Lessons Learned: RF Ablation
Barrie Price

Aim of treatment

1) Stop truncal reflux
2) Prevent recurrence of truncal reflux
Stripping replaced by Thermoabrasion NICE CG168

Hypothesis – Thermoablation

1999 – Original VNUS RFA

Bipolar RFA

Originaly:
- 70 degrees Centigrade for "Collage Contraction"
  - (Thermocouple)
- External Compression
- Very slow pull back
  - (20 sec/cm)

1999 – Original VNUS RFA

- Ultrasound guided insertion and placement
- Flush position at SFJ

Disclosures:

- None
1999 – Original VNUS RFA
- Under GA – Eshmark compression
- Retreat if not closed

Lessons learned:
- Wall contact required
- Eshmark bandage
- Transmural death needed to avoid thrombosis and recanalization
  - (Not Collagen Contraction at 70°C)

Local Anaesthetic Tumescence – within Saphenous Fascia
- Anaesthesia
- Contraction (wall contact)
- Heat Sink

LEED = Power x pull back in sec / cm

LEED = J / sec x cm / sec
LEED = J / sec x sec / cm
LEED = J / cm

80 J/cm Optimial
Low LEED is Inadequate

Normal LEED = 72 J/cm

High power – fast pull back
- Carbonization
- Inadequate thermal spread

Effect of pull back speed on LEED

LEED 18 20 60 72 72 72
Thermal spread from device (mm)

Power (Watts), Pull-back speed (sec/cm)

Confirmed in Human GSV (ex vivo)

LEED 72 J/cm 18 W 4 Sec/cm

LEED 72 J/cm 6 W 12 Sec/cm

Effect of pull back speed

Control GSV

Segmental RFA

- Easier
- But:
  - Less flexibility of:
    - Treatment schedules
    - Veins segments
    - Power levels

Lessons Learned with Radiofrequency:

- Need:
  - Contact with wall
  - Use LEED to measure adequate treatment
  - Adequate treatment time
- No neovascular tissue
- Can close incompetent perforators
  - (with right device)

Conclusion

TRLOP Closure of Perforators

Five-year results of incompetent perforator vein closure using Transluminal Oclusion of Perforator
