Modern Management of Varicose Veins

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TRISTRAM
VASCULAR ULTRASOUND

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Multimodality treatment

- Compression stockings
- Sclerotherapy
- Ultrasound guided sclerotherapy
- Endovenous Laser
- Surgery
- Ovarian vein embolisation
- Vein Clinic
GP alternatives

- Understand treatment alternatives
- Arrange investigation (usually duplex ultrasound)
- Explain each to patient and gain an understanding of which Rx would best meet their expectations (including cost)
- Refer appropriately
  - OR

Refer to multimodality vein clinic
Indications for Treatment

- Cosmetic
- Symptomatic ache, itch, swelling
- Complications ulcer, eczema, STP, LDS
Investigations

- History
- Examination
- Ultrasound
Ultrasound

- History
- Examination

- (appropriate for those that will definitely be treated)
Symptoms (or reason for wanting treatment)
Previous treatments
History of DVT or thrombophilia
Brief medical history
Ache

- Achey veins
- Achey legs

(Be clear about expectations)
Ultrasound

- Patency, competence of deep veins
- SFJ, GSV
- GSV relation to saphenous sheath
- SPJ, SSV
- Perforators
- Extra anatomical sources of reflux (esp recurrence)
- Ovarian vein incompetence
Great Saphenous Vein
saphenous sheath
Report Examples

- Perforator 1
- Perforator 2
- 14 mm
- 10 mm
Choice of treatment - Primary vvs

- Endovenous Laser
- Surgery
- Occasionally UGS
Ultrasound guided sclerotherapy (UGS)

- Surgery
- Rarely EVLT (if GSV still present)
Development of Sclerotherapy

- “Evolutionary not revolutionary”
- Started early 20th century
- Foam described 1939
- Fegan technique 1970s NHS
- Use of ultrasound guidance 1980s-90s
Sclerotherapy

- Visible veins
- Spiders, reticular veins, varicosities
- Hypertonic (20%) saline
- Polidocanol (0.5 - 5%)
- Sodium Tetradecyl Sulphate (0.5 - 3%)
- Foam
Ultrasound guided sclerotherapy

- Possible to treat all vvs with UGS
- Foam
- Compression
- Best suited to post surgical recurrence
Recurrent varicose veins (post surgical)

- GSV not stripped
- SFJ not accurately ligated
- SSV
- Perforators
- Non axial recurrence
- Pelvic vein incompetence
- Neovascularisation
Recurrent GSV varices
Foam

- Tessari technique
- Increase effective surface area
- Displacement of blood from treated vein
- Ultrasound contrast agent
- Less dose required
- Less problems with extravasation
Ultrasound guided sclerotherapy

Pros

- Simple
- Minimal pain
- Cheapest option
- Treats bleeding veins well
Ultrasound guided sclerotherapy

Cons

- Needles
- Stocking
- Anaphylaxis
- Phlebitis
- Staining
- Recurrence
- Telangiectatic matting

Complications unpredictable

?best suited to post surgical recurrence
Pigmentation
Endovenous saphenous ablation

- Treat GSV (or SSV)
- Mainly for primary veins
- VNUS radiofrequency ablation
- Endovenous Laser (810, 940, 980, 1064, 1320, 2078 nm wavelength)
- ? Difference in pain, bruising
Common Principles

- Local anaesthetic (+/- sedation)
- Ultrasound guided approach to GSV around knee level
- Disposable kit
- Needle, guidewire, sheath (Seldinger), Diode laser
- Tumescent anaesthesia
- Ablation by continuous / intermittent pull-back
- Adjuvant sclerotherapy / phlebectomy
EVLT: Access

- Access in LONGITUDINAL
- Large calibre needle (16gauge) easy to see
EVLT Laser tip Positioning

- Laser fibre thin, but well seen
- U/S guidance: tip 1-2 cm from SFJ
Local Anaesthetic Injection Guidance

- Preparation for EVLT
- TRANSVERSE guidance is practical
- Flooding of LSV fascial envelope with local anesthetic
Local anaesthetic

- Analgesia
- Compress, spasm vein
- Heat sink
Post EVLT
Post EVLT
Comparison to stripping

- Retains abdominal wall venous drainage
- No crossectomy
- More acceptable to some patients
- No GA
Does it work?

GSV occlusion rates
Relatively short term
RFA 88% at 4 yrs (Merchant et al)
EVLT 93% at 2 yrs
?technique / energy dependent
Australasian results

Myers and Fris  MJA Aug 2006
404 veins in 308 pts
3 technical failures
21 recanalisation (minor, 11 had UGS)
Primary success 80%
Secondary u/s success 88%
Results

Dec 2003-April 2008
351 pts (502 legs)
51 SSVs
2 failed access due to STP
2 other failed access
1 failure treated by SFJ ligation
1 recanalisation, 3 minor recanalisation
No VTE
Results

Pain 0-14 days
NSAID use in 70%
10% pts took time off work beyond day of procedure
70% required adjuvant UGS
Significant STP 4 pts
Reasons for choice between EVLT and surgery

- Patient choice
- Anatomical considerations
- GA vs LA
- Needle phobia
- Repeated visits
- Large tributary veins
Anatomical considerations

GSV (or SSV)
Saphenous sheath
Large calibre tributary veins
Great Saphenous Vein
saphenous sheath
GSV not in saphenous sheath
Surgery

- Ultrasound guided
- Majority SFJ ligation GSV strip + avulsions
- Inversion strip
- Phlebectomy hooks
- Absorbable sutures
- Bandage 2/7
- No stocking
- Early mobilisation
Questions

- Which treatment is best?
- Is surgical treatment outdated?
- Which has the best long term results?
Limitations of Scientific Evaluation

- No randomised controlled trials
- Limited comparative literature
- Heterogeneous population
- Differing indications for treatment
- Differing definitions of recurrence
- Evolution of treatments
Recurrence

- Clinical
- Ultrasound
- Significant
- Recurrence of symptoms
- Recurrence of ulceration

- Significant recurrence probably occurs in 20-30% in the long term
- UGS v EVLT v Surgery
UGS Recurrence

- Anywhere between 0 - 100%
- Published figures 50% at 5yrs
- Very dependent on pt selection
• Recanalisation of GSV
• Uncommon
• Probably 5-10%
• Dependent on energy used and size of vein
Surgical Recurrence

- Most scrutinised
- U/S recurrence high
- About 20% have further treatment
- Dependent on pt selection
Higher surgical recurrence
- related to lack of stripping
- EVLT, UGS may be indicated
- sural nerve
Normal Venous Anatomy: Superficial-Deep Junctions

- Sapheno-Popliteal junction - variant
How do we treat perforators
Incompetent Perforators

• Controversial whether to treat
• 1. Primary SFJ incompetence
• 2. Deep vein incompetence
• 3. Isolated perforator incompetence (athletes)

• Surgery, SEPS, UGS
Report Examples

Diagram showing:
- Perforator 1
- Perforator 2
- Measurements of 14 mm and 10 mm
Anterior thigh circumflex vein reflux
GSV incompetence
Ovarian vein Incompetence

- Common in women (usually asymptomatic)
- Causes pelvic venous congestion
- May cause vulval vvs
- May contribute to recurrence
- May cause pelvic pain
- May cause urge incontinence
Ovarian vein Incompetence management

- Ultrasound
- ?pelvic ultrasound (TV)
- Vulval vvs usually regress
- Avulsion / sclerotherapy for veins
- Ovarian vein embolisation for selected pts
- Good results based on pt selection

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Summary

- Varicose vein management is not easy!
- Treatment options often are (if appropriate choice taken)
- Specialist vein clinics make it easy
Keep your options open!
Keep your options open!
Keep your options open!
Keep your options open!
Keep your options open!
Keep your options open!
Keep your options open!
Primary Varicose Veins

- 70% saphenofemoral + GSV incompetence
- Pelvic vein + GSV incompetence
- GSV + SSV
- SSV + CE
- Perforators
Selection for endovenous ablation

- GSV including recurrence
- Best if completely within fascial envelope
- Any size
- Small number of varicosities
- GSV reflux + spider veins ideal
- Avoid ATCV
Ultrasound guided sclerotherapy

- Differing procedures
- Assessment of recurrence (0-100%)
- Best for small calibre veins
- Foam
- Choice of sclerosant
- Stocking
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Recurrent GSV varices
Primary Varicose Veins

- EVLT for straightforward GSV reflux
- Medical comorbidities (warfarin)
- Surgery for large callibre varicosities
- ATCV varicosities
- UGS for occasional small callibre GSV
- Unusual paraxial veins
Recurrent VVs

- Surgery if large calibre recurrent / residual SFJ
- EVLT for residual GSV
- UGS for widespread small calibre recurrence
Superficial Thrombophlebitis

- Urgent ultrasound
- DVT - anticoagulate
- STP up to SFJ - urgent surgery
- STP - surgery for symptomatic (can wait)
Superficial Thrombophlebitis

- Acute
- Recanalized
- Chronic
- Phleboliths
Chronic Superficial Thrombophlebitis

- Surgery can be difficult
- EVLT - passage of wire may be difficult
- ? Good indication for UGS
CONCLUSION

- Multiple treatment modalities
- Numerous variations in vv distn
- Ultrasound is essential
- Differing treatments for differing anatomy
- In order to gain fully informed consent, you must discuss all options??