



Presentation on June 5. Right leg with about a six week progression of swelling.



Presentation on June 12 for lymphedema therapy.



Right leg presentation on June 19.



This photograph taken on July 10 showing indentation where the compression wraps were placed and really no improvement in swelling of the right leg.

Leg swelling evaluation leads to finding cancer

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The patient is a well-nourished, elderly, 86-year old female who presented to us on June 5, 2017 with her daughter as a self-referral. She states that approximately three weeks ago, she presented to her primary care physician (PCP) for right lower extremity swelling. Since then, she states the leg had gotten worse in terms of redness, not swelling, and would like it evaluated.

Her PCP did order an ultrasound to rule out a deep vein thrombosis. It was done at a local hospital and it was negative. The patient had no symptoms of fevers, chills or night sweats. Per her daughter, and initial intake forms, the patient does have dementia. She has a caretaker and lives in an assisted living facility.

She was also concerned with what she believed to be varicose and spider veins. At the time of presentation, another ultrasound was not warranted given the patient's history and recent ultrasound. She presented to our office with the right leg shown above (left).

On examination, her right leg was larger in size than the left leg. The leg circumference measurements were as follows: right ankle 24cm, calf 40cm vs. the left leg ankle 19cm

and calf 33cm. There was pitting edema and slight redness. Upon palpation, her skin was warm and appeared somewhat "glossy". She had normal femoral pulses bilaterally. Dorsalis pedis and posterior tibial pulses were strong and easily palpable.

Given her classic presentation of lymphedema, she elected to have Complete Decongestive Therapy (CDT) with a certified lymphedema therapist in our office. She was also started on Bactrim DS twice daily for suspected cellulitis.

The patient began CDT the following week on June 12, however, she had discontinued her Bactrim after three days as her children thought it was making her "see things and talk out of her head." Upon examination, the patient's redness and swelling had worsened and she was started on Keflex, 500mg, twice daily.

Two days later, a phone call was received from the patient's daughter stating that her swelling was worsening and now she had developed blisters and seeping of clear fluid. She still had no fevers, chills or night sweats. Her leg did not hurt per the patient. She was still encouraged to come in. She presented for follow-up on June 19, four days later, for a clinical visit to assess the swelling.

The patient presented four times for lymphedema therapy (Complete Decongestive and Manual) from June 12, 2017-July 5, 2017.

On July 5, the therapist asked to have the patient re-examined. There was minimal improvement in the swelling and leg measurements. She actually seemed to have worsened, with increased swelling in the thighs, buttocks and lower abdomen. She still continued to not complain of pain – only swelling.

She was then brought back on July 10 and another ultrasound was performed. At this time, there again was no DVT. However, the swelling was now extended into the lower abdomen. An ultrasound showed overall swelling in the soft tissues of the lower abdomen and a non-compressible vein the abdominal wall with distention.

SENT TO THE ER

At this particular appointment, her caretaker was present and they agreed that due to her worsening condition and concerning ultrasound, it warranted further studies and blood work. They agreed that testing would be best carried out in the hospital.

The patient was sent the ER and admitted. She had an abdominal CT scan which showed enlarged lymph nodes measuring 1cm-3cm in the iliac chain, periaortic and retroperitoneal areas – but no structural defect of any structures. She was began on IV antibiotics for cellulitis. The hospital had reviewed and compared her current image to a previous CT imaging done in 2016,

CASE STUDY

where gastric wall thickening. The patient did recently have some changes in her bowel habits in the last month.

The patient also received IV antibiotics for suspected cellulitis/lymphangitis.

This patient, upon review, we feel, had timely care in diagnosis and treatment. We see oftentimes, swelling in the tissues (by definition is lymphedema) is treated with diuretics and patients live with lymphedema for quite some time prior to diagnosis and treatment. In this case, lymphedema treatment was not progressing and seemed unsuccessful, which prompted further investigation.

The patient had a normocytic cell count without any abnormalities. Initially, Non-Hodgkins Lymphoma was high on the differential. However, ultimately, biopsy of the lymph nodes revealed primary colon cancer with secondary neuroendocrine cancer. She is currently undergoing treatment with chemotherapy Etoposide and Carboplatin. Her bone marrow biopsy was negative for metastatic malignancy.

LYMPHEDEMA TREATMENT

Complete Decongestive Therapy, also called Combined, Complex or Comprehensive Decongestive Therapy, is the main treatment for lymphedema. Experts who treat lymphedema consider CDT the “gold standard” of treatment. CDT consists of an initial reductive phase (Phase I) followed by a maintenance phase (Phase II). In Phase I, the main goals are reducing the size of the affected part and improving the skin. After Phase I, patients move to Phase II, a self-management phase to make sure the gains of Phase I are maintained long term.

The effects of CDT, from the National Lymphedema Network, are to decrease swelling, increase lymph drainage, improve the skin condition, improve patient’s function, relieve discomfort and improve quality of life, and reduce the risk of cellulitis

and Stewart-Treves-Syndrome, a rare form of angiosarcoma.

The components of CDT, from the National Lymphedema Network, are manual lymph drainage (MLD), multi-layer, short-stretch compression bandaging, lymphatic exercise, skin care, education in lymphedema self-management, and elastic compression garments.

CDT is performed until the reduction of fluid volume is at its maximum benefit, which can take 4 to 8 weeks or longer. At the completion of Phase I CDT, the person with lymphedema is set up on a self-management program that includes self-lymph drainage, home lymphatic exercises, a skin care regimen, and compression garments or bandages that the individual learns to apply.

CDT ISSUES

Compression garments must be replaced every 4-6 months to be effective. Manual lymph drainage is an essential part of CDT. It is a specialized manual (hands-on) technique that appears to work by two mechanisms. It stimulates superficial lymphatic vessels to remove excess interstitial fluid. MLD is a light, skin technique learned by certified lymphedema therapists.

Compression bandaging refers to utilizing multiple layers of several materials to create safe and effective gradient compression. The necessary components of compression bandaging are tubular bandage lining; digit bandages; polyester, cotton or foam under-cast padding; and multiple layers of short-stretch bandages with 50 percent overlap and 50 percent stretch to cover the entire limb

Therapists providing CDT should have completed at least 135 hours of training. Our office uses a board certified occupational therapist who is also certified in lymphedema therapy.

To obtain an effective compression gradient, short-stretch bandages must be

applied with low-to-moderate tension using more layers distally. Pressure within the short-stretch bandages is low when the patient is not moving (“resting pressure”). Muscle contractions increase interstitial fluid pressure to assist the fluid to move out of congested areas (“working pressure”).

Maintaining hygiene of the skin is critical in patients with lymphedema. Nail and skin health should include nail clipping regularly and hydration/emollients to prevent dryness. Cracking and scaling skin can cause itchiness, which can lead to skin breakdown if disturbed.

Once maximal volume reduction with Phase I CDT is achieved, patients are fitted with a compression garment. The patient should receive two garments at a time for each affected body part: one to wear and one to wash and dry.

Venous practices must be aware of the all the causes of swelling (lymphedema) – venous and non-venous. Not all veins are created equal and neither are all patients with lymphedema. **VTN**



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Since 2007, the VCC has been an IAC-accredited vascular laboratory. In 2015 the VCC was one of the first 50 practices in the country to also be Vein Center accredited. The VCC has been dedicated to venous disease and laser treatments since 2004, and is located in Lima, Ohio, with a satellite office in Celina, Ohio. She may be contacted at www.yourveincarecenter.com.



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