Management of Side Branches and Perforating Veins

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Disclosures

Consultant Medi Bayreuth

Presentations Bayer, Aspen
Development of Endovenous Thermal Ablation of Perforating Veins

- 1998 CE mark for radiofrequency ablation (RFA)
- 1999 CE mark for endovenous laserablation (ELA)
- 2009 first publication about RFA stylets
- 2009 first publication about ELA in perforating veins
Ablation of IPV with RFA

- Retrospective case series, follow up 5 years after initial treatment

- Follow up 55%

- Occlusion rate 81% (n=101/125)

- 14 new IPV
van den Bos RR, Wentel T, Neumann MH, Nijsten T. Treatment of incompetent perforating veins using the radiofrequency ablation stylet: a pilot study Phlebology 2009; 24: 208-212

Ablation of IPV with RFA

- Treatment of 14 IPV with RFA stylet
- Occlusion rate 3 m postoperatively 68%
Observational study in 48 ablation procedures in 93 IPV

- Mean diameter 3.8 ± 1.1 mm

- 11 (11.8%) IPV remained patent

- Age, prior GSV ablation, IPV diameter, and C class didn't have an influence on occlusion, only pulsatile flow in the IPV (p<0.001)
Ablation of IPV with ELT

- Occclusion of 6 of 7 IPV with 50-60 J
- Follow up 4 weeks
Ablation of IPV with ELT

- Treatment of 58 IPV in 33 legs with 810 nm laser
- Occlusion rate 78% 3 months postoperatively
- 4 of 5 ulcer healed after 6 months
Observational study in 13 patients, 16 limbs and 24 treated IPV

Average Energy 174 J (105-236 J)

2 patients with local paresthesias

4 of 5 ulcers healed within 8 weeks

Occlusion rate 86.9% at 12 months follow up

Dumantepe M, Trahan A, Yurdakul I, Ozler A  Endovenous laser ablation of incompetent perforating veins with 1470 nm, 400 µm radial fiber
Photomed Laser Surg 2012; 30: 672-677
Summary

- RFA and ELT are feasible to treat IPV
- Ulcers seem to heal faster
- Occlusion rates are acceptable and vary between 68 and 88%
Percutaneous Perforator Interruption
Review 4 RCT’s and case series

After Ablation of the GSV alone there was a significant reduction of IPV

In 2 RCT’s the additional ligation of IPV showed no additional benefit in comparison to compression alone

Case series showed little effect on the addition of IPV treatment to GSV stripping

O’Donnel TF The present status of surgery of the superficial venous system in the management of venous ulcer and the evidence for the role of perforator interruption J Vasc Surg 2008; 48: 1044-1052
Question

Is it necessary to treat IPV?
Stab Avulsion of Side Branches
Treatment of side branches with transilluminated powered phlebectomy (TIPP)

- Retrospective case series with 339 patients

- Perioperative complications

  → Pigmentation 2,3%
  → Hypertrophic scarring 0,6%
  → Inflammation 0,3%
  → DVT 0,3%

- Patients were satisfied with the results 12 weeks postoperatively
Treatment of side branches with TIPP

- Comparison of 56 pat. after TIPP vs. 52 pat. after miniphlebectomy
- Time of treatment after TIPP significant shorter (p<0.0001)
- Number of incisions significant less (p<0.0001)
- Pain and cosmetic results comparable in both groups
With the shift of combined operative vein approaches for concomitant saphenous vein insufficiency and varicose tributary veins towards "minimally invasive" techniques the overall complication rate has remained unchanged. While combined endovenous ablation-transilluminated phlebectomy offers some advantage of "less" invasiveness, this perceived benefit should be balanced against unchanged overall risk over traditional operative approaches.
Liu P\textsuperscript{1}, Ren S, Yang Y, Liu J, Ye Z, Lin F

Intravenous catheter-guided laser ablation: a novel alternative for branch varicose veins.


- 89 limbs in 74 patients were treated with laser ablation. The residual tortuous veins were abolished with the intravenous catheter-guided laser ablation (ICLA group), whereas residual varicose veins in 81 limbs in 60 patients were treated by stab avulsion (SA group). Patients were followed up with the median of 44.5 months after surgery. The outcomes and durability of treatment in both groups were evaluated. The primary end point was recurrence of varicose veins. In comparison with the SA group, patients in the ICLA group had fewer surgical incisions and morbidity, a shorter hospital stay, and returned to normal activity earlier. The overall 5-year recurrence of varicose veins was infrequent in the ICLA group but was much higher in the SA group (5.4\% versus 20\%, \(P = 0.022\)). ICLA provided better outcomes than conventional SA in managing the branched varicose veins and may be an alternative for the treatment of branch varicose veins.
Different Hooks for Miniphlebectomy
Summary

- The results of minimally invasive techniques and miniphlebectomy for the treatment of side branches are comparable.
- TIPP is associated with a high rate of pigmentation.
- The effort and costs of minimally invasive techniques are much higher.
- Therefore we don't see an advantage for minimally invasive techniques treating side branches, don't forget sclerotherapy.
Thank You Very Much for Your Attention

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