Treatment of accessory and non-saphenous veins

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Faculty Disclosure
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1. Research grant support
   AngioDynamics, Covidien, Sapheon, Vascular Insights

2. Managing Partner
   Vascular Device Partners, LLC
Great saphenous vein anatomy
Pitfalls

- Failure to recognize anatomic variability.
- Failure to correlate duplex to the clinical exam.
Common patterns of VV

GSV  Pudendal  Dodd  Giacomini
Surgical failures:

Imaging will identify the refluxing vein causing varicosis.
Great Saphenous Incompetence
The great saphenous vein (GSV) is the most common source of superficial venous reflux occurring in up to 70% of patients presenting with symptomatic varicose veins and venous insufficiency.

SSV Insertions

- 60%
- 30%
- 10%
Up to 20% of patients with varicose veins have incompetence of the SSV.

Isolated AAGSV reflux occurs in approximately 10% of patients with symptomatic varicose veins.

33 patients who underwent EVLT of the AAGSV had no recanalization of the treated vein at 1 year.

Patient-satisfaction scores 84%
Developments in Endovascular and Endoscopic Surgery

Radiofrequency Ablation and Laser Ablation in the Treatment of Varicose Veins

Jose I. Almeida, MD, FACS, RVT,1,2 and Jeffrey K. Raines, PhD, RVT,1,2 Miami, Florida

Table II. Distribution of treated veins

<table>
<thead>
<tr>
<th>Device</th>
<th>GSV</th>
<th>AASV</th>
<th>PTCV</th>
<th>SSV</th>
<th>SVR</th>
<th>Perforator</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF</td>
<td>95</td>
<td>21</td>
<td>-</td>
<td>11</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>810 nm laser</td>
<td>17</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>940 nm laser</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>980 nm laser</td>
<td>460</td>
<td>125</td>
<td>7</td>
<td>104</td>
<td>96</td>
<td>2</td>
</tr>
<tr>
<td>1,320 nm laser</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>578</td>
<td>146</td>
<td>7</td>
<td>115</td>
<td>99</td>
<td>2</td>
</tr>
</tbody>
</table>

Dual vein ablations, n = 46; triple vein ablations, n = 2; quadruple vein ablations, n = 1. GSV, great saphenous vein; AASV, anterior accessory saphenous vein; PTCV, posterior thigh circumflex vein; SSV, small saphenous vein; SVR, saphenous vein remnant.
Dual GSV and AASV reflux
Dual ablation
Multiple vein treatment

ATCV
AAGSV
GSV
PTCV
PAGSV

Multiple vein treatment
Superficial Accessory SV

Risk of thermal injury

Images courtesy of Olivier Pichot, MD
Post-op staining from epifascial GSV
Re-entry via inter-saphenous connections
Perforators

- Hunterian PV
- Dodd PV
- Boyd PV
- Cockett PV

- Mid thigh (Hunterian) perforator insufficiency
- Competent Dodd perforating vein
- Boyd perforator insufficiency

Drawing courtesy of Olivier Pichot, MD
Table II. The pooled proportion of successful endovenous laser ablation (EVLA) and radiofrequency ablation (RFA) per time intervals

<table>
<thead>
<tr>
<th>Type of intervention</th>
<th>Success rate (5 year)</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgery</td>
<td>80.7 (%)</td>
<td>67.9-82.1</td>
</tr>
<tr>
<td>UGFS</td>
<td>75.7 (%)</td>
<td>62.8-82.1</td>
</tr>
<tr>
<td>RFA</td>
<td>73.5 (%)</td>
<td>59.5-91.5</td>
</tr>
<tr>
<td>EVLA</td>
<td>95.4 (%)</td>
<td>79.7-99.1</td>
</tr>
</tbody>
</table>

CI, Confidence intervals; EVLA, endovenous laser ablation; RFA, radiofrequency ablation; UGFS, ultragluteal foam sclerotherapy.
case 1
LADS- laser assisted distal saphenectomy

GSV in canal

Dermal GSV (sasv)
LADS- laser assisted distal saphenectomy
LADS- laser assisted distal saphenectomy
case 2
Recurrent VV s/p saphenectomy

EVL AASV

Foam

EVL straight remnant
EVL versatility: *fits through micropuncture*
RF 7cm long heating element limits short length veins
case 3
Klippel-Trenauney Syndrome

- Pain & non-healing ulcer
- Normal deep venogram
ELT of KTS- 6 superficial axial veins closed over 1 year period, followed by sclerofoam.

Now 9 years, UGS once a quarter
Conclusion:

MAP correctly, & you won’t go astray

Thank you!