Varicose Veins and Chronic Venous Insufficiency

See also Deep vein thrombosis (DVT)

Disclaimer

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Background

About varicose veins and chronic venous insufficiency

➢ Venous disease, including ulceration, causes considerable morbidity and cost that can be prevented or reduced through correct management.
➢ Varicose veins are familial with exacerbating factors including pregnancy, smoking, previous venous thromboembolism, and obesity.
➢ Chronic venous insufficiency results from valvular incompetence (often presenting as varicose veins) or occlusion of major veins, resulting in chronic venous hypertension.

Red flags

• Superficial thrombophlebitis within 7 cm of the saphenofemoral junction
• Significant haemorrhage from a varicose vein

Assessment

1. Identify related history of:
   • infections, including cellulitis.
   • thrombophlebitis or DVT of calf or thigh.
   • ulceration.

2. Look for clinical signs.

Clinical signs of varicose veins and chronic venous insufficiency

➢ Varicose veins – great and small saphenous veins.
➢ Ankle flare – tiny varicose veins of inner aspect foot and ankle.
➢ Atrophie blanche – lacy white areas of avascular tissue with tiny red spots.

Source: DermNet NZ

➢ Haemosiderin staining – red-brown discolouration of skin can present as small patches or extend over most of gaiter.
➢ **Lipodermatosclerosis** – hard, woody, fibrosed skin on medial or lateral ankle. When extensive, the leg appears as an inverted champagne bottle.

Source: [DermNet NZ](https://dermnetnz.org/veins/)

➢ **Varicose (gravitational) eczema** – can be wet or dry.

Source: [DermNet NZ](https://dermnetnz.org/veins/)

➢ **Venous oedema** – lower limb pitting oedema.
➢ **Venous ulcers** – typically medial or gaiter region with sloped edges.

Source: [DermNet NZ](https://dermnetnz.org/veins/)
3. Assess the severity using the **CEAP classification** and whether:
   - symptoms are controlled with compression stockings and medical management.
   - patient is able to carry out normal activities.

**CEAP classification**

- **C0** – No visible or palpable signs of venous disease
- **C1** – Telangiectases or reticular veins
- **C2** – Varicose veins
- **C3** – Oedema
- **C4** – Pigmentation, eczema, lipodermatosclerosis, atrophie blanche
- **C5** – Healed venous ulcer
- **C6** – Active venous ulcer
- **CA** – Asymptomatic
- **CS** – Symptomatic


5. Arrange investigations:
   - If considering compression hosiery, arrange **ankle brachial pressure index (ABPI)**.
Ankle brachial pressure index (ABPI)

➢ The ratio of the ankle to brachial systolic pressure is measured using a sphygmomanometer and handheld Doppler device. See ABPI assessment instructions.

ABPI assessment instructions

Equipment:
• Ultrasound handheld Doppler
• Ultrasound gel
• Sphygmomanometer
• Blood pressure cuff

Procedure:
1. Explain the procedure and gain consent from the patient.
2. Patients should ideally be lying flat for 15 minutes beforehand, and will need to remain so throughout the procedure.
3. Apply blood pressure cuff to upper arm. Locate brachial pulse by applying ultrasound gel and Doppler probe, holding the probe at 45 to 60 degree angle to the skin and moving it around until clearest signal is found.
4. Inflate blood pressure cuff until signal can no longer be heard, then slowly release the cuff and listen carefully for the signal to return. Record this value as the brachial systolic pressure for that arm.
5. Repeat this process for the other arm. Use the highest systolic pressure to compare against the ankle pressures.
6. Apply blood pressure cuff to lower limb, above ankle, and locate dorsalis pedis and posterior tibialis pulses, as above.
7. Repeat process of inflating and deflating blood pressure cuff while listening with the Doppler ultrasound, and record the value at which the systolic pressure returns in both the dorsalis pedis and posterior tibialis arteries.
8. Repeat this process for the other leg. Compare the highest systolic pressure on each limb against the highest brachial pressure obtained.
9. To calculate the ABPI:
   • Left ABPI – Divide the highest of the 2 ankle readings for the left leg by the highest of the 2 brachial pressures.
   • Right ABPI – Divide the highest of the 2 ankle readings for the right leg by the highest of the 2 brachial pressures.
10. Make a record of all pressures obtained during the assessment in the clinical notes, as these absolute values can be helpful for future reference.

➢ ABPI substantiates the presence or absence of significant peripheral vascular disease (PVD), except in patients with heavily calcified vessels where the ABPI will be > 1.3 and should be disregarded.
➢ An ABPI < 0.9 is abnormal. With intermittent claudication, value is usually between 0.5 and 0.9.
➢ If the ABPI is:
   • 0.7 to 0.9, consider compression but use with caution and frequently review. If the patient develops pain, cease compression.
   • < 0.7, compression is contraindicated.
   • normal (0.9 to 1.3), use compression.

If referring for possible vein ablation therapy, arrange duplex ultrasound scanning (varicose vein study) to assess the degree of venous reflux. Cosmetic treatment of varicose veins in the lower leg without management of reflux is ineffective. Write “varicose vein study” on request to ensure an adequate scan is performed.
Vein ablation therapy

- Options include:
  - chemical ablation (sclerotherapy)
  - thermal ablation (laser and radio-frequency ablation)
  - surgical ablation.

- Long-term results of thermal ablation are equivalent to surgical intervention but with lower morbidity, less pain, and earlier return to work.

- Thermal and surgical ablation both have a short recovery time and reduced complications, but radio-frequency appears less painful when compared to surgical treatment.

- Chemical ablation often needs to be repeated and the recurrence rates are high.

- Surgical and thermal ablation is more efficacious and cost-effective than compression or chemical ablation.

Management

Practice Point

Explore options for non-funded patients

Patients with a CEAP classification of C0, C1, or C2, spider veins, or varicose veins without symptoms or complications are not eligible for treatment within the public hospital system.

Offer these patients non-operative management and explore their willingness to undertake a private vascular surgery assessment.

1. Manage bleeding varicose veins if required.

Bleeding

- Haemorrhage of varicose veins will usually respond to compression and elevation and in most cases does not require urgent vascular review.

- If there is haemodynamic compromise (rare) or if bleeding fails to cease with elevation and compression (rare), arrange immediate vascular surgery referral or admission.

- After bleeding has stopped, arrange early follow-up appointment and send patient home.

- If recurrent bleeding, consider immediate vascular surgery referral or admission.

2. If symptomatic varicose veins with a CEAP classification of C3 or above, arrange urgent or routine vascular surgery referral.

3. Reassure the patient that asymptomatic, uncomplicated veins are harmless and that early treatment is unnecessary other than for appearance. Encourage and regularly reinforce leg elevation when resting.

4. Advise the patient about lifestyle modification, including weight management, smoking cessation, and improving calf muscle pump through exercise.

5. Before vein ablation treatments, consider a trial of compression therapy for at least 3 months for control of oedema, venous ulcers, and for patients with symptoms:
Control of oedema

Advises:
- elevation of the foot of the bed and high elevation of the limb when resting for oedema control. This is an essential component of the management of stasis ulceration.
- active exercise (walking) ideally accompanied by graduated elastic compression.

- Evidence is limited and 25% of patients cannot tolerate compression.
- **Compression hosiery considerations**

Compression hosiery considerations

*Take note of the following when prescribing hosiery:*
- Avoid compression in patients with known or suspected arterial disease (particularly if they have diabetes).
- Stockings are expensive and do not suit everyone.
- Unusually-shaped legs require experience to get hosiery to fit well.
- Legs with oedema shrink with compression, and smaller hosiery will then be required.
- The elderly and those with arthritis cannot manage hosiery.
- Measure ankle brachial pressure index (ABPI) in all patients before commencing compression therapy.

6. Manage varicose (gravitational) eczema with soap substitutes, regular emollients, and topical corticosteroids as for adult eczema.

7. If varicose veins complicated by thrombophlebitis, see **Deep vein thrombosis (DVT)** pathway.

8. Consider **vein ablation therapy** – evidence suggests:

Vein ablation therapy

- **Options include:**
  - chemical ablation (sclerotherapy)
  - thermal ablation (laser and radio-frequency ablation)
  - surgical ablation.
- Long-term results of thermal ablation are equivalent to surgical intervention but with lower morbidity, less pain, and earlier return to work.
- Thermal and surgical ablation both have a short recovery time and reduced complications, but radio-frequency appears less painful when compared to surgical treatment.
- Chemical ablation often needs to be repeated and the recurrence rates are high.
- Surgical and thermal ablation is more efficacious and cost-effective than compression or chemical ablation.

- it provides improvement in 80% of symptomatic patients correctly treated.
- when combined with compression therapy, it reduces the recurrence of ulcers. Encourage patients to wear their stockings continually and replace them every six months.

9. If varicose veins with a CEAP classification of C0, C1, or C2, spider veins, or varicose veins without symptoms or complications, consider referral to a private vascular surgeon.
Referral

- Arrange immediate vascular surgery referral or admission if:
  - there is haemodynamic compromise (rare) or if bleeding fails to cease with elevation and compression (rare).
  - recurrent bleeding.
  - superficial thrombophlebitis within 7 cm of the saphenofemoral junction.
- If symptomatic varicose veins with a CEAP classification of C3 or above, arrange urgent or routine vascular surgery referral.
- If varicose veins with a CEAP classification of C0, C1, or C2, spider veins, or varicose veins without symptoms or complications, consider referral to a private vascular surgeon.

Information

For health professionals

Further information

Australian Family Physician – Varicose Veins

For patients

- Varicose Eczema: Gravitational Eczema
- Varicose Veins

Sources

References


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