Approach to Swollen Legs

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Disclosures......
......I am NOT Dr. Thomas
Objectives

• Review major causes of leg edema

• Focus on vascular causes, mainly venous insufficiency and lymphedema

• Review current therapies for treatment of both conditions
How many times do you see this a week?
Major Causes of Leg Edema

- Heart Failure
- Renal disease
- Medication related (NSAIDs, steroids, etc)
- Nephrotic syndrome/liver disease
- Malnutrition
- Venous obstruction or insufficiency
- Lymphedema
Venous disease

- May cause unilateral or bilateral edema
- If edema is acute and unilateral, of course always need to rule out DVT
- Very common to see post-thrombotic syndrome after episode of thrombophlebitis
- Chronic venous insufficiency is also extremely common
Prevalence of Venous Insufficiency

Venous reflux disease is 2x more prevalent than coronary artery disease (CAD) and 5x more prevalent than peripheral arterial disease (PAD)\(^1\)
Risk Factors for Venous Disease

- Advancing age
- Family history of venous disease
- Prolonged standing
- Obesity
- Sedentary lifestyle
- Lower extremity trauma
- History of DVT/SVT
- Pregnancy
Pathophysiology

- Inadequate calf muscle pump function
- Incompetent venous valves (reflux)
- Venous thrombosis/obstruction

ALL LEAD TO VENOUS HYPERTENSION, which initiates changes leading to vein dilation, skin changes, and ulceration
Progression of disease

• Increasing severity of symptoms appears to be related to extent of valvular incompetence

• Reflux is diagnosed by duplex ultrasound showing retrograde or reversed flow of >0.5 second duration*
Clinical Features

• Symptoms: pain, leg heaviness/aching, swelling, dry skin, tightness, itching

• Signs: dilated veins, edema, hyperpigmentation, lipodermatosclerosis (a fibrosing dermatitis of the subcutaneous tissue), ulceration
CEAP categories

- Clinical
  - C0: No visible or palpable signs of venous disease
  - C1: telangiectases or reticular veins
  - C2: varicose veins
  - C3: edema
  - C4: skin changes ascribed to venous disease
    - a. pigmentation or eczema
    - b. lipodermatosclerosis
  - C5: healed venous ulcer
  - C6: active venous ulcer

Etiologic: congenital, primary, secondary or none
Anatomic: superficial, perforator, deep
or none
Pathophysiologic: reflux, obstruction, both or none
Initial Conservative Management

• Treatment goals: improvement of symptoms and appearance, reduction of edema, healing of ulcers
• Always start with leg elevation, exercise, and compression therapy
• Stasis dermatitis responds to topical agents
• Venous ulcers should be treated with wound care and compression bandaging
Vein Ablation therapy

- Most insurance carriers require a minimum of 3 months of conservative therapy prior to ablation*
- If symptoms persist, and the patient has documented reflux on duplex, then ablation is the next step
Radiofrequency Ablation (RFA)

- Catheter has 7cm bipolar electrode on its distal end, can perform segmental ablation
- Mechanism involves electrode making direct contact with the vein wall to deliver RFA
- Contact with the wall results in destruction of the endothelium, occlusion by contraction of the vein wall collagen, and thrombus formation
RFA

- Can be used to close GSV or SSV
- Contraindications include active SVT, DVT, venous aneurysm, and abnormal ABIs
- Can be performed in outpatient office setting, depends on local resources
- Pts wear compression for at least one week afterwards, and have a follow-up duplex to rule out DVT
VNUS Closure® Procedure using the ClosureFAST™ Catheter

Disposable catheter inserted into vein

Vein heats and collapses

Catheter withdrawn, closing vein
Recent VNUS patient
Non-thermal ablation

- Newer technologies being introduced, eliminate the need for tumescent anesthesia (ie, less needle sticks)
- VenaSeal (Medtronic)
  - Cyanoacrylate “super glue” used to close incompetent saphenous veins
  - No compression needed afterwards, immediate return to normal activities
- No CPT code yet, expected later this year
Non-thermal ablation CONT

- Clarivein (Vascular Insights)
  - Uses sclerotherapy technique with 360-degree catheter to close saphenous without heat
  - Faster return to normal activities
  - Just gained CPT code end of 2016, reimbursement being negotiated
Lymphedema

- Accumulation of fluid and fibroadipose tissue due to disruption of lymphatic flow

- Can be primary but more commonly secondary (malignancy, recurrent cellulitis, obesity, lymphatic damage from surgery, burns, or radiation)
Lymphedema

- Conservative treatments are best, with limb elevation, maintaining a healthy body weight, exercise, meticulous skin hygiene, low threshold to treat cellulitis with antibiotics, avoiding limb constriction
- Also implement compression garments, possibly intermittent pneumatic compression, and manual lymphatic drainage massages (**Jean Nourse**)
Summary

• Patients with symptoms of venous insufficiency, especially those found to have venous reflux, should be referred to a vein specialist for further evaluation and management

• Remember to document the initiation of conservative management with compression hose

• For those with lymphedema, we have excellent resources in occupational therapy