Inferior Cava / Iliac Vein Duplex Protocol

- Verify patient, order and indication for examination.
- Patients undergoing IVC-iliac segment evaluation are generally asked to fast prior to this exam to minimize bowel gas if this proves necessary.
- Explain basic test procedure to patient in order to minimize anxiety.
- A focused history and physical exam should be performed.
- Hard copy is a combination of video tape and/or still images – **PLEASE REFER TO REQUIRED DOCUMENTATION.** If stills only, please make sure to document thoroughly!
- The patient is placed in a supine position and the exam is begun at the midline just below the xiphoid process. The low frequency curvilinear transducer is most often employed but the linear transducer can provide excellent images if depth requirements are not too great. Abdominal exams generally require various acoustic windows and patient positions in order to optimize the data available from a patient. These vary from patient to patient depending upon anatomy, body habitus, recent (or even remote) surgery, and mostly the presence and location of bowel gas. The examination is begun at the IVC at the level of the diaphragm and followed distally to the confluence. Longitudinal and transverse images should be used to confirm findings.
- From the IVC confluence, the common iliac veins are followed distally, if possible noting the confluence of the internal iliac vein. If difficulty is encountered, it is often helpful to begin by locating the external iliac vein at the groin and following it proximally.
- Each vessel is evaluated for patency, color flow filling to help confirm patency, and notable flow changes.
- Pay close attention to any evidence of extrinsic compression. Measure and report any suspected compression.
- A representative spectral analysis of each vessel should be taken at a good (60 degrees or less) Doppler angle in each vein segment looking for a spontaneous and phasic flow pattern.
- Spectral analysis should also be obtained at any noted color flow changes or at any imaged abnormality.
- Proximal augmentation maneuvers, (ie: deep inspiration, valsalva) can be performed to help demonstrate proximal patency and reflux. Distal augmentation, (ie: common femoral or thigh compression) should also be performed to ascertain distal patency and competence.

The room is then cleaned and trash properly disposed. The exam table, instrument(s), including control panel and transducers are cleaned and/or sterilized as necessary with appropriate cleaner(s) when finished with exam. Paper linens are replaced in preparation for the next exam.
Inferior Vena Cava and Iliac Venous Duplex Examination

Required Documentation

Gray scale and / or Color Doppler Images  Include gray scale only images if pertinent, significant disease or otherwise deemed necessary. These could also be incorporated into the spectral analysis if data quality is good and well visualized – and especially if normal.

1. Inferior vena cava - multiple transverse and longitudinal planes
   a. Proximal (window through the liver)
   b. Mid / Distal
   c. Confluence if possible
2. Common iliac vein (iliac images can often be combined)
   a. Make sure to carefully evaluate and if applicable, measure the CIV if iliac vein compression is identified
3. External iliac vein
4. Internal iliac vein if possible
5. Any areas of suspected obstruction, extrinsic compression, or other abnormality
6. Any other measurements performed

Spectral Doppler

1. IVC - document if normal and if not or suspicious, then proximal, distal and any suspect areas
2. Common iliac vein
3. External iliac vein
4. Internal iliac vein if possible
5. Any areas of suspected obstruction, extrinsic compression, or other abnormality