

What To Do About *Venous Stasis Disease*

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Chronic lower limb edema is a common problem due to congestive heart failure, low albumin, or venous stasis. Often this edema is caused by venous stasis or chronic venous insufficiency, and the etiology is variable (Table 1).

Chronic venous insufficiency presents clinically as a spectrum of features (Figure 1).

Lipodermatosclerosis, cellulitis, venous stasis dermatitis, and acute contact dermatitis on the lower limb may, at times, be difficult to differentiate. Lipodermatosclerosis is usually

bilateral, but in the early, acute stages it may present as a unilateral, reddish to purple, swollen lower limb. However, it is unresponsive to antibiotics, and would not be associated with any systemic symptoms. Venous stasis

Table 1

Causes of venous diseases

Valvular insufficiency

- Superficial, perforating, or deep veins
- Atrioventricular shunts

Calf muscle pump failure

Post-surgical

- Varicose vein surgery
- Vein harvesting

Trauma

- Crush injury
- Shotgun wound
- Radiation

Obstruction

- Acute (phlebitis or infection/cellulitis)
- Abdominal obstruction

Post-phlebotic syndrome

Obesity

Medication

- Steroids, estrogens, calcium channel blockers

Lifestyle/occupation

Comorbid illness causing generalized edema

Margaret's case

Margaret, 57, has a long history of swollen ankles that she initially noticed with the first of her four pregnancies. The degree of swelling has progressed over time and has been aggravated by prolonged standing at work. Over the last year, she has noticed an itchy, reddish discoloration on the lower part of both her legs.



For a followup on Margaret, see page 88.

dermatitis and acute contact dermatitis would both be itchy. However, patients may describe a discomfort that is burning rather than itchy, which can make the diagnosis more difficult.

Topical products that contain irritants and potential allergens should be avoided in patients with venous stasis. Compounds containing lanolin, bacitracin, neomycin, colophony, and perfumes are commonly associated with contact dermatitis in patients with venous stasis disease. Patients with persist-

ent contact dermatitis might benefit from patch testing to determine if they have a known contact allergy that may be contributing to their disorder.

Superficial thrombophlebitis is often a difficult diagnostic challenge. Clinically, the skin lesions should be somewhat linear and tender. The differential diagnosis includes erythema nodosum, panniculitis, and vasculitis. Support stockings can be used in patients with superficial, but not deep, thrombophlebitis, and exercise is not contraindicated. Non-steroidal anti-inflammatory med-

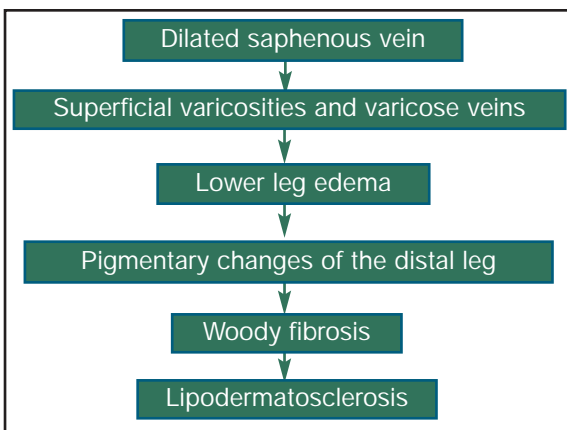
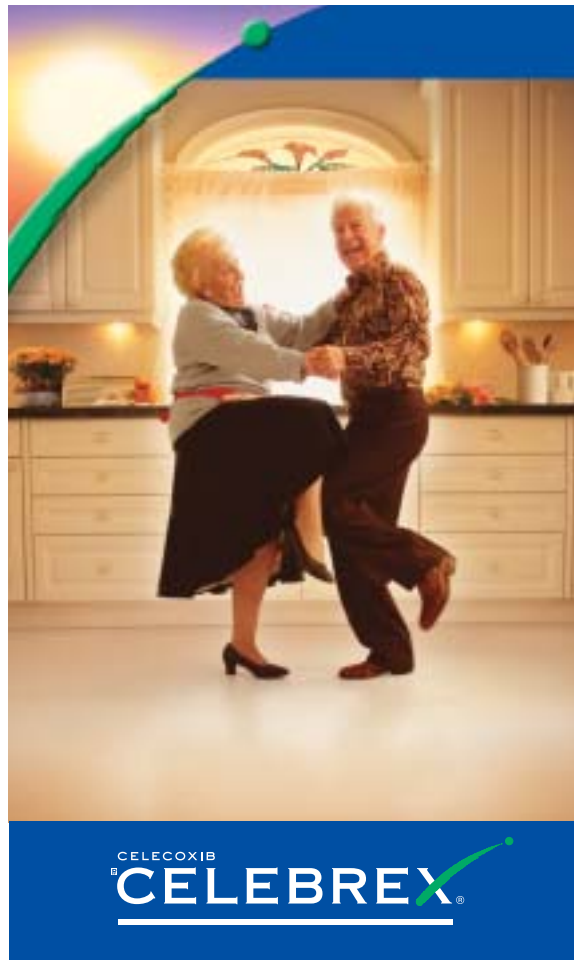


Figure 1. Progression of chronic venous insufficiency.

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Venous Stasis

Table 2

Complications of venous stasis disease

<u>Diagnosis</u>	<u>Presentation</u>	<u>Treatment</u>	<u>Comments</u>
Pitting edema	Dull ache at end of day; may be asymmetric	Compression bandaging, support stockings, ambulation, exercise, improve calf muscle pump	Non-elastic stockings or bandages may initially be preferred, as they are less likely to cause pain at rest
Superficial phlebitis	Pain and tenderness along affected vein; usually saphenous	Compression, ambulation, NSAID therapy	Risk of associated, underlying DVT is low, especially if affected area is below the knee
Deep phlebitis (DVT)	Acute, red, tender, swollen calf—almost too painful to touch; Doppler necessary to confirm diagnosis	ASA, unfractionated heparin, warfarin, LMWH, bed rest	Suspect a DVT in patient with a sudden increase in calf pain, with risk factors, such as immobilization, recent surgery, oral contraceptives, <i>etc.</i>
Acute lipodermato-sclerosis	Diffuse, purple-red, swollen leg resembling cellulitis; aching and tenderness are common	Compression bandaging, support stockings, NSAIDs, pentoxifylline	Usually bilateral, though may be more prominent on one leg; compression therapy essential
Chronic lipodermato-sclerosis	Diffuse, brown, sclerotic pigmentation with widespread chronic pain	Same as with acute form, but with topical steroids and lubricants	Support stockings may have to be custom-made to accommodate for leg shape
Wound infection	Change in pain character associated with other clinical signs of infection	Topical antimicrobial agents and oral antibiotics, as indicated	Maintain bacterial balance and watch for increase in pain, size, exudates, odour, or granulation tissue as signs of infection
Cellulitis	Diffuse, bright red, hot leg; usually unilaterally associated with tenderness and fever	IV oral antibiotics; antibiotics needed for severe episodes or with low host resistance	Venous ulcers may make individuals more prone to cellulitis
Atrophie blanche	Pain, stellate, white, scar-like areas associated with pain at rest and standing	NSAIDs, other analgesics	May be seen with scars of healed ulcers, or may be an independent clinical feature
Acute contact dermatitis	Itching, burning, red areas on leg corresponding to area of use of topical products	Remove the allergen; apply topical steroids	Lanolin, colophony, perfumes, and neomycin are some of the more likely agents involved
Cutaneous ulcer/wound	2/3 of venous ulcers are painful, with significant impact on quality of life	Compression, moisture balance, bacterial balance, and debridement	Choice of compression must be achievable, wearable, and affordable

DVT: Deep venous thrombosis
 NSAID: Non-steroidal anti-inflammatory drug
 LMWH: Low-molecular-weight heparin

ASA: Acetylsalicylic acid
 IV: Intravenous

ications are helpful, though introduction of stasis and then attempting to reverse it; and cyclooxygenase-2 inhibitors remains controversial. The association of an underlying deep vein thrombosis with superficial thrombophlebitis below the knee is felt to be unlikely.

A summary of the complications of venous stasis disease is provided in Table 2.

How is venous insufficiency managed?

Managing the patient with chronic venous insufficiency involves two steps:

1. Establishing the cause of the venous



2. Controlling the venous insufficiency with support stockings (Table 3).

Once a patient has been diagnosed with chronic venous insufficiency, support stockings are recommended and encouraged to be continued as long as possible. At times, other disease processes develop that prevent the use of support stockings, such as arterial insufficiency of the lower limbs. If there is clinical evidence to suggest peripheral arterial insufficiency of the lower legs, then an arterial Doppler ultrasound would be helpful to obtain an ankle-brachial index (ABI). However, in the absence of a contraindication, support stockings should be part of the long-term plan of care.

Table 3
Classification of support stockings

<u>Class</u>	<u>Strength (mmHg)</u>	<u>Use</u>
I	20-30	Varicose veins, mild edema
II	30-40	Moderate edema, severe varicose veins, moderate venous insufficiency
III	40-50	Chronic venous insufficiency
IV	> 60	Elephantiasis, irreversible lymphedema
Dress support	15-22	When class I is not tolerated for varicose veins and mild edema

Venous Stasis

Barriers exist that may prevent the patient from wearing support stockings (Table 4). Often, taking the time to review these barriers with the patient, and attempting to find a solution will help the patient adhere to the plan of long-term support stocking use.

A followup on Margaret

The patient has venous stasis dermatitis and no other medical disorder. Support stockings of medium strength (20-30 mmHg) are ordered, as well as a mild topical steroid to be applied to the dermatitic areas at night. A followup appointment is made for six weeks to determine if Margaret is able to wear her stockings, and to review the importance of long-term use of support stockings to prevent progression of her venous stasis disease.

Table 4

Barriers to support stockings

<u>Barrier</u>	<u>Solution</u>
Comorbid illness	Choose a stocking that is easy to apply; use of gloves; Easy Slide®
Difficult to put on	Stocking aids; spend time with patient to review technique
Cost	Check with different suppliers; coverage by insurance plans
Comfort	Toe in, toe out; length; composition (cotton, microfibre, nylon)
Appearance	Wear a regular sock or stocking over the support stocking, with a loose tip
Forgetting	Put on before getting out of bed; take off by bedtime in evening
Care	Use gloves to apply; follow manufacturer's instructions for washing and drying
Replacement	Every 3-6 months, depending on manufacturer, type, and degree of elasticity; suggest patients buy two pairs and rotate
Itch, dermatitis	Venous stasis dermatitis versus potential contact dermatitis to rubber; avoid topical steroids under stockings, but add topical steroids at night

Frequently Asked Questions

1. Is it appropriate to order high compression bandages for a patient with acute lipodermatosclerosis and poor peripheral pulses without first obtaining an ABI?

Prior to ordering high-compression bandaging, the peripheral vascular status should be assessed.

Non-invasive techniques include obtaining an ABI, toe pressures, toe brachial index, ankle Doppler waveforms, or transcutaneous oxygen levels. More invasive investigations are not indicated for this purpose.

2. What is the treatment when an acute allergic contact dermatitis is a suspected cause of a flare of pre-existing venous stasis dermatitis?

First, the suspected allergen must be discontinued and a topical steroid of medium potency can be used. If the acute allergic contact dermatitis is moist and weeping, a cream base would be appropriate. If the contact dermatitis is dry and cracked, an ointment base would be appropriate.

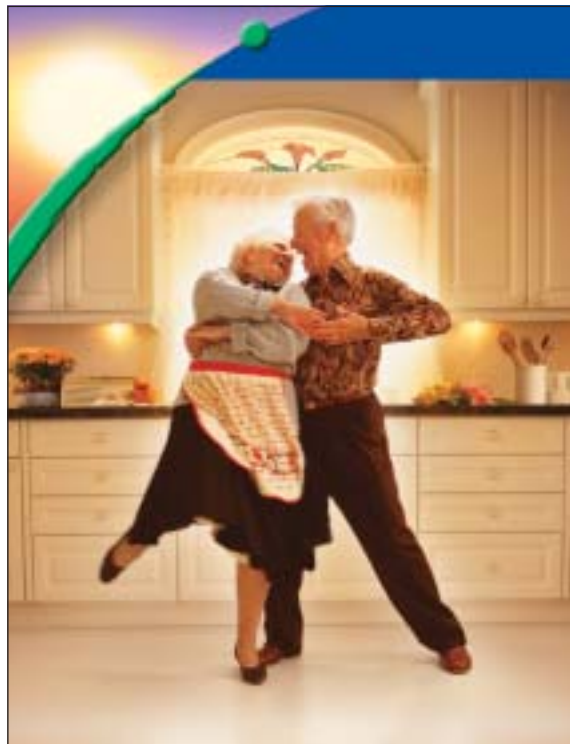
3. Are diuretics useful in the management of pitting edema caused by an incompetent venous valvular system of the lower legs?

Diuretics have no real benefit in dependent edema limited to the lower extremities related to an incompetent venous system without any systemic cause. Weight reduction, leg elevation, exercise, and support stockings/compression bandaging are more beneficial.

What is the physician's role?

Venous stasis disease is a chronic disorder that requires ongoing assessment and management, as well as an awareness of the complications that are associated with this disorder. Support stockings should always be considered in the therapeutic plan (unless contraindicated). Engaging the patient in the need for long-term control of the venous stasis should help in developing a plan of care that meets the patient-centred concerns, as well as creating a long-term

goal to which the patient can adhere. A holistic approach to the patient will aid in the assessment and management of chronic venous stasis disease. [Dx](#)



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References available—contact *The Canadian Journal of Diagnosis* at diagnosis@sta.ca.

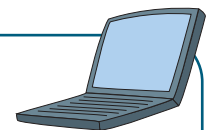


Take-home message

How is venous stasis treated?

- First, establish the cause and attempt to reverse it.
- Second, control the venous insufficiency with support stockings.
- Third, make a treatment plan that meets the patient's needs and can be easily adhered to. Make sure the patient has a long-term goal that is within reach.

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