

# VENOUS INSUFFICIENCY /VARICOSE VEIN SCANNING

## REFERRAL SOURCE

Vascular Team / CDU / A&E / Wards / GP

## PATIENT PREPARATION:

None - compression bandaging to be left in situ. Knowledge of patient's previous VV surgical history / DVT is vital.

## SCAN TIME:

20 minutes single leg / 40mins bilateral leg veins.

## PATIENT POSITION:

A combination of prone, seated and erect. Keep the room cool - patients prone to vasovagal reactions, limit erect position time.

## EQUIPMENT SET UP:

**PROBE:** Linear mid frequency probe (9-3MHz), linear superficial probe (17-9MHz).

**PRESET:** Venous.

## SUGGESTED MINIMUM IMAGES:

- Assess deep veins for patency - as described in the deep vein patency protocol (combination of venous compression with the probe / colour flow imaging).
- Competence assessed whilst veins under hydrastatic pressure with patient either seated/erect. Using colour mode and spectral Doppler sampling with either calf augmentation, foot flexion or valsalva manoeuvre. B Mode - may be used to locate thigh perforators and junction sites TS /LS combination
- Assess competence of deep veins with colour mode +/- spectral Doppler sampling of SFV popliteal vein +CFV if required.
- Using a combination of B mode/ colour mode locate the sapheno-femoral junction in the groin and obtain spectral Doppler sample to assess competence.
- Follow the long saphenous vein from the junction to the knee assessing competence
- Assess competence of any noted perforators. If incompetent, note the location; a diameter measurement may be taken.
- Rotate the patient in order to obtain access to popliteal fossa.
- Using B mode imaging, locate the short saphenous vein and assess its competence with calf augmentation in the mid and prox calf .
- Follow the SSV proximally to locate the sapheno popliteal junction (SPJ) if present and assess for competence.

### PITFALLS:

- There may be several tributaries draining into SFJ, any one of which may be source of thigh varicosities, not necessarily the LSV
- Perforating veins break through the deep fascia, tributaries break through the superficial fascia.
- There are several SPJ variations to note
- There may not be an SPJ in the popliteal fossa
- There may be a continuation posterior thigh ascending tributary draining into the SSV or SPJ.

### **For new positive finding of DVT the following must be added to the report:**

Soliton VR auto-text: INSERT “positive DVT” New DVT is confirmed. For mandatory root cause analysis, please note that the clinician is required to inform the Trust VTE

RCA team by e-mail alert at [VTErootcauseanalysis@leedsth.nhs.uk](mailto:VTErootcauseanalysis@leedsth.nhs.uk)

The relevant CRIS auto-text is ‘+DVT’.

### EVIDENCE BASED CRITERIA:

- ‘Vascular Laboratory Practice part 1 to 4, ‘lower limb venous scanning ’ - Institute of Physics in Engineering and Medicine in Association with the Society of Vascular Technologists of GB and Ireland.
- ‘cardiovascular haemodynamics and Doppler waveforms explained’ , Crispin Oates, grenwich medical media ltd 2001
- CLASS TRIAL (comparison of laser surgery and foam sclerotherapy) trial
- ‘peripheral vascular ultrasound, how , why and when’ - Thrush and Hartshorne; Churchill Livingstone 1999
- Duplex ultrasonography for assessment of venous valve function of the lower limb: Sarin et al, Br. J. Surgery, 1994, 81, 1591-1595

### EVLt CRITERIA:

If patient is deemed suitable for EVLT treatment, the clinicians may request an EVLT assessment at the same time as the venous duplex.

Additional information required on the report should include:

- The diameter and depth of incompetent LSV in prox, mid, and distal thigh
- The diameter of LSV in upper calf and the position where the LSV becomes competent
- The diameter and depth of the incompetent SSV in the Mid and proximal calf.
- The position at which the SSV becomes competent

#### CLINICAL INCLUSION CRITERIA FOR EVLT:

- Adults aged 18ys+ with symptomatic primary varicose veins with LSV /SSV incompetence.
- CEAP grade 2 or higher (CEAP = clinical Etiology Anatomical Pathological)
- veins diameter over 3mm but less than 12mm
- Reflux greater than 1 second as demonstrated by spectral trace, in main stem long saphenous vein or short saphenous vein
- Suitable for day case treatment

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