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Management of Refractory Lymphocele Post-Medial Thighplasty Using Lymphaticovenular Anastomosis and Negative Pressure Wound Therapy: A Case Report

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Data Collection B
Statistical Analysis C
Data Interpretation D
Manuscript Preparation E
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Patient: Female, 51-year-old
Final Diagnosis: Refractory lymphocele post-medial thighplasty
Symptoms: Pain or discomfort • feeling of pressure • lump in the thigh • fluid accumulation under the skin
Clinical Procedure: —
Specialty: Plastic Surgery

Objective: Unusual setting of medical care

Background: Medial thigh lift in patients after bariatric surgery may injure lymphatic channels and cause lymphatic complications, including lymphocele and secondary lymphedema. Most lymphoceles resolve with conservative treatment, but chronic high-output collections associated with lymphatic drainage impairment remain difficult to manage and lack a standardized strategy.

Case Report: After bariatric surgery, a 51-year-old woman developed a chronic encapsulated fluid collection of the left medial thigh after medial thigh lift, associated with secondary lymphedema. Magnetic resonance imaging (MRI) showed a collection measuring 28 × 7 × 9 cm, and lymphoscintigraphy demonstrated impaired lymphatic drainage. Serial aspirations every 3 days evacuated 0.5 to 1.0 L of clear fluid per session, with rapid recurrence. Surgery consisted of complete capsulectomy and targeted ligation of the leakage point guided by intraoperative indocyanine green and methylene blue mapping. Two distal lymphaticovenular anastomoses were performed below the knee with 11-0 nylon to restore lymphatic outflow. Negative pressure wound therapy with instillation was applied for 5 days to collapse the dead space and control output, followed by definitive closure over suction drainage. At 12 months, limb circumferences normalized, and MRI confirmed resolution of the lymphocele with stable reduction of lymphedema. At 24 months, no recurrence or complications were observed.

Conclusions: Combined capsulectomy, leak ligation, distal lymphaticovenular anastomoses, and negative pressure wound therapy with instillation may represent a useful option for refractory lymphocele associated with secondary lymphedema after medial thigh lift. This approach addresses both cavity control and lymphatic drainage impairment. Additional cases are needed to define reproducibility and indications.

Keywords: Anastomosis, Surgical • Bariatric Surgery • Indocyanine Green • Lymphocele • Negative-Pressure Wound Therapy

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Introduction

Medial thigh lift is frequently requested after massive weight loss and is associated with a substantial rate of postoperative wound morbidity, including seroma and persistent drainage, because of motion, moisture, and the creation of large potential spaces in proximity to major lymphatic pathways [1]. Although true lymphocele after thigh lift is reported less commonly than seroma, it represents a distinct entity characterized by persistent lymphatic leakage into a confined cavity, often requiring prolonged treatment and repeated procedures [2,3].

Initial management is usually conservative and includes compression and aspirations, while operative strategies have historically focused on exploration, ligation of lymphatics, dead space reduction, and capsulectomy when chronic encapsulation develops [2,3]. In parallel, radiologic approaches such as percutaneous drainage with sclerotherapy, conventional lymphangiography with lipiodol, and targeted embolization, including intranodal glue embolization, have broadened the therapeutic spectrum for postoperative lymphatic leaks and lymphoceles [4-7]. These modalities can be effective, but they primarily address the cavity and the leak rather than restoring lymphatic outflow, which becomes relevant when secondary lymphedema coexists.

Current treatment escalation is commonly structured as first-line conservative management (compression and serial aspirations), second-line operative management (exploration, ligation, dead space reduction and capsulectomy for chronic encapsulated cavities), and third-line interventional radiology procedures (sclerotherapy and lymphangiography-guided embolization), each primarily targeting the leak and cavity. When lymphatic drainage impairment coexists, physiologic reconstruction of outflow becomes a separate objective.

Supermicrosurgical lymphaticovenular anastomosis (LVA) has been described for iatrogenic thigh lymphocele, supporting the concept that diverting lymph into the venous system can control high output lymphatic collections when conservative management fails [8]. Negative pressure wound therapy, including negative pressure wound therapy with instillation, can reduce dead space, control exudate, and support wound edge approximation, and has been used to limit lymph-related wound complications after groin procedures such as inguinal lymph node dissection [9-11]. Accurate intraoperative localization of lymphatic disruption remains a technical bottleneck. Dye-based mapping techniques have been reported in thigh lift–related groin lymphorrhea, and contemporary protocols using indocyanine green lymphography, alone or combined with visible dyes, improve identification of lymphatic channels and leak points [3,12-14].

This report aimed to describe the treatment and outcome of a patient after bariatric surgery with a chronic, organized medial thigh encapsulated postoperative fluid collection associated with objective secondary lymphedema, which was treated with complete capsulectomy and leak ligation guided by intraoperative lymphatic mapping, combined with distal LVA and negative pressure wound therapy with instillation to eliminate dead space and control lymphatic output.

Case Report

A 51-year-old woman was referred to our institution in September 2022 for persistent swelling and recurrent fluid collection of the left medial thigh after body contouring. Past medical history included allergic asthma. She was a nonsmoker and did not report diabetes, peripheral vascular disease, or chronic anticoagulation. Orthopedic history included prior tibia and fibula fixation with plates and screws and prior arthroscopic meniscectomy with cruciate ligament repair.

She underwent sleeve gastrectomy in March 2017 for obesity, with a preoperative weight 102 kg and body mass index 36.2 kg/m^2. Her postoperative weight stabilized at approximately 76 kg, with a body mass index of about 27 kg/m^2. She subsequently underwent abdominoplasty in June 2019 and brachioplasty in February 2020 at other institutions. In September 2021, she underwent thigh liposuction, followed by medial thigh lift in May 2022. From June 2022, she developed a recurrent, enlarging medial thigh collection at the left inguino-crural region. Conservative measures including compression therapy and repeated ultrasound-guided aspirations were performed at the referring institution. Aspirated fluid was consistently clear, straw-colored, and non purulent, with volumes typically ranging from 0.5 to 1.0 L per session, depending on tolerance. Microbiology remained negative at each evaluation. An operative revision for seroma debridement was attempted at the referring institution, without durable resolution.

At first evaluation in our hospital on September 15, 2022, physical examination showed a tense, fluctuant medial thigh swelling with discomfort during ambulation (**Figure 1**). Clinical edema of the left lower limb was present. Circumferential measurements were taken every 5 cm along a standardized line from the first toe to the greater trochanter with the foot in neutral extension. Baseline measurements are reported in **Table 1**. The left limb was larger at multiple levels, consistent with concomitant secondary lymphedema.

Magnetic resonance imaging (MRI) performed in October 2022 demonstrated a large, encapsulated fluid collection in the subcutaneous tissue of the medial left thigh measuring 28 × 7 × 9 cm, with septations and a thickened wall, consistent

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Figure 1. Preoperative clinical appearance of the lower limbs. The image shows marked asymmetry between the lower extremities, with evident swelling of the left thigh compared with the contralateral side. The medial aspect of the left thigh appears enlarged and tense, consistent with a chronic lymphocele associated with secondary lymphedema. Skin tension and altered contour are visible along the medial thigh region, corresponding to the site of the previous medial thigh lift and repeated aspirations.

with chronic organized fluid collection (**Figures 2, 3**). Dilated lymphatic channels were described in the adjacent soft tissues. Ultrasound confirmed a loculated collection suitable for aspiration. Lymphoscintigraphy showed qualitative dermal backflow at the leg, consistent with impaired lymphatic drainage of the left lower limb and with secondary lymphedema. There were no systemic signs of infection, and inflammatory markers were not elevated.

Differential diagnosis included postoperative seroma, chronic hematoma, infected collection or abscess, pseudoaneurysm, deep vein thrombosis, inguinal hernia, and soft tissue neoplasm.

Table 1. Lower limb circumferential measurements at baseline and 12 months. Measurements were taken every 5 cm along a line from the first toe to the greater trochanter with the foot in neutral extension.

Point (every 5 cm)	Baseline right (cm)	Baseline left (cm)	12 months right (cm)	12 months left (cm)
1	23.0	23.0	23.0	23.0
2	21.0	23.0	21.0	21.0
3	28.0	29.5	28.0	28.0
4	26.0	26.0	26.0	26.0
5	28.0	28.0	28.0	28.0
6	33.0	33.0	33.0	33.0
7	39.0	40.0	39.0	39.0
8	44.0	45.0	44.0	44.0
9	43.5	47.0	43.5	43.5
10	41.0	45.0	41.0	41.0
11	46.0	47.0	46.0	45.5
12	51.0	54.0	51.0	50.5
13	53.5	59.0	53.5	53.0
14	56.0	62.0	55.5	55.5
15	58.0	66.5	58.0	57.5
16	66.0	71.0	66.0	66.0
17	68.0	72.0	68.0	69.0

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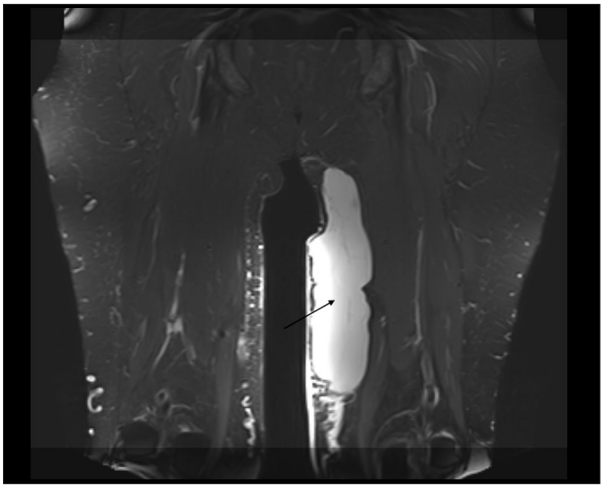


Figure 2. Preoperative coronal magnetic resonance imaging of the left thigh showing an encapsulated medial subcutaneous fluid collection. Arrows indicate the collection. Maximal dimensions are 28 cm craniocaudal, 7 cm transverse, 9 cm anteroposterior.

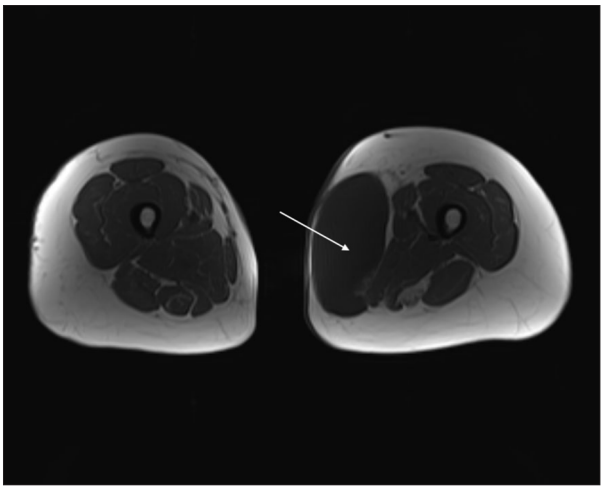


Figure 3. Preoperative axial magnetic resonance imaging demonstrating the same collection with thickened wall and septations. Arrow indicates the collection wall.

Imaging morphology, repeatedly sterile aspirates, absence of inflammatory signs, and stable hemoglobin excluded hematoma, abscess, and hemorrhagic complications. Duplex evaluation excluded venous thrombosis. The encapsulated, septated cavity with persistent high-volume clear fluid was interpreted as a lymphatic leak–related chronic encapsulated collection in the spectrum between chronic seroma and lymphocele.

Given the chronic encapsulation, volume burden, failure of repeated aspirations and prior revision, and objective coexistence of secondary lymphedema, we selected an operative strategy combining complete capsulectomy and definitive leak control with distal lymphaticovenular diversion. Sclerotherapy and radiologic embolization were considered as alternatives for postoperative lymphatic collections [4-7] but were not selected, because the cavity was organized and required excision, and because we aimed to treat the associated lymphatic drainage impairment rather than only obliterate the space.

Surgery was performed in November 2022 under general anesthesia with standard antibiotic prophylaxis administered before incision. Intraoperative lymphatic mapping was performed using indocyanine green lymphography with an infrared imaging system (IC Flow). Indocyanine green was prepared according to published lymphography protocols [12], using a 25-mg vial diluted in 5 mL sterile saline, and injected intradermally in small volumes. In our case, 0.1 mL was injected at the first interdigital space of the foot and 0.1 mL at the medial malleolus on the affected side, followed by gentle manual massage to facilitate tracer migration.

To enhance visual identification of lymphatic leakage at the surgical field, methylene blue was also used, based on reported combined dye techniques [13,14]. Methylene blue was administered subcutaneously near the suspected leakage region approximately 30 minutes before exploration, allowing visible staining of lymphatic flow in addition to fluorescence guidance.

Exploration of the medial thigh identified a thick-walled encapsulated cavity consistent with chronic lymphocele. Complete capsulectomy was performed, and the cavity was excised en bloc. A focal lymphatic leak point was identified at the medial thigh capsule by direct visualization of blue-stained lymphatic seepage and by fluorescence accumulation. The leak was ligated with fine nonabsorbable suture and reinforced with meticulous soft tissue approximation. Specimens were sent for histology and microbiology. A blue-stained lymphatic vessel protruding into the cavity was identified above the knee, resected en bloc with the capsule, and sent for histology. Immunohistochemistry showed lymphatic endothelial markers with anti-podoplanin (D2-40) positivity, confirming the lymphatic nature of the leaking vessel and supporting the diagnosis of true lymphocele [15].

After leak control and capsulectomy, attention was directed to lymphatic outflow. Preoperative and intraoperative mapping showed progressive dermal backflow proximal to the knee, with preserved linear lymphatic channels distally. Two distal LVA were performed below the knee at sites selected where fluorescence indicated functional lymphatic collectors before the onset of dermal backflow. Under operating microscope, lymphatic vessels of approximately 0.3 to 0.5 mm and matched venules of approximately 0.4 to 0.6 mm were dissected. End-to-end LVA were completed with interrupted 11-0 nylon. Patency was confirmed by visualization of indocyanine green transit across the anastomoses into the venous system.

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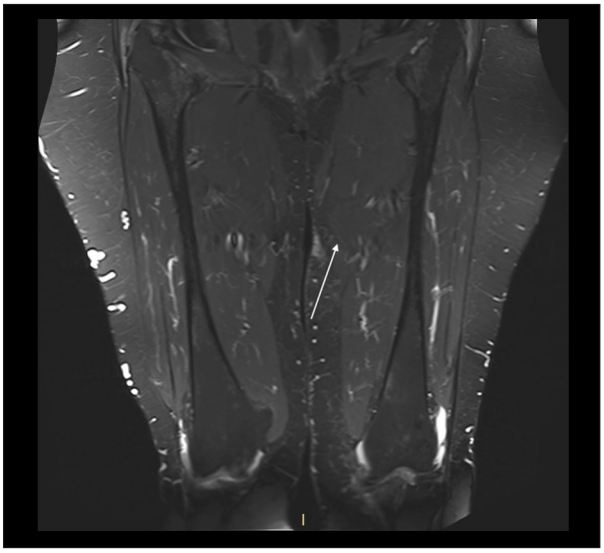


Figure 4. Twelve-month coronal magnetic resonance imaging showing absence of recurrent collection and reduced subcutaneous edema compared with baseline. Arrow indicates the previous site of the lymphocele.

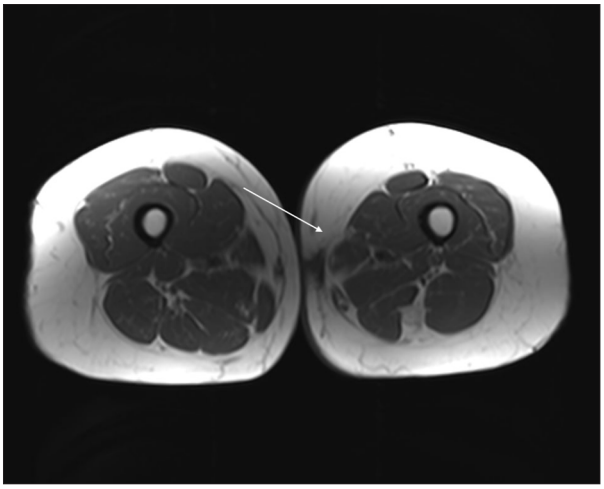


Figure 5. Twelve-month axial magnetic resonance imaging confirming no recurrent lymphocele. Residual subcutaneous edema is reduced relative to baseline, consistent with clinical volume normalization. Arrow indicates the previous site of the collection.

Negative pressure wound therapy with instillation was applied only at the medial thigh cavity site, while all LVA were performed distal to the knee and were not exposed to negative pressure, addressing concerns regarding suction effects on microanastomosis patency.

Because of the large residual potential space after capsulectomy, negative pressure wound therapy with instillation was used to collapse dead space and control lymphatic output, following consensus principles for instillation therapy [9]. A V.A.C. Ulta system with black polyurethane foam was positioned within the wound, bridging the approximated tissue planes, and set to continuous negative pressure at minus 125 mm Hg. Normal saline instillation was programmed at 30 mL every 3 hours with a 10-minute dwell time, followed by continuous suction. No conventional drains were placed during the instillation phase, because the system functioned as the primary controlled drainage pathway. Negative pressure therapy was applied at the thigh cavity site only; the 2 LVA were performed below the knee in a separate, uninjured distal field, deliberately distant from the negative pressure wound therapy dressing to avoid any risk of anastomotic compression or compromise.



Figure 6. Clinical appearance at 12-month follow-up after surgical treatment. The image demonstrates restoration of limb symmetry, with normalization of the medial thigh contour on the left side and resolution of the preoperative swelling. No clinical signs of lymphocele recurrence or lymphedema progression are evident.

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The postoperative course was uncomplicated. The negative pressure wound therapy with instillation system was maintained for 5 days and removed in the operating room because the foam was integrated into the approximation strategy and removal required controlled conditions. Canister output decreased progressively during therapy, with no evidence of recurrent cavity formation at inspection. After device removal, the wound margins were definitively closed in layers, and a single 18-French suction drain was placed. Drain output remained low and never exceeded 20 mL per day, and the drain was removed after 7 days. After definitive closure, the patient resumed a structured decongestive physiotherapy program supervised by trained therapists, consistent with International Society of Lymphology recommendations [16]. The program included manual lymphatic drainage, skin care, individualized exercise, and compression therapy with graduated garments. At planned re-exploration on postoperative day 5, direct inspection confirmed rapid cavity apposition and stable dead-space collapse under instillation therapy; therefore, we proceeded with definitive layered closure and suction drainage.

At 1 year, MRI performed in November 2023 demonstrated no residual or recurrent lymphocele and reduced edema compared with baseline imaging (**Figures 4, 5**). Clinically, swelling and discomfort resolved with restoration of limb symmetry (**Figure 6**). Circumferential measurements repeated with the same protocol showed symmetry between limbs with small residual differences of 0.5 cm at limited points (**Table 1**). At 2 years after surgery, clinical follow-up confirmed durable resolution without recurrence, infection, wound breakdown, or donor site morbidity.

Discussion

This case addresses 2 simultaneous problems that are not consistently separated in reports of post-thighplasty fluid collections, namely a chronic organized lymphocele with a persistent leak and an objectively impaired lymphatic drainage consistent with secondary lymphedema. Medial thigh lift after massive weight loss is associated with high rates of wound morbidity and seroma [1], and lymphocele has been specifically recognized as a rare but challenging complication in this setting [2,3]. In the algorithm proposed by Borud and colleagues for lymphocele after medial thigh lift, escalation to operative measures is often required when conservative drainage fails, and recurrence remains a concern when dead space and lymphatic disruption persist [2].

The therapeutic landscape for postoperative lymphatic collections has expanded. Radiologic approaches include percutaneous catheter drainage with sclerotherapy [5,6], and more recently lymphangiography-guided interventions and embolization, including intranodal glue embolization [4,7]. These techniques can be decisive in selected postoperative lymphatic leaks, but they do not restore lymphatic outflow and they do not remove a thick, organized capsule when present. In our patient, chronicity, septations, and a fibrotic capsule supported definitive capsulectomy, while the coexistence of objective lymphedema supported an adjunctive physiologic procedure to improve lymphatic drainage. For postoperative assessment, MRI was selected to document both the cavity resolution and soft-tissue edema, providing higher spatial and anatomic detail than radionuclide lymphoscintigraphy; preoperatively, qualitative dermal backflow at the leg was shown, consistent with impaired lymphatic transport, whereas postoperative follow-up relied on MRI and standardized circumferential measurements [17,18]. The postoperative disappearance of the collection on MRI, reduction of edema, and recovery of limb symmetry at 12 months support a coherent function-structure-clinical improvement in lymphatic drainage.

Scaglioni and colleagues treated 11 patients with iatrogenic thigh lymphocele using 1 to 3 LVA (mean 1.5) after unsuccessful conservative therapy, without complications and with no recurrences during follow-up ranging from 6 to 12 months; 3 patients also received a pedicled sartorius flap for dead space obliteration [8]. Our case differs by combining lymphaticovenular diversion with complete capsulectomy, targeted leak ligation, and staged cavity management using negative pressure wound therapy with instillation. Our patient's follow-up extended to 24 months without recurrence. This combined approach was selected to address a chronic encapsulated cavity and postoperative exudate control in addition to lymphatic drainage impairment.

Our choice of 2 distal anastomoses below the knee was driven by fluorescence mapping showing preserved distal collectors before dermal backflow, with the intention of diverting lymph away from the disrupted proximal region. This selection aligns with the physiologic rationale of lymphaticovenular diversion in obstructed drainage patterns rather than attempting reconstruction at the scarred, previously operated thigh.

Precise identification of the lymphatic anatomy and leak point is critical for reproducibility and remains a limitation of many historic descriptions. Intraoperative lymphatic mapping has been described in groin lymphorrhea complicating thigh lift, originally using dye techniques to identify disrupted channels [3]. Contemporary indocyanine green lymphography protocols specify intradermal microinjections and structured massage to accelerate tracer migration, improving visualization of functional collectors and dermal backflow zones [12]. Combined strategies that pair fluorescence mapping with a visible dye, such as methylene blue, further increase the surgeon's ability to identify lymphatic vessels and leakage in real time [13,14]. In our case, the leak point was concordantly identified by fluorescence accumulation and visible blue staining, allowing targeted ligation in addition to complete capsulectomy.

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Dead space control and postoperative lymphatic output management represent the second technical pillar. Incisional and cavity-directed negative pressure wound therapy has shown benefit in groin procedures with high lymphatic morbidity, including inguinal lymph node dissection, where reductions in wound complications and fluid-related morbidity have been reported [10,11]. Negative pressure wound therapy with instillation provides an additional mechanism by combining suction-mediated dead space collapse with periodic irrigation, and consensus guidelines define appropriate pressure ranges and instillation parameters for complex wounds [9]. We selected a continuous minus 125 mm Hg regimen with scheduled saline instillation to maintain controlled drainage, limit space re-expansion during the early postoperative period, and support progressive approximation prior to final layered closure.

Drain output remained less than 20 mL per day after definitive closure; this low drainage volume is consistent with early dead space closure and controlled exudate during the instillation phase.

Finally, postoperative conservative management remained integral because LVA aims to improve lymph transport but does not substitute for comprehensive lymphedema care. International guidance supports complete decongestive therapy as a cornerstone of lymphedema management [16], and we maintained a structured program after surgery to stabilize volume reduction and reduce the risk of fibrosis and recurrent swelling. Objective limb measurements at 12 months demonstrated near symmetry, supporting sustained functional improvement in addition to the absence of recurrent lymphocele.

This report has limitations inherent to single-patient evidence. The contribution is primarily technical and educational, providing a reproducible sequence that integrates mapping, definitive cavity management, physiologic diversion, and dead space control. Comparative studies are needed to position this combined strategy against radiologic interventions, isolated capsulectomy, or LVA alone, and to define which patients benefit most, particularly within post-bariatric body contouring populations.

Conclusions

In a patient after bariatric surgery with chronic encapsulated lymphocele after medial thigh lift and objective secondary lymphedema, a combined approach consisting of complete capsulectomy with targeted leak ligation guided by intraoperative lymphatic mapping, distal LVA, and negative pressure wound therapy with instillation was feasible and was associated with durable clinical and radiologic resolution at 2-year follow-up. This strategy should be considered a potential option for selected refractory cases in which both a persistent cavity and impaired lymphatic drainage are present. Larger case series and comparative designs are required to define indications, standardize technical parameters, and evaluate long-term recurrence.

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Informed Consent

Written informed consent was obtained from the patient for the publication of this case report, including any accompanying images or data.

Declaration of Figures' Authenticity

All figures submitted have been created by the authors who confirm that the images are original with no duplication and have not been previously published in whole or in part.

References:

1. Gusenoff JA, Coon D, Nayar H, et al. Medial thigh lift in the massive weight loss population: Outcomes and complications. Plast Reconstr Surg. 2015;135(1):98-106
2. Borud LJ, Cooper JS, Slavin SA. New management algorithm for lymphocele following medial thigh lift. Plast Reconstr Surg. 2008;121(4):1450-55
3. Stadelmann WK. Intraoperative lymphatic mapping to treat groin lymphorrhea complicating an elective medial thigh lift. Ann Plast Surg. 2002;48(2):205-8
4. Sommer CM, Pieper CC, Offensperger F, et al. Radiological management of postoperative lymphorrhea. Langenbecks Arch Surg. 2021;406(4):945-69
5. Karcaaltincaba M, Akhan O. Radiologic imaging and percutaneous treatment of pelvic lymphocele. Eur J Radiol. 2005;55(3):340-54
6. Alago W Jr., Deodhar A, Michell H, et al. Management of postoperative lymphoceles after lymphadenectomy: Percutaneous catheter drainage with and without povidone-iodine sclerotherapy. Cardiovasc Intervent Radiol. 2013;36(2):466-71
7. Smolock AR, Nadolski G, Itkin M. Intranodal glue embolization for the management of postsurgical groin lymphocele and lymphorrhea. J Vasc Interv Radiol. 2018;29(10):1462-65
8. Scaglioni MF, Meroni M, Fritsche E. Lymphovenous anastomosis (LVA) for treatment of iatrogenic lymphocele in the thigh. Microsurgery. 2021;41(1):19-25
9. Kim PJ, Attinger CE, Constantine T, et al. Negative pressure wound therapy with instillation: International consensus guidelines update. Int Wound J. 2020;17(1):174-86

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10. Tauber R, Schmid S, Horn T, et al. Inguinal lymph node dissection: Epidermal vacuum therapy for prevention of wound complications. J Plast Reconstr Aesthet Surg. 2013;66(3):390-96
11. Jørgensen MG, Toyserkani NM, Thomsen JB, Sørensen JA. Prophylactic incisional negative pressure wound therapy shows promising results in prevention of wound complications following inguinal lymph node dissection for Melanoma: A retrospective case-control series. J Plast Reconstr Aesthet Surg. 2019;72(7):1178-83
12. Suami H, Heydon-White A, Mackie H, et al. A new indocyanine green fluorescence lymphography protocol for identification of the lymphatic drainage pathway for patients with breast cancer-related lymphoedema. BMC Cancer. 2019;19(1):985
13. Zhou X, Liu B, Guo X, et al. Application of indocyanine green lymphography combined with methylene blue staining in lymphaticovenular anastomosis of lower limb vessels: A prospective study. Phlebology. 2023;38(7):466-73
14. Ayestaray B, Bekara F, Andreoletti JB. Patent blue-enhanced lymphaticovenular anastomosis. J Plast Reconstr Aesthet Surg. 2013;66(3):382-89
15. Ordóñez NG. Podoplanin: A novel diagnostic immunohistochemical marker. Adv Anat Pathol. 2006;13(2):83-88
16. Executive Committee of the International Society of Lymphology. The diagnosis and treatment of peripheral lymphedema: 2020 Consensus Document of the International Society of Lymphology. Lymphology. 2020;53(1):3-19
17. Quartuccio N, Agugliaro F, Alongi P, et al. A systematic review comparing lymphoscintigraphy and magnetic resonance imaging techniques in the assessment of peripheral lymphedema. Curr Med Imaging. 2022;19(5):469-75
18. Salehi BP, Sibley RC, Friedman R, et al. MRI of lymphedema. J Magn Reson Imaging. 2023;57(4):977-91

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