Efficacy of endovascular therapy for treating pelvic congestion syndrome

Mark Whiteley
Disclosures:

- Educational Grant: Vascular Insights
- Consultant for Angiodynamics
Pelvic Vein Pathology

- Confusion as to “Congestion”
  - Obstruction
  - Reflux
Pelvic Congestion Syndrome

Symptoms include:
- Irritable bladder
- Irritable bowel
- Deep dyspareunia
- Dragging in pelvis

Worse at time of menses
Varicose Veins of Vulva
Varicose Veins of Legs
Efficacy of endovascular therapy ...

- **Efficacy:**
  - “the ability to produce a desired or intended result”

- **Clinical ??**

- **Haemodynamic / Anatomic ??**
Clinical results:

- 14 (66.7%) some improvement at 9 months
- 9 (42.9%) underwent 2nd procedure
  - Total 16 (76.2%) improvement
Investigation of PVR

- Laparoscopy!
- Venography
- MRI / MRV
- CT
- Transabdominal Duplex Ultrasound
- Transvaginal Duplex Ultrasound
Investigation of PVR

- Laparoscopy
  - Unable to see much of venous trunks
  - No functional information
Investigation of PVR

- Venography / MRI / MRV / CT
  - Size of veins > 8mm
  - Poor functional information
  - Only see veins with contrast flow in
  - Usually lying flat
Investigation of PVR

Ovarian Vein Diameter Cannot Be Used as an Indicator of Ovarian Venous Reflux

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Investigation of PVR

Size vs. Reflux

Diameter (mm)

Non-Refluxing
Refluxing
Investigation of PVR
Investigation of PVR

- Trans-abdominal Duplex Ultrasound
  - Physiological reflux seen
  - In slim patients can see truncal veins
  - Cannot see communication with vulval veins, haemorrhoids, exit points of pelvis

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Vascular and Lymphatic Disorders

The role of duplex ultrasound in the workup of pelvic congestion syndrome

Rafael D. Malgor, MD, Demetri Adrahtas, MD, Georgios Spentzouris, MD, Antonios P. Gasparis, MD, Apostolos K. Tassiopoulos, MD, and Nicos Labropoulos, RVT, DIC, PhD, Stony Brook, NY
Investigation of PVR

- Transvaginal Duplex Ultrasound (TVS)
  - Physiological reflux seen
  - Can see truncal veins and communication with vulva, haemorrhoids and can trace to exit points
  - Restricted to females
TVS – Left Ovarian Vein Reflux
TVS – Left Varicocele in Labial Veins
Investigation of PVR

Phlebology OnlineFirst, published on October 16, 2014 as doi:10.1177/0268355514554638

Original Article

**Transvaginal duplex ultrasonography appears to be the gold standard investigation for the haemodynamic evaluation of pelvic venous reflux in the ovarian and internal iliac veins in women**

MS Whiteley\textsuperscript{1,2}, SJ Dos Santos\textsuperscript{1,2}, CC Harrison\textsuperscript{1}, JM Holdstock\textsuperscript{1} and AJ Lopez\textsuperscript{3}
### TVS v Outcome

<table>
<thead>
<tr>
<th>Diagnosis by TVS</th>
<th>Assessment by outcome of embolisation treatment</th>
<th>Predictive values of TVS</th>
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</thead>
<tbody>
<tr>
<td>Positive (reflux present) 289</td>
<td>True Positive 288</td>
<td>False Positive 1</td>
</tr>
<tr>
<td>Negative (no reflux) 111</td>
<td>False Negative 0</td>
<td>True Negative 111</td>
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<table>
<thead>
<tr>
<th>N = 400</th>
<th>Sensitivity / specificity of TVS</th>
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<tr>
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<td>Sensitivity 100%</td>
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Assessment by outcome of embolisation treatment:
- Reflux treated with reduction of reflux 288
- No treatment / over-treatment no residual reflux 112

Predictive values of TVS:
- PPV 99.7%
- NPV 100%
- Sensitivity 100%
- Specificity 99.1%
No IIv Reflux
Good immediate results with coils (Haemodynamic / Anatomic)

DOI 10.1007/s00270-008-9402-9

Clinical Investigation

Pelvic Vein Embolisation in the Management of Varicose Veins

Lakshmi A. Ratnam · Petra Marsh · Judy M. Holdstock ·
Charmaine S. Harrison · Fuad F. Hussain ·
Mark S. Whiteley · Anthony Lopez

- 218 patients
  - 16 mild reflux
  - 6 reflux (significant)
  - 3 new reflux
28 patients
- 4 significant reflux at 6–8 years
  - 1 of these had subsequent pregnancy
Subsequent pregnancy (Haemodynamic / Anatomic)

The effect of a subsequent pregnancy after transjugular coil embolisation for pelvic vein reflux

Scott J Dos Santos¹,², Judy M Holdstock¹, Charmaine C Harrison¹ and Mark S Whiteley¹,²

- 8 patients
  - 5 out of 8 new truncal reflux
  - BUT no coil migration
Embolization is not essential in the treatment of leg varices due to pelvic venous insufficiency

E Rabe¹ and F Pannier²

- Based on 1 case report and 1 short term study only
- Studies on foam in larger veins show poor long term occlusion
- Likely to be wrong in medium to long term
Conclusion

- Efficacy depends on accurate diagnosis of reflux
  - TVS using Holdstock protocol currently gold standard

- **Haemodynamic / anatomical efficacy proven for coils in short and long term**

- Foam – only weak evidence and only short term

- Clinical studies need to be based on standardised imaging and treatment to produce reliable figures.
Efficacy of endovascular therapy for treating pelvic congestion syndrome

Mark Whiteley