymphedema: Ultrasonographic Imaging and Correlation with Dermis and Subcutaneous Tissue Thickness**

Busra Nur Aslantas<sup>1</sup>, Eren Aygun<sup>1</sup>, Rana Terlemez<sup>1</sup>, Sansin Tuzun<sup>1</sup>

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Busra Nur Aslantas / Istanbul University-Cerrahpasa, Cerrahpasa Medical Faculty, Department of Physical Medicine and Rehabilitation

**Objectives:** We aimed to investigate if lymphedema could affect the thickness of the proximal nail unit, detectable via ultrasonographic imaging. We also evaluated the correlation between dermis and subcutaneous tissue thickness in lymphedematous limbs and proximal nail unit thickness.

**Background:** The impact of lymphedema is well-documented on the skin and subcutaneous tissue of the extremities, yet its potential effects on the proximal nail unit remain understudied to date. Considering that the proximal nail unit could be a potential predictor for early detection of lymphedema, we evaluated both the nails and subcutaneous tissue.

**Methods:** This cross-sectional study involved female patients diagnosed with unilateral secondary lymphedema associated with breast cancer. Comparative clinical and ultrasound imaging assessments were conducted on the lymphedematous and the contralateral limbs. Circumferences were measured at 10 cm above and below the elbow crease using a measuring tape. During the ultrasonographic examination (using an ESAOTE MyLab 70 model US device with a 6–18 MHz linear probe), the thickness (in millimeters) of the proximal nail units of all fingers of both hands (Figure 1), as well as the dermis and subcutaneous tissue thickness (in millimeters) at 10 cm above and below the elbow crease (Figure 2), were measured and the results were analyzed statistically.

The ultrasonographic measurement of thickness of the proximal nail unit



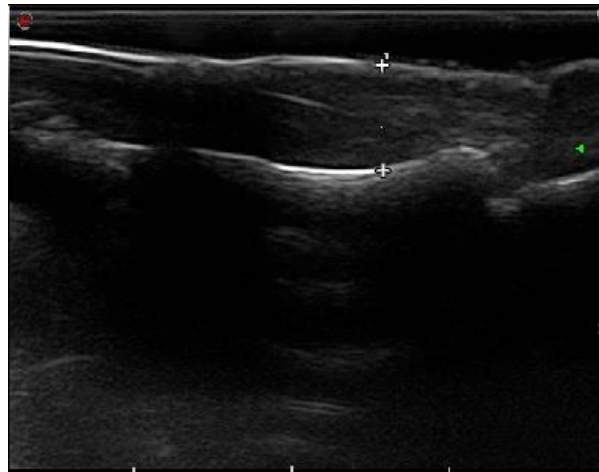
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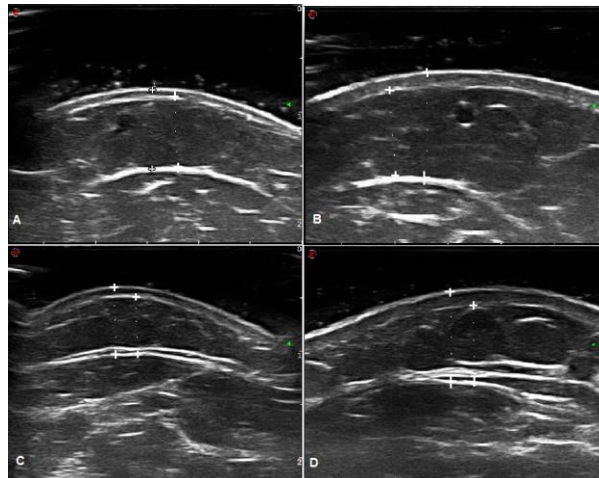
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The ultrasonographic measurement of the dermis and subcutaneous tissue thickness



The ultrasonographic measurement of the a. dermis and subcutaneous tissue thickness at 10 cm above the elbow crease on the contralateral limb b. and the lymphedematous limb c. dermis and subcutaneous tissue thickness at 10 cm below the elbow crease on the the contralateral limb d. and the lymphedematous limb



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**Results:** Fourteen patients diagnosed with unilateral lymphedema secondary to breast cancer were included. The patient's ages ranged from 37 to 65 years (mean 55,64 years); and body mass index, 18,73 to 32,84 (mean 26,8). Duration of secondary lymphedema ranged from 3 months to 20 years (mean 5,79 years). All patients had stage 2 lymphedema according to the ISL (International Society of Lymphology). Dermis and subcutaneous tissue thickness were significantly higher in the lymphedematous limb, except for subcutaneous tissue thickness at 10 cm above the elbow crease ( $p < 0,05$ ). Although the thicknesses of the proximal nail units in all fingers of the lymphedematous limb were higher compared to the unaffected limb, no statistically significant difference was found between the two sides (Table 1). A positive moderate correlation was observed between the thickness of the proximal nail unit of the fifth finger and dermis thickness.

Ultrasonographic measurement of thicknesses of proximal nail units, dermis and subcutaneous tissue, mean

Ultrasonographic Measurement	Lymphedema	Control	P-value
Dermis thickness at 10 cm above the elbow crease(mm)	1,55	1,19	<b>0,04</b>
Subcutaneous thickness at 10 cm above the elbow crease(mm)	11,07	10,14	0,07
Dermis thickness at 10 cm below the elbow crease(mm)	1,87	1,05	<b>&lt;0,01</b>
Subcutaneous thickness at 10	11,79	9,27	<b>0,02</b>



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cm below the elbow crease(mm)			
Proksimal nail unit thickness of the first finger(mm)	3,35	3,33	0,92
Proksimal nail unit thickness of the second finger(mm)	3,07	3,03	0,75
Proksimal nail unit thickness of the third finger(mm)	3,15	3,07	0,24
Proksimal nail unit thickness of the forth finger(mm)	2,96	2,91	0,59
Proksimal nail unit thickness of the fifth finger(mm)	2,66	2,56	0,08

**Conclusions:** Our study is the first to demonstrate the utility of ultrasonographic imaging as a valuable tool for detecting changes in proximal nail units in lymphedematous limbs. Nonetheless, future studies should aim to include a larger sample size to attain statistical significance.

**Keywords:** Lymphedema, proximal nail unit, ultrasonography

## References



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**Group:** General / Etiology/epidemiology of lymphedema

## Coexistence Of Elephantiasis Nostras Verrucosa And Foot Deformity

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**Objectives:** We reported a case of a 34 year old man who had chronic primary lymphoedema of right lower limbs for 30 years. His disease was complicated with irreversible changes of elephantiasis nostras verrucosa and had recurrent admissions due to infection. He had many times(22 times )surgical treatment for his lymphedema.Our patient was taken to the complex decongestive physiotherapy program. We aimed to report the results of our patient.

**Background:** The most common factors causing lymphedema in the lower extremity are aplastic/hypoplastic/hyperplastic lymphatic abnormalities, gynecological cancers, surgical interventions, trauma, radiotherapy and recurrent infections.Elephantiasis nostras verrucosa (ENV) is a rare form of chronic lymphedema that causes progressive cutaneous hypertrophy. It can cause serious deformities, especially in the lower extremities.

**Methods:** The patient's complaints have been present since birth. He has a total of 22 vascular surgeries and orthopedic reconstruction surgery in his medical history. After the surgeries the patient had, severe deformity developed in his foot and ankle. Lymphedema, which started as primary, increased secondarily due to iatrogenic and enfective reasons. His functional status was severely impaired due to loss of ankle function. Deformities in his lower limbs limited his daily activities, and limited activities worsened his lymphedema.On physical examination, there was a port wine stain on the right leg, and incision scars was visible along both the medial and lateral part of the lower extremity. His lowerextremity showed pitting edema; lichenification; indurated, cobblestone-like papulonodules; and plaques.

Elephantiasis Nostras Verrucosa



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image of elephantiasis

**Results:** The patient received manual lymphatic drainage and bandaging treatment for 30 sessions, 5 days a week, by the same physiotherapist who has manual lymphatic drainage certification training. In the beginning lower extremity circumference measurement, the ankle was evaluated as 28 cm, 20 cm proximal to the malleolus was 40 cm, and 10 cm above the patella was evaluated as 50 cm. After treatment in circumference measurement, the ankle was evaluated as 24 cm, 20 cm proximal to the malleolus as 35 cm, and 10 cm above the patella as 42 cm.



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**Conclusions:** After 30 sessions of decongestive lymph drainage treatment, the patient's leg was thinned by 8 cm in the proximal and 4 cm in the distal. The treatment was completed by recommending a custom-made lymphedema compression garment suitable for the patient's measurements, outpatient clinic checks and self-drainage and exercise were recommended.

**Keywords:** Lymheudema, ElephantiasisNostras Verrucosa, Manual Lymphatic Drainage

## References

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**Group:** General / Lymphedema

## **Lymphedema in a Patient with Parkinson's Disease: Is It Only Due to Restriction of Mobilization? Or is Lymphatic Microangiopathy Developing?**

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**Objectives:** Lymphedema is the accumulation of protein-rich interstitial fluid in the skin and subcutaneous tissue. Although secondary lymphedema is due to malignancy, heart or kidney failure, immobilization, obesity, vascular diseases or trauma.

**Background:** In this case report, we aim to present about a case of Parkinson's Disease (PD) and bilateral lower extremity lymphedema that started simultaneously with the disease and to review the literature.

**Methods:** A 78-year-old female patient with a known history of PD, hypertension, diabetes and vertigo was admitted to our outpatient clinic with complaints of swelling in both legs. She was diagnosed with PD 4 years ago. After a short time, increasing swelling developed in both lower extremities and mobility was further restricted. The patient, who was admitted to the cardiovascular surgery outpatient clinic, had lower extremity lymphoscintigraphy performed and an appearance consistent with lymphatic partial obstruction on the left side was observed. In the physical examination of the patient, it was observed that his mobilization was limited, she could walk with small steps and on flat ground. There was no rest tremor, but rigidity and bradykinesia were present. There was swelling in both lower extremities (Figure 1). Stemmer's test was positive. The patient's body mass index was 35.15 kg/m<sup>2</sup>. In laboratory examinations, laboratory values were within normal limits. She didn't have kidney and heart failure.



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Figure 1



Swelling in both lower extremities

**Results:** Lymphedema due to immobilization and obesity was first considered in the patient. Complete decongestive treatment was planned for both lower extremities (Figure 2). In addition, a rehabilitation program for PD was planned and increasing mobilization was planned as a priority target. When there was a regression in lower extremity peripheral measurements in the 3rd week of treatment, personalized compression garment measurements were taken. In the first month of treatment, a compression garment was used (Figure 3) and the patient was mobilized with a single cane.

Figure 2

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Short tension bandaging of both lower extremities

**Conclusions:** In our case, although we thought that lymphedema was primarily due to mobility limitation and obesity, we wanted to investigate similar cases in the literature on this subject because it occurred simultaneously with the diagnosis of PD. It is not clear whether this edema is due to venous insufficiency, impaired posture compliance as a result of the activity of the calf muscles, or dysfunction in the autonomic nervous system. In the evaluation performed by microlymphography in a female patient with PD, and increase in interstitial and microlymphatic



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pressures was detected, and this was attributed to the insufficiency in venous and lymphatic drainage that developed after the deterioration in the function of the calf muscles.

**Keywords:** immobilization, lymphedema, obesity, parkinson's disease

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**Group:** General / Head and Neck lymphedema

## **Neck, trunk, and arm lymphedema after thoracic outlet surgery**

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<sup>1</sup>SBU İstanbul Physical Medicine And Rehabilitation Training And Research Hospital

Sedef Ersoy / SBU İstanbul Physical Medicine And Rehabilitation Training And Research Hospital

**Objectives:** We aimed to report a case of neck , trunk and arm lymphedema after Thoracic Outlet Surgery

**Background:** Lymphedema is a slow-onset, progressive disease characterized by the accumulation of protein-rich interstitial fluid under the skin as a result of lymphatic system dysfunction caused by injury, infection, or congenital abnormalities. Thoracic outlet syndrome (TOS) defines a condition with upper extremity symptoms that occurs due to compression of neurovascular structures in the thoracic outlet. There are three types depending on where the compression occurs. After lymphedema , TOS can be seen, but as in this case we think it is rare to meet lymphedema after TOS surgery.

**Methods:** A 34-year-old male patient was referred to our outpatient clinic with complaints of swelling in the right neck, chest, and upper arm, and numbness between the shoulder and olecranon in the right arm, which had been present for 3-4 months. In 2015, he had his first surgical operation due to TOS, through an axillary approach. 1. costal resection and pectoralis muscle relaxation were performed. Axillary hematoma developed after the operation. Afterwards patient received physical therapy and exercise therapy. In July 2017, the patient was operated on again using the pectoral and supraclavicular approach due to swelling, redness, and weak pulse in the right arm. The patient complained of swelling in the chest and neck after the operation. The patient had a third surgery in March 2020, but there was no improvement in his complaints of swelling after the operation. Following 3. surgery patient had manual lymphatic drainage as lymphedema treatment. In November 2022 the patient was operated on for the 4th time and after surgery his pain decreased, but edema in the chest and neck continued.



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trunk lymheudema



Trunk Lymphedema after TOS treatment

**Results:** As a result, our patient had many surgeries for treatment of Torasic outlet syndrome. After these operations he has stage 2-3 lympeudema of neck trunk and arm. We applied manual lymphatic drainage complex decongestive treatment and exercises to our patient. we recommended him self-drainage and compression clothing.

**Conclusions:** Lymphedema is not mentioned at all among the complications seen after surgical treatment of thoracic outlet syndrome. Our patient is one of the rare cases of secondary lymphedema because it occurred after TOS surgery.

**Keywords:** lymphedema, torasic outlet syndrome

## References

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**Group:** General / Lymphedema

## **Lymphedema Following Covid-19 Infection: A Case Series of 3 Young Patients**

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Hasan Ocak / Hacettepe University Faculty of Medicine, Department of Physical Medicine and Rehabilitation

**Objectives:** Although lymphedema commonly develops secondary to cancer treatment, trauma and infection also play an important role in its etiology. It is well known that COVID-19 infection causes microvascular dysfunction by causing endothelial damage. However, the effect of COVID-19 on the lymphatic system has not been demonstrated yet. There are only a few case reports in the literature about lymphedema occurring after COVID-19 vaccination. Here, we present 3 patients with a diagnosis of lymphedema that developed or worsened after COVID-19 infection.

**Background:** Case 1: A 25-year-old woman with a complaint of left arm swelling for 2 months were admitted to our department. She declared that it developed 1 week after Covid-19 infection. The circumference of left arm was greater up to 1.5 cm than the right side. Lymphoscintigraphy showed that there was no lymph flow in the left arm. At the end of 1 month, no significant volume reduction was obtained with self lymphatic massage and compression garment. Thus, complex decongestive therapy (CDT) was applied 5 days/week for 2 weeks. Unfortunately, only 10% volume reduction could be achieved.

**Methods:** Case 2: A 28-year-old woman with a complaint of swelling in her left lower limb for 6 months admitted to our department. She stated that the swelling increased significantly and became permanent after she had become sick with coronavirus. The volume difference between the legs was calculated as 1366 ml. Lymphoscintigraphy showed a significant decrease in left lower remity lymphatic drainage. A significant volume reduction has been achieved by 15 sessions of CDT. Self-massage, exercise and compression garment were prescribed.



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**Results:** Case 3: A 22-year-old woman applied to our outpatient clinic with a complaint of swelling in her left foot and calf. The patient declared the slight swelling in the left ankle persisting for 3 years, increased dramatically following Covid-19 infection. The volume difference between the lower extremities was determined as 675 ml. Lymphoscintigraphy showed slowing of lymphatic flow in the left lower extremity. Self lymphatic massage, exercise and compression garment were recommended. At the end of 1st month, swelling reduced significantly.

**Conclusions:** Although great attention has been paid to the effects of COVID-19 infection on arteriovenous system, potential damage on lymphatic system has been overlooked. However, lymphatic vessels also consist of endothelial cells and are likely to be affected by Covid-19 infection. Therefore, detailed inquiry about COVID 19 infection is crucial to elucidate the etiology of swelling in patients diagnosed with lymphedema.

**Keywords:** Lymphedema, Physical Therapy, Lymphedema Rehabilitation

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**Group:** General / Lymphedema

## Lymphedema in a Patient with Yellow Nail Syndrome

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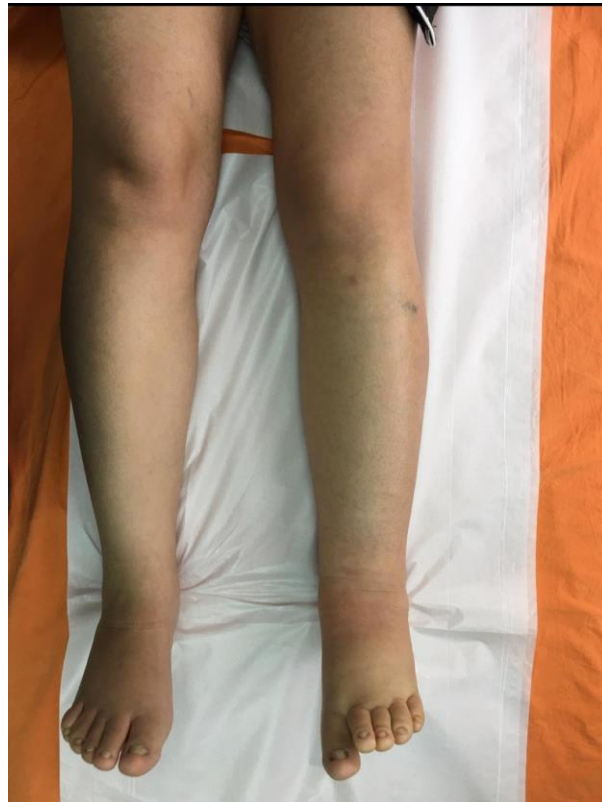
**Objectives:** Yellow nail syndrome (YNS) is a rare condition characterised by the presence of two of the following: (1) slow-growing, hard, yellow and dystrophic nails, (2) lymphedema and (3) respiratory disease. In general, the syndrome is acquired and affects adults over 50 years of age. However, there are case reports of YNS occurring in children and even newborns. Anatomically, YNS affects the fingernails, toenails, respiratory tract and lymphatic vessels (often in the lower limbs). All of these signs and symptoms are believed to be caused by impaired lymphatic circulation. In this case report, we present a patient with lower extremity lymphedema and persistent yellow nail changes.

**Background:** A 42 year old woman was admitted to our clinic with left leg swelling. Her complaints were left leg swelling, cough and sputum. There was no history of trauma, malignancy and insect bite. It was learnt that the patient had complained of swelling in both legs since the age of 18. Physical examination findings were as follows: edema on the left leg, stemmer sign +, yellow dystrophic nails on the toes and fingers. Cardiac examination revealed normal heart sounds and no murmur. Respiratory examination was normal. Echocardiography performed with cardiology consultation revealed an EF of 65% and no additional findings. There was no finding of respiratory tract disease as a result of chest diseases consultation. Culture and staining tests performed for onychomycosis were negative. There was a history of two previous pneumonia and bronchitis. His brother had similar yellow nail changes, low extremity lymphedema and a history of sinusitis infection every year.

lymphedema and yellow nail appearance

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lower extremity lymphoedema and persistent yellow nail changes



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lymphedema and yellow nail appearance



yellow dystrophic changes in fingernails

**Methods:** systemic examination and questioning of family history

**Results:** The patient received 15 sessions of complex decongestive therapy during his treatment in our ward. Right leg volume was 6.319 and left leg volume was 6.838 at the first measurement during the treatment, while right leg volume was 6.362 and left leg volume was 6.448 at the end of the treatment.

**Conclusions:** After detailed systemic examination and questioning of family history, we made a diagnosis of Yellow Nail Syndrome, which is rare in the literature. In conclusion, we wanted to draw attention to this genetic syndrome associated with lymphedema and yellow nail appearance.

**Keywords:** Lymphedema, yellow nail, dystrophic nail

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**Group:** General / Differential Diagnosis

## A Rare Cause of Lymphedema: Cat Scratch Disease

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Faika Nur Erkol / Acıbadem University Research Institute of Senology

**Objectives:** -Can lymphedema occur as a result of cat scratch disease?-Is complex decongestive therapy effective in the treatment of lymphedema caused by cat scratch disease?

**Background:** A 24-year-old female patient went to hospital with the complaint of swelling in her left hand. The patient said that he was scratched by a stray cat two months ago; Following the development of fever and painful swelling in the axillary region, ultrasound revealed two lymph nodes, 34x25 and 10x28 in size, with lobulated contours and necrosis in the middle, and it was learned that lymph node excision was treated for diagnostic purposes and antibiotic therapy with azithromycin was started.

**Methods:** In the pathological examination of the lymph nodes, chronic granulomatous lymphadenitis with abscess formation compatible with CSD was detected. In physical examination; In the upper extremity circumference measurements made with a tape measure at standard points, a 2 cm swelling was detected at the hand and wrist level compared to the right side. No limitation was detected in the shoulder joint range of motion of the patient, who was diagnosed with Stage 2 lymphedema. Examination findings of other systems were normal. Complex decongestive therapy was applied, including 10 sessions of manual lymph drainage, self-drainage training, multilayer bandaging, and then a compression garment. The treatment was terminated with self-drainage, exercise and protection recommendations.

**Results:** Table 1: Measurement Differences of Left-Right Hands Standart Points Standart Points Before Treatment (Left-Right) Difference (cm) After Treatment (Left-Right) Difference (cm) Middle Hand 2,10,9 Wrist 20,7 After treatment; The right and left hands and wrists had the same appearance.

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Picture 1



It can be seen that there is a difference of 2 cm on the left the dorsal hand compared to the right side.

Picture 2



Left hand view before and after treatment

Table 1

Standart Points	Before Treatment	After Treatment
	(Left-Right) Difference(cm)	(Left-Right) Difference(cm)
Middle Hand	2,1	0,9
Wrist	2	0,7



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## Measurement Differences of Left-Right Hands

**Conclusions:** •Cat Scratch Disease causes damage to lymphatic pathways due to chronic granulomatous inflammation. • The risk of developing lymphedema increases due to lymph node excision performed for diagnostic purposes. • Care should be taken against lymphedema, in infectious diseases that especially affect the lymphatic system. • Complex decongestive therapy was effective, the edema in the patient's hand completely subsided and fully recovered.

**Keywords:** lymphedema, infection, lymphadenopathy

### References

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**Group:** General / Etiology/epidemiology of lymphedema

## **Acquired lymphedema as a red flag sign: A case of endometrial sarcoma presenting with subclinical lower extremity lymphedema**

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Nur Kakilli / Trakya University Physical Medicine and Rehabilitation Department

**Objectives:** Acquired lymphedema must be considered a red flag and prompt further investigation is needed before a diagnosis of primary lymphedema is made. Patient-reported lymphedema should be taken seriously which may be a revealing sign of malignancy.

**Background:** Lower extremity lymphedema (LEL) is a long term complication of gynecologic cancers. The onset of LEL may begin immediately or much later after surgery however, onset before diagnosis is overlooked. Appearance of LEL as the first clinical manifestation of a gynecologic malignancy is extremely rare. These patients are often referred to physiatrists by gynecologic oncologists but the opposite scenario is also possible, as in this case which concerns a rare case of endometrial stromal sarcoma presenting with LEL.

**Methods:** Informed consent was taken.

**Results:** A 49-year old female presented with complaints of heaviness and swelling in her legs for the last 3 months. She had no chronic illness. Family history was not remarkable. Neurological examination was intact except for hypoesthesia in right L2 dermatome. Stemmer test was bilaterally negative. There were no pitting edema or trophic skin changes (Figure 1). No obvious swelling was seen at inspection. Limb circumference measurement revealed only a maximum of 1 cm increase in the right lower extremity. Blood tests were normal except hypercalcemia. Bilateral lower extremity venous doppler ultrasonography (USG) was normal. Lymphoscintigraphy revealed slowed lymphatic drainage in the right lower extremity at the femoral level. Abdominal USG showed a heterogeneous, hypoechoic nodular area measuring 7x10 cm in the uterus. She was referred to the gynecologist. In pelvic magnetic resonance imaging; the mass lesion showed regular boundaries, cystic necrotic areas in the center and



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heterogeneous contrast enhancement in the periphery. No periaortocaval or pelvic lymphadenopathy was detected. She underwent total hysterectomy with salpingo-oophorectomy with a preliminary diagnosis of myoma uteri but pathological examination revealed low-grade endometrial stromal sarcoma. No evidence of metastasis was detected in further examinations. Complex decongestive therapy was not deemed necessary. Exercise, self-massage, diet and general precautions were recommended. She was cured without chemoradiotherapy. At 2nd year follow-up, her lymphedema was still in latent stage.

Figure 1



Clinical appearance of patient's lower extremities at presentation

**Conclusions:** LEL, as the first presenting sign of a gynecologic malignancy is very rare. Our case is remarkable because early recognition of lymphedema provided cure for the patient. Patient-reported lymphedema should be taken seriously. It should be kept in mind that gynecologic malignancies can present with both advanced or subclinical LEL. Acquired LEL must be considered a red flag until proven otherwise.

**Keywords:** lymphedema, malignancy, lower extremity, endometrial sarcoma

## References

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**Group:** General / Genital Lymphedema

## GENITAL LYMPHEDEMA: A COMPLEX CASE PRESENTATION

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Büşra Nur Aslantaş / İUC-Cerrahpaşa Tıp Fakültesi

**Objectives:** Genital lymphedema is a rare condition characterized by the expansion of the skin and subcutaneous tissue in the genital area due to impaired lymphatic drainage. It can develop secondary to malignancy, surgery, radiation, trauma or infections like filariasis. This case illustrates genital lymphedema's complexity.

**Background:** Genital lymphedema presents with recurrent erysipelas, lymphatic cysts, and lymphorrhea, causing personal hygiene, urination, and sexual activity challenges. Diagnosis delays are common due to psychosocial issues. Imaging for lymphedema includes lymphoscintigraphy, indocyanine green (ICG) lymphangiography, CT, and MRI. Treatment options include conservative and surgical approaches, tailored to each patient.

**Methods:** A 77-year-old man presented with bilateral lower extremity and penoscrotal lymphedema for 8 months, with low back pain. He had a history of rectal cancer surgery, chemotherapy, radiotherapy, hydrocelectomy, lumbar disc herniation, and inguinal hernia repair. Bilateral lower limb and genital lymphedema manifested in 2023. Oral antibiotics, topical treatment, and complex decongestive physiotherapy (CD) were initiated. During hospitalization, elevated acute phase reactant (APR) and urea creatinine prompted nephrostomy for grade 4 hydronephrosis. Elevated APR led to oncology referral, limiting lymphedema treatment for 3 weeks.

**Results:** Three weeks of CDP significantly reduced bilateral lower extremity and genital lymphedema, enhancing the patient's quality of life. Even without surgery, CDP proved effective.

before the CDP



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after the CDP



**Conclusions:** Genital lymphedema challenges early diagnosis due to psychosocial impacts. Treatment involves conservative and surgical methods, individually tailored. Standardized protocols are lacking, emphasizing the need for personalized approaches.

**Keywords:** genital lymphedema, complex decongestive physiotherapy (CDP)

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**Group:** General / Surgical Treatments for Lymphatic Disorders

## Vascularized Lymph Node Transplantation for the Treatment of Factitious Lymphedema: A Case Report

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**Objectives:** Factitious disorders of the extremities can occur in various ways, including lymphedema. Several case presentations that were treated by amputation, Charles procedure, conservative medical treatment, or self-injury prevention. This is the first case report for treating factitious lymphedema using free vascularized lymph node transfer (VLNT).

**Background:** A 17-year-old girl presented with a hyperpigmented, stiff, swollen, brownish, heavily movable left arm with several punctures. Symptoms began a year ago, the patient had been in different hospitals. Lymphoscintigraphy demonstrated stage IIa lymphedema with epitrochlear dermal backflow and reduced activity on epitrochlear and axillary lymph nodes.

**Methods:** Under local anesthesia, two lymphovenous anastomoses (LVAs) were performed on her hand's dorsum. A compression garment was placed. The swelling on her hand reduced. She returned to the clinic a week later because of her entire arm was stiff and purple. VLNT using a

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gastro-omental flap was performed. Approximately 40% of the harvested flap was transported to the wrist, and 60% to the elbow. On the third day of the procedure, venous insufficiency was found in the wrist region. A pinhole in the vein wall was found during re-exploration, vein anastomoses were restored, yet venous insufficiency remained. During re-exploration, some lymph nodes became stuck on the wrist, were observed to be alive and were not removed. There were no problem in the ankle. The edema in her extremity had significantly lessened, and she was discharged. A week later the patient presented with swollen and painful extremity. She was re-admitted into service and during the next day round a bra strap was bound tightly on the upper arm; but she refused and became upset when confronted. This pattern continued throughout the day. A psychiatric evaluation was requested. Given that the patient generated the physical symptoms, presenting herself as unable to work due to pain, and the lack of a more plausible mental disorder to explain this situation, it was deemed consistent with factitious disorder according to DSM-5 TR.

photo 1



Figure 1A: Immediate preoperative appearance of patient after lymphovenous anastomoses performed and before vascularized lymph node transfer (VLNT), open incisions on the hand's dorsum is visible and clear distinction above which there is no edema at the proximal extent of axilla is visible. B: Harvested gastro-omental flap C: Flow through vein anastomoses of the VLNT in the wrist. D:Flow through vein anastomoses of the VLNT in the ankle E:Early postoperative appearance F:Reconstructed radial artery by using vein graft. Reddish lymph nodes are visible, which are left in the wrist like a graft. G: Final appearance of her arms



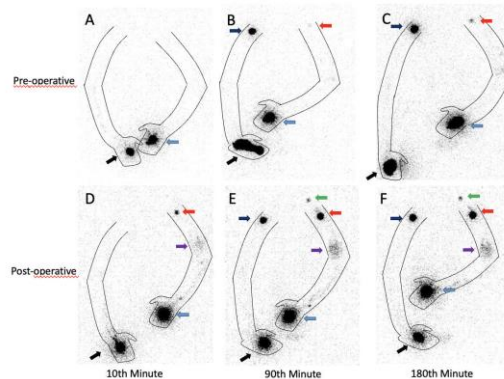
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**Results:** She underwent psychiatric treatment and lymphedema did not occur again. Late term postoperative lymphoscintigraphy demonstrated a significantly rapid activity passage and additional lymph node visualization.

photo 2



Semi-whole body anterior images of (a–c) preoperative and (d–f) postoperative lymphoscintigraphy; (a and d) 10th-minute, (b and e) 90th-minute, and (c and f) 180th-minute images after <sup>99m</sup>Tc-nanocolloid injection to the hands. In the preoperative images, minimal activity passage from the left-hand injection site (blue arrow) was observed to the left axillary lymph node (red arrow), whereas in the postoperative images, a significantly rapid activity passage and additional left cervical lymph node (green arrow) visualization was detected, reflecting an increase in lymphatic drainage. Activity accumulation due to postoperative changes was observed on the left upper arm surgical site (purple arrow). Normal activity passage was observed from the right hand (black arrow) to the right axillary lymph node (dark blue arrow) at both time points

**Conclusions:** The tourniquet effect in factitious lymphedema is distinguished by the brawny discoloration of the arm, the field of unambiguous distinction above which there is no discoloration at the proximal reach of the axilla. Physicians should thoroughly and patiently examine these patients to prevent any self injury related organic pathology and avoid being manipulated into performing unnecessary procedures.

**Keywords:** factitious lymphedema, vascularized lymph node transfer, free gastrointestinal flap, lymphovenous anastomoses

## References

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**Group:** General / Vein and lymphatics

## **The management of varicose veins with concomitant lymphedema of lower extremities. A case report.**

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Tatiana Chernyago / JSC Phlebology Center

**Objectives:** We present a case of the successful treatment of varicose veins of the lower extremities combined with secondary lymphedema.

**Background:** The optimal approaches for concurrent vascular lesions with limb lymphedema are not well established. It is known that the presence of venous pathology aggravates the course of lymphedema of the extremities.

**Methods:** We present the case of a 60-year-old woman who underwent hysterectomy with lymph node dissection in 2016 for uterine cancer. Since then, the patient has noted swelling of the right lower limb. During the period from 2016 to 2022, she suffered 6 episodes of erysipelas. The established difference between right and left legs was 3002 ml. The presence of varicose veins has been noted for more than 10 years. The patient's quality of life was assessed at 14 points according to the CIVIQ questionnaire, the severity of the disease according to the VSCC scale was 13. Clinical class according to CEAP was C1,2,3,S,Ep,se,As,p,Pr GSVa,CPV,LII on both legs. We decided on the advisability of surgical treatment of varicose veins. At the first stage, the patient underwent a course of complex decongestive therapy for 10 days. During treatment, the edema regressed and the volume of the limb was reduced by 1785 ml. Then the patient underwent an endovenous laser ablation therapy of the great saphenous veins on both legs. The postoperative period proceeded without complications; ultrasound veins scan 2 weeks later showed the obliteration of the great saphenous veins in both extremities. The patient was prescribed II class compression stockings, use of venotonics and dynamic observation. A year after the surgical intervention, the patient noted an improvement in the quality of life - 52 points on the CIVIQ questionnaire, in addition, there was no recurrence of erysipelas over the year follow-up.



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**Results:** Thus the elimination of venous pathology improves the quality of life of patients, and probably reduces the likelihood of erysipelas.

**Conclusions:** Today the literature does not provide enough data on the treatment of patients with combined lymphatic and venous pathology. Systematization of knowledge in this direction is relevant.

**Keywords:** Varicose veins, lymphedema, lymph-venous insufficiency

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**Group:** General / Complete Decongestive Therapy, all aspects

## **Complete Decongestive Therapy for Persistent Localized Swelling in the Hand Following Complicated Soft Tissue Infection: A Case Report**

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Ayça Utkan Karasu / Gazi University Faculty of Medicine, Physical Medicine and Rehabilitation Department

**Objectives:** This case report presents the outcomes of a patient with persistent localized swelling in the hand, following a complicated soft tissue infection (CSTI), treated with complete decongestive therapy (CDT).

**Background:** Lymphedema can occur as a consequence of various factors, including infections that disrupt the normal flow of lymphatic fluid. Post-infection lymphedema, in particular, presents a unique challenge due to its potential to exacerbate tissue damage and hinder the body's ability to fight infection effectively. Understanding the underlying mechanisms and exploring effective treatment strategies for post-infection lymphedema is crucial in mitigating its impact on patients' quality of life and long-term outcomes.

**Methods:** Measurements of circumference, range of motion of joints, hand grip strength measurements with Jamar dynamometer, and assessment of quality of life using the quality of life assessment tool for lymphoedema (LYMQOL) scale were conducted before and after the patient's treatment.

**Results:** A 42-year-old male, employed as a plumber, presented to the dermatology department for management of a complicated soft tissue infection in the right arm, which began following work in an unclean environment (Figure 1). Despite discharge from the hospital, the patient continued to experience persistent swelling in the arm, weakness, and limited range of motion in the hand, prompting referral to the Department of Physical Medicine and Rehabilitation. It was noted that the patient faced difficulties in both daily and occupational activities. Superficial ultrasonography revealed widespread heterogenous edema in the skin-subcutaneous tissue

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interface. Complete Decongestive Therapy (CDT) was initiated. For 2 weeks, 5 days a week, the patient underwent multilayer bandaging, manual lymphatic drainage, and lymphedema exercises. Post-treatment Improvements were observed in edema, range of motion, grip strength, and LYMQOL scale scores (Figure 2). Pre- and post-treatment assessments are summarized in Table 1.

Figure 1



Complicated soft tissue infection in the right arm

Figure 2



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Improvements in edema



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Table 1

	Pre-treatment		Post-treatment	
	Right	Left	Right	Left
<b>MCP (cm)</b>	23,6	20,6	23,2	20,6
<b>Wrist (cm)</b>	18,7	17	18,3	16,9
<b>+4 (cm)</b>	20,4	19	19,3	19
<b>+8 (cm)</b>	23,3	21,8	21,7	21,6
<b>+12 (cm)</b>	26,4	24,7	24,8	24,6
<b>+16 (cm)</b>	27,3	25,8	26,8	26
<b>+20 (cm)</b>	27,4	26,4	27	26,4
<b>+24 (cm)</b>	27,3	26	27,2	26
<b>+28 (cm)</b>	28,5	27,8	28,2	27,7
<b>+32 (cm)</b>	30,3	29,1	30,3	28,9
<b>+36 (cm)</b>	32,5	31	32	31
<b>+40 (cm)</b>	33,8	32	34	32,5
<b>Volume (ml)</b>	2506	2249	2405	2248
<b>Volume difference (%)</b>	11,4		7	
<b>Wrist flex (°)</b>	15	62	80	77
<b>Wrist ext (°)</b>	19	60	30	65
<b>Elbow flex (°)</b>	124	135	135	135
<b>HGS (kg)</b>	30	45	39	46
<b>LYMQOL</b>	52		30	

Pre- and post-treatment assessments

**Conclusions:** Complete Decongestive Therapy (CDT) is a beneficial method for the earlier acquisition of hand functions affected by persistent edema developing after complicated soft tissue infections.

**Keywords:** Lymphedema, Complete Decongestive Therapy, Soft Tissue Infection



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## References

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## **Treatment of Head and Neck Lymphedema Following Surgery and Radiotherapy for the Laryngeal Squamous Cell Cancer; A Case Report.**

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**Objectives:** This study aims to take a glance at head and neck lymphedema treatment which was occurred after the neck surgery due to laryngeal squamous cell cancer.

**Background:** Head and Neck Lymphedema (HNL) is a disastrous but common effect of head and neck cancer treatment. Removal of lymph nodes during cancer biopsy or tumor resection and radiation therapy are causes of HNL in head and neck cancer patients. HNL can progress to the point of creating frustration and embarrassment resulting in social withdrawal from obvious body image concerns, neck and facial deformity, as well as serious functional problems such as difficulty breathing and swallowing, or even walking. However, with appropriate treatment, HNL can usually be reduced to a manageable level.

**Methods:** Case Summary: Herein, we present a male patient who underwent a neck surgery, had lymphectomy and got the radiotherapy because of a larynx squamous cell cancer. After 3 years from the radiotherapy process, he was diagnosed with a stage 2 HNL.

**Results:** A total of 30 sessions of rehabilitation program consisting of complete decongestive therapy (CDT) including manuel lymph drainage (MLD) was applied to our patient. In our study, even though our patient benefited from CDT, complete recovery was not achieved and we consider that more effective results can be obtained by trying additional methods.

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Complete Decongestive Therapy Follow-up



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**Conclusions:** Complete decongestive therapy is effective for HNL. However, further research and studies are needed.

**Keywords:** head and neck lymphedema, complete decongestive therapy, manuel lymph drainage

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