DISCUSSION

In planning the surgical management of patients with chronic osteomyelitis being able to visualise sequestrae and abscesses is of great importance. We now request over-penetrated radiographs as standard in all cases of chronic osteomyelitis.

Reference

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A simple technique to achieve adequate tumescent anaesthesia for endovenous laser ablation (EVLA) of the great saphenous vein

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BACKGROUND

EVLA is an effective alternative to stripping of the great saphenous vein (GSV).^{1,2} It utilises local tumescent anaesthesia allowing immediate ambulation and rapid discharge. The safety, comfort and efficacy of EVLA are highly dependent upon the accurate placement of large volumes of tumescent fluid in the perivenous plane.^{1,2} We present a simple technique to achieve this aim.

TECHNIQUE

The GSV is cannulated and a catheter is positioned proximal to the saphenofemoral junction. Administration of tumescent anaesthetic (around 200 ml of 0.1% lidocaine per leg) is then commenced. Initially, the vein/catheter complex is imaged in the transverse plane with the vein positioned centrally. Every 5 cm along the course of the vein, a mark is made next to the outer side of the ultrasound transducer (Fig. 1). At each mark, local anaesthetic is injected (size 25-G needle; Fig. 2). Tumescent fluid is then administered painlessly under ultrasound guidance (10–20 ml at each site) using a 21-G needle (Fig. 3). To ensure accurate placement of fluid, the path of the needle is followed on the screen, and the fluid is injected once the needle tip penetrates the saphenous fascia. To visualise the advancing needle, it must be inserted centrally along the line of the ultrasound beam. Accurate and adequate placement of fluid is

Figure 1 A skin mark is made to the side of the transducer.

Figure 2 Marks on leg along the course of the great saphenous vein and injection of 1% lidocaine.

Figure 3 Infiltration of tumescent fluid under ultrasound guidance.

Figure 4 Ultrasound image of 21-G needle tip (vertical arrow) and tumescent 'halo' (horizontal arrow).

confirmed by observing the formation of a circumferential radiolucent halo of fluid around the vein/catheter complex (Fig. 4). A single injection at 5-cm intervals spreads along and around the GSV to achieve adequate tumescence along the whole length of the vein.

DISCUSSION

This is an alternative technique to the use of a long spinal needle employed by others. A potential disadvantage is that more injection sites may be necessary, but it is simple to perform, easily taught and quickly adopted by surgical trainees.

References

1. Min RJ, Khilnani NM. Endovenous laser ablation of varicose veins. *J Cardiovasc Surg* 2005; **46**: 395–405.
2. Agus GB, Mancini S, Magi G for the IEWG. The first 1000 cases of the Italian Endovenous-Laser Working Group (IEWG). Rationale, and long-term outcomes for the 1999–2003 period. *Int Angiol* 2006; **25**: 209–15.

Colour enhancement of black and white diagrams

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BACKGROUND

The need to produce a presentation at short notice is a regular occurrence for all doctors. Here are some simple tips on how to get the perfect picture and edit it for maximum visual impact.

TECHNIQUE

Taking the picture

If 'Google images'¹ does not provide the perfect picture, digital photographs can be taken from books, journals (referencing and gaining permission from the original authors) and hand-drawings.

- Make sure the page is flat; glossy pages give reflections
- Do not use the flash but use natural light
- If natural lighting is not available, then multiple light sources (minimum of 2) reduce reflections
- For predominantly white diagrams, overexpose the shot to give a whiter white
- Hold the camera at 90° to the page, and dodge any reflections
- Use medium zoom to reduce lens curve
- Fill the frame.

Figure 1 Digital photograph taken from: McRae R, Esser M. *Practical Fracture Treatment*, 4th edn. London: Churchill Livingstone, 2002, illustration No. 23, page 368. Reproduced with copyright permission from Elsevier.

Figure 2 Cropped picture.