

Jaime Schwartz, MD
240 S. LA Cienega BL # 200
Beverly Hills CA 90211

March 5, 2024

Re: Patient: Tami Ahmad
ID #: W237480909
DOB: 10/22/1961

To Whom It May Concern,

We are requesting a **prior authorization and a GAP EXCEPTION review** for surgery to treat the diagnosed disease Lipedema. We are requesting a 6-month Authorization as the procedures are staged.

I have also attached for your review:

1. Letters and notes from non -surgeons documenting this patients Lipedema diagnosis.
2. Proofs of attempts to manage condition with conservative treatment
3. Letter of medical necessity, exam notes and surgical plan from Dr Schwartz
4. Patient letters describing how Lipedema is affecting her life
5. Photos
6. articles and documentation on the treatment of Liposuction for the treatment of Lipedema.

Patients with Lipedema have been misdiagnosed despite this disease identified by the Mayo clinic in the 1940s. Thank you for your attention to this important matter and ensuring a high-quality review of this request.

Please feel free to contact me if you require any additional information.

Best regards,

Sherry Bodod
Total Lipedema Care
Jaime S. Schwartz, MD, FACS
Board Certified Plastic Surgeon
Associate Clinical Professor of Surgery- USC Keck School of Medicine
Division of Plastic and Reconstructive Surgery
frontdesk@drjaimeschwartz.com
T: (310)882-5454 F: (310)747-5908

| | | | | | |
|------------|------------|----------------------|----------------|---|--------------------|
| PATIENT | | FACILITY | | ENCOUNTER | |
| Tami Ahmad | | PRO MED | | Office or other outpatient visit for the evaluation and management of a new patient, which requires ... | |
| DOB | 10/22/1961 | T | (334) 382-0530 | NOTE TYPE | SOAP Note |
| AGE | 62 yrs | F | (334) 382-0498 | SEEN BY | Chandra Shekar |
| SEX | Female | 302 paul stabler dr | | | INTERNAL |
| PRN | TA360129 | Greenville, AL 36037 | | | MEDICINE/PEDIATRIC |
| | | | | DATE | 02/03/2024 |
| | | | | AGE AT DOS | 62 yrs |
| | | | | Electronically signed by Chandra Shekar | |
| | | | | INTERNAL MEDICINE/PEDIATRIC at | |
| | | | | 02/04/2024 05:51 pm | |

Chief complaint

Chronic leg and arm pain, tenderness and swelling.

Patient identifying details and demographics

| | | | | | |
|-------------|-------|---------------|------------|----------------|----------------|
| FIRST NAME | Tami | SEX | Female | RACE | White |
| MIDDLE NAME | - | DATE OF BIRTH | 10/22/1961 | ETHNICITY | - |
| LAST NAME | Ahmad | DATE OF DEATH | - | PREF. LANGUAGE | - |
| SSN | - | PRN | TA360129 | STATUS | Active patient |

CONTACT INFORMATION

| | | | |
|----------------|----------------------|------------------|---------------------|
| ADDRESS LINE 1 | 318 West 25th Avenue | CONTACT BY | Mobile Phone |
| ADDRESS LINE 2 | - | EMAIL | tsahmad61@yahoo.com |
| CITY | Covington | HOME PHONE | (985) 892-0726 |
| STATE | LA | MOBILE PHONE | (985) 507-0009 |
| ZIP CODE | 70433 | OFFICE PHONE | (985) 792-3005 |
| | | OFFICE EXTENSION | - |

FAMILY INFORMATION

| | | | |
|---------------------|---|--------------------------------|---|
| NEXT OF KIN | - | PATIENT'S MOTHER'S MAIDEN NAME | - |
| RELATION TO PATIENT | - | | |
| PHONE | - | | |
| ADDRESS | - | | |

| Active insurance | | | |
|-------------------------|------------|------------------------|------------|
| PRIMARY PAYER | | | |
| PAYER | Aetna | INSURED ID NUMBER | W237480909 |
| PRIORITY | Primary | GROUP NUMBER | 0880794 |
| TYPE | Other | EMPLOYER NAME | - |
| RELATIONSHIP TO INSURED | Self | INSURANCE PAYMENT TYPE | Copay |
| START DATE | 06/04/2018 | PAYMENT TYPE | Fixed |
| END DATE | - | COPAY AMOUNT | - |
| | | STATUS | Active |

Inactive insurance

| Payment information | | | |
|-------------------------------------|--|------------------------|----------------|
| PAYMENT PREFERENCE | Primary Insurance | DATE OF BIRTH | 10/22/1961 |
| PATIENT'S RELATIONSHIP TO GUARANTOR | Self | SEX | Female |
| GUARANTOR NAME | Tami S Ahmad | SOCIAL SECURITY NUMBER | - |
| GUARANTOR ADDRESS | 318 West 25 th Avenue Covington, LA 70433 | PRIMARY PHONE NUMBER | (985) 507-0009 |
| | | SECONDARY PHONE NUMBER | (985) 892-0726 |

| Vitals for this encounter | |
|---------------------------|---------------------|
| | 02/03/24 3:15 PM |
| Height | 64 in |
| Weight | 214 lb |
| Pulse | 80 bpm |
| Temperature | 98.50 °F |
| BMI | 36.73 |
| Blood pressure | 125/72 mmHg |

Subjective

Ms Tami is here for evaluation of chronic bilateral lower extremity pain, tenderness and swelling with cuffing at the ankles. Bilateral upper extremity swelling and pain. Persistent rash and skin irritation in skin folds of abdomen. Her mother also had these types of problems.

She has lost approximately 105 pounds and has excess skin, but also has bulging around the knees and hips. She has used tried conservative treatments with manual lymphatic drainage with physical therapy, use of compression garments, diuretics, and use of pneumatic compression pumps. Conservative treatment has shown limited response.

Review of systems:

General: No fever or chills. c/o easy fatigability. **She has lost approximately 105**, but this is intentional[Had gastric bypass surgery.

Eyes: No blurred or double vision.

Head: No headaches or migraines.

Breast: No noted lumps, no tenderness, no swelling, no nipple discharge.

Chest: No cough or shortness of breath..

Heart: Has high blood pressure, heart attack, or irregular heart beat.. She is taking low dose blood pressure medications with **blood pressure under good control. She has had an extensive cardiac workup which was negative for any heart disease or heart failure.** Calcium score was **0.**

Gastrointestinal: No abdominal pain, nausea, diarrhea, or constipation..

GU: No kidney stones, urinary tract infections, or other urinary tract problems..

Gyn: No dysmenorrhea, no vaginal discharge, no pelvic pain..

Musculoskeletal: Patient complains of **low back pain and muscle spasms.** She has **seropositive rheumatoid arthritis**, so has some complaints of joint discomfort, but is mostly controlled with Orenica infusions. **Patient had vascular workup on the lower extremities with ultrasound which revealed no reflux or abnormalities.**

Skin: **Patient has persistent rash and skin irritation under the skin folds around the abdomen and pelvic area.** She has **excessive bruising on legs, hands and arms.**

Neurologic: No weakness, no stroke, no seizures, no numbness or tingling..

Psychiatric: No anxiety or depression..

Endocrine: Hypothyroidism

Immunologic: No tuberculosis, hepatitis, or recurrent infections..

Hematologic: No anemia or easy bleeding. **Patient has excessive and persistent bruising.**

Current Medications:

Orenica Infusion - every 4 weeks

Mounjaro 15 - once a week

Reclast Infusion - once a year

Synthroid - .075 mcg

Cipro - 250 mg bid

Plaquenil - 200 mg bid

Aldactone - 25 mg qd

Toprol - 25 mg bid

Savella - 25 mg bid

Prednisone - 2.5 mg qd

Multivitamin - qd

Calcium + D - 2 per day

Vitamin D3

Objective

General: Normotensive, in no acute distress.

Head: Normocephalic, no lesions.

Eyes: PERRLA, EOM's full, conjunctivae clear, fundi grossly normal.

Ears: EAC's clear, TM's normal.

Nose: Mucosa normal, no obstruction.

Throat: Clear, no exudates, no lesions.

Neck: Supple, no masses, no thyromegaly, no bruits. Chest: Lungs clear, no rales, no rhonchi, no wheezes.

Heart: RR, no murmurs, no rubs, no gallops.

Abdomen: Soft, tenderness to the touch with lumps under the skin. Rash under the folds of the lower abdomen.

GU: Normal, no lesions, no discharge, no hernias noted.

Pelvic: deferred

Rectal: deferred

Back: Normal curvature, some tenderness and spasm

Extremities: Legs with swelling and tenderness. Multiple Lumps and nodules under the skin and visible on examination. Arms with tenderness and nodules under the skin

Neuro: Physiological, no localizing findings.

Skin: soft tissue contusions with purplish discoloration on arms, hands and legs. Moist irritative skin rash under skin folds of lower abdomen. Multiple subcutaneous fatty lumps noted in the extremities and around the trunk.

Labs: reviewed -unremarkable .

Assessment

Rheumatoid Arthritis/Polyarthritis - under control

Lipedema bilateral legs, bilateral arms, trunk and abdomen

Secondary Lymphedema.

Hypertension controlled with medication

Lower abdominal interagio

Increased abdominal adiposity, Lower back pain-

Plan

Current medications reviewed, continue current medications unchanged.

Preventive counseling: Diet and exercise reviewed. Low fat low cal diet regular exercise lose wt.

Advised patient to consider abdominal

- Panniculectomy
- Suction assisted lipectomy of upper & lower extremities.
- Suction assisted lipectomy of abdomen[Circumferential lipectomy}
- Suction assisted lipectomy of trunk
- Circumferential abdominoplasty
- Dietary counseling and surveillance

Will refer to plastic surgeon Dr. Jaime Schwartz for complete evaluation and further management. Phone - 888.547.3336.

Name: Tami Sticker Ahmad | DOB: 10/22/1961 | MRN: 1843701 | PCP: Beth Ann Evans, DO | Legal Name: Tamera Sticker Ahmad

Progress Notes by PT Bridget at 9/22/2022 1:00 PM

Ochsner Health / St. Tammany Health System
Lymphedema Physical Therapy
Initial Evaluation

Visit Date: 9/22/2022

Name: Tamera Sticker Ahmad

Clinic Number: 1843701

Therapy Diagnosis:

Encounter Diagnoses

Name

Primary?

- Lymphedema
- Lipedema

Yes

Physician: Evans, Beth Ann, DO

Physician Orders: PT Eval and Treat

Medical Diagnosis: Lymphedema

Evaluation Date: 9/22/2022

Authorization: pending

Plan of Care: 09/22/2022-12/22/2022

Visit #: 1 / 12

PTA visit: n/a

Time In: 01:00 PM

Time Out: 02:05 PM

Total Billable Time: 65 minutes

Precautions: Standard

Subjective

Pt reports: Since the last time I was here I had my right knee replaced in march and the site where they went in for the robot got infected like last time. My swelling has all since returned and I've had cellulitis twice in the left leg and once in the right. I'm on antibiotics right now and I'm told may have to stay on them. I had to stop using my pump because I was having anxiety and feeling claustrophobic like I was having a panic attack. That has all subsided since beginning a new medication for my heart rate. I still have my biolect leggings and have begun using my pump recently. The swelling is still there but its better but cannot fit into

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my compression socks.

My legs are tender to touch across the tops of the thighs and knees even lower legs even since I was a child and bruise easily, as you can see the bruise on the left lower leg has been there for over a year. I am also schedule with cardiology for a holter and stress test next week. U/S of the LE's were negative for blood clots.

Pain

Location: bilateral thighs, lower legs

Current 5/10, Worst 8/10, Best 4/10

Description: soreness

Past Medical History:

Past Medical History:

| Diagnosis | Date |
|--|------------|
| • Acne | |
| • Acute deep vein thrombosis (DVT) of femoral vein of left lower extremity | 05/19/2020 |
| • Arthritis | |
| • Cellulitis of left lower leg | 01/19/2021 |
| • Chronic bronchitis | |
| • Chronic cough | |
| • Colon polyps | |
| • Difficulty controlling bolus of food | |
| • Essential hypertension | 08/20/2021 |
| • GERD (gastroesophageal reflux disease) | |
| • History of gastric bypass | |
| • Hypothyroidism | |
| <i>hypothyroidism</i> | |
| • Insomnia | |
| • Iron deficiency anemia | 11/21/2017 |
| • Microcytic anemia | 11/20/2017 |
| • Osteoporosis | |
| • Reactive airway disease without complication | 6/25/2022 |
| • Rheumatoid arthritis | |
| • Ulcer, anastomotic | |
| • Urinary frequency | |

Past Surgical History: has a past surgical history that includes Colonoscopy w/ biopsies (08/2010); Dilation and curettage of uterus; Endometrial ablation; Cholecystectomy; Tubal ligation; Breast surgery; Tumor excision; Dental surgery; Esophagogastroduodenoscopy (04/10/2017); Bronchoscopy with fluoroscopy (N/A, 06/14/2019); Total Reduction Mammoplasty; Joint replacement (Right, 03/18/2021); Joint replacement (Left, 11/2020); Gastric bypass (~2000); Colonoscopy (08/18/2017); Esophagogastroduodenoscopy (2018); Esophagogastroduodenoscopy (N/A, 4/21/2022); Esophagogastroduodenoscopy (4/21/2022); revision of total knee replacement (Bilateral, 11/2020 03/2021); Total Reduction Mammoplasty (Bilateral, 2002); and putuitary tumor.

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Medications: has a current medication list which includes the following prescription(s): orencia (with maltose), ascorbate calcium, cholecalciferol (vitamin d3), ciprofloxacin hcl, cyanocobalamin, cyclobenzaprine, hydroxychloroquine, levothyroxine, metoprolol succinate, milk thistle, savella, mounjaro, multivitamin, phytonadione (vitamin k1), spironolactone, telmisartan, torsemide, tramadol, vitamin a, vitamin e, and vitamin k2.

Allergies:

Review of patient's allergies indicates:

| Allergen | Reactions |
|---------------------------------|----------------------|
| • Cefaclor | Anaphylaxis |
| • Lyrica [pregabalin] | Other (See Comments) |
| <i>edema</i> | |
| • Methotrexate analogues | Other (See Comments) |
| <i>Atypical pneumonia</i> | |
| • Rinvoq [upadacitinib] | Other (See Comments) |
| <i>DVT,</i> | |
| • Alpha 1 blocker- quinazolines | Rash |
| • Penicillins | Rash |

Diet: well rounded, eating fruits and vegis

Habitus: overweight

Prior Therapy/Previous treatment included: No PT this calendar year. Home Health following R TKR 03/18/2021

DME owned: rollator

Social History: lives with their spouse

Occupation: works as a data analyst working from home so sits at a computer most of the day

Prior Exercise Routine: does not participate in regular daily exercise

Prior Level of Function: independent

Current Level of Function: pt amb without AD, slow steady gait

Surgery: Left TKA November 19th 2020, Right TKA march 2022

Radiation: N/A

Chemotherapy: N/A

Previous Lymphedema Treatment: 02/2021-03/2021 PT Lymphedema, positive results, pt able to obtain pneumatic pump for home use.

Patient's Goals: reduce leg swelling, fit back into garments

Objective

Hi there! I'm MyOchsner's chatbot. Can I help you with anything?

Mental Status: Alert/Oriented



Hi there! I'm MyOchsner's chatbot. Can I help you with anything?



Hi there! I'm MyOchsner's chatbot. Can I help you with anything?



Observation

Posture: rounded shoulders, anterior pelvic tilt, increased BOS

Integumentary System

Amount of Swelling: Stage 2

Location of Swelling: bilateral LE swelling with R>L, shelving to Right ankle> LEFT.

Skin Integrity: mild dryness noted to bilateral ankles, dorsum of feet

Sensation

Light Touch: intact bilat

Proprioception: intact bilat

A/PROM

(L) LE: WFLs

(R) LE: WFLs

Limitations:

Hi there! I'm MyOchsner's chatbot. Can I help you with anything?

Measurements

| LANDMARK | LEFT LE (cm) | RIGHT LE (cm) |
|----------------------|--------------|---------------|
| H + 22 in | 76.0 | |
| H + 18 in | 62.4 | 59.5 |
| H +14 in | 56.4 | 60.4 |
| H +10 in | 52.2 | 53.7 |
| H + 5 in | 36.7 | 35.2 |
| 11 cm from great toe | 23.8 | 23.0 |
| MTP Jt line | 21.8 | 20.9 |
| Leg Length | | |

Garments recommended: currently owns bioflect leggings and capris as well as knee high socks. Pt may benefit from lower legs wraps to donn over bioflect leggings for additional compression.

Functional Mobility

Bed mobility: independent
 Roll to left: independent
 Roll to right: independent
 Supine to prone: independent
 Scooting to edge of bed: independent
 Supine to sit: independent
 Sit to supine: independent
 Transfers to bed: independent
 Transfers to toilet: independent
 Sit to stand: independent
 Stand pivot: independent
 Car transfers: independent

Gait Assessment

AD used: none
 Assistance: independent
 Distance: community distances
 Endurance: WFL
 Gait Pattern: decreased cadence, increased BOS due to girth of thighs

Treatment

Treatment Time In: 01:00 PM

Treatment Time Out: 02:05 PM

Total Treatment time separate from Evaluation: 30 minutes

Hi there! I'm MyOchsner's chatbot. Can I help you with anything?

Discussed the purpose, mechanism, and indications of MLD with pt. Pt was cleared of all contraindications

and precautions, including but not limited to cardiac edema, renal failure, acute infection, acute bronchitis, acute DVT, malignancies, bronchial asthma, HTN, pregnancy, ileus, aortic aneurysm, recent abdominal surgery, IBD, diverticulosis, XRT fibrosis or cystitis, colitis. Risks and benefits of tx were reviewed with patient, to which patient was in agreement to continue with tx today.

Discussed the purpose, mechanism, and indications of intermittent pneumatic compression (IPC) with pt. Pt was cleared of all contraindications and precautions, including but not limited to nonpitting chronic lymphedema, DVT, PE, thrombophlebitis, acute inflammation of skin, uncontrolled or severe cardiac failure, pulmonary edema, ischemic vascular disease, local active metastatic disease, severe peripheral neuropathy, severe PAD, edema at root of extremity, truncal edema. Risks and benefits of tx were reviewed with patient, to which patient was in agreement to continue with tx today.

Discussed the purpose, mechanism, and indications of Compression Therapy with pt. Pt was cleared of all contraindications and precautions, including but not limited to cardiac edema, PAD, acute infection, HTN, cardiac arrhythmia, hyposensitivity, paralysis, CHF, diabetes, malignancy. Risks and benefits of tx were reviewed with patient, to which patient was in agreement to continue with tx today.

Manual Therapy to develop flexibility, extensibility, desensitization, pliability, and contour for 30 minutes including:

Manual lymphatic drainage to right short neck series, cervical terminus , axilla, deep abdominals, AIA anastomosis , PIA anastomosis , inguinal nodes, popliteal nodes, full leg sequence, and rework accessing all watershed areas on trunk with concurrent use of pneumatic compression pump set at 30mmHg for 10 minutes. PT applied Eucerin lotion to L LE prior to wrapping. PT applied gentle gradient compression bandages to include: stockinet, cast padding, Rosidal soft foam, and short stretch bandages 1-6 cm, 1-8 cm, 1-10 cm. TG grip G applied to R LE. Instructed pt to remain in bandages for 24-48 hrs and removed after unless experiencing SOB, pain or changes in circulation to toes (turning blue). Pt to donn TG after removing bandages (can remove TG at night while sleeping.) PT assisted pt in donning gripper slipper socks over bandages and TG grip. Instructed to donn her compression first thing in the morning. PT to roll bandages to return for next session.

Education: Instructed on general anatomy/physiology, lymphedema information (definitions, signs, symptoms, precautions), role of therapy in multi-disciplinary team, purpose of lymphedema physical therapy and the benefits/risks of treatment, risks of refusing treatment, POC, and goals for therapy were discussed with the pt.

Written Home Exercises Provided: will provide next session .

Exercises were reviewed and Tami was able to demonstrate them prior to the end of the session. Tami demonstrated good understanding of the education provided.

Assessment

Hi there, I'm MyOchsner's chatbot. Can I help you with anything?

This patient presents s/p R TKA 03/18/2021, and L TKA in November 2020 with complaints of recurrent chronic swelling to LE's prior to surgery, history of multiple episode of cellulitis resulting in: lymphedema of

the B LE with L>R, increased pain, increased stiffness in the ankles, knees, as well as difficulty ambulation, sleeping at night and placing the pt at risk of higher infection. Patient also presents with symptoms of lipedema to B LE's, ongoing tenderness to bilateral LE's as a child as well as bruising easily, cuffing at bilateral ankles. This pt would benefit from skilled therapy services to address the above impairments.

Plan of care discussed with patient: Yes

Pt's spiritual, cultural and educational needs considered and patient is agreeable to the plan of care and goals as stated below:

Anticipated barriers for therapy: none

Medical Necessity is demonstrated by the following:

| | | |
|---|---|----------|
| History Co-morbidities and personal factors that may impact the plan of care | Co-morbidities: anxiety, immunosuppression, level of understanding of current condition, and recurrent cellulitis Personal Factors: work environment | moderate |
| Examination Body Structures and Functions, activity limitations and participation restrictions that may impact the plan of care | Body Systems: gross symmetry heart rate edema scar formation Activity limitations: Mobility walking Self care no deficits Domestic Life no deficits | moderate |
| Clinical Presentation | evolving clinical presentation with changing clinical characteristics | moderate |
| Decision Making/ Complexity Score: moderate | | |

GOALS

Short Term Goals: 8 visits

Patient will demonstrate 100% knowledge of lymphedema precautions and signs of infection.

Patient will tolerate iADLs with multilayered bandaging for 24-48 hours.

Hi there! I'm MyOchsner's chatbot. Can I help you with anything?

Decrease girth by average 1 cm for improved mobility and safety with iADLs.
Patient to report compliance sleeping on 30 degree incline for lymphatic protection.
Patient will demonstrate proper posture with sitting and standing to decrease detrimental affects to adjacent structures.
Patient will tolerate HEP for better progression toward LTGs and self-management of presentation.
Patient to report daily compliance with use of home pneumatic compression pump

Long Term Goals: 16 visits

Patient will be independent with HEP for self-management of symptoms and current status.
Decrease girth by average 2 cm for improved mobility and safety with iADLs.
Patient will perform self lymphatic drainage techniques for long term management of lymphedema.
Patient to don/doff compression garments for self management of lymphedema.
Patient will report pain reduction to $< \text{ or } = 4$ with palpation to tenderness and improved comfort to LE's.

Plan**Plan of Care Certification:** 9/22/2022 to 12/22/2022

Outpatient Physical Therapy 2 time(s) a week for 16 visits to include the following interventions: patient education, HEP, therapeutic exercises, neuromuscular re-education, therapeutic activity, manual therapy including pneumatic compression pump and lymphatouch, self care/home management, modalities, gait training, decongestive massage, multi-layered bandaging, self massage, self bandaging, and assistance in obtaining appropriate compression garment.

Bridget Landry, PT , CLT

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Hi there! I'm MyOchsner's chatbot. Can I help you with anything?

Name: Tami Sticker Ahmad | DOB: 10/22/1961 | MRN: 1843701 | PCP: Beth Ann Evans, DO | Legal Name: Tamera Sticker Ahmad

Progress Notes by PT Bridget at 10/13/2022 1:00 PM

**St. Tammany Health System
Lymphedema Therapy**

| |
|--|
| Physical Therapy Daily Treatment Note |
|--|

Visit Date: 10/13/2022

Name: Tamera Sticker Ahmad

Clinic Number: 1843701

Therapy Diagnosis:

Encounter Diagnoses

Name

Primary?

- Lymphedema
- Lipedema
- Lymphedema of both lower extremities

Yes

Physician: No ref. provider found

Physician: Evans, Beth Ann, DO

Physician Orders: PT Eval and Treat

Medical Diagnosis: Lymphedema

Evaluation Date: 9/22/2022

Authorization: pending

Plan of Care: 09/22/2022-12/22/2022

Visit #: 1 / 12

PTA visit: n/a

Time In: 01:00 PM

Time Out: 02:05 PM

Total Billable Time: 65 minutes

Precautions: Standard

| |
|-------------------|
| Subjective |
|-------------------|

Hi there! I'm MyOchsner's chatbot. Can I help you with anything?

Pt reports: My left leg looked great after taking the bandages off. Front of the shin real sensitive and I got

another bruise on the left leg. My legs are just so sensitive that I can't stay in the wraps for 24 hrs. I've been using my pump everyday now, and I'm suppose to have a stress test scheduled for tomorrow.

Pain

Location: bilateral thighs, lower legs

Current 4/10, Worst 8/10, Best 4/10

Description: soreness

Objective**TREATMENT**

Discussed the purpose, mechanism, and indications of MLD with pt. Pt was cleared of all contraindications and precautions, including but not limited to cardiac edema, renal failure, acute infection, acute bronchitis, acute DVT, malignancies, bronchial asthma, HTN, pregnancy, ileus, aortic aneurysm, recent abdominal surgery, IBD, diverticulosis, XRT fibrosis or cystitis, colitis. Risks and benefits of tx were reviewed with patient, to which patient was in agreement to continue with tx today.

Discussed the purpose, mechanism, and indications of intermittent pneumatic compression (IPC) with pt. Pt was cleared of all contraindications and precautions, including but not limited to nonpitting chronic lymphedema, DVT, PE, thrombophlebitis, acute inflammation of skin, uncontrolled or severe cardiac failure, pulmonary edema, ischemic vascular disease, local active metastatic disease, severe peripheral neuropathy, severe PAD, edema at root of extremity, truncal edema. Risks and benefits of tx were reviewed with patient, to which patient was in agreement to continue with tx today.

Discussed the purpose, mechanism, and indications of Compression Therapy with pt. Pt was cleared of all contraindications and precautions, including but not limited to cardiac edema, PAD, acute infection, HTN, cardiac arrhythmia, hyposensitivity, paralysis, CHF, diabetes, malignancy. Risks and benefits of tx were reviewed with patient, to which patient was in agreement to continue with tx today.

Manual Therapy to develop flexibility, extensibility, desensitization, pliability, and contour for 60 minutes including:

Manual lymphatic drainage to short neck series, cervical terminus , B axilla, deep abdominals, AIA anastomosis , PIA anastomosis , B inguinal nodes, popliteal nodes, full leg sequence, and rework accessing all watershed areas on trunk with concurrent use of pneumatic compression pump set at 30mmHg for 15 minutes each leg. PT applied Eucerin lotion to B LE prior to wrapping. PT applied gentle gradient compression bandages to include: stockinet, cast padding, Rosidal soft foam, and short stretch bandages 1-6 cm, 1-8 cm, 1-10 cm. Instructed pt to remain in bandages for 24-48 hrs and removed after unless experiencing SOB, pain or changes in circulation to toes (turning blue). Pt to donn TG after removing bandages (can remove TG at night while sleeping.) PT assisted pt in donning gripper slipper socks over bandages and TG grip. Instructed to donn her compression first thing in the morning. PT to roll bandages to return for next session.

EDUCATION

Education provided:

- Progress towards goals

Hi there! I'm MyOchsner's chatbot. Can I help you with anything?

- Role of therapy
- Activity modification
- Lymphedema information (definitions, signs, symptoms, precautions), purpose of lymphedema physical therapy and the benefits/risks of treatment

Written Home Exercises Provided: Patient instructed to cont prior HEP.

Exercises were reviewed and Tami was able to demonstrate them prior to the end of the session. Tami demonstrated good understanding of the education provided.

See EMR under Patient Instructions for exercises provided prior visit.

Assessment

Pt tolerated today's tx well with no visible or reported adverse affects. Patient expressing comfort to gradient compression bandages to bilateral LE's, good understanding of how long to remain in bandages as tolerated.

Tami is progressing well towards her goals. Pt will continue to benefit from skilled outpatient physical therapy to address the deficits listed in the problem list box on initial evaluation, provide pt/family education and to maximize pt's level of independence in the home and community environment.
Pt **prognosis** is Excellent.

This patient presents s/p R TKA 03/18/2021, and L TKA in November 2020 with complaints of recurrent chronic swelling to LE's prior to surgery, history of multiple episode of cellulitis resulting in: lymphedema of the B LE with L>R, increased pain, increased stiffness in the ankles, knees, as well as difficulty ambulation, sleeping at night and placing the pt at risk of higher infection. Patient also presents with symptoms of lipedema to B LE's, ongoing tenderness to bilateral LE's as a child as well as bruising easily, cuffing at bilateral ankles. This pt would benefit from skilled therapy services to address the above impairments.

Plan of care discussed with patient: Yes

Pt's spiritual, cultural and educational needs considered and patient is agreeable to the plan of care and goals.

Anticipated Barriers for therapy: none

GOALS

Short Term Goals: 8 visits

Patient will demonstrate 100% knowledge of lymphedema precautions and signs of infection.

Patient will tolerate iADLs with multilayered bandaging for 24-48 hours.

Decrease girth by average 1 cm for improved mobility and safety with iADLs.

Patient to report compliance sleeping on 30 degree incline for lymphatic protection.

Patient will demonstrate proper posture with sitting and standing to decrease detrimental affects to adjacent structures.

Patient will tolerate HEP for better progression toward LTGs and self-management of presentation.

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Long Term Goals: 16 visits

Patient will be independent with HEP for self-management of symptoms and current status.

Decrease girth by average 2 cm for improved mobility and safety with iADLs.

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Patient will report pain reduction to $< \text{ or } = 4$ with palpation to tenderness and improved comfort to LE's.

Plan**Plan of Care Certification:** 9/22/2022 to 12/22/2022

Outpatient Physical Therapy 2 time(s) a week for 16 visits to include the following interventions: patient education, HEP, therapeutic exercises, neuromuscular re-education, therapeutic activity, manual therapy including pneumatic compression pump and lymphatouch, self care/home management, modalities, gait training, decongestive massage, multi-layered bandaging, self massage, self bandaging, and assistance in obtaining appropriate compression garment.

Plan

Continue with established POC working toward PT goals.

Bridget Landry, PT

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Name: Tami Sticker Ahmad | DOB: 10/22/1961 | MRN: 1843701 | PCP: Beth Ann Evans, DO | Legal Name: Tamera Sticker Ahmad

Progress Notes by PT Bridget at 10/27/2022 11:00 AM

**St. Tammany Health System
Lymphedema Therapy**

Physical Therapy Daily Treatment Note

Visit Date: 10/27/2022

Name: Tamera Sticker Ahmad

Clinic Number: 1843701

Therapy Diagnosis:

Encounter Diagnoses

Name

- Lymphedema
- Lipedema

Primary?

Yes

Physician: No ref. provider found

Physician: Evans, Beth Ann, DO

Physician Orders: PT Eval and Treat

Medical Diagnosis: Lymphedema

Evaluation Date: 9/22/2022

Authorization: no auth required, 60 PT visits per calendar year

Plan of Care: 09/22/2022-12/22/2022

Visit #: 2 / 12

PTA visit: n/a

Time In: 11:05 AM

Time Out: 12:10PM

Total Billable Time: 65 minutes (bilateral legs addressed)

Precautions: Standard

Subjective

Pt reports: I'm off the prednizone and I can really feel it right now in my joints. I had my stress test done and it came back abnormal however the doctor doesn't think it is right, and running more blood work. The

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wraps that were put on last time stayed on the longest time yet, I didn't have any pain but the right one eventually started falling off.

Pain

Location: bilateral thighs, lower legs, right shoulder

Current 4/10, Worst 8/10, Best 4/10

Description: soreness

Objective

Pt arrives without compression to legs, cuffing and shelving at bilateral ankles, fullness to calves, distal medial thigh fullness.

TREATMENT

Discussed the purpose, mechanism, and indications of MLD with pt. Pt was cleared of all contraindications and precautions, including but not limited to cardiac edema, renal failure, acute infection, acute bronchitis, acute DVT, malignancies, bronchial asthma, HTN, pregnancy, ileus, aortic aneurysm, recent abdominal surgery, IBD, diverticulosis, XRT fibrosis or cystitis, colitis. Risks and benefits of tx were reviewed with patient, to which patient was in agreement to continue with tx today.

Discussed the purpose, mechanism, and indications of intermittent pneumatic compression (IPC) with pt. Pt was cleared of all contraindications and precautions, including but not limited to nonpitting chronic lymphedema, DVT, PE, thrombophlebitis, acute inflammation of skin, uncontrolled or severe cardiac failure, pulmonary edema, ischemic vascular disease, local active metastatic disease, severe peripheral neuropathy, severe PAD, edema at root of extremity, truncal edema. Risks and benefits of tx were reviewed with patient, to which patient was in agreement to continue with tx today.

Discussed the purpose, mechanism, and indications of Compression Therapy with pt. Pt was cleared of all contraindications and precautions, including but not limited to cardiac edema, PAD, acute infection, HTN, cardiac arrhythmia, hyposensitivity, paralysis, CHF, diabetes, malignancy. Risks and benefits of tx were reviewed with patient, to which patient was in agreement to continue with tx today.

Manual Therapy to develop flexibility, extensibility, desensitization, pliability, and contour for 60 minutes including:

Manual lymphatic drainage to short neck series, cervical terminus , B axilla, deep abdominals, AIA anastomosis , PIA anastomosis , B inguinal nodes, popliteal nodes, full leg sequence, and rework accessing all watershed areas on trunk with concurrent use of pneumatic compression pump set at 30mmHg for 15 minutes each leg. PT applied Eucerin lotion to B LE prior to wrapping. PT applied gentle gradient compression bandages to include: stockinet, cast padding, Rosidal soft foam, and short stretch bandages 1-6 cm, 1-8 cm, 1-10 cm. Instructed pt to remain in bandages for 24-48 hrs and removed after unless experiencing SOB, pain or changes in circulation to toes (turning blue). Pt to donn TG after removing bandages (can remove TG at night while sleeping.) PT assisted pt in donning gripper slipper socks over bandages and TG grip. Instructed to donn her compression first thing in the morning. PT to roll bandages to return for next session.

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EDUCATION

Education provided:

- Progress towards goals
- Role of therapy
- Activity modification
- Lymphedema information (definitions, signs, symptoms, precautions), purpose of lymphedema physical therapy and the benefits/risks of treatment

Written Home Exercises Provided: Patient instructed to cont prior HEP.

Exercises were reviewed and Tami was able to demonstrate them prior to the end of the session. Tami demonstrated good understanding of the education provided.

See EMR under Patient Instructions for exercises provided prior visit.

| |
|-------------------|
| Assessment |
|-------------------|

Pt tolerated today's tx well with no visible or reported adverse affects. Patient expressing comfort to gradient compression bandages to bilateral LE's, good understanding of how long to remain in bandages as tolerated. Will continue to see patient for MLD, and application of gradient compression wraps for further reduction, Anticipating possible need for bilateral Lower leg velcro wraps, will need to discuss with patient if interested.

Tami is progressing well towards her goals. Pt will continue to benefit from skilled outpatient physical therapy to address the deficits listed in the problem list box on initial evaluation, provide pt/family education and to maximize pt's level of independence in the home and community environment.
Pt **prognosis** is Excellent.

This patient presents s/p R TKA 03/18/2021, and L TKA in November 2020 with complaints of recurrent chronic swelling to LE's prior to surgery, history of multiple episode of cellulitis resulting in: lymphedema of the B LE with L>R, increased pain, increased stiffness in the ankles, knees, as well as difficulty ambulation, sleeping at night and placing the pt at risk of higher infection. Patient also presents with symptoms of lipedema to B LE's, ongoing tenderness to bilateral LE's as a child as well as bruising easily, cuffing at bilateral ankles. This pt would benefit from skilled therapy services to address the above impairments.

Plan of care discussed with patient: Yes

Pt's spiritual, cultural and educational needs considered and patient is agreeable to the plan of care and goals.

Anticipated Barriers for therapy: none

GOALS**Short Term Goals:** 8 visits

Patient will demonstrate 100% knowledge of lymphedema precautions and signs of infection.

Patient will tolerate iADLs with multilayered bandaging for 24-48 hours.

Decrease girth by average 1 cm for improved mobility and safety with iADLs.

Patient to report compliance sleeping on 30 degree incline for lymphatic protection.

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Patient will demonstrate proper posture with sitting and standing to decrease detrimental affects to adjacent structures.

Patient will tolerate HEP for better progression toward LTGs and self-management of presentation.

Patient to report daily compliance with use of home pneumatic compression pump

Long Term Goals: 16 visits

Patient will be independent with HEP for self-management of symptoms and current status.

Decrease girth by average 2 cm for improved mobility and safety with iADLs.

Patient will perform self lymphatic drainage techniques for long term management of lymphedema.

Patient to don/doff compression garments for self management of lymphedema.

Patient will report pain reduction to < or = 4 with palpation to tenderness and improved comfort to LE's.

Plan

Outpatient Physical Therapy 2 time(s) a week for 16 visits to include the following interventions: patient education, HEP, therapeutic exercises, neuromuscular re-education, therapeutic activity, manual therapy including pneumatic compression pump and lymphatouch, self care/home management, modalities, gait training, decongestive massage, multi-layered bandaging, self massage, self bandaging, and assistance in obtaining appropriate compression garment.

Plan

Plan of Care Certification: 9/22/2022 to 12/22/2022

Pt to call to schedule more appointments.

Continue with established POC working toward PT goals.

Bridget Landry, PT , CLT

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Jaime Schwartz, MD Total Lipedema Care TLC Surgical Center

January 24, 2024

RE: Tami Ahmad

DOB: 10/22/1961

To Whom It May Concern:

I am writing on behalf of Tami Ahmad for coverage of medically necessary lipedema surgery. Miss Ahmad has a chronic progressive debilitating disorder called Lipedema. This condition is transmitted genetically as an autosomal dominant pattern disease.

The patient has diseased lipedema tissue accumulation in their arms, thighs, legs, and ankles. My approach is to manually extract as much of the diseased tissue as is safely possible per the attached Surgical Plan using a staged process involving 6 and a pending to be staged surgeries. In early stages, lipedema can be present on the legs, hips, and buttocks and 80% of women have it on their arms. Lipedema, in later stages, can also be present in the lower abdomen or other parts of the body and can negatively interact with obesity. Lipedema surgery includes liposuction of the diseased tissue, manual removal of nodules, and excision of excess skin.

There are published guidelines for diagnosing lipedema and an International Consensus Agreement on diagnosis in 2019. Diagnosis is by physical exam. S1 Guidelines J Dtsch Dermatol Ges 2017 Jul;15(7):758-767; International Consensus on the Prevention of Progression of Lipedema. <https://www.ncbi.nlm.nih.gov/pubmed/3135643> 3

Although there is variability among patients, clinicians look for the following:

- Onset at puberty, pregnancy, and menopause-progressive with age
- The affected limbs feel tight and heavy (especially at end of day even with elevation)
- Increase in adipose tissue usually starting in legs
- Reduced ambulation, decreased social activity
- Pain to the touch or pressure
- Easy bruising
- Hands and feet not affected
- Cuffs or bulges around joints (not in Type 1 or Type II Lipedema)
- Negative Stemmer sign (not in late-stage lipedema)
- Palpable spheroids in lipedema fat

As documented in my attached notes, the patient demonstrates most, if not all, of lipedema diagnostic signs. Note, per the International Consensus, a waist-height and waist-hip ratio are not criteria for diagnosis since, as it progresses, lipedema can occur in other areas like the trunk and arms. Non-pitting edema also is present in early stages of lipedema but can be unreliable because secondary lymphedema is common as the disease progresses.

240 S La Cienega Blvd #200/210 Beverly Hills, Ca 90211
P: (310) 882-5454, F: (310) 747-5908
Email: totallipedemacare.com



Jaime Schwartz, MD Total Lipedema Care TLC Surgical Center

The patient has tried to manage this condition through conservative measures such as diet, exercise, compression garments and manual lymphatic drainage. The patient's functioning in their everyday life is impacted by lipedema.

Reduced caloric intake, physical activity, and even bariatric surgery do not reduce the abnormal subcutaneous lipedema tissue which likely results from the growth of a brown stem cell population with lymphatic dysfunction in lipedema. Lipedema, a Frequently Unrecognized Problem, Fonder & Loveless et al., Journal of the American Academy of Dermatology, 2007, 57(2), S1-S3. Thus, lipedema tissue must be surgically removed.

Lipedema is a chronic, progressive disease, which if left untreated, can lead to multiple secondary and life-threatening health problems. These include circulatory problems (due to pressure on lymph vessels); a disruption of the lymphatic system causing dangerous lymphedema; joint problems in the spine and lower extremities; and a reduction in mobility leading to impaired quality of living. Lipedema: An Overview of its Clinical Manifestations, Diagnosis and Treatment of the Disproportional Fatty Deposition Syndrome, Forner-Cordero & Szolnoky, Clin Obes 2012 Jun;2(3-4): 86-95.

The only successful treatment for Lipedema is lipedema surgery. This is not a cosmetic procedure but a medically necessary surgery. Following liposuction surgery, patients can resume activities, return to Miss Ahmad will be prescribed compression following surgery to assist in her healing and will continue to wear garments long after. Multiple studies demonstrate the long-term effectiveness of lipedema surgery to relieve the pain, swelling, and immobility caused by lipedema. Also, see links to Aetna, Anthem and Premiera Blue Cross plans coverage policy on lipedema surgery that describes the diagnoses and treatment in additional detail. Highmark, Excellus, Care1st, and other smaller plans also cover lipedema.

http://www.aetna.com/cpb/medical/data/1_99/0031.html

https://www.anthem.com/dam/medpolicies/abc/active/policies/mp_pw_a050277.html

<https://www.premiera.com/medicalpolicies/7.01.567.pdf>

Please contact me if you require further information,
Jaime Schwartz, MD

240 S La Cienega Blvd #200/210 Beverly Hills, Ca 90211
P: (310) 882-5454, F: (310) 747-5908
Email: totallipedemacare.com



Jaime Schwartz, MD Total Lipedema Care TLC Surgical Center

SURGICAL PLAN

Tami Ahmad

DOB: 10/22/1961

Diagnosis Code R60.9, M79.603, M79.606

Stage 1:

Lipedema reduction surgery bi-lateral lower extremity anterior

CPT Code 15879 Modifiers -50

Lipedema reduction surgery bi-lateral lower extremity anterior

CPT Code 15879 Modifiers -50

Stage 2:

Lipedema reduction surgery trunk (abdomen)

CPT Code 15877

OR

Excision excessive skin and tissue (Panniculectomy)

CPT Code 15839 (conversation on which suites her better)

Stage 3:

Lipedema reduction surgery bi-lateral upper extremity

CPT Code 15878 Modifiers -50

Lipedema reduction surgery bi-lateral upper extremity (forearm)

CPT Code 15878 Modifiers -50

Lipedema reduction surgery trunk (buttocks) RT

CPT Code 15877

Lipedema reduction surgery trunk (buttocks) LT

CPT Code 15877

Lipedema reduction surgery trunk (hip shelf) RT

CPT Code 15877

Lipedema reduction surgery trunk (hip shelf) LT

CPT Code 15877

Lipedema reduction surgery bi-lateral lower extremity posterior

CPT Code 15879 Modifiers -50

Lipedema reduction surgery bi-lateral lower extremity posterior

CPT Code 15879 Modifiers -50

240 S La Cienega Blvd #200/210 Beverly Hills, Ca 90211

P: (310) 882-5454, F: (310) 747-5908

Email: totallipedemacare.com



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Stage 4:

Bi-lateral excision skin. / Subcutaneous tissue upper extremity

CPT code 15836-50 RT/LT

Stage 5:

Bi-lateral excision skin. / Subcutaneous tissue lower extremity

CPT code 15832-50 RT/LT

Stage 6:

Excision excessive skin and tissue - (knee lift)

CPT code 15833-50

Pending to be staged:

Excision excessive skin and tissue - (Calf Lift)

CPT Code 15833

Excision excessive skin and tissue - (Saddlebag)

CPT Code 15839

Anterior Hip Roll Reduction

CPT Code 15839-22

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Note that the surgical plan can change depending on how the patient responds to surgery. It will take approximately 12 months to complete this plan, so we ask for approval to reflect that time period.

Jaime Schwartz, MD
NPI: 1336397660
FED TAX ID: 46-0858507
Address: 240 S. La Cienega Bl # 200
Beverly Hills CA 90211

TLC Surgical Center
NPI: 1104469105
FED TAX ID: 83-3724406
Address: 240 S. La Cienega Bl # 210
Beverly Hills CA 90211

240 S La Cienega Blvd #200/210 Beverly Hills, Ca 90211
P: (310) 882-5454, F: (310) 747-5908
Email: totallipedemacare.com



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EFFECTIVENESS OF LIPEDEMA SURGERY

There are approximately 1,000 lipedema surgeries performed every year in the United States. They are essential to improving function and reducing pain for patients suffering from this disease.

An August 2014 review of the forty-seven publications from 1982 to 2014, found agreement of the forty-seven publications from 1982 to 2014, found agreement that lipectomy is an applicable and effective treatment for chronic medical conditions such as lipedema. *Liposuction: A Surgical Tool to Improve the Quality of Life after Morbid Medical Conditions: Review of Literature*, Elkhatab HA 2014 Anaplastology 3:133. Lipectomy for lipedema has a definite positive and long-lasting effect. *Liposuction is an Effective Treatment for Lipedema-Results of a Study with 25 Patients*, Rapprich. Stefan, MD et al, Journal of the German Soc of Derm: Vol 9, (2012); p 33-40. (the majority of patients no longer require prolonged further therapy. Reduction of pain and drastic improvement in the patient's quality of life is noted in all patients.)

Liposuction has ceased to define a specific procedure and became synonymous with a surgical technique or tool the same as the surgical knife, laser, electrocautery, suture material, or even wound-dressing products. *Functional and Therapeutic Indications of Liposuction: Personal Experience and Review of the Literature*, Bishara Atiyeh 2015 Annals of Plastic Surgery 75(2). Liposuction results in fewer complications such as hematoma formation, skin necrosis, wound infection, and dehiscence with delayed healing and prolonged hospital stay. *Aesthetic or Functional Indications for Liposuction*, Michel Costagliola, MD et al, *Aesthetic Surgery Journal*, Volume 33, Issue 8, November 2013, Pages 1212-1213. In other words, liposuction is to surgical lipectomy what endoscopic cholecystectomy is to open surgical cholecystectomy.

Lipedema surgery decreases the mechanical stress on lymphatic vessels sufficiently to allow for the cessation of compression garment use beyond the initial postoperative period. *Long-term Outcome After Surgical Treatment of Lipedema*, Anne Warren Peled, MD, et al, Annals of Plastic Surgery Volume 68, Number 3, March 2012.

The international expert in lipedema, Dr. Josef Stutz, has studied the effects on the health of his patients for many years. The effects in a patient's body from the unusual gait from lipedema fat storage around the knees causes multiple joint complications. Stutz concluded that lipectomy is the only treatment that can remove the mechanical impediment to normal gait and prevent joint deterioration. *Liposuction of Lipedema for Prevention of Later Joint Complications*; Stutz, Josef MD, Vasomed, Vol 23 (2011).



Jaime Schwartz, MD Total Lipedema Care TLC Surgical Center

Wollina and colleagues reported on 111 patients mostly with advanced lipedema treated by this technique in our center between 2007 and 2018. The median pain level before treatment was 7.8 and 2.2 at the end of the treatment. An improvement of mobility could be achieved in all patients. Bruising was also reduced. Serious adverse events were observed in 1.2% of procedures, the infection rate was 0% and the bleeding rate was 0.3%. Liposuction is an effective treatment for painful lipedema. *Dermatol Ther.* 2019 Mar; 32(2) In another study of 209 patients, quality of life increased significantly after surgery with a reduction of pain and swelling and decreased tendency to easy bruising. Bauer and colleagues, *New Insights on Lipedema: The Enigmatic Disease of the Peripheral Fat. Plast. Reconstr Surg.* 2019 Dec. 144(6)

Thus, lipedema surgery is safe, effective, and the standard of care for many, many years. Indeed, the International Consensus Conference on Lipedema issued conclusions that although lipedema has been underdiagnosed in places like the United States, multiple studies from Germany have reported long-term benefits for as long as eight years after lipedema surgery.

<https://www.ncbi.nlm.nih.gov/pubmed/3135643> 3

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Medical History

Acquired lymphedema of lower extremity
Arthritis
Autoimmune disease:
Rheumatoid Arthritis
Deep venous thrombosis: from Rinvoq
Easy bruising
Elevated blood pressure
Fibromyalgia
Gastroesophageal reflux disease
H/O: bronchitis
H/O: obesity
H/O: pneumonia: from Methotrexate
History of anemia: Had previous iron infusion. Has been fine for several years
History of cellulitis
History of fall
History of orthopedic surgery: Bilateral Total Knee Arthroplasty
Hypothyroidism
Lipedema
Lymphedema of lower extremity
Rheumatoid arthritis
Sleep apnea: Very Mild
Other: Pituitary Macroadenoma

Surgical History

Bilateral replacement of knee joints
Bypass of stomach
Cholecystectomy
H/O: tubal ligation
History of bypass of stomach
History of cholecystectomy
Operation on brain: Pituitary Macroadenoma
Roux-en-Y gastrojejunostomy
Total replacement of left knee joint
Total replacement of right knee joint
Other: Reduction Mammoplasty; Liposuction upper arms; Closed Reduction Comminuted Fracture Nose

Plastic Surgery History

Plastic Surgery History

History of reduction of breast
Reduction mammoplasty
Reduction mammoplasty, bilateral

Family History of Breast Cancer

Do you have a family history of breast cancer?: No

Family History of Malignant

Chief Complaint: Lipedema Consultation

HPI: This is a 62 year old female who is being seen for a lipedema consultation for lipedema affecting the legs, thighs, arms, abdomen, pubic area, buttocks, hip shelf, knees, and ankles.

Legs:

- Location: Anterior and Posterior
- Tenderness: Yes
- Lipomas: Yes
- Bruising: Yes
- Pain: Yes
- Cuffing: Yes
- Dimpling: Yes

Thighs:

- Location: Anterior and Posterior
- Tenderness: Yes
- Lipomas: Yes
- Bruising: Yes
- Pain: Yes
- Dimpling: Yes

Arms:

- Tenderness: Yes
- Lipomas: Yes
- Thickened Tender Subcutaneous Fat: Yes
- Spongy Adipose Tissue: Yes

Abdomen:

- Tenderness: Yes
- Lipomas: Yes
- Thickened Tender Subcutaneous Fat: Yes
- Spongy Adipose Tissue: Yes

Pubic Area:

- Tenderness: Yes
- Lipomas: Yes
- Thickened Tender Subcutaneous Fat: Yes
- Spongy Adipose Tissue: Yes

Buttocks:

- Tenderness: Yes
- Lipomas: Yes
- Thickened Tender Subcutaneous Fat: Yes
- Spongy Adipose Tissue: Yes
- Dimpling: Yes

Hip Shelf:

- Tenderness: Yes
- Lipomas: Yes
- Thickened Tender Subcutaneous Fat: Yes
- Spongy Adipose Tissue: Yes
- Dimpling: Yes

Knees:

- Tenderness: Yes
- Lipomas: Yes
- Thickened Tender Subcutaneous Fat: Yes

Hyperthermia and Anesthesia Sensitivity

Do you have a family history of malignant hyperthermia or severe reactions to anesthesia?: No

Herbal Medications and Supplements

Vitamin D
Other: Multivitamin

Skin Conditions

Acne
Psoriasis

Skin Protection

Do you wear sunscreen?: Yes
If Yes, what SPF?: 50
Do you tan in a tanning salon?: No

Family History of Melanoma

Do you have a family history of Melanoma?: No

Social History

Not sexually active

Patient feels safe at home

EtOH less than 1 drink per day:
Occasionally

Single Question Alcohol Screening: 0 days
Caffeine Use: Several times a day
Exercise: A few times a week
Occupation: Data Analysis - Work from home.
Place of Residence: Single family home
Smoking status - Never smoker
Driving status:
Drives in the Daytime
Drives at Night

Medications

Reclast 5 mg/100 mL
Intravenous - Dose: 1 piggyback
Frequency: qyr Indication: Osteoporosis
Orencia 250 mg IV Infusion
Frequency: q4week Indication: Rheumatoid Arthritis
ciprofloxacin HCl 250 mg Oral -

Ankles:
- Tenderness: Yes
- Lipomas: Yes
- Thickened Tender Subcutaneous Fat: Yes
- Spongy Adipose Tissue: Yes

Duration: 40 years
Similarly Affected Family Members: mother
Pedicures: Yes (patient is able to tolerate pedicure massages)
Do You Wear Boots: No
Lipedema Worsened By: puberty and menopause
Swelling Occurs With: standing, sitting, end of day, and summer
Previous Treatments: Compression Garments for 12 weeks or more, Manual Lymphatic Drainage for 12 weeks or more, Sequential Pumps for 12 week or more, and bariatric surgery
Difficulty Walking: Yes (legs feel extremely heavy)
Flexibility: Very Flexible
Cooler Areas: calves and arms
Easy Bruising: legs, thighs, calves, abdomen, buttocks, arms, and none
Pain: all the time, with movement, when touched, and when sleeping
Ability to move a chair from one room to another: Without any difficulty
Ability to bend down and pick up clothing from the floor: Without any difficulty
Ability to stand for one hour: With much difficulty
Ability to do chores such as vacuuming or yard work: With some difficulty
Ability to push open a heavy door: Without any difficulty
Ability to exercise for an hour: With a little difficulty
Ability to carry a heavy object (over 10 pounds /5 kg): With a little difficulty
Ability to stand up from an armless straight chair: Without any difficulty
Ability to dress yourself, including tying shoelaces and buttoning your clothes: Without any difficulty
Ability to able to dry your back with a towel: Without any difficulty
The patient understands and agrees that they must continue wearing compression garments after their surgery.

Exam:

An examination was performed.

Base

Appearance: well developed and nourished

Memory: Appropriate recent and remote memory with appropriate history provision

Judgment and Insight: Appropriate judgment, insight, interpersonal dynamics and expectations of encounter and goals of treatment

Orientation: Alert and oriented to person, place, time.

Mood: Mood and affect well-adjusted, pleasant and cooperative, appropriate for clinical and encounter circumstances

Skin Inspection: Normal skin inspection without rashes or concerning lesions

Skin Palpation: Normal skin palpation without rashes or concerning lesions

Comprehensive Upper Extremity

Visit Note - January 24, 2024

PMS ID: Sex: DOB: Phone: MRN:
6718 Female 10/22/1961 (985) 507-0009 6718

Dose: 2 tablet Frequency: bid
 Indication: Infection Knee Joint
 hydroxychloroquine 200 mg Oral
 - Dose: 1 tablet Frequency: bid
 Indication: Rheumatoid Arthritis
 levothyroxine 75 mcg Oral -
 Dose: 1 tablet Frequency: qd
 Indication: Hypothyroidism
 metoprolol tartrate 25 mg Oral -
 Dose: 1 tablet Frequency: bid
 Indication: Tachycardia
 prednisone 2.5 mg Oral - Dose:
 1 tablet Frequency: qd
 Indication: Rheumatoid Arthritis
 Savella 25 mg Oral - Dose: 1
 tablet Frequency: bid Indication:
 Fibromyalgia
 spironolactone 25 mg Oral -
 Dose: 1 tablet Frequency: qd
 Indication: Hypertension
 Mounjaro 15 mg/0.5 mL
 Subcutaneous - Dose: 1 pen
 injector Frequency: qwk
 Indication: Obesity

Allergies

Ceclor - Anaphylaxis
 methotrexate - Other: Atypical
 pneumonia
 Rinvoq - Other: DVT
 gabapentin - Swelling

Family History

Family history of cancer of colon
 (situation)
 - Mother

Family history: Diabetes mellitus
 in first degree relative (situation)
 - Father
 - Grandmother
 - Aunt

Family history of cirrhosis of liver
 (situation)
 - Father

Family history of chronic
 obstructive lung disease
 (situation)
 - Father

Family history of malignant
 neoplasm of uterus (situation)
 - Aunt

Family history: Stomach cancer
 (situation)
 - Grandmother

LN Exam: Normal lymphatic exam without lymphadenopathy in cranial, cervical, axillary and inguinal regions

Right Upper arm Inspection: **Vascular manifestation
 such as cherry angiomas, telangiectasia, venous
 disease**

**Lipedema Nodules, Pain, Tenderness, Skin
 Hypothermia, Easy Bruising, No Pitting Edema
 Persistent Enlargement of after elevation of
 extremity or weight loss.**

Right Forearm Inspection: **forearm tenderness.
 Vascular manifestation such as cherry angiomas,
 telangiectasia, venous disease
 Lipedema Nodules, Pain, Tenderness, Skin
 Hypothermia, Easy Bruising, No Pitting Edema
 Persistent Enlargement of after elevation of
 extremity or weight loss.**

Right Hand Inspection: Normal alignment, no deformity,
 no tenderness, no warmth

Right Hand Stability: Stable

Right Hand Special: Normal

Digit Inspection: **Negative Stemmer Sign Fingers/Toes**

Right UE Peripheral Pulses: normal radial and ulnar
 pulses, without thrill, good capillary refill

Right UE Peripheral Sensation intact to light touch
 throughout peripheral nerve distributions

Coordination: Coordination normal.

Cosmetic Abdominoplasty

Appearance: **overweight.**

Abdominal Survey: **mass, right lower quadrant, mass, left lower quadrant, tenderness, right lower
 quadrant, and tenderness, left lower quadrant Superficial masses and tenderness c/w Lipedema
 Nodules, Pain, Tenderness, Skin Hypothermia, Easy Bruising, No Pitting Edema**

Hernia Exam: Normal abdominal wall without hernias or bulges

Respiratory Effort: Normal respiratory effort without labored breathing or accessory muscle use

Right LE Peripheral Pulses: normal femoral, posterior
 tibialis and dorsal pedis pulses, brisk capillary refill

Left Upper arm Inspection: **Vascular
 manifestation such as cherry angiomas,
 telangiectasia, venous disease
 Lipedema Nodules, Pain, Tenderness, Skin
 Hypothermia, Easy Bruising, No Pitting Edema
 Persistent Enlargement of after elevation of
 extremity or weight loss.**

Left Forearm Inspection: **forearm tenderness.
 Vascular manifestation such as cherry
 angiomas, telangiectasia, venous disease
 Lipedema Nodules, Pain, Tenderness, Skin
 Hypothermia, Easy Bruising, No Pitting Edema
 Persistent Enlargement of after elevation of
 extremity or weight loss.**

Left Hand Inspection: Normal alignment, no
 deformity, no tenderness, no warmth

Left Hand Stability: Stable

Left Hand Special: Normal

Left UE Peripheral Pulses: normal radial and ulnar
 pulses, without thrill, good capillary refill

Left UE Peripheral Sensation intact to light touch
 throughout peripheral nerve distributions

Left LE Peripheral Pulses: normal posterior tibialis
 and dorsal pedis pulses, brisk capillary refill

Comprehensive Lower ExtremityGait: **scissor.**

Right Thigh Inspection: **Vascular manifestation such as cherry angiomas, telangiectasia, venous disease Lipedema Nodules, Pain, Tenderness, Skin Hypothermia, Easy Bruising, No Pitting Edema, Persistent Enlargement of after elevation of extremity or weight loss Persistent Enlargement of after elevation of extremity or weight loss.**

Right Knee Inspection: **valgus alignment. Medial Lobules, Tissue Overhanging or Covering Knee.**

Right Leg Inspection: **Vascular manifestation such as cherry angiomas, telangiectasia, venous disease Lipedema Nodules, Pain, Tenderness, Skin Hypothermia, Easy Bruising, No Pitting Edema Persistent Enlargement of after elevation of extremity or weight loss.**

Right Ankle Inspection: **varus hindfoot. Ankle Cuff.**

Right LE Sensation intact to light touch throughout peripheral nerve distributions

Left Thigh Inspection: **Vascular manifestation such as cherry angiomas, telangiectasia, venous disease Lipedema Nodules, Pain, Tenderness, Skin Hypothermia, Easy Bruising, No Pitting Edema, Persistent Enlargement of after elevation of extremity or weight loss Persistent Enlargement of after elevation of extremity or weight loss.**

Left Knee Inspection: **valgus alignment. Medial Lobules, Tissue Overhanging or Covering Knee.**

Left Leg Inspection: **Vascular manifestation such as cherry angiomas, telangiectasia, venous disease Lipedema Nodules, Pain, Tenderness, Skin Hypothermia, Easy Bruising, No Pitting Edema Persistent Enlargement of after elevation of extremity or weight loss.**

Left Ankle Inspection: **varus hindfoot. Ankle Cuff.**

Left LE Sensation intact to light touch throughout peripheral nerve distributions

Peripheral Vascular

Lower Extremity Venous:

Right Lower Extremity Venous: **edema, severe**

Left Lower Extremity Venous: **edema, severe**

Impression/Plan:

1. Lipedema: Associated diagnoses: Localized Adiposity, Obesity, Subcutaneous Fat, Varicose veins of bilateral lower extremities with pain, Lymphedema, not elsewhere classified, and Edema, unspecified

Plan: Counseling - Lipedema

I counseled the patient regarding the following:

Skin care: Treatments include diet, exercise, and compression. If there is associated lymphedema, patients can benefit from manual lymphatic drainage. Liposuction has also been used to treat this condition.

Expectations: Lipedema is a chronic condition characterized by excessive fat deposits on the legs, thighs, and buttocks. It can also affect the upper arms. The condition can be painful and can cause easy bruising. The cause is unknown. It may be genetic and because the condition affects almost exclusively women, it has been postulated that hormones may play a role in development of the condition.

Contact office if: Lipedema causes pain or discomfort.

Lipedema is a chronic disease presenting in women during puberty or other times of hormonal, weight and/or shape change such as pregnancy or menopause, characterized by symmetric enlargement of nodular, painful deposition of inflamed and fibrotic subcutaneous adipose tissue. Lipedema was first named as a medical condition in 1940 at the Mayo Clinic¹ and in Germany.² The diagnosis of lipedema is largely clinical and based on criteria initially established in 1951 by Drs. Wold, Allen and Hines.³ Lipedema starts in the lower extremities leading to circumferential bilateral lower extremity enlargement typically seen extending from the below the umbilicus to the ankles resulting in edema, pain and bruising; with secondary lymphedema, fibrosis and spreading of abnormal tissues to the trunk and arms occurs during later stages. Unfortunately as the lipedema tissue grows, the deep fascia and muscle are also affected reducing the function of the lymphatic pump.

Lipedema is a hereditary disease and recently the first mutated gene AKR1C1 was discovered resulting in a slower and less efficient reduction of progesterone to hydroxyprogesterone and increased subcutaneous fat deposition in variant carriers, confirming hormones as important in lipedema.⁴ Lipedema also clearly manifests as a connective tissue disorder characterized by loss of elasticity in the skin⁵ and the aorta,⁶ hypertrophic adipocytes, inflammatory cells, and dilated leaky blood and lymphatic vessels.^{7, 8}

She has lipedema in her legs, arms and trunk that includes nodules and pain in these areas. Her hands, feet, and upper trunk have been spared. She has other signs of lipedema including a negative Stemmer's sign and abnormal fat pad development, disproportion, pain and dysmobility.

She also might be developing early stages of lipo-lymphedema and thus her lipedema needs to be treated.] She has tried conservative measures for many months and while conservative therapies can reduce swelling and pain for a short time, removing the diseased tissue with surgery is necessary to reduce symptoms and progression long-term.

Lipedema is distinct from non-lipedema obesity, although some, not all, patients can be obese. The adipose tissue accumulation is bilateral and symmetrical in the extremities, with the feet and hands spared from lipedema fat accumulation unless there is loss of elasticity as in hypermobile Ehlers Danlos where the skin has lost elasticity and fat can grow on the hand (with or without obesity). A hallmark of earlier stages of lipedema is the discrepancy in fatty tissue of the extremities compared to the trunk. This is in contrast to the fat associated with lifestyle-induced obesity, which is usually global and proportionate, affecting the abdomen equal or greater than the hips.

Women with lipedema find it difficult to lose weight before a needed surgery or other procedures. There is a significant number of women with lipedema who have failed bariatric surgery because they were already controlling their diet but just not losing weight.⁹⁻¹¹

Besides the many painful nodules that women with lipedema have, studies indicate that women with lipedema do not have the muscle strength like people who have non-lipedema obesity, are subject to more injuries and have poorer functional capacity.¹² Thus, to improve function and reduce pain, lipedema surgery is recommended.¹³

I counseled the patient regarding the following:

Lipodystrophy Care: Cosmetic body contour dissatisfaction may be due to excess skin, stretch marks, bulging, fat excess, muscle weakness, and other complaints. Abdominoplasty, liposuction and other body contouring techniques are performed to help correct these issues. Surgery is commonly performed on an outpatient basis, although overnight hospitalization may be indicated in some patients, particularly those undergoing large body contouring operations. Aesthetic body contouring deformities may improve somewhat with diet control, exercise, rest, and proper skin care, including avoidance of excess sun and abstinence from nicotine. Specific preoperative and postoperative instructions will be provided for surgery.

Expectations: Body contour aesthetic concerns may be the result of obesity or overweight, pregnancy, genetic factors, sun damage, prior surgery, hernias, and other factors. Aesthetic surgery for these concerns is generally not performed for the purposes of weight loss. Rather, overweight patients are advised to lose weight in a controlled, supervised manner until a maintainable plateau weight is achieved before undergoing body contouring operations, in order to optimize results and reduce surgical risks. Liposuction often does not correct wrinkling, roundness, or laxity or fullness on the abdomen or other body locations. Liposuction is also performed for contouring purposes, rather than weight loss intent. Skin retraction may not be complete with liposuction, and excess skin may require surgical removal for full correction. Use of garments after surgery is advised and instructions will be provided. Risks, benefits, expectations and alternatives to liposuction have been explained in detail, including, but not limited to, the risks of infection, bleeding, injury to nerves or abdominal organs, bulging, contour irregularities, inadequate skin retraction, persistent deformity, seromas, deep venous thrombosis, pulmonary embolism, fat embolism, scarring, delayed healing, and other risks. Aftercare and possible use of drains have been explained. No guarantee or warranty regarding cosmetic outcome or longevity of results was given or implied.

Contact office if: the patient develops concerning symptoms such as severe abdominal pain, nausea, vomiting, diarrhea, fever, excessive or unusual drainage, swelling, redness, difficulty breathing, bleeding, or other concerning symptoms. Please contact the office if additional procedures or a change to the recommended treatment plan are desired. Fees for cosmetic procedures are valid

for a limited time, as specified on the fee schedule, and are subject to change at the practice's discretion. Please contact the office with any questions regarding fee schedule, payment policy, product concerns, or preoperative and postoperative questions. The risks, benefits, expectations and alternatives of liposuction were discussed and include but are not limited to: infection, bruising, lumpiness, pain, anesthesia reaction, dysesthesia, scarring in treatment area or puncture point, vasovagal reactions, tachycardia, nausea, necrosis, ulceration, color change and asymmetry.

I discussed the following surgical options with the patient:

Abdominoplasty: Abdominoplasty is the medical term for what is commonly referred to as a tummy tuck. It is a procedure performed to remove excess skin and draping fat from the lower abdomen. It is performed for the purpose of body contouring, not for the purpose of helping patients lose weight. While tissue removed during the procedure has some weight, the procedure is strictly not a procedure for weight loss. Patients seeking to lose weight are best suited by losing the weight through supervised diet and exercise until a stable, more desirable weight is achieved and maintained prior to the surgery. Abdominoplasty is performed through an incision low in the abdomen, usually in the same crease as a C-section would be performed in the suprapubic crease. The skin and fat are undermined off the muscle layer and the muscle layer is typically tightened with a plication procedure. An incision is also performed around the belly button (umbilicus) to allow it to be repositioned when the skin is redraped. After release, the excess tissues are removed and the belly button is delivered through a hole in the tightened skin. Typically, the hole created for release of the umbilicus is within the skin that is ultimately removed. However, in some cases, the hole must be closed and results in a small scar in the lower abdomen below the new hole created for delivery of the belly button. Drains may be used to evacuate fluid from under the fat layer to permit healing. They are usually removed within the first 10-14 days. A postoperative garment and/or binder will be required for several weeks to 2 months to aid in shaping. The scar will usually go through changes over the course of 6-12 months before final maturity. Scar revisions are occasionally required. Placement of the surgical incisions may be aided by the patient bringing typical swimwear, which can help to optimize concealment of the scar. Early ambulation after surgery is important to reduce risks of blood clot formation.

Back Lift: A Back Lift involves removal of adipose tissue and skin. Significant incisions may be required to remove redundant skin. The risks, benefits, expectations and alternatives (including incisional approaches and minimally invasive or noninvasive techniques) have been discussed and include, but are not limited to, the risks of infection, bleeding, injury to nerves/vessels/other structures, contour irregularities, asymmetry, fat necrosis, delayed healing, visible scarring, dissatisfaction with cosmetic outcome and possibility of unplanned return to the operating room. All questions were answered to the patient's satisfaction. No guarantee or warranty was given or implied regarding cosmetic outcome, longevity of results, or satisfaction therewith.

Brachioplasty: Brachioplasty involves removal of the redundant skin, and some excess fat, on the upper arm. The incision is either fashioned along the inner arm seam, or along the back of the arm, and it may be extended into the axilla (armpit) area. It may traverse the length of the upper arm all the way to (and even beyond) the elbow crease. The excess skin is removed and the remaining skin is closed together to improve the cylindrical shape of the arm. Care is paid to avoid overresection of skin in order to reduce the risk of inability to close the incision completely at the time of surgery, which is a possibility with significant skin removal when the skin swells. The incision may be numb and may take 3-5 weeks to heal to closure. Scar maturation may take 6-12 months. Drains may be used for up to 10-14 days in many patients.

Breast Reduction: Breast reduction involves removal of breast tissue and skin. Significant incisions may be required to remove redundant skin. The risks, benefits, expectations and alternatives to breast reduction (including incisional approaches and pedicle selection) have been discussed and include, but are not limited to, the risks of infection, bleeding, injury to nerves/vessels/other structures, contour irregularities, asymmetry, fat necrosis, nipple loss, loss of nipple sensation, delayed healing, visible scarring, dissatisfaction with cosmetic outcome and possibility of unplanned return to the operating room. All questions were answered to the patient's satisfaction. No guarantee or warranty was given or implied regarding cosmetic outcome, longevity of results, or satisfaction therewith.

Fleur-de-Lis Technique: The fleur-de-lis technique involves both horizontal and vertical incisions resulting in an inverted-T shaped scar. This variant of abdominoplasty design is appropriate for many patients with massive weight loss, who have excess skin and fat in both horizontal and vertical directions. The vertical scar is not easily concealable in two-piece bathing garments but may be a reasonable trade-off for many patients in order to secure a better overall contour and correction of skin redundancy. Healing may take 1-2 weeks longer than what would otherwise be required for standard abdominoplasty incisions.

Liposuction: Liposuction may improve contour irregularities and volume excesses. Tumescence fluid with local anesthetics and other medications is used to reduce postoperative bleeding and pain. Fat removal may be enhanced by ultrasound, Vaser, power or other assisted techniques. Repeated sessions of liposuction may be required. Liposuction is a procedure to contour the body's shape, not to help the patient lose weight. A very small amount of weight may be lost as a result of the suctioning of fat, but sustained weight improvement requires attention to diet and exercise. Under no circumstances should the patient expect

liposuction to create significant weight loss through the surgery itself. The risks, benefits, expectations and alternatives to liposuction have been discussed and include, but are not limited to, the risks of infection, bleeding, injury to nerves/vessels/other structures, contour irregularities, asymmetry, fat necrosis, nipple loss, loss of nipple sensation, delayed healing, visible scarring, dissatisfaction with cosmetic outcome and possibility of unplanned return to the operating room. All questions were answered to the patient's satisfaction.

Lower Body Lift: A lower body lift is an extensive technique that includes abdominoplasty, often combined with circumferential correction of excess skin on the back (belt lipectomy or circumferential tioroplasty), as well as bilateral medial and lateral thigh lifting. Incisions include the standard abdominoplasty incision as well as scars on the inner thighs, and a possible extension of the abdominal scar all the way around the back. This procedure is often performed on a hospital setting where overnight hospitalization can be offered, due to the typical length of surgery and extent of incisions. Delayed healing, seromas and scars are common issues with this operation, but the resultant improvement in body contour is often rather dramatic. Early ambulation after surgery is important to reduce risks of blood clot formation. Multiple drains are usually required.

Medial Thigh Lift: A medial thigh lift is a procedure done to remove excess skin on the thighs, and may be combined with abdominoplasty or body lifting (belt lipectomy or circumferential tioroplasty). Incisions are made on the inner thighs, and may be confined to the groin creases in some cases, though many patients require extensions of the incisions down the thigh to remove the excess properly. When combined with body lifting, incisions also include a lower abdominal incision and a possible extension of the abdominal scar all the way around the back. Standard medial thigh lifting may be performed on an outpatient basis, usually under general anesthesia. Delayed healing, seromas, numbness in the thighs and scars are common issues with this operation, but the resultant improvement in body contour is often rather dramatic. Concealment of scars may be difficult in shorts, skirts or bathing suits. Early ambulation after surgery is important to reduce risks of blood clot formation. Drains are often in place for 10-14 days, although some patients require longer periods of drainage due to proximity of the thigh lymphatic vessels to the treatment area. The postoperative garments can also help significantly reduce the fluid accumulation.

Panniculectomy: Panniculectomy is a procedure involving removal of the excess apron of skin and fat below the belly button. In contrast to abdominoplasty, it usually does not involve undermining of the skin well above the belly button. In addition, muscle plication of the abdominal wall may not be performed in panniculectomy. Panniculectomy may be required medically in patients with severe recurrent infections or rashes in the crease below the pannus. Delayed healing and fluid collections are not uncommon. Risks also include, but are not limited to, infection, bleeding, deep venous thrombosis (blood clots), scarring, persistent excess tissue, cosmetic dissatisfaction, and other risks.

Power-Assisted Liposuction: Power-assistance involves the use of a power source to oscillate the suction cannula device to reduce manual effort for the surgeon. In other respects, it is similar to standard liposuction.

Lipodystrophy Option Other: Lipedema Reduction Surgery with Lymphatic Sparing Liposuction (LSL) with Manual Lipedema Extraction (MLE) along with Skin Reductions

LRS surgical stage options:

Anterior thighs - 15879-22 RT/LT

Anterior legs - 15879-22 RT/LT

Abdomen - 15877-22

Arms - 15878-22 RT/LT

Forearms 15878-22 RT/LT

Buttock Shelf/Hips 15877-22 RT/LT

Posterior Thighs - 15879-22 RT/LT

Posterior Legs - 15879-22 RT/LT

Panniculectomy - 15839-22

Arm lift - 15836-22 RT/LT

Thigh lift - 15832-22 RT/LT

Knee Lift - 15833-22 RT/LT

Calf Lift - 15833-22 RT/LT

Saddle Bag Excision 15839-22 RT/LT

Anterior Hip Roll Reduction 15839-22

After counseling, we decided on the following plan: Lipedema Reduction Surgery with Lymphatic Sparing Liposuction (LSL) with Manual Lipedema Extraction (MLE) along with Skin Reductions based on planned surgical stages for safety:

1. Anterior thighs - 15879-22 RT/LT

1. Anterior legs - 15879-22 RT/LT

Visit Note - January 24, 2024

PMS ID: Sex: DOB: Phone: MRN:
6718 Female 10/22/1961 (985) 507-0009 6718

2. Abdomen - 15877-22 or Paniclectomy - 15839-22 (conversation on which suites her better)

3. Arms - 15878-22 RT/LT

3. Forearms 15878-22 RT/LT

3. Buttock Shelf/Hips 15877-22 RT/LT

3. Posterior Thighs - 15879-22 RT/LT

3. Posterior Legs - 15879-22 RT/LT

(Possibly break up posterior dependent on volume and/or healing)

4. Arm lift - 15836-22 RT/LT

5. Thigh lift - 15832-22 RT/LT

6. Knee Lift - 15833-22 RT/LT

Calf Lift - 15833-22 RT/LT

Saddle Bag Excision 15839-22 RT/LT

Anterior Hip Roll Reduction 15839-22

I discussed the following miscellaneous information with the patient:

-confirmed diagnosis of lipedema

-asked for further pictures of the lower abdomen/upper pubic region without clothing for increased visualization

-depending on how patient tolerates the anterior, may need to break up posterior body into 2 surgeries

-once liposuction has been completed, discuss in detail where skin removal should begin between thigh, arm and knee lifts and any other regions that may need it

-discussed getting off RA medication leading up to surgery, advised that CRNA and clinical team will review medical chart (re: medication reconciliation, clearances that will be required) as well as conversation/clearance from rheumatologist

-discussed long-term use of antibiotics and having conversation with infectious disease doctor about continuing treatment

-discussed use of munjaro, side effects and needing to stop leading up to surgery

May need to stage procedures more due to volume as well as medical clearance.

Nicotine Abstinence: I counseled regarding the risks of nicotine exposure, including delayed healing, infection, perioperative cardiovascular events and possible need for extended wound care or return to surgery.

Imaging Studies: Imaging studies including CT scans or MRI's may be appropriate to help determine the extent of deformity or to rule out hernias, and to help guide treatment.

Follow up PRN for: Preoperative Appointment, Discussion of Procedure, Additional Consultation, Preoperative Marking

Staff:

Jaime Schwartz (Primary Provider) (Bill Under)

Electronically Signed By: Jaime Schwartz, 01/25/2024 11:37 AM PST

My pain and swelling began in my late teens and early 20's. Over the years I have been to several physicians but none had actually diagnosed the lipedema and lymphedema. After going my whole life with pain and swelling, and after having bilateral total knee replacement surgeries with subsequent cellulitis, the Infectious Disease doctor who treated the cellulitis in the hospital finally referred me to physical therapy for MLD and other treatment.

The pain and heaviness in my legs have affected my mobility and have prevented me from doing many things I would like to have done. Walking for any length of time or distance is very difficult and while I have had to use a walker or wheelchair for extended traveling. I also have had skin issues because of the bulges around my knees. When getting into and out of a vehicle, I must use my arms to lift my legs high enough to get through the door, due to the heaviness.

I also have extreme heaviness in my arms preventing me from lifting and/or holding my arms up. I have difficulty doing normal household activities because of the heaviness and fatigue associated with the heaviness of the arms.

I have been trying to manage the symptoms on my own as much as possible. Over the past six months I have been using leg and arm compression garments on a daily basis and leg compression pumps 2 x a day when possible, to try to help with the lipedema and lymphedema. I massage my arms and legs daily and keep them elevated as much as possible to reduce swelling and pain. I attend Pilates 2-3 times per week to help with strength and mobility. I use anti-fungal medications and powders in an attempt to prevent skin rashes and irritation.















Standard of care for lipedema in the United States

Karen L Herbst^{1,2,3} , Linda Anne Kahn^{2,4}, Emily Iker^{2,5},
Chuck Ehrlich^{2,6}, Thomas Wright^{2,7} , Lindy McHutchison^{2,8},
Jaime Schwartz^{2,3}, Molly Sleight^{2,9}, Paula MC Donahue^{2,10},
Kathleen H Lisson^{2,11}, Tami Faris^{2,12}, Janis Miller^{2,13},
Erik Lontok^{2,14}, Michael S Schwartz^{2,15}, Steven M Dean^{2,16},
John R Bartholomew^{2,17}, Polly Armour^{2,18},
Margarita Correa-Perez^{2,19}, Nicholas Pennings^{2,20},
Edely L Wallace^{2,21} and Ethan Larson^{2,22}

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Abstract

Background: Lipedema is a loose connective tissue disease predominantly in women identified by increased nodular and fibrotic adipose tissue on the buttocks, hips and limbs that develops at times of hormone, weight and shape change including puberty, pregnancy, and menopause. Lipedema tissue may be very painful and can severely impair mobility. Non-lipedema obesity, lymphedema, venous disease, and hypermobile joints are comorbidities. Lipedema tissue is difficult to reduce by diet, exercise, or bariatric surgery.

Methods: This paper is a consensus guideline on lipedema written by a US committee following the Delphi Method. Consensus statements are rated for strength using the GRADE system.

Results: Eighty-five consensus statements outline lipedema pathophysiology, and medical, surgical, vascular, and other therapeutic recommendations. Future research topics are suggested.

Conclusion: These guidelines improve the understanding of the loose connective tissue disease, lipedema, to advance our understanding towards early diagnosis, treatments, and ultimately a cure for affected individuals.

Keywords

Lipedema, lymphedema, hypermobility, chronic venous disease, standard of care

¹Department of Medicine, University of Arizona, Total Lipedema Care, Beverly Hills, CA and Tucson, AZ, USA

²The US Standard of Care Committee

³Total Lipedema Care, Los Angeles, CA, USA

⁴Lymphatic Therapy Services, San Diego, CA, USA

⁵Lymphedema Center, Santa Monica, CA, USA

⁶Lymph Notes, San Francisco, CA, USA

⁷Lipedema Surgical Solutions, O' Fallon, MO, USA

⁸Carolina Vein Center, Durham, NC, USA

⁹Lighthouse Lymphedema Network, Atlanta, GA, USA; Centura Health, Colorado Springs, CO, USA

¹⁰Department of Physical Medicine and Rehabilitation, Vanderbilt University Medical Center, Nashville, TN, USA

¹¹Solace Massage and Mindfulness, San Diego, CA, USA

¹²Independent Contractor, Kansas City, KS, USA

¹³Olathe Health, Olathe, KS, USA

¹⁴Barth Syndrome Foundation, Larchmont, NY, USA

¹⁵Pasadena Plastic Surgery, Pasadena, CA, USA

¹⁶The Ohio State University Wexner Medical Center, Columbus, OH, USA

¹⁷Cleveland Clinic, Cleveland, OH, USA

¹⁸Fat Disorders Resource Society, Laurel, MD, USA

¹⁹Physical Medicine Institute, Orlando, FL, USA

²⁰Campbell University School of Osteopathic Medicine, Buies Creek, NC, USA

²¹Yogamatrix Studio, Orlando, FL, USA

²²Larson Plastic Surgery, Tucson, AZ, USA

Corresponding author:

Karen L Herbst, 240, South La Cienega Boulevard, Suite 200, Beverly Hills, CA 90211, USA.

Email: kaherbst@gmail.com

Introduction

Lipedema is a disease of fibrotic loose connective (adipose) tissue (LCT) on the lower abdomen, hips, buttocks, and limbs of females, sparing the trunk, hands, and feet. Lipedema is rare in men. A trigger for the development of lipedema tissue may be an increase in fluid and connective tissue remodeling that occurs alongside body changes during puberty, childbirth, menopause, stress associated with lifestyle change, or by altering tissue structure after surgery or trauma.¹ A hallmark of lipedema tissue is inflammation^{2,3} resulting in tissue fibrosis and pain, and in some cases, the tissue may become numb.⁴

First described in 1940 by Allen and Hines at Mayo Clinic in the US⁵ and by Moncorps from Germany,⁶ lipedema remains under-recognized in part, because it is assumed to be a usual hereditary component of female fat.⁷ Lipedema is confused with non-lipedema obesity or lymphedema due to increased leg size.⁸ Under-recognition or misdiagnosis can delay identification of lipedema for decades.⁷ Therefore, patient access to appropriate and timely treatment is often diminished⁹ and patients frequently find themselves blamed for their condition, including self-blame.¹⁰ However, lipedema can be treated to reduce pain and edema, maintain mobility, and improve quality of life while slowing disease progression, therefore timely diagnosis is paramount.

Lipedema is identified by clinical exam¹¹ with diagnostic criteria to help guide the clinical diagnosis (Figure 1). Skin and lipedema LCT are graded by stage and location (Figure 2). Lipedema tissue, body mass index (BMI), metabolic disease and lymphedema increase with stage.^{4,12}

Although guidelines are available from other countries,^{13–17} a published guideline remains an unmet medical need to improve and expand care for people with lipedema in the US.

Methods

In 2019, 21 lipedema expert panelists and a parliamentarian gathered at the *Fat Disorders Resource Society Annual Meeting* in 2019 to review the literature and develop consensus SOC guidelines for lipedema in the US. A structured questionnaire of 96 consensus statements in REDCap¹⁸ was completed by all panelists prior to the meeting, then panelist average responses were summarized, presented and discussed at the meeting (Round 1). After presentations on SOC guidelines from other countries including pathophysiology, diagnostic criteria,^{13–17} imaging, and medical, manual, and surgical treatments for patients with lipedema, consensus, defined as 75% agreement amongst panelists, was reached on 90 statements (Round 2). Panelist responses to the summary were collected, summarized again by representative panelists, and presented to panelists two more times to reach a final consensus on 85 statements following the Delphi survey technique.¹⁹

Consensus statements were scored by panelists and averaged using the GRADE system²⁰ which classifies recommendations as strong (Grade 1 or ⊕) or weak (Grade 2 or ⊕⊕), according to the balance between benefits, risks, burden, and cost, and the degree of confidence in estimates of benefits, risks, and burden, and quality of evidence as high (Grade A), moderate (Grade B), or low (Grade C) according to factors including the risk of bias, precision of estimates, the consistency of the results, and the directness of the

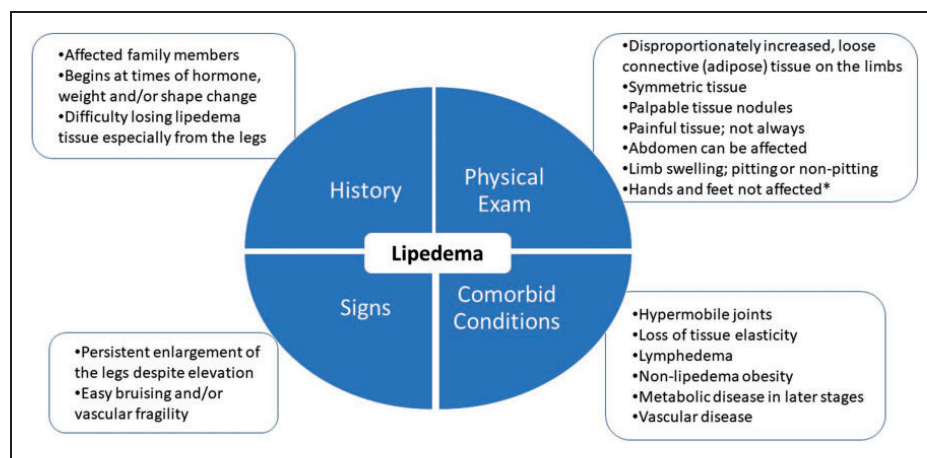


Figure 1. Diagnostic considerations for lipedema supported by expert opinion of the United States standard of care committee.
*~30% of women with lipedema can have fat tissue on the hands likely due to loss of elasticity in the tissue.⁴

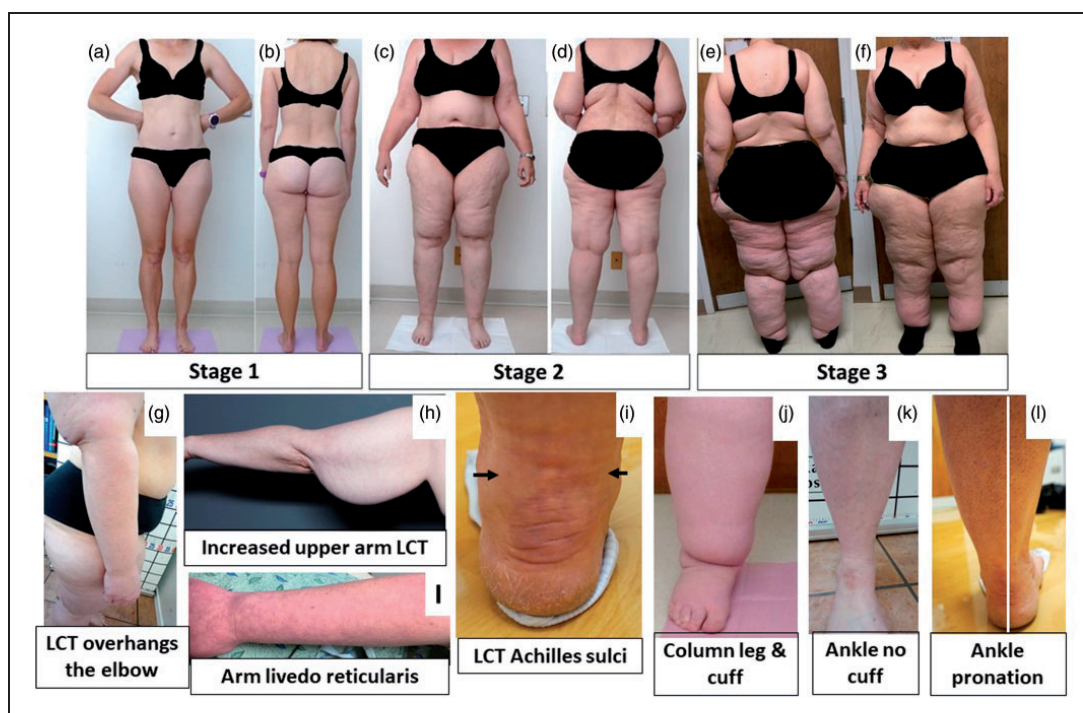


Figure 2. Stages and features of lipedema. (a) to (f): Front and back pictures of women with lipedema Stages I to 3. Staging references the legs, however women pictured also have arm involvement. Stage I skin has a smooth texture with subdermal pebble-like feel due to underlying loose connective tissue fibrosis. Lipedema Stage 2 women have more lipedema tissue than women with Stage I and skin dimpling due to progressed fibrotic changes and excess tissue. Palpable nodules may be more numerous and larger. Note the full Achilles sulci in pictures (d) to (f). In Lipedema Stage 2 arms, the tissue begins to hang off the arm and full arm involvement shows a more pronounced wrist cuff. Lipedema Stage 3 features increased lipedema tissue more fibrotic in texture with numerous large subdermal nodules and overhanging lobules of tissue. Patient (e) and (f) has lipedema, non-lipedema obesity and lipolymphedema. Types I to V describe the locations of lipedema tissue. Type I, lipedema tissue is present under the umbilicus and over hips and buttocks, Type II, under the umbilicus to knees (a, b), Type III, under the umbilicus to ankles (c to f), Type IV, arms (a to f) and Type V, lower legs (not shown). A tissue cuff at the ankle or wrist may be present in all stages. (g): Lipedema tissue overhangs the elbow. (h): Lipedema tissue often hangs well below the arm due to loss of elasticity and heaviness of the tissue. (i): Livedo reticularis is often a feature of lipedema. (j): Close view of tissue filling the Achilles sulci. (k): Close view of a column type lipedema leg with an obvious ankle cuff. (l): An ankle of a woman with lipedema without an ankle cuff (compare to (k)). (m): Pronation of the ankle commonly found in women with lipedema. Consent was obtained for use of all photos. LCT: loose connective tissue.

evidence as suggested by UpToDate.²¹ References evaluated to score consensus statements in this document follow the statement directly and/or in succeeding paragraph(s) or sections.

US SOC meeting goals

1. Agree on a description of lipedema and a consensus SOC for the US.
 2. Develop and publish clinical practice guidelines for use by providers, patients, and families.
- This consensus standard of care guideline accomplishes Goal 1. Additional content is available online.²² Consensus statements are graded to reflect the strength or weakness based on the current published evidence.

1.0 Lipedema overview

1.1 Lipedema should be regarded as a LCT disease versus a disease of just adipocytes (fat).^{11,23} (⊕A)

Fat is a loose connective tissue. In addition to adipocytes, immune cells and fibroblasts, LCT has an extracellular matrix of fibers (e.g. collagen and elastin) that supports, protects, and connects tissues. Blood vessels and cells contribute fluid to the extracellular matrix. Fluid exits through lymphatic vessels²⁴ or remains in the tissue bound to glycosaminoglycans and proteoglycans. Glycosaminoglycans bind sodium and water due to their strong negative charge. Glycosaminoglycans increase when extracellular matrix water and/or salt increases.

When excess fluid is present, LCT becomes compliant,²⁵ allowing more fluid to collect, stimulating proteoglycan synthesis. Excess fluid limits cell access to oxygen resulting in hypoxia, inflammation and fibrosis.²⁶ Extracellular matrix fluid, free and bound to proteoglycans, also increases in lymphedema.^{27,28} When excess fluid collects in the extracellular matrix, it is called edema.²⁹

1.2 Extracellular matrix edema in lipedema tissue is bound to proteoglycans. (⊕C)

Despite a lack of visible fluid in lipedema tissue on ultrasound,³⁰ extracellular fluid is higher in the tissue of women with lipedema compared to matched controls.³¹ Sodium is also higher in the skin and LCT of women with lipedema.³² Lipedema tissue has an enlarged extracellular matrix where proteoglycans reside.^{2,33} In support, multiple proteoglycans are upregulated in excess adipose tissue in individuals with obesity.³⁴ These data suggest an increase in proteoglycan-bound fluid in lipedema tissue.

1.3 Lipedema has a distinct distribution of pathologic tissue that differs from non-lipedema obesity (Figure 2).⁸ (⊕A)

In women with lipedema, but without non-lipedema obesity, gynoid (not truncal) loose connective tissue is

disproportionately increased and fibrotic (Figures 2 and 3), with greater numbers of M2 macrophages, unlike the prevalence of M1 macrophages in non-lipedema obesity.^{2,35} Furthermore, an inflammatory angiogenesis³ is present in lipedema LCT but not in the tissue of people with non-lipedema obesity.³⁶

1.4 Lipedema LCT can affect the abdomen.¹² (⊕B)

Lipedema tissue is on the abdomen,⁴ often with metabolic disease (Figures 1 and 2).¹²

1.5 Disproportionate distribution of lipedema tissue along with joint hypermobility and muscle weakness³⁷ impact postural stability and balance often resulting in a hyperlordotic curve in the lumbar spine, valgus knee, ankle pronation and plantar arch flattening.³⁸ (⊕B)

1.6 Lipedema tissue is resistant to reduction by diet, exercise, or bariatric surgery.^{39–42} (⊕B)

When weight loss occurs, a greater degree of tissue is lost from the trunk exaggerating the disproportion. Fibrosis of LCT, as in lipedema, inhibits weight loss by usual measures.⁴³

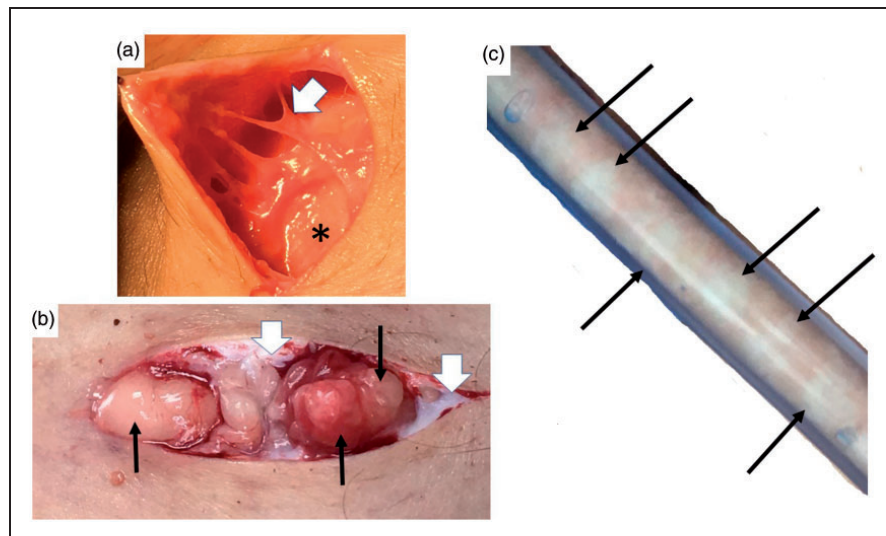


Figure 3. Nodules and thickened extracellular matrix fibers in lipedema calf loose connective tissue. (a) Example of thick fibrotic fibers (white arrowhead) connecting skin to superficial fascia (*). The abnormal fibers when palpated through the wound are firm and thick and less mobile due to fibrosis in comparison to adjacent fibers. (b) Three nodules under the skin (black arrows) that can be palpated through the skin as firm and that when removed feel firm. Notice extensive scar under the skin (white arrowheads). (c) Lipedema nodules (black arrows) intermingled amongst yellow fat obtained during modified suction lipectomy.

Source: Photos courtesy of Jaime Schwartz.

1.7 Rice-grain, pearl-sized or larger nodules in LCT should be part of the diagnostic criteria for lipedema (Figure 1).^{4,42} (⊕B)

Fibrosis of lipedema tissue is present in the extracellular matrix space² and within fibers forming fibrotic nodules palpable through the skin (Figure 3).

1.8 A Microangiopathy of blood and lymphatic vessels underlies lipedema pathology. (⊕B)

Lipedema LCT can have capillary fragility⁴⁴ and livedo reticularis (Figure 2) and are prone to easy bruising. Increased numbers of dilated micro-blood vessels in lipedema³ contribute excess fluid to the extracellular matrix. Elevated M2 macrophages,^{2,3} lymphocyte subtypes² and platelet factor 4, an inflammatory marker elevated in conditions of lymphatic disease including all stages of lipedema,⁴⁵ suggest inflammation drives the microangiopathy in lipedema. Impairment in lymphatic outflow in lipedema contributes to excess fluid in the extracellular matrix.⁴⁶

1.9 Comorbidities of lipedema include lymphedema,⁴ non-lipedema obesity,¹² venous disease (5.0 Arterial and venous disorders in lipedema section) and joint disease (Figure 1; Table 1). (⊕A)

Hypermobility joints were present in ~50% of women with lipedema consistent with a connective tissue disease, such as hypermobile Ehlers Danlos Syndrome.¹² Reduced elasticity of the skin²⁵ and aorta⁴⁷ in women with lipedema confirm lipedema as a connective tissue disease.⁴⁸ Comorbidities should individually be evaluated and treated based on current guidelines for each disease.

1.10 Assessment for hypermobility by the Beighton criteria⁴⁹ or questionnaire⁵⁰ should be considered when lipedema is diagnosed. (⊕C)

1.11 When there is a concern that lymphedema is present concurrently with lipedema, a nuclear medicine lymphangioscintigraphy exam of the legs, arms or both, should be conducted to assess the integrity and function of the lymphatic system.⁴⁶ (⊕A) This exam may also guide treatment when lymphedema is present. Lymphangioscintigraphy findings in lipedema include convoluted lymphatic vessels in the legs that slow transit of radionuclide.⁴⁶ (⊕A)

1.12 Women with lipedema who develop lymphedema have lipolymphedema. (⊕A) Lipolymphedema is lipedema that has progressed to clinically identifiable lymphedema, a risk that increases concomitant with stage.⁴

1.13 Lipedema tissue is frequently painful especially when touched. (⊕B)

On a numerical pain scale from 0 (none) to 10 (unbearable), 80% of women with lipedema scored ≥ 5 , and 11% rated their pain as unbearable.⁵¹ The etiology of pain in lipedema is unclear,⁵² though histology findings of inflammation and hypoxia may be contributing elements.^{2,3} Painful lipedema tissue may be misdiagnosed as fibromyalgia.

Painful lipedema tissue is not an absolute requirement for the diagnosis of lipedema (Figure 1).⁵² In a seminal paper on lipedema, only 40%–50% of women had pain or tenderness in the tissue.⁵³ Conservative therapies can reduce lipedema tissue pain (3.0

Table 1. Multidisciplinary team to assess people with lipedema at any time including prior to lipedema reduction surgery.

| Team | Domain |
|-------------------------------|---|
| Medical | Lipedema, lymphedema, bariatric, dermatological, endocrine, gastrointestinal, neurological, orthopedic, pain, sleep, vascular |
| Nutrition | Healthy and sustainable eating plan |
| Behavioral/Psychiatric | Depression, anxiety, eating disorders, body dysmorphic disorder ¹⁴ ; especially prior to any life-changing surgery or significant dietary change |
| Compression specialist | Compression garment selection and fitting |
| Certified lymphatic therapist | Tissue structure and mobilization, lymphatic function, nutrition, posture, gait, exercise, home self-care |

Conservative and other therapies section), yet people still retain a diagnosis of lipedema. In a family with lipedema and no pain, a gene mutation in *AKR1C1*, reducing aldo-keto reductase activity, should increase levels of the potent analgesic, allopregnanolone,⁵⁴ while at the same time decreasing prostaglandin F2 α levels and raising progesterone levels, both of which stimulate adipogenesis.⁵⁵

1.14 Lipedema is a common disease. ($\oplus C$)

Prevalence estimates for lipedema range from 6.5% in children in the US,⁵⁶ 6%–8% in women in Germany,¹⁶ and 15%–19%^{57,58} in vascular clinics. If these numbers are valid and applied to the US population, then millions of women in the US have lipedema.

1.15 Lipedema can be inherited. ($\oplus B$)

Genes for lipedema are thought to pass from parent to offspring in an autosomal dominant manner with sex limitation.^{59,60} One gene for lipedema has been identified, *AKR1C1*, a gene encoding for aldo-keto reductase that catalyzes the reduction of progesterone to its inactive form.⁵⁵ Elevation of progesterone due to a mutation in *AKR1C1* should increase adipogenesis, as in lipedema.⁶¹ Genes associated with lipedema as part of a syndrome have been reviewed.⁶²

1.16 Lipohypertrophy is a condition in women that is very similar to lipedema but without edema and pain.⁴² Women with lipohypertrophy have tissue that looks like lipedema, have difficulty losing weight, but do not have pain or edema. Some authors state lipohypertrophy is a pre-lipedema condition⁶³ while others consider it a synonym for lipedema.⁷ Lipohypertrophy is also used to describe obesity affecting the limbs and trunk.⁶⁴ More research is needed to determine if lipohypertrophy is different from lipedema. ($\oplus C$)

1.17 Lipedema and its concomitant pain and inability to lose tissue mass by usual measures can increase the incidence of depression, anxiety, or eating disorders.⁶⁵ ($\oplus B$)

Eighty-five percent of women state lipedema affects their mental health, coping abilities and self-esteem.⁶⁶ Depression was observed in 18%–35% of people with lipedema, exceeding average population prevalence levels.⁶⁷ On a standardized measure of health-related quality of life, anxiety or depression was found in 42% of people with lipedema.⁶⁸ In other studies, self-

reported anxiety affected 18%–30% of people with lipedema.^{69,70} Psychological pain scores were also high in women with lipedema.⁵¹ Early diagnosis and treatment may mitigate the impact of lipedema on mental health.

In a study of 100 people with lipedema, 74% had a history of eating disorders, 12% with periodic binge eating attacks, 8% with bulimia, and 16% with anorexia nervosa.⁷¹

1.18 A Mental health consultation should be offered to people with lipedema when there are signs and symptoms of depression, anxiety or eating disorders. ($\oplus B$)

Improved mental health increases self-care by women with lipedema.⁷²

2.0 Medical treatment

2.1 Signs and symptoms of lipedema can be treated to maintain and improve quality of life including pain, edema, and mobility; earlier treatment provides better results.^{17,42,64,66,73} ($\oplus B$)

2.2 A Complete patient evaluation and assessment identifies impairments that can be addressed with medications, therapy, or referrals to other providers (Table 1).^{11,17} ($\oplus C$)

2.3 Barriers to treatment of lipedema include difficulty of self-care, mobility limitations, social stigma attached to increased body size and physical limitations, anxiety, depression,⁶⁵ lack of social support,¹² availability of knowledgeable healthcare providers and affordability of services and limitations of some non-surgical treatments to reduce lipedema tissue.^{37,66,74} ($\oplus B$)

There are no known medications that specifically treat lipedema.

2.4 Use of medications and supplements for lipedema should focus on reducing tissue inflammation, fibrosis, swelling, and pain.¹¹ ($\oplus \oplus C$)

Medications for metabolic complications that arise from obesity in people with lipedema should follow standard guidelines.⁷⁵ ($\oplus A$)

2.5 Medications that increase edema should be avoided in people with lipedema.¹¹ (⊕A)

2.6 Medications that promote weight gain should be avoided and replaced with medications that are weight neutral or that promote weight loss when possible.⁷⁶ (⊕A)

2.7 Thiazolidinediones increase subcutaneous adipose tissue and should be avoided in people with lipedema.⁷⁷ (⊕C)

2.8 Long-term use of diuretics should be avoided in people with lipedema.⁷⁸ (⊕B)

Diuretics do not treat the main cause of edema in lipedema which is inflammation.^{2,3}

2.9 Sympathomimetic amines that constrict arterioles and lower intracapillary pressure can be considered for edema treatment.⁷⁸ (⊕⊕C)

People with lipedema treated with sympathomimetic amines had reduced weight, body size, edema and pain and improved quality of life.⁶⁹

2.10 Metformin should be considered for people with lipedema and metabolic complications. (⊕A)

Metformin inhibits hypoxia-induced fibrosis in adipose tissue,⁷⁹ and can reverse fibrosis after injury.⁸⁰

2.11 Thyroid function should be assessed in people with lipedema. (⊕A)

Hypothyroidism was found in 27%–36% of women with lipedema.^{4,67,70}

2.12 Diosmin can be considered for treatment of lipedema tissue. (⊕⊕C)

Diosmin, a biologically active polyphenol often in combination with its precursor, hesperidin, reduces oxidative stress markers in people with chronic venous disease,⁸¹ improves venous elasticity,⁸² functions as a lymphagogue reducing edema,⁸¹ reduces microvascular permeability,⁸³ and improves vascular,⁸⁴ neuropathic⁸⁵ and radicular pain.

2.13 Eating plans for people with lipedema should minimize postprandial insulin and glucose fluctuations (⊕C) and be sustainable long-term. (⊕C)

Healthy eating patterns for lipedema can be whole food, enzyme rich, plant-based^{86,87} or ketogenic.⁸⁸ Research favors vegetable-based low-carbohydrate diets which correlate with decreased all-cause mortality over animal-based diets.⁸⁹

2.14 Vitamin D levels should be monitored and normalized for people with lipedema. (⊕C)

Vitamin D levels decrease with increasing BMI.⁹⁰

2.15 Lipedema tissue does not reduce significantly after diet, exercise, or bariatric surgery^{39–42} likely due to the fibrotic component of loose connective tissue. (⊕C)

Weight reduction of non-lipedema obesity is beneficial to reduce metabolic complications following published guidelines.⁷⁵ A BMI greater than 50 kg/m² can induce metabolic complications, lymphedema and exacerbate lipedema.⁹¹

2.16 Women with lipedema may have sleep issues including sleep apnea; sleep assessment should be considered especially in later stages.⁴ (⊕C)

2.17 While sex hormones can affect fluid retention, a causative role for sex hormones in the expression of lipedema remains speculative. When necessary, lower doses of sex hormones for birth control or hormone replacement should be considered.¹¹ (⊕⊕C)

3.0. Conservative and other therapies

3.1 People with lipedema should be assessed for lipedema, lymphedema, posture, balance, muscle strength, gait and joint hypermobility by a therapist with certified lymphedema therapist (CLT) training.⁹² (⊕C)

People with lipedema may benefit from postural and core exercises,¹² muscle strengthening exercises, gait training, neuromuscular re-education, and deep abdominal breathing to increase lymphatic flow⁹³ and stimulate the parasympathetic system. Education and

training should be performed by a qualified practitioner.

3.2. Standard conservative therapy for lipedema includes nutritional guidance (2.0 Medical treatment section), manual therapy, compression garments, recommendations for a pneumatic compression device (external pump)^{94,95} and a home exercise plan.³⁷ (⊕C)

3.3. Manual therapies, sequential pneumatic compression pumps^{96,97} and exercise⁹⁸ should improve lipedema tissue by decreasing pain and increasing lymphatic flux, which in turn increases movement of glycosaminoglycans from the extracellular matrix into lymphatic vessels.⁹⁹ (⊕C)

3.4. Standard manual therapy for lipedema includes soft tissue mobilization to reduce pain, inflammation^{100,101} and musculoskeletal restrictions, and manual lymphatic drainage as part of an individualized comprehensive therapy program to stimulate lymphatic flow and reduce edema.¹⁰² (⊕C)

3.5. Lipedema tissue should be mobilized deeper with myofascial release, other manual techniques or instrument assisted soft tissue therapy to reduce fibrotic restrictions and improve the interstitial space while considering patient tolerance and tissue integrity.^{100,101} These therapies do not harm the lymphatic system. (⊕C)

3.6. Compression needs vary depending on patient presentation, pain, and physical ability to don/doff

garments or compression bandages (Table 2).^{16,103} (⊕A)

3.7. Compression garments for lipedema provide comfort and reduce pain by supporting the tissues especially if there is interference by lipedema tissue pads,¹⁰⁴ and manage edema.^{7,105} (⊕B)

3.8. Selection of compression styles, fabric and strength should be individualized. Compression garment styles can be combined to cover the arms, hands, legs, feet, trunk, or pelvis.¹⁰³ (⊕C)

Fabrics range from lightweight and micro-massage, to circular knit to flat knit, the latter providing the strongest containment.¹⁰⁶ Certified lymphedema therapists may suggest modifications for compression garments, inelastic compression garments, “donning aides”, or adaptive equipment. Multilayer, short-stretch compression wraps, or inelastic Velcro may be required to contain fluid. The strength of garments or the compression class level is made independent of fabric type and according to lipedema stage (Table 2). If pain increases with compression, the compression class level may be decreased, or garments layered. A higher compression class level does not equate to better results.¹⁰³

3.9. Pneumatic compression devices stimulate lymphatic flow⁹⁶ and are an option for at-home lipedema and lymphedema management when there are no contraindications.^{96,107} (⊕A)

Pneumatic compression devices provide pain reduction and may provide better control of swelling than self-manual lymphatic drainage.¹⁰⁸ Use of pneumatic compression devices and early mobilization can reduce the risk of deep venous thromboembolism following lipedema reduction surgery.¹⁰⁹ Pressure levels can be altered and cotton padding added between the skin

Table 2. Compression class level (CCL) recommendations for lipedema.^a

| Stage | Recommendation |
|------------------------------|---|
| Stage 1 | Micro-massage garment (10–20 mm Hg) as needed. |
| Stage 2 | Micro-massage, CCL I or II as tolerated when pain, swelling or heaviness are present. |
| Stage 3 | Micro-massage; CCL I or CCL II as tolerated when pain, swelling or heaviness are present. May have to layer different garments. |
| Lipedema with lipolymphedema | CCL should be determined individually based on patient presentation, physical ability and tolerance, and caregiver support. May have to layer different garments. |

^aCCL I = ~20–30 mmHg, CCL II = ~30–40 mmHg.

and device if discomfort is experienced with pneumatic compression device use.⁶⁴

3.10. Exercise programs for people with lipedema should be individually prescribed, started slowly, and progressed as tolerated.^{37,66} (⊕B)

3.11. Mobility can be improved by therapeutic interventions for flexibility, posture, joint protection, strengthening (including pelvic floor) and conditioning.^{37,66} (⊕C)

3.12. Beneficial home exercise plans for people with lipedema include swimming/aquatics, elliptical machines, yoga, stationary bikes, whole body vibration and walking. Impact levels may vary but should remain tolerable and sustainable for long-term adherence.^{37,66} (⊕C)

3.13. People with lipedema undertaking exercise programs ideally would be followed long-term with regular assessment.³⁷ (⊕C)

3.14. Home care for lipedema (self-management or with caregiver assistance) is essential to mitigate progression and optimize quality of life.¹⁰ (⊕C)

Daily self-care includes skin care (to prevent breakdown under fat lobules, and to prevent infection when lymphedema is present), compression garments, pneumatic compression pumps, self-massage, a healthy eating plan, home exercise plan, adequate sleep and psychosocial support including social networks.

4.0. Surgical treatment

4.1. Lipedema reduction surgery is currently the only available technique for removing abnormal lipedema tissue such as adipocytes, nodules, fibrotic extracellular matrix, and other non-adipocyte components. It is also the only treatment that slows progression of lipedema and ideally would be performed before complications and disabilities from lipedema develop.^{110,111} (⊕C)

4.2. Lipedema reduction surgery utilizes suction lipectomy (liposuction), excision and manual

extraction that spares blood and lymphatic vessels.¹⁷ (⊕⊕C)

Lipedema reduction surgery significantly improves symptoms,^{110–112} mobility, stance, gait,³⁸ valgus rotation/deformity of the knee and ankle, quality of life, and redistributes and restores the plantar arch.¹¹³ It also improves lymphatic symptoms, reducing the need for compression and manual therapy^{110–112,114} and improves lymphatic function as shown by radionuclide lymphangioscintigraphy.¹¹⁵

The types of suction lipectomy recommended for people with lipedema are based around tumescent liposuction which uses a solution injected into the tissue to decrease pain and bleeding.¹¹⁶ Other mechanical methods can also be used such as Water Assisted Liposuction (WAL)^{114,117} and Power Assisted Liposuction (PAL).¹¹⁸

To date, all studies showing clinical improvements for women with lipedema used tumescence or WAL techniques.^{110–112,119} There is little published information on the safety of laser or ultrasound technology for removing lipedema tissue.

4.3. Candidates for lipedema reduction surgery should generally be in good health

People with lipedema are different from the general population in that BMI is not a reliable indicator of overall health.¹⁷ (⊕C)

4.4. There is no age limit for which people will benefit from lipedema reduction surgery.¹⁷ (⊕C)

4.5. Indications for lipedema reduction surgery include a diagnosis of lipedema with demonstrated compliance and adherence to or failure of conservative therapies (3.0 Conservative and other therapies section).^{13–17,66} (⊕C)

4.6. Lipedema reduction surgery does not fit traditional volume limits for liposuction

Debulking lipedema tissue may require larger than traditional suction aspirate volumes¹²⁰ and multiple surgeries with proper intervals in-between. This is not cosmetic liposuction as there are mobility, pain and health benefits when removing lipedema tissue.^{13–17} (⊕⊕B)

4.7. Women with lipedema should be treated with conservative therapy prior to lipedema reduction therapy (4.0 Surgical treatment section). People may travel to receive surgery and rely on a therapy team in their hometown for pre- and post-operative care. In the weeks before surgery, a certified lymphedema therapist can perform a pre-surgical screening to guide “prehab” exercise, perform manual therapies and recommend compression garments for the patient.^{13–17} (⊕⊕B)

4.8. If the patient has lipolymphedema, complete decongestive therapy performed prior to surgery should include an intensive volume reduction phase, ideally 3–4 treatments per week.¹⁰⁷ (⊕C)

4.9. Before surgery, two sets of off the shelf, made to measure or inelastic garments or a combination of micro-massage garment and short stretch bandages should be prescribed.¹⁰⁷ Compression garments should be replaced 3 or 4 times during the first year. Garments must be worn regularly as non-compliance risks a rebound of edema.¹⁰⁷ (⊕C)

4.10. People with lipedema, especially higher stages, are at increased risk for venous thromboembolism and pulmonary embolus after surgery. We recommend venous thromboembolism risk stratification and treatment when indicated (5.0 Arterial and venous disorders in lipedema section). (⊕A)

4.11. A Pre-surgical venous duplex ultrasound and/or treatment of chronic venous disease should be considered especially in patients with lipolymphedema prior to lipedema reduction surgery.¹²¹ (⊕⊕A)

Varicose veins from chronic venous disease increase the risk of venous thromboembolism in the legs;¹²² treatment of chronic venous disease decreases this risk.¹²³ Varicose veins may increase the risk of intra-operative blood loss during surgical treatment of lipedema.¹²⁴

4.12. Lipedema reduction surgery can be safely accomplished in an outpatient setting

Consider overnight observation after surgery for significant comorbid medical illness or high-volume aspirate.¹⁷ (⊕⊕B)

4.13. Lipedema reduction surgery can be safely performed under local or general anesthesia.¹⁷ (⊕B)

4.14. Lipedema reduction surgery is not without risk and may cause long-term complications including lymphatic injury.¹²⁵ (⊕C)

4.15. Lipedema reduction surgery should be performed by surgeons experienced in the care of people with lipedema, with expert knowledge of the anatomy and function of lymphatic collection systems, using meticulous care to avoid lymphatic injury.^{66,116} (⊕B)

4.16. Lipedema reduction surgery may be less effective in advanced stages of lipedema⁶⁶ and in women with lipedema and severe obesity^{110–112,119} although recent data demonstrate a greater reduction of symptoms in more advanced cases.⁷³ Surgery may involve multiple procedures, however, the optimal time between procedures is unknown. (⊕⊕B)

4.17. Blunt cannulas no larger than 2–4 mm should be used during lipedema reduction surgery

Larger cannulas increase the risk for lymphatic injury, and the risk of rare, but deadly fat embolism. Cannulas greater than 4 mm should only be used in people with advanced stage lipedema and only for deep plane liposuction.¹²⁶ (⊕C)

4.18. Longitudinal technique should be used during lipedema reduction surgery to avoid damaging lymphatic vessels.¹²⁷ (⊕C)

4.19. Anemia is a risk with large volume liposuction in people with lipedema

Hemoglobin levels should be followed pre- and post-operatively in higher risk individuals.¹²⁸ (⊕C)

4.20. Large tissue sacks may remain after successful surgery and weight loss, for which subsequent plastic surgery in the form of dermo-lipectomy may be required. (⊕C)

These surgical recommendations align with published standard of care guidelines and long-term studies.^{16,110–112,119} UK guidelines suggest lipedema reduction

surgery after 6–12 months of adherence to conservative therapy.¹³ Dutch guidelines suggest lipedema reduction surgery for people no longer responding to conservative therapy.⁶⁶ We recommend women with lipedema discuss lipedema reduction surgery with healthcare providers for a pre-surgical assessment, get a referral to a trained therapist (3.0 Conservative and other therapies section), and be assessed for significant and treatable vascular disease (5.0 Arterial and venous disorders in lipedema section) prior to undergoing lipedema reduction surgery.

4.21. People with early stage lipedema should wear a postoperative compression garment for at least 2–3 months to manage post-operative edema.¹⁰⁷

People with advanced lipedema and/or lipolymphedema may need to continue compression garments for life.^{15,120} If people find it difficult to don and doff compression garments, two garments with a lesser level compression can be layered to achieve adequate compression. (⊕C)

4.22. Post-surgical care should be performed by a certified lymphedema therapist 2–3 times a week as soon after surgery as possible until swelling subsides.^{120,129} *Certified lymphedema therapists or a qualified fitter can monitor compression needs.* (⊕⊕B)

4.23. Complete decongestive therapy is either no longer needed or the need reduced in people after recovery from lipedema reduction surgery.¹¹² (⊕⊕A)

5.0. Arterial and venous disorders in lipedema

5.1. The arterial and venous vascular status of people with lipedema should be evaluated.^{47,121} (⊕⊕C)

Most people with lipedema have leg pain, all have leg swelling, either pitting or non-pitting, and many have underlying chronic venous disease.¹²¹

The physical examination should include inspection and palpation of pulses in the limbs. Pulse palpation in people with lipedema may be difficult and painful due to limb size.

5.2. It is important to differentiate leg pain in lipedema from peripheral arterial disease. (⊕⊕A)

Peripheral arterial disease is common especially when major risk factors are present.¹³⁰ Compression garments are a standard treatment for people with lipedema with signs of lymphatic impairment; however, compression garments are contraindicated for people with severe peripheral arterial disease.

5.3. If peripheral arterial disease is clinically suspected, ankle brachial index is recommended with whole leg or single segment (foot and ankle) assessment. (⊕A)

Arm or leg enlargement in lipedema may affect accuracy of the blood pressure measurements in this test and cause pain.¹³¹ If performing an ankle brachial index is not possible, measurement of a toe brachial index may be helpful. Forearm or wrist blood pressure measurement may be an alternative in this population. Other options include using a 4 MHz Doppler ultrasound probe (over the standard 8 MHz probe) and/or a larger blood pressure cuff.¹³²

The arterial duplex ultrasound can eliminate the need for invasive procedures such as arteriography or computed tomography angiography.

5.4. Common venous conditions seen in people with lipedema include increased risk for venous thromboembolism and conditions associated with chronic venous disease: varicose veins, chronic venous insufficiency, and telangiectasias (spider veins).¹²¹ (⊕C)

5.5. Lipedema, especially later stages, is associated with multiple comorbid conditions that increase the risk of venous thromboembolism, which includes superficial thrombophlebitis, deep vein thrombosis and pulmonary embolism.¹³³ (⊕C)

5.6. Providers should perform a venous thromboembolism risk assessment score¹³⁴ for people with lipedema and follow venous thromboembolism prophylaxis treatment guidelines. (⊕C)

Independent risk factors for venous thromboembolism based on Caprini risk stratification,¹³⁴ especially for women with Stage 3 lipedema include:

- BMI >40 kg/m² (1 point)

- Varicose veins (1 point)
- Swollen legs, including loss of definition of bony prominences (1 point)
- Decreased mobility¹¹³ (1 point) (⊕A)

5.7. Chronic venous disease can present with leg swelling and pain and should be considered in the differential diagnosis of lipedema. (⊕B)

Chronic venous disease is the most common vascular disorder in all populations. Chronic venous disease is the presence of morphological (i.e., venous dilation) or functional (e.g., venous reflux) abnormalities manifested by symptoms and/or signs indicating the need for further investigation or treatment. There is little data on lipedema and chronic venous disease. Two studies state ~25% of women with lipedema have venous disease and one study showed 50% of women with lipedema and lipolymphedema had chronic venous insufficiency.^{53,121,135} Lipedema and chronic venous disease often co-exist, share similar leg symptoms, and could exacerbate each other. Advancing age, female gender, and BMI compound an underlying relationship between lipedema and chronic venous disease.¹³⁶

Symptoms of chronic venous disease include: leg pain, fatigue, heaviness, swelling, pruritus, restless legs and night cramps.¹³⁷ The leg pain of chronic venous disease is generally worse with dependency and relieved by elevation. Symptoms of chronic venous disease are relieved by compression garments and walking. In people with lipedema, leg elevation does not improve swelling, and compression garments often cause pain.

The physical exam for chronic venous disease includes inspection of the arms and legs comparing each to the contralateral limb. Physical signs of chronic venous disease include telangiectasia, varicose veins, hyperpigmentation, erythema, inflammation, dryness, corona phlebectatica, lipodermatosclerosis, atrophie blanche and leg ulceration. Edema, pitting or non-pitting, should be noted.

Secondary lymphedema in people with lipedema can be difficult to evaluate. Not only does secondary lymphedema often occur in the absence of a positive Stemmer's sign,¹³⁸ it requires palpation of tissue density and heaviness. As much as 0.5 L of fluid can be present in the calf/ankle before it is noticed. Women with any stage of lipedema may manifest lymphedema although it is more likely in more advanced stages.^{4,46}

5.8. The Clinical-Etiological-Anatomical-Pathophysiological (CEAP) classification for venous

disease should be determined for people with lipedema.¹³⁹ (⊕A)

5.9. The venous evaluation of people with lipedema includes a bilateral, lower extremity duplex ultrasound evaluation of the deep and superficial venous systems assessing for valvular insufficiency (reflux),¹²¹ acute or chronic thrombosis¹³³ and patterns of obstructive flow. (⊕A)

The scan should evaluate reflux in the superficial truncal veins (great saphenous, small saphenous and accessory saphenous), measure truncal vein diameters, and map large refluxing tributaries. These scans can be difficult to perform and assess in people with severe obesity, extensive lipedema, and lower extremity edema.

Duplex ultrasound may be helpful when the clinical examination for lipedema is unclear. For example, dermal thickness was normal in people with lipedema, while dermal thickness was increased and fluid was present in the loose connective tissue in cases of lymphedema.¹⁴⁰

Knowing when to treat chronic venous disease in people with lipedema is challenging without published data. Generally, it is accepted to consider treatment of chronic venous disease when superficial truncal reflux is present, the symptoms interfere with activities of daily living, and people do not respond to conservative therapy (compression garments, manual therapy, 3.0 Conservative and other therapies section). (⊕B)

5.10. Providers should determine whether symptoms are from lipedema, chronic venous disease or both as they share many symptoms.¹²¹ (⊕B)

One goal for people with lipedema is to improve discomfort. It is important to give reasonable expectations for chronic venous disease treatment outcomes including that overall leg shape, edema, and underlying symptoms from lipedema most likely will not improve. However, by removing the chronic venous disease component, people can expect an overall net improvement of end of day symptoms.¹³⁹

5.11. Consider thermal and non-thermal treatment modalities of chronic venous disease in people with lipedema.¹⁴¹ (⊕C)

There are two modalities for treating superficial truncal reflux in chronic venous disease: non-thermal and thermal. Non-thermal methods cause less inflammation, injury to adjacent structures, damage to adjacent lymphatics or nerves, risk of anesthetic complications, noxious needle punctures, and pre- and post-treatment

discomfort. Thermal modalities are theoretically more likely to injure adjacent lymphatics; however, thermal ablation is more widely available and more effective on larger diameter veins.¹⁴²

5.12. Due to alterations in lymphatic vessels in people with lipedema,⁴⁶ when thermal ablation is used to treat chronic venous disease in the proximal saphenous vein segments, generous peri-vascular tumescent anesthesia should be infiltrated, especially at the sapheno-femoral and sapheno-popliteal junctions, to increase protection of surrounding lymphatics.¹⁴³ (⊕C)

5.13. The decision of whether to treat distal saphenous segments and/or large tributaries of chronic venous disease in people with lipedema must be individualized.¹⁴⁴ (⊕⊕C)

Monitoring treatment

Though there is no lipedema specific health-related quality of life evaluation tool, several outcome instruments have been used to differentiate lipedema from lymphedema including the SF-36¹⁴⁵ and the Patient Benefit Index.¹⁴⁶

Research

How or why lipedema occurs is poorly understood, and for affected individuals, the signs and symptoms of progression remain unexplored. Key areas of research include:

- Defining the penetrance of pain and its mechanisms,
- Pathomechanism of muscle strength loss,
- Connective tissue aspect of lipedema including hypermobile joints,
- Difference and differential diagnosis between lipohypertrophy and lipedema,
- Overall prevalence and incidence of lipedema as well as its demographic distribution.

Further research should focus on how to optimize treatment for people with lipedema, with a particular focus on patient quality of life, nutritional guidance, management of comorbid diseases, deeper tissue techniques to reduce inflammation and fibrosis, earlier diagnosis to allow for intervention and education, psychosocial support, as well as pre- and post-surgical protocols to improve care and assess medium- to long-term outcomes.

Conclusion

These findings are the consensus statements of US-based expert panels put forth as a standard of care guideline for people with lipedema in the US. It is our goal and aspiration that that this guideline will improve the understanding of the loose connective tissue disease, lipedema, and that increased research and awareness of lipedema will advance our understanding towards increased diagnosis, improvements of treatments, and ultimately a cure for the community of affected individuals.

Declaration of Conflicting Interests

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Ethical approval

All patients provided consent for use of their photos.

Guarantor

KLH



Contributorship

All authors attended the original consensus meeting and contributed to the original ideas for this paper. KLH obtained grant funding, organized the original meeting for the standard of care committee, provided questions and summaries for consensus statements and collated written portions of the submitted paper from authors. All authors researched the literature, assisted in drafting of the different sections of the paper, edited multiple versions of the manuscript and approved the final version of the manuscript.

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ORCID iDs

Karen L Herbst  <https://orcid.org/0000-0002-9079-9754>
Thomas Wright  <https://orcid.org/0000-0003-4900-2800>

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