Current Issues: Perforator Vein Treatment

or

“I wish I knew what I know now, when I was younger, Ooh La La” *

Steve Elias MD FACS FACPh
Director, Center for Vein Disease
Director, Wound Healing Center
Englewood Hospital and Medical Center NJ


Real Perforators

US Duplex View

Rule # 1

• IPV vs. PPV
• Reflux > .5 secs.
• >3.5 mm at fascia
• In area of ulcer/previous ulcer
• C5, C6 and some C4

• IPV – reflux > .5 secs. In C1 – C3

Rule # 2

• C1 – C3 – IPV not PPV
• C4 – IPV or PPV
• C5 – C6 - PPV

Rule # 3

• Almost never ablate an IPV
• Almost always ablate a PPV
2015: How We Got Here


SVS/AVF Guideline 6.5
Superficial/Perforator Reflux and Ulcer

- PPV
- “We suggest ablation of both the incompetent superficial veins and the perforator veins, as well as compressive therapy to aid in ulcer healing and recurrence.”
- GRADE 2 C

SVS/AVF Guideline 6.6
Superficial/Perforator Reflux and Skin Changes at Risk for Ulcer (C4b) or Healed Ulcer (C5)

- PPV
- “We suggest ablation of the incompetent superficial veins to prevent ulcer development or recurrence”
- “Perforator ablation can be performed simultaneously or staged if still incompetent on re-evaluation”
- GRADE 2 C

Additional Reasons: INDIVIDUALIZE

- Thigh IPV – source of recurrent VV
- Calf IPV – source of pain
- IPV Anywhere – source of bleed esp. ankle area
- Not in C2 (VV) patients routinely

SVS/AVF Guideline 6.8
Treatment Alternatives for PPV

- “We recommend treatment by percutaneous techniques (PAPS) over open venous surgery” (GRADE 2B)
- Dutch SEPS subset analysis: longer ulcer free interval with PPV treatment
- Dutch SEPS >50% missed PPV
- PAPS – US guided, less missed PPV

PPV Treatment Choices 2015

- Open ligation or SEPS -2nd choice
- PAPS – Laser, RF, PEM, MOCA
- Local anesthesia, US guided, repeatable
- Success rates – vary 70% – 90%
PAPS: THE ACRONYM

- Percutaneous
- Ablation of
- PerforatorS

PAPS has replaced SEPS

*Elias S. The New Perforator Algorithm, JVC Apr. 2006, Miami FL.

Procedural TIPS

- Better with 2 people – one visualize, one treats (luxury)
- Best US machine, best tech, high frequency probe
- Anatomic course variable – curves, length, angles
- Multiple scanning angles
- Take what the perforator gives you
- Largest, most pathologic first – nearest to ulcer

Plan of Attack*

- Everything set up before access
- Laser fiber or RF plugged in and ready to use
- MOCA ready to go
- Glasses on (laser)
- Tumesence ready
- Small vessel even when pathologic (4.8mm series of 50 PPV*)


Access and TREATMENT choices

- 21 gauge needle – laser 400 micron fiber
- Micropuncture kit (21 g/4Fr sheath) – laser, MOCA
- RFS Catheter – RF
- 27 gauge needle – USG Foam

RFS catheter

PAPS Laser Kit
PAPS Laser Kit: 400 micron fiber

PAPS Laser

Access Locations

• Just below or at fascia level

• Treat 2-3 levels or 3-5 mm. (longer better but not always possible). Spot weld usually

• Foam – inject VV in area of ulcer leading to PPV and foam flows into PPV (safer than direct PPV access - artery)

• Less (no) risk of arterial sequelae with laser/Rf/MOCA

Access level
Technique* - Best duplex possible

- **Treat** – 2-3 segments approx. 1-2 mm apart
- **RF** - 85 C, 60sec/quadrant, 4min,12min
- **Laser** – Pulsed 5 sec/15 W, 75 joules, 225 joules
- **MOCA** – 1 cc 1.5% STD liquid


*Lawrence, PF et al. Endovenous Ablation of incompetent perforating veins is effective treatment for recalcitrant venous. JVS 2011;54:737-742.

---

Post PAPS Changes – US

Post PAPS Changes - Duplex

TREATED Perforators

---

Personal Bias: Order of preference

- **Laser** – multiple PPV, 21 g. needle, 400 micron fiber
- **MOCA** – straight PPV, 4Fr sheath, 1cc 1.5% STD
- **Foam** – VV leading to PPV, 27 gauge, avoids artery
- **RF** - as laser but presently needs improvement


---

Summary 2015

- **Ulcers** – Do it all at once
- **Healed/Pending Ulcer** – Dealers choice
- **Varicose Veins** – Don’t do it (almost never)
- **Issues** – Re-entry IPV, 3rd party payors
“But I’m just a soul whose intentions are good. Oh Lord! please don’t let me be misunderstood”

Benjamin B. *Don’t Let Me Be Misunderstood*: The Animals. MGM Records 1965