Cyanoacrylate Closure for the Treatment of Venous insufficiency

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Chronic Venous Insufficiency (CVI)

- **Prevalence**
  - Varicose veins: 10-30%
  - Ulcers: Lifetime risk 1-5%

- **Symptoms**
  - Varicose and reticular veins
  - Edema
  - Pain
  - Hyperpigmentation/Atrophy
  - Ulcerations
Historical Treatment Options

- Surgical Stripping & Ligation
- Ambulatory Phlebectomy
- Thermal Ablation
  - Endovenous Laser Ablation (EVLA)
  - Radiofrequency Ablation (RFA)
- Sclerotherapy
- Mechanical Sclerotherapy (Clarivein™* catheter)
- Endovenous Steam Ablation (EVSA)
A Randomized Trial of Early Endovenous Ablation in Venous Ulceration

Hazard ratio for ulcer healing, 1.38 (95% CI, 1.13–1.68)
P=0.001
Potential Advantages of CAC

1. No risk of thermal injury.
2. Eliminates need for tumescent anesthesia.
3. Rapid return to normal activities.
4. No post treatment compression stockings needed.
5. No capital equipment.

3. Morrison et al, Randomized trail comparing cyanoacrylate embolization and radiofrequency ablation for incompetent great saphenous veins (VeClose) JVS April 2015: 61;4 pg. 985-994
4. Gibson, K WAVES trial one month; Vascular News August 12, 2016
<table>
<thead>
<tr>
<th>Study Design</th>
<th>Patients</th>
<th>Defined Treatment Success</th>
<th>Closure Rates</th>
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<tbody>
<tr>
<td>Feasibility Study</td>
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<tr>
<td>First In Human¹</td>
<td>38</td>
<td>No discrete segment of patency &gt; 5 cm in the treated vein segment</td>
<td>94.7% 94.7%</td>
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<td>94.7%</td>
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<tr>
<td>eSCOPE</td>
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<tr>
<td>European Multicenter Study²</td>
<td>70</td>
<td>No discrete segment of patency &gt; 10 cm in the treated vein segment</td>
<td>90% 88.5%</td>
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<td>88.5%</td>
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<tr>
<td>VeClose</td>
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<tr>
<td>Randomized Controlled Trial³</td>
<td>242</td>
<td>No discrete segment of patency &gt; 5 cm in the treated vein segment</td>
<td>96.8% vs. 95%</td>
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<td>94% 94.4%</td>
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2 The European Multicenter Study on Cyanoacrylate Embolization of Refluxing Great Saphenous Veins without Tumescent Anesthesia and without Compression Therapy. Results presented at: Charing Cross; 2016; London, UK.
3 Morrison, N. VenaSeal Closure System vs. Radiofrequency Ablation for Incompetent Great Saphenous Veins (VeClose). 36 Month Results presented at: IVC; April 20, 2017; Miami, FL
The case

• 56 yo male presenting with bilateral lower extremity edema
  • Varicose, reticular and spider veins
  • Hyperpigmentation with mild atrophy at the medial aspect of the left ankle
  • Bilateral GSV reflux > 4 seconds
    • 0.55 cm on the right
    • 0.60 cm on the left

• Symptoms persisted but did not improve after 3 months of conservative treatment
  • Compression stockings (knee high; 20-30 mmHg)
  • Leg elevation
  • Calf pump exercises
  • Weight loss
Proximal Measuring Point SFJ
Using transverse ultrasound plane, position the ultrasound transducer just cephalad to the catheter tip (which is 5 cm from SFJ) and apply adequate pressure to compress the GSV near the SFJ.