Deep Venous Valve Treatment: When And Why?

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Why are Deep Veins Important?

- Rhythmic closure and opening of the valves act in concert with pulsatile venous flow. This mechanism prevents blood slits inside the valve pockets. Valve incompetence gives rise to low shear areas, deposition of thrombotic valves, predisposing to DVT.
- Deep Vein Valve incompetence leads to increased volume reflux & severity of CVI.
- Surgery of superficial venous systems, in the presence of deep venous reflux, leads to poor healing of venous ulcers in >70% of patients.

Venous Ulcers

C5/6

50% Successfully treated by superficial/perforator reflux ablation

50%

50%

have mixed deep obstructive/insufficiency

will have long-term healing after correction of obstruction

60-70%

Venous Valve Reconstruction

Indications for Deep Vein Reconstructions

Reflux

- Severe Deep venous reflux - Grade III/IV (venogram) + Valve closure time > 3 secs. (Standing Duplex with Valsalva)
- Failure of Conservative Therapy (> 3 months) – Class II/III compression stockings + Daflon
- Previous Superficial or perforator vein surgery(ies) with no current duplex recorded superficial or perforator incompetence
- Open surgical demonstration of a repairable, refluxive valve

“Reefing” - mainstay of valve repair

Neovalve

Maleti Neovalve

a. Creation of subintimal pocket valve

b. Completed Monocuspid valve
World Wide Experience with Valvuloplasty

<table>
<thead>
<tr>
<th>Investigator</th>
<th>Limbs</th>
<th>Ulcer Healing (%)</th>
<th>Follow-up (yrs)</th>
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</thead>
<tbody>
<tr>
<td>Eriksson</td>
<td>19</td>
<td>85</td>
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<td>Kistner</td>
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Reduction internal valvuloplasty is a new technical improvement on plication internal valvuloplasty for primary deep vein valvular incompetence

Fig 1. A, Intervalval distance. B, Transcutaneous diameter.

Reducing incision in high shear areas
Conclusion

• Deep Vein pathology is important and should be thoroughly investigated.

• Surgical and Endovascular Techniques for deep venous reconstruction are improving

• These should be in the armamentarium of a vascular surgeon caring for patients with lower limb venous ulceration.