


Lymphedema Management Current and Future Trends


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Objectives


- To identify lymphedema and its clinical etiology
- To understand lymphedema treatment and self management of symptoms
- How to educate the patient on risk reduction
- Responding to some of the most frequently asked patient questions regarding exercise and air travel
- To better understand the use of compression therapy and garments
- When you would refer a patient to a lymphedema clinic



What is Lymphedema?

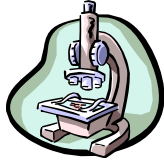
- Abnormal accumulation of *protein-rich fluid and water* in the interstitial space
- A progressive disease (NO CURE)
- Mechanical insufficiency of lymphatic system
 - This occurs when the transport capacity drops below the normal lymphatic load due to organic or functional causes
 - The impairment is so severe that the lymphatic system is unable to manage a normal amount of, or respond to an increase in, lymphatic load





Diagnosis of Lymphedema

- History!
- Physical exam
- Inspection
- Palpation
- Tests – r/o other causes of edema (heart, kidney, liver, recurrent cancer, DVT)



Evaluation - History

- Reason for the swelling?
- Length of time swelling existed?
- How quickly did the swelling develop/progress?
- Underlying diseases?
- Pain?
- Medications?
- Travel
- Family History
- Previous treatments



Evaluation - History

- Inspection:
 - Location
 - Skin changes
 - Rashes
 - Collateral veins
 - Lymphatic cysts/fistulas
 - Ulcers
 - Scars (radiation)
 - Papillomas



Evaluation - Palpation

- Temperature – infection/chronic inflammatory state
- Kaposi-Stemmer Sign
- Skin fold
- Pitting
- Fibrosis
- Muscular Status
- Tender to Palpation
- Pulses
- Others



Diagnostic Tests

- Physical Exam and History
- Lymphography
- Venography
- Indirect Lymphography
- Fluorescence Microlymphography
- Lymphoscintigraphy
- Venous Doppler
- CT scan
- MRI

Differential Diagnosis

- Lipedema
- Chronic Venous Insufficiency
- Acute Deep Venous Thrombophlebitis
- Cardiac edema
- CHF
- Malignancy (active cancer)
- Filariasis
- Myxedema
- CRPS

Who is at Risk

- Any patient that has undergone lymph node resection or radiation to the axilla (breast cancer patients)
- The risk becomes greater with more aggressive disruption



Lymphedema vs. Edema

- | | |
|--|---|
| <ul style="list-style-type: none">• Accumulation of <i>protein-rich fluid</i> in the tissue spaces• A disease process• A progressive condition | <ul style="list-style-type: none">• Accumulation of water in the tissue• Not necessarily high protein• Not a disease<ul style="list-style-type: none">– Can be a sign of some other problem |
|--|---|



Lymphatic Loads

- Water
- Protein - Hydrophilic
- Cell Particles
- Fat
 - Only in digestive system



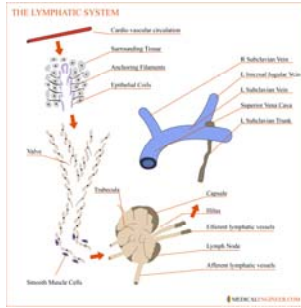
Lymphatic System

- Basic Purpose:
 - Immune defense
 - Drainage of substances that cannot be reabsorbed by the blood system
 - Protein, Water, Cell Particles, and Fat (in the digestive system only)
 - "Lymphatic loads"



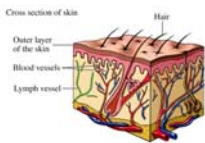
Lymphatic System

- Returns these lymphatic loads back into the blood system
- One-way principle:
 - Starts in interstitial areas with lymph vessels
 - Ends in the venous end of the blood circulatory system



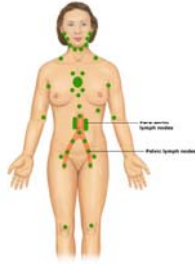
Anatomy of Lymphatic System

- Swelling in the skin is called lymphedema. It is a condition where there is an accumulation of lymphatic fluid in the tissues, causing the skin to become thick and swollen. It is often very painful.



Anatomy

- Lymph Nodes
 - 600-700 in the average human body
 - Contain lymphocytes and macrophages
 - Serve as a filter, destroying microorganisms and abnormal cells
 - Important in fighting infection and enhancing the body's immune capabilities
 - Lymph fluid will pass several lymph nodes before it reaches venous circulation



Stages of Lymphedema

- Stage 0: (Latency Stage)
 - LS has been damaged, however it is able to “keep up”
 - No swelling is present
 - Breast CA pt. who is post-mastectomy with or without axillary involvement is said to be in this stage
- Stage I: (Reversible)
 - Increased swelling
 - Soft & pitting
 - No secondary skin changes
 - Possible to completely remove swelling with treatment



Stages of Lymphedema

- Stage II: (Spontaneously irreversible)
 - Increase in limb volume
 - Protein-rich swelling causes progressive hardening of affected tissue (lymphostatic fibrosis)
 - Infection can be frequent due to weakened local immune defense
- Stage III: (Lymphostatic Elephantiasis)
 - Extreme increase in limb volume
 - Secondary skin changes (fungus, ulcers, cysts, fistulas)
 - Frequent infections
 - Lymphorrhea
 - Lymph fluid leaking from skin



Importance of time...

- Lymphedema will progress through these stages if given the time
- A timely referral is a must, it can cut down the time the patient will need to spend in the clinic significantly.



Patient Education

- Journal Study – Participants with breast cancer in which 41% of the participants did not receive any information on lymphedema at time of diagnosis could be diagnosed with Stage I lymphedema and 27% with latent Stage, while only 19% of those that received information could be diagnosed with Stage I lymphedema and 10% with latent Stage.

Classifying Lymphedema

- Primary
 - Malformation of the lymphatic system present at birth
 - May develop at late age
 - Most common in women
 - Almost exclusively in LEs
- Secondary
 - Caused by trauma/known insult to the lymphatic system
 - Surgery
 - Radiation
 - Infection (filariasis)
 - Cancer
 - Self-induced

Lymphoscintigraphy

- Intradermal injection of a labeled sulfur colloid into the web space of the hand or foot. A gamma camera tracks the movement of the tracer over 4 to 6 hours
- A sluggish movement or failed arrival at the LN could indicate a Lymph system disorder.



Resulting Deficits

- Pain resulting from muscle strain
- Loss of ROM/Strength
- ADL/IADL dysfunction
- Decreased functional mobility
- High risk of infection
- Psychosocial issues

Treatment Approaches

- Current Treatment
 - Complete Decongestive Therapy (CDT)
 - There are two phases
 - Phase 1 - Intensive phase, education and bandaging with MLD
 - Phase 2 - Self management phase
- Past Treatment
 - Pneumatic compression pumps
 - Medications
 - Benzopyrones, Diuretics
 - Surgery
 - Debulking/Liposuction

MLD/CDT Contraindications

- Acute infections
- Cardiac edema
- Malignant disease (relative)
- Renal dysfunction
- Acute D.V.T.



Bandaging Contraindications

- All general contraindications
- Arterial diseases
- Extra Cautious!
 - HTN
 - Paralysis
 - Diabetes
 - Bronchial asthma
 - CHF



Lymphedema Treatment

- Complete Decongestive Therapy (CDT)
 - Non-invasive, painless treatment approach
 - Used in Europe successfully since 1960's
 - Treatment for lymphedema and related conditions
- 4 Basic Components
 - Manual Lymph Drainage (MLD)
 - Compression
 - Exercise
 - Skin/Nail Care



Manual Lymph Drainage (MLD)

- A gentle manual treatment technique based on 4 basic skin strokes
 - Improves activity of lymph vessels with mild mechanical stretches on walls of lymph collectors
 - Mobilizes lymph fluid
 - Re-routes lymph flow around blocked areas to healthy ones
- MLD IS **NOT** A MASSAGE



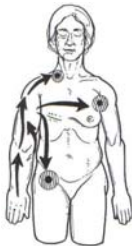
Techniques of MLD

- Four Basic Techniques:
 - Stationary Circle – all areas of body
 - Pump Technique – large curved surfaces
 - Rotary Technique – flat skin regions
 - Scoop Technique – Extremities only
 - Combination



MLD Sequence

- Left upper extremity example:
 - Short neck
 - Treat healthy lymph node groups
 - Establish anastomosis
 - Clear proximal then distal
 - Treat anterior/posterior quadrants



Compression

- External tissue pressure
 - Prevent re-accumulation of fluid after decongestion
 - Achieved through *short stretch* bandages, garments, or combination of both (depends on phase of therapy)
 - NOT the same as “Ace” bandages
 - Different working/resting pressures
 - Garments usually last 6 to 8 months

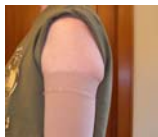


Compression Gradient

- Compression garments/bandages assist in fluid movement from distal areas towards proximal areas (root areas).
- Greater pressure distal areas, less pressure proximal areas
- Application to create proper gradient:
 - Vary widths
 - Distal to proximal
 - Uniform space/tension
 - Appropriate padding

Help my garment is too tight and it's two years old!!

- Wrongly prescribed garments that are not correct in size or compression class can be harmful and cause increased edema
- The person measuring for the garment should be certified and have a fitter number
- Typically, a CC2 is used for UE and CC3 for LE
- Sleeves should be measured with a glove or gauntlet
- Again garments only last 6 to 8 months before they need replacement



Decongestive Exercise

- Improve lymph circulation
- Improve venous return
- Optimize joint & muscle pump
- Performed with compression in place
- Address all joints
- Keep it simple!



Clinical Trial - Exercise

- Patient's were provided with accurate risk prevention education
- The trial examined women who performed whole body resistive training twice weekly involving progressive weight bearing and progressive repetitions of exercise. Trial showed there was no significant impact on limb edema and the women had greater improvements in self reported symptoms of lymphedema.

Exercise is a GOOD Thing!!

There is no evidence to support that lifting causes lymphedema, everything in moderation, that's what I tell my patients



Skin/Nail Care

- To reduce chance of bacterial & fungal growth
- Keep skin moisturized to prevent dryness/cracks
- Avoid manicures/pedicures
- No tight jewelry
- No constrictive clothing
- Avoid sunbathing, hot tubs, etc.
- Avoid needle sticks and blood pressure if able
- Avoid injury to the affected arm



Air Travel

- There are position papers by the National Lymphedema Network in support of using garments and compression in flights over 5 hours.
- For more info www.lymphnet.org



Lymphedema Specialists

- Certified Lymphedema Therapist
 - OT/PT who has undergone 135 hour certification course
 - LANA certified therapists have passed national exam



Patient Referral

JeffFIT Outpatient Therapy
25 S. 9th Street
Philadelphia, PA 19107
(215) 955-1200

Kevin Wegner, OTR/L, CLT
Judith Folwieler, OTR/L, CHT, CLT

Methodist Hospital
St. Agnes Building
1900 South Broad Street
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(215) 952-1234

Kristin Johnson, PT, DPT, CLT



Research

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Thank You



July 2010 Are you sure you want your husband to help you?

Jefferson
University and Hospitals
