Mechanochemical Ablation: The Five-Year Outcome Of A Prospective Trial On 100 Patients With GSV Incompetence

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Mechanochemical ablation

- Tumescent free alternative for endothermal ablation
- Combination of mechanical and chemical damage to the vein wall
  - Mechanical: rotating wire (1,500 rpm) → cellular damage to intimal layer and spasm of the vein
  - Pharmacotherapy: sclerosants penetrating the vessel wall → obliteration

Disclosures

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- Endologix Inc.
- W.L. Gore and associates
- Vascular Insights LLC

Mechanochemical endovenous ablation – MOCA™

Early outcome

## Early outcome

**Mechanochemical endovenous ablation – MOCA™**

<table>
<thead>
<tr>
<th>Study design</th>
<th>Population</th>
<th>Total</th>
<th>GS V</th>
<th>SSV</th>
<th>Female</th>
<th>C2 (36.2%)</th>
<th>C3 (34.0%)</th>
<th>C4 (25.5%)</th>
<th>C5 (2.1%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCT</td>
<td>30</td>
<td>50</td>
<td>30</td>
<td>0</td>
<td>63%</td>
<td>13%</td>
<td>34%</td>
<td>25%</td>
<td>2%</td>
</tr>
</tbody>
</table>

### Technical success, %
- 100
- 100
- 99
- 100
- n/a

### Anatomical success, n (%)

<table>
<thead>
<tr>
<th>Time</th>
<th>6 months</th>
<th>1 year</th>
<th>2 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical</td>
<td>96%</td>
<td>94%</td>
<td>95%</td>
</tr>
<tr>
<td>Anatomical</td>
<td>n/a</td>
<td>n/a</td>
<td>92%</td>
</tr>
</tbody>
</table>

### VCSS
- 3 → 1
- 4 → 1
- 9, 5 → 3

### Major complications
- n/a

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**Mechanochemical endovenous ablation – MOCA™ treatment protocol**

- Patient in horizontal position
- Start rotating first to create spasm
- Pullback rate of 7 sec per cm
- The proximal 10 cm was treated with 2 mL of polidocanol 2% and the remaining vein with polidocanol 1.5%
- Compression stockings first 24 hrs continuously and 2 weeks during daytime
- Full activity immediately

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**Mechanochemical endovenous ablation – MOCA™ 5-year outcome**

- 113 GSVs treated in 94 patients in two centers
- Previous ipsilateral varicose treatment 13%
- Female 63%
- Clinical classification C2 (16.2%) C3 (14.0%) C4 (25.5%) C5 (2.1%)
- VCSS 4.0 (IQR 3.0 - 5.0)
- Diameter GSVs 5.5 mm (IQR 5.0 - 7.0 mm)
- Treated segment 45 cm (IQR 39 - 50 cm)
- Procedural time 11 (IQR 10-14) min
- Technical success 99.1%

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**Mechanochemical endovenous ablation – MOCA™ 5-year outcome – preliminary data**

- Re canalization occurred in 20 veins (34.7%)
- 6 re-interventions on the treated segment
- Time to failure: 18 months (range 7 - 72 months)
- Recanalization length: 15 cm (range 8-38 cm)

### Additional venous treatments during follow-up in 44 patients (46.8%), and another 7 scheduled
- Ipsilateral: 8 (5-18 months)
- Contralateral: 3 (1-11 months)
- Bilateral: 5.5 (5-15.5 months)

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**Mechanochemical endovenous ablation – MOCA™ 5-year outcome – preliminary data**

- VCSS significantly improved compared to baseline on all time points;
- VCSS deteriorated from 3 years though 5 years follow-up, but still better compared to baseline.
• AVVQ improved at all time points compared to baseline
• After one-year worsening of AVVQ score; indication of progression of disease/recurrence?

Summary

• MOCA has proven to be safe and effective at the short-term
• Through five-year follow-up there are a significant number of anatomical and clinical failures in this series and many patients require additional treatment
• The current series was the first large prospective trial after introduction of the technique
  • Early in the learning curve
  • Evolution in technique
  • Polidocanol versus Sotradecol
• Better results can be expected in later studies