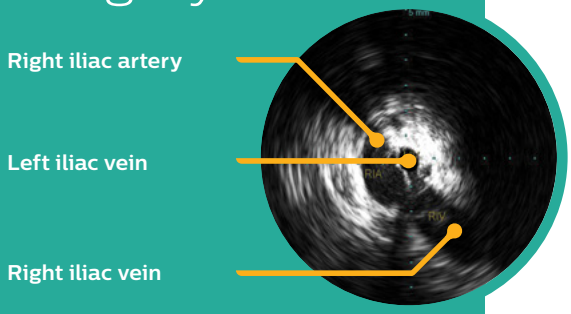
PHILIPS

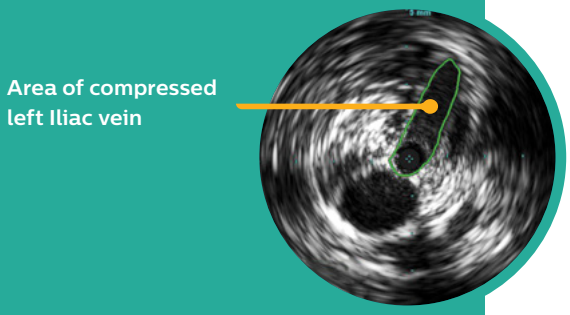
Quick reference

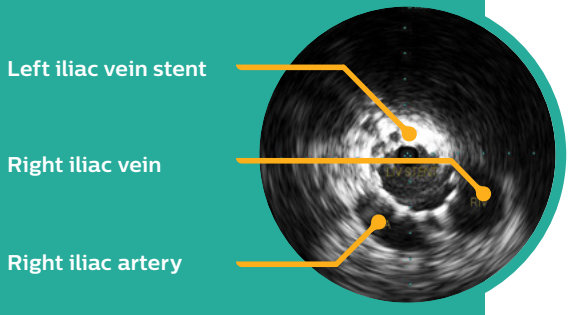
Iliac venous compression

Venous applications

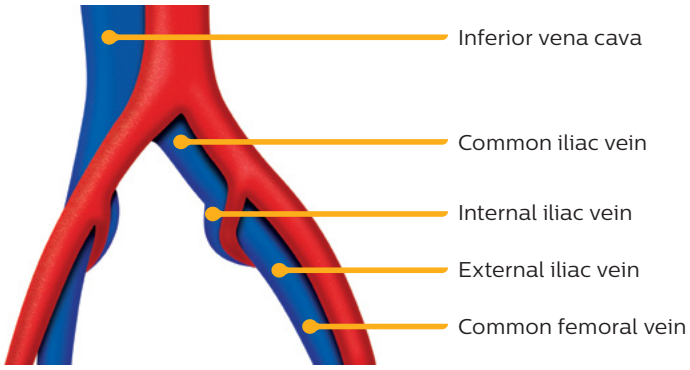
Typical IVUS imagery







Venous anatomy



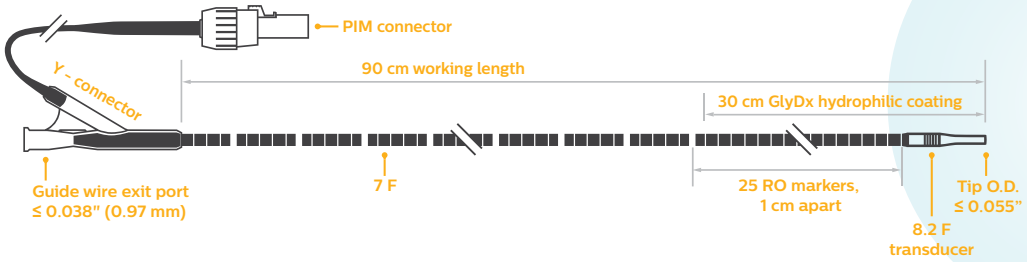
Approximate venous segment dimensions

Venous segment	Approximate length	Approximate diameter
Inferior vena cava	140 mm	23.4 mm
Common iliac vein	60 mm	16.0 mm
External iliac vein	130 mm	14.0 mm
Common femoral vein	60 mm	12.0 mm

Ouriel K, Greenberg RK, Green RM, et al. A volumetric index for the quantification of deep venous thrombosis. J Vasc Surg 1999;30:1060-6.

Raju S, Davis BS. Anomalous features of iliac vein stenosis that affect diagnosis and treatment. J Vasc Surg: Venous and Lym Dis 2014;2:260-7.

Visions PV .035 digital IVUS catheter



Actual Size of Field of View (60mm)

Workflow

1. Femoral or popliteal venous access
   - Patient is therapeutically heparinized if not already anticoagulated
   - Insert a sheath through percutaneous or open access site via standard interventional technique

2. Wire placement
   - Advance an 0.035" guide wire to the area of interest
   - An angled guide catheter may be used to facilitate placement

3. Perform venogram of leg from access point to the level of the diaphragm
   - Place guide catheter in the cranial portion of the femoral vein, just below the trochanter to image the CFV, EIV, and CIV
   - Advance guide catheter to EIV or CIV to image the IVC

CFV	Common Femoral Vein	CIV	Common Iliac Vein
EIV	External Iliac Vein	IVC	Inferior Vena Cava

4. Advancement of IVUS catheter
   - Replace sheath with 9Fr introducer sheath (8.5Fr minimum)
   - Prepare the PV .035 IVUS catheter by flushing the guide wire lumen, and then wipe down the entire working length with sterile heparinized normal saline
   - Connect the IVUS catheter to the imaging system's Patient Interface Module (PIM) as described in the imaging system Operator's Manual. Verify that the device is imaging.
   - Advance the IVUS catheter to the supra-renal IVC over operator's choice of 0.035" guide wire (wire exchanges can be made through the IVUS catheter at the Y-connector)

5. IVUS pullback for branch identification starting with the renal veins
   - Look for areas of narrowing due to compression or hyperechoic scar from post-thrombotic change
   - Evaluate the vein for any evidence of webbing or spurs
   - Measure cross-sectional area of narrowing, as well as that of either side of narrowing; measure minimum and maximum diameters at these points. Measure the length of narrowed section using the Visions PV .035 IVUS catheter's radiopaque or inked markers.
   - Physician evaluates patient's condition. Physician decides whether it is medically necessary to intervene and whether to proceed with venoplasty, venous stenting or some other type of intervention.
   - Venoplasty and venous stenting are illustrated in steps 6-7 of the workflow. Post-intervention workflow is illustrated in steps 8-10. If no intervention is necessary, proceed to Step 10.

6. Exchange the IVUS catheter for the physician's choice of angioplasty balloon, and treat the affected venous segment(s)

7. Deploy the physician's choice of stent to cover the area requiring treatment

8. Perform post intervention IVUS assessment to assess adequacy of stent apposition and proper dilation of the venous segment(s)

9. Replace IVUS catheter with guide catheter and perform final venogram

10. Remove wire and sheath per standard interventional procedure

These workflow instructions were developed in consultation with Paul Gagne, MD (a paid Philips Volcano consultant) and are intended to serve as a general reference guide for incorporating the use of IVUS into the diagnosis, and when medically necessary, the treatment and post intervention assessment of iliac venous compression. They are not intended to replace the instructions for use of any medical device used in the procedure or the physician's own workflow based upon his/her medical experience and judgment.

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