Inflow to CFV: CDUS, IVUS, CTV, MRV.

No Disclosures

Why does inflow to the CFV matter?

Although the CFV is the common entry point for blood from the lower extremity, this only assumes real significance in planning revascularisation of post thrombotic patients

The areas affected by acute deep vein thrombosis will be those areas most likely to scar and narrow down
Whichever technique you use for identification of CFV inflow it needs to be:

- Reproducible
- Reliable
- Readily understandable by users
- Applicable in most patients
- In common use
- Must produce diagnostic axial images

<table>
<thead>
<tr>
<th>Imaging Modality</th>
<th>Reliable</th>
<th>Reproducible</th>
<th>Commonly available</th>
<th>Widely applicable</th>
<th>Diagnostic axial images</th>
<th>Risks?</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDUS</td>
<td>Yes, takes skill</td>
<td>Operator dependent</td>
<td>Yes</td>
<td>Yes</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Indirect CTV</td>
<td>?</td>
<td>yes</td>
<td>yes</td>
<td>?</td>
<td>Radiation Contrast</td>
<td></td>
</tr>
<tr>
<td>Direct CTV</td>
<td>yes</td>
<td>yes</td>
<td>?</td>
<td>yes</td>
<td>Radiation Contrast</td>
<td></td>
</tr>
<tr>
<td>MRV</td>
<td>yes</td>
<td>?</td>
<td>yes</td>
<td>yes</td>
<td>Yes Pacemakers etc</td>
<td></td>
</tr>
<tr>
<td>Venography</td>
<td>?</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>Radiation Contrast</td>
</tr>
<tr>
<td>IVUS</td>
<td>yes</td>
<td>yes</td>
<td>Should be!</td>
<td>yes</td>
<td>Yes, the best</td>
<td>Invasive</td>
</tr>
</tbody>
</table>

An illustrative case

- 28 year old female
- Left ilio-femoral DVT in pregnancy
- IVC filter placed then
- Treated conservatively until delivery
- Attempted thrombolysis at 7 weeks

Post Thrombolysis
Not stented
GOOD decision NOT to stent (given terrible inflow)
Anticoagulated

- Left leg venous swelling
- Poor exercise tolerance
- Referred for venograms, CDUS and CT abdomen over the next 3 years

Indirect CTV at 6 months
Left CIV looks OK
Left EIV maybe slightly small compared with the right

Left leg venogram at 3 years

Persistent unremitting symptoms

- Left leg heavier than the right
- Couldn’t wear skinny jeans
- Had to buy a larger sized boot for her left leg
- Left leg heavy/stiff useless after 50 m
- Has gradually put on 5-8kg
- Referred to Galway
- Direct CTV
Note significant left iliac vein compression syndrome by overlying right common iliac artery

Normal Direct CTV correct??
Note
1- the effect of windowing
2- synechiae in CIV CFV PFV

Clearly abnormal

- SO WHAT??????
- It is important because it should influence you access point!!
- Where to puncture
  - R IJV/R CFV/L PFV
  - **NOT** L CFV
  - L Popliteal Vein is OK if you can definitely get into PFV from ipsilateral popliteal access

Inflow to CFV-

- **conclusions**
  - 1- Your choice of imaging technique depends largely on availability of imaging, local skill set and local expertise
  - 2- Regardless of which technique you use, attention to detail is critical
  - Pre op: CDUS/MRV/CTV
  - Intra-op IVUS