Pelvic Varices Are Best Studied With Trans-Vaginal Duplex Ultrasound

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Disclosure
Speaker name:
Mark S Whiteley
✓ I have the following potential conflicts of interest to report:
✓ Receipt of grants/research support
✓ Receipt of honoraria and travel support
✓ Participation in a company sponsored speakers’ bureau
✓ Employment in industry
✓ Shareholder in a healthcare company
✓ Owner of a healthcare company
✓ I do not have any potential conflict of interest

Symptoms include:
◦ Irritable bladder
◦ Irritable bowel
◦ Deep dyspareunia
◦ Dragging in pelvis
◦ Worse at time of menses

Pelvic Congestion Syndrome

Pelvic Vein Pathology

Confusion as to “Congestion”
◦ Obstruction < 1% Clinically unsuspected
◦ Reflux

Varicose Veins of Legs

Varicose Veins of Vulva
1 in 5 (20%) women with vaginal delivery and leg varicose veins, have a contribution from PVR

1 in 7 (14%) all women


Group 4 (n=111)

<table>
<thead>
<tr>
<th>Neovascular tissue</th>
<th>63</th>
<th>56.8%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pelvic veins</td>
<td>37</td>
<td>33.3%</td>
</tr>
<tr>
<td>Incompetent Perforating Veins (IPV)</td>
<td>36</td>
<td>32.4%</td>
</tr>
<tr>
<td>Missed or &quot;de novo&quot; vein reflux</td>
<td>35</td>
<td>31.5%</td>
</tr>
<tr>
<td>Inadequate operation</td>
<td>12</td>
<td>10.8%</td>
</tr>
<tr>
<td>Previously untreated veins</td>
<td>7</td>
<td>6.3%</td>
</tr>
</tbody>
</table>

Females with children no hysterectomy:

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

Laparoscopy

- Unable to see much of venous trunks
- No functional information

Ovarian vein diameter v reflux

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

Laparoscopy

- Unable to see much of venous trunks
- No functional information
Reflux can be seen
In slim patients can see truncal veins
But cannot see:
- communication with vulval veins
- peri-urethral veins
- exit points of pelvis

Transvaginal Duplex Ultrasound (TVS)
- Physiological reflux seen
- Can see truncal veins and communication with vulva, peri-urethral veins, haemorrhoids and can trace to exit points
- BUT:
  - Restricted to consenting females

Investigation of PVR
- Transvaginal Duplex Ultrasound (TVS)
  - Physiological reflux seen
  - Can see truncal veins and communication with vulva, peri-urethral veins, haemorrhoids and can trace to exit points
  - BUT:
    - Restricted to consenting females
Assessment by outcome of embolisation treatment

<table>
<thead>
<tr>
<th>No treatment / over-treatment no residual reflux</th>
<th>N = 112</th>
</tr>
</thead>
<tbody>
<tr>
<td>True Negative</td>
<td>111</td>
</tr>
<tr>
<td>False Negative</td>
<td>1</td>
</tr>
</tbody>
</table>

Sensitivity / specificity of TVS

- Sensitivity: 100%
- Specificity: 99.1%

Diagnosis by TVS

<table>
<thead>
<tr>
<th>Positive (reflux present)</th>
<th>True Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>False Positive</td>
<td>288</td>
</tr>
<tr>
<td>Negative (no reflux)</td>
<td>111</td>
</tr>
<tr>
<td>False Negative</td>
<td>0</td>
</tr>
</tbody>
</table>

Reflux treated with reduction of reflux

- N: 400
- True Positive: 288
- False Positive: 1
- True Negative: 111
- False Negative: 0

Positive values of TVS

- PPV: 99.7%
- NPV: 100%

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 Whitlock, S JDas Santos, CC Harrison, JM Hulstink and AJ Lopez

Distribution of PVR
Pelvic Varices Are Best Studied With Trans-Vaginal Duplex Ultrasound

BUT Need to exclude:
- May-Thurner Syndrome / NIVL
- Nut-Cracker Syndrome
- Although occurred in clinically unsuspected < 1% of our patients
- Also? In men or women when TVS not possible?

Conclusion

No IVR Reflux

Conclusion

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