Number	Date	Scan type	CHI
1 / 2	09/03/2022	BLLV	2003442081
3	09/03/2022	RLLV	2610602103
4	09/03/2022	LLLV	0604342136
5	11/03/2022	DVT	1106502108
6	11/03/2022	Deep veins	2409432034
7	24/03/2022	L vein map	1211562263
8	28/03/2022	Vein map	1109459076
9/10	31/03/2022	BLLV	1209322056
11/12	01/04/2022	BLLV	2710352214
13	04/04/2022	LLLV	3004462117
14	04/04/2022	RLLV	1801615527
15	05/04/2022	Vein map and mark	1909615595
	12/04/2022	BLLV	2010572076
16	19/04/2022	Vein map arms	0808672215
17	20/04/2022	Venous TOS	1604820306
18/19	21/04/2022	BLLV	2504502346
20	28/04/2022	R vein map	0602612152
21	03/05/2022	LLLV	2110535386
22	10/05/2022	RLLV	2706462132
23	24/05/2022	LLLV	2003808051
24	31/05/2022	LLLV	0408462132
25	06/06/2022	LLLV	2403552353

The Vascular Laboratory
Aberdeen Royal Infirmary

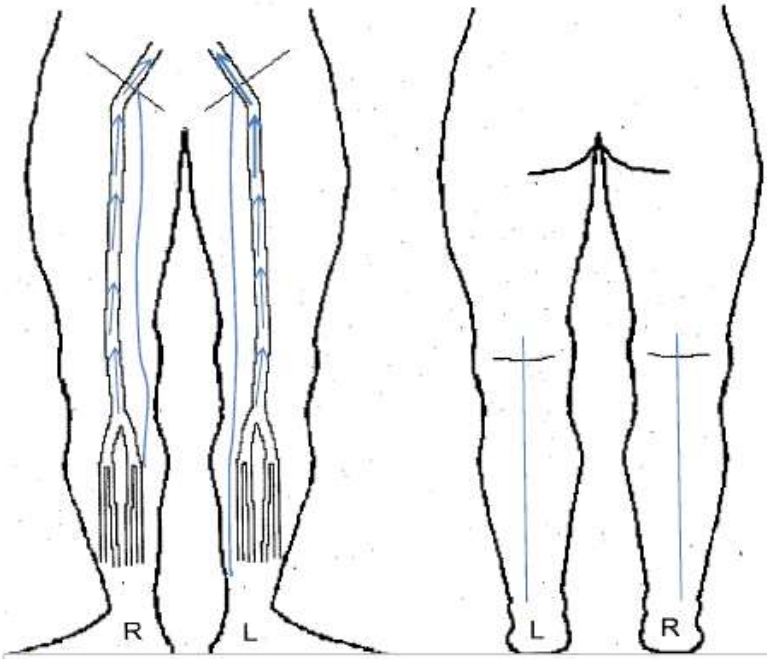
To: Mr [redacted]
Consultant Vascular Surgeon
clinic - ARI

Date: 03/03/2022

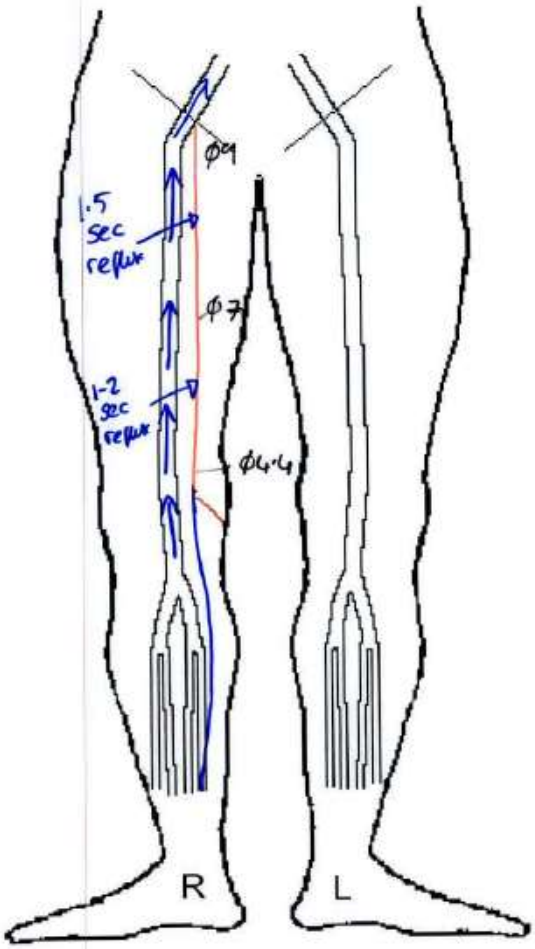
Patient: [redacted] Hosp.No: 2003442081 D.O.B: 20/03/1944

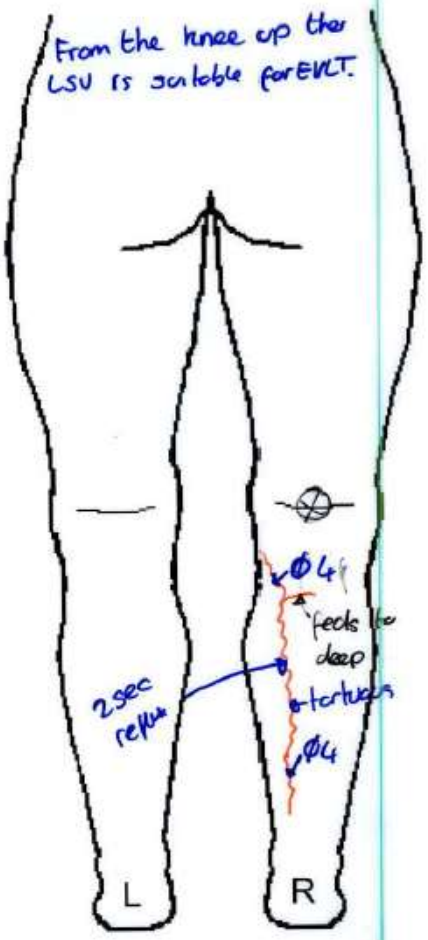
Date of Test: 03/03/2022

Test: Bilateral lower limb venous



Venous
Right deep veins and superficial veins are patent and competent,
Left deep veins and superficial veins are patent and competent, it was noted there was a smalll VV in the calf which comes from the LSV





Incompetent superficial vein
Competent superficial vein
Thrombus
Incompetent perforator
Reflux in deep system
Partial thrombus
Previous surgery remnant of junction
Competent flow in deep system
Anatomical variation in deep system
Previous surgery no junction remnant
Diameter (mm)
Depth of vessel (mm)

Name [redacted]
CHI 2610602103
Cons [redacted]
Scan RLLV

The Vascular Laboratory
Aberdeen Royal Infirmary

To: Mr [redacted]
Consultant Vascular Surgeon
OP - ARI

Date: 09/03/2022

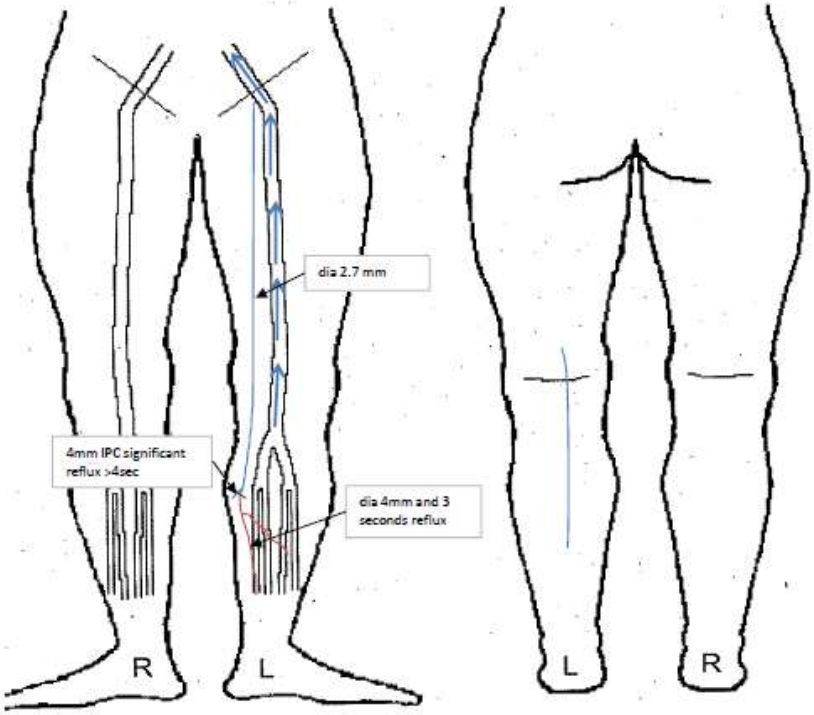
Patient: [redacted]

Hosp.No: 604342136

D.O.B: 09/03/2022

Date of Test: 09/03/2022

Test: Left lower limb venous



The Deep veins are pulsatile but remain patent and competent throughout.
LSV is patent. They are competent until mid calf where it connects to an IPC and then distally become incompetent. SSV is patent and competent.

Extensive odema was noted more signifcant in calf
Heather Lynn

The Vascular Laboratory
Aberdeen Royal Infirmary

Consultant:	Episode date	Ward
	11/03/2022	Outpatient

Patient:	Unit Number	CHI
[redacted]	0372680	1106502108

Tests performed: **Right Leg Arterial Duplex** **Generic Duplex**

RLLV - The deep vein are patent and compatent throughout with no reflux.
On the posterior calf there is extensive fluid very superficial

Scanned By:- Heather Lynn
Trainee Clinical Scientist

The Vascular Laboratory
Aberdeen Royal Infirmary

Consultant: Locum
Vascular Consultant
Ward 215 ARI

Episode date
11/03/2022

Ward
Outpatient

Patient:
[redacted]

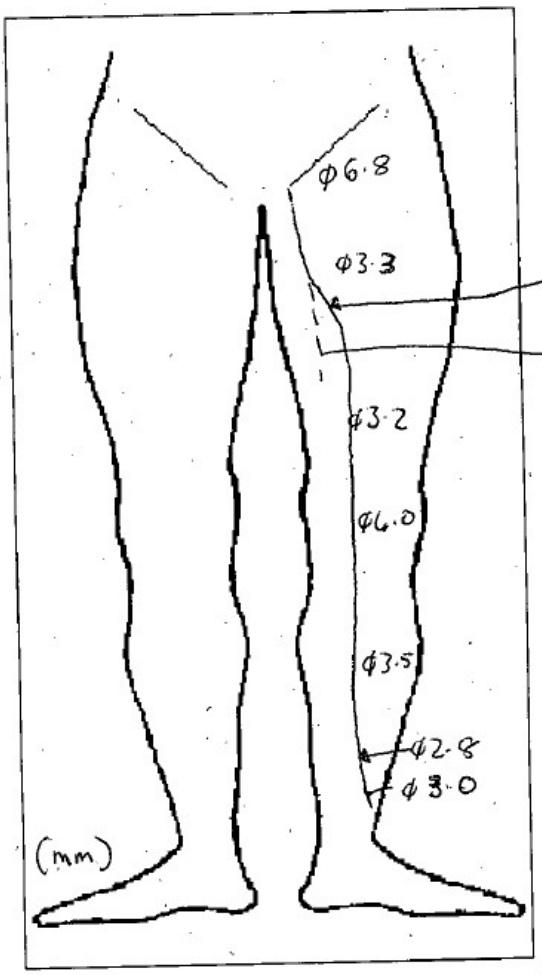
Unit Number
0132613

CHI
2409432034

Tests performed: **Left Leg Arterial Duplex** **Generic Duplex**

Left lower limb venous - The deep veins are patent and competent throughout

Scanned By:- Heather Lynn
Trainee Clinical Scientist

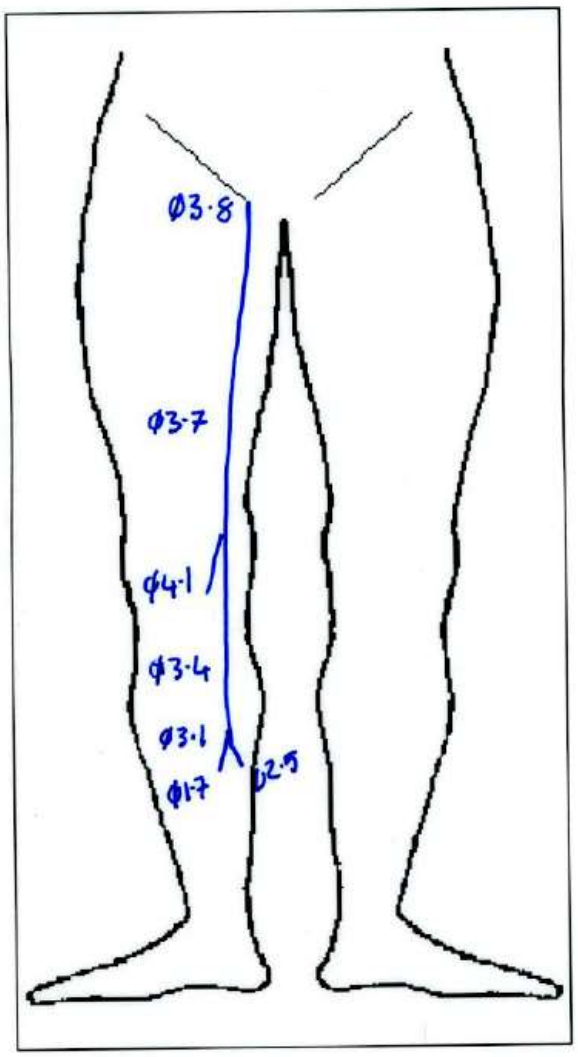


Name - [redacted]

CHI - 1211562263

Scan - Vein map left

Date 24/3/22



[redacted]

110945 9076

Vein map

[redacted]

28/3/22

The Vascular Laboratory - Ward 507
Aberdeen Royal Infirmary

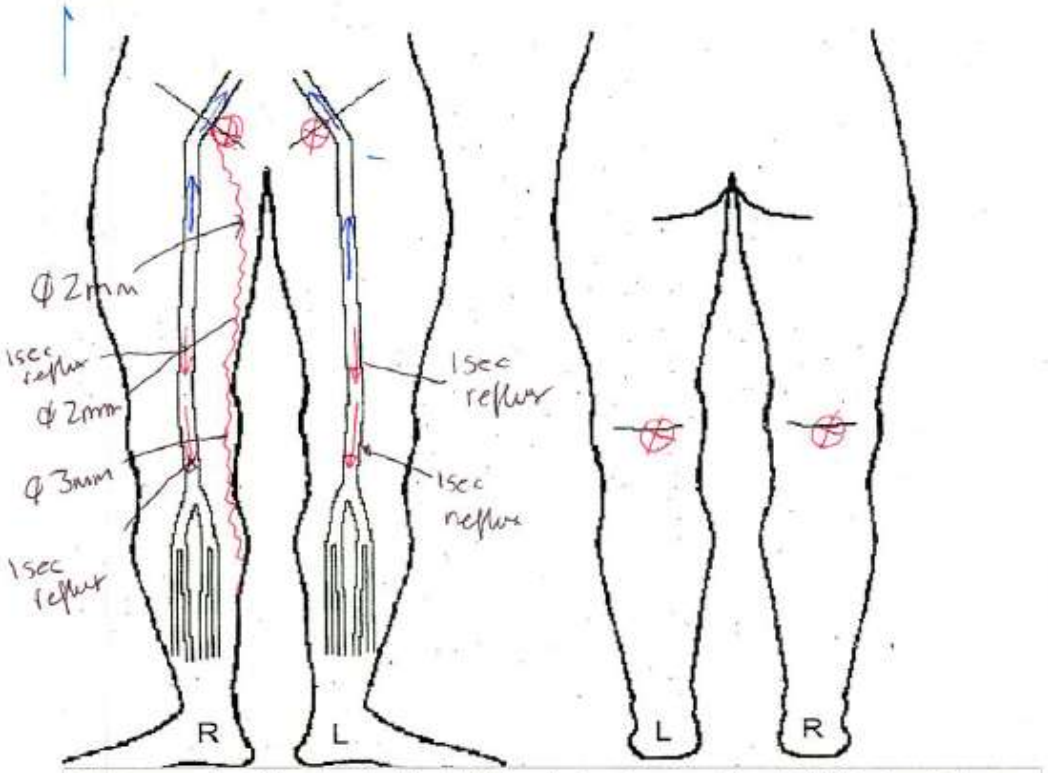
To: Mr [redacted]
Consultant Vascular Surgeon
Ward 507 - ARI

Date: 31/03/2022

Patient: [redacted] **Hosp.No:** 1209322056 **D.O.B:** 12/09/1932

Date of Test: 30/03/2022

Test: Left leg stent and bilateral venous duplex



Right venous - The CFV and proximal to mid SFV is patent and compenet, The distal SFV and popliteal vein has mild reflux ~ 1 second.
Ther appears to be previous surgery on the LSV howere there is a superficial tortuous varicose vein that run medially down the leg. SSV previous surgery? with no remnants however the gastrocnemius veins appears to have mild reflux ~ 1 second and are enlarged.

Left venous - The CFV and proximal to mid SFV is patent and compenet, The distal SFV and popliteal vein has mild reflux ~ 1 second. LSV has previous surgery no remnants at junction, however reappears at distal thigh with mild reflux. SSV previous surgery? with no remnants however the gastrocnemius veins appears to have mild reflux ~ 1 second and are enlarged.
Left - The stent is patent with a sharp biphasic waveform seen throughout. proximal and distal ends both seen clearly and there is a biphasic waveform distal to the graft.
Heather Lynn

The Vascular Laboratory - Ward 507
Aberdeen Royal Infirmary

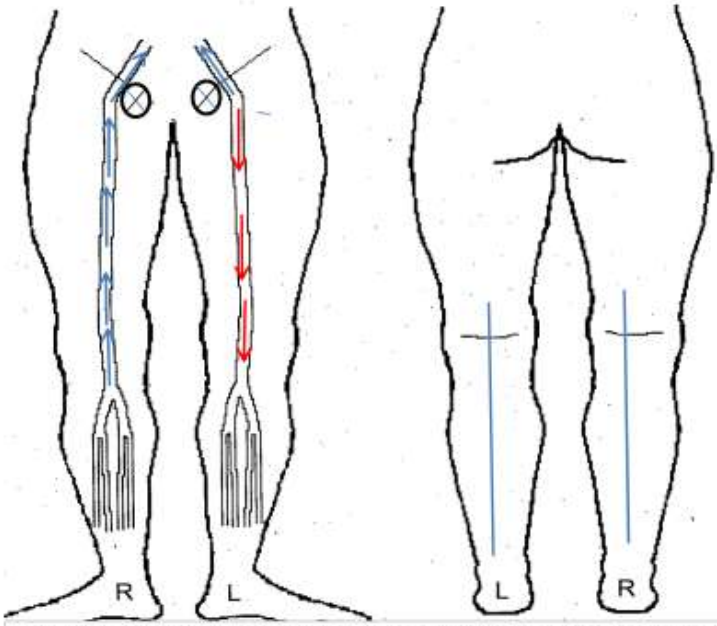
To: Mr [redacted]
Consultant Vascular Surgeon
Ward 507 - ARI

Date: 01/04/2022

Patient: [redacted] **Hosp.No:** 2710352214 **D.O.B:** 27/10/1935

Date of Test: 01/04/2022

Test: Bilateral venous duplex



Right venous - Deep veins are patent and competent, LSV has previous surgery, SSV is patent and competent.

Left venous - The CFV patent and compenet, SFV has ~ 2 second reflux throughout, The distal SFV and popliteal vein has mild reflux ~ 1 - 2 second. LSV has previous surgery no remnants at junction and no recuurent V.V SSV is patent and competent.

The Vascular Laboratory - Ward 507
Aberdeen Royal Infirmary

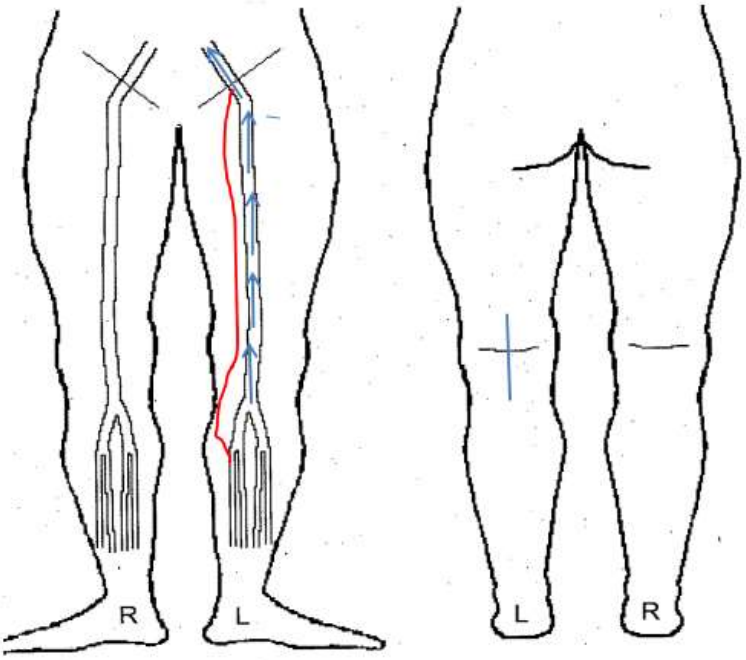
To: Mr [redacted]
Consultant Vascular Surgeon
Ward 507 - ARI

Date: 04/04/2022

Patient: [redacted] **Hosp.No:** 3004462117 **D.O.B:** 30/04/1946

Date of Test: 04/04/2022

Test: Bilateral venous duplex



Left venous - The deep veins are patent and competenet. LSV has mild reflux throughout ~ 1 second, It is uniform in size and ~ 4mm in diameter, remains in facsia until distal thigh ? reflux caused by high BMI. Unable to assess distally due to complexed dressing and open wounds. Proximal SSV is patent and competent. It was also noted that the veins appear calcified.

Heather Lynn

The Vascular Laboratory - Ward 507
Aberdeen Royal Infirmary

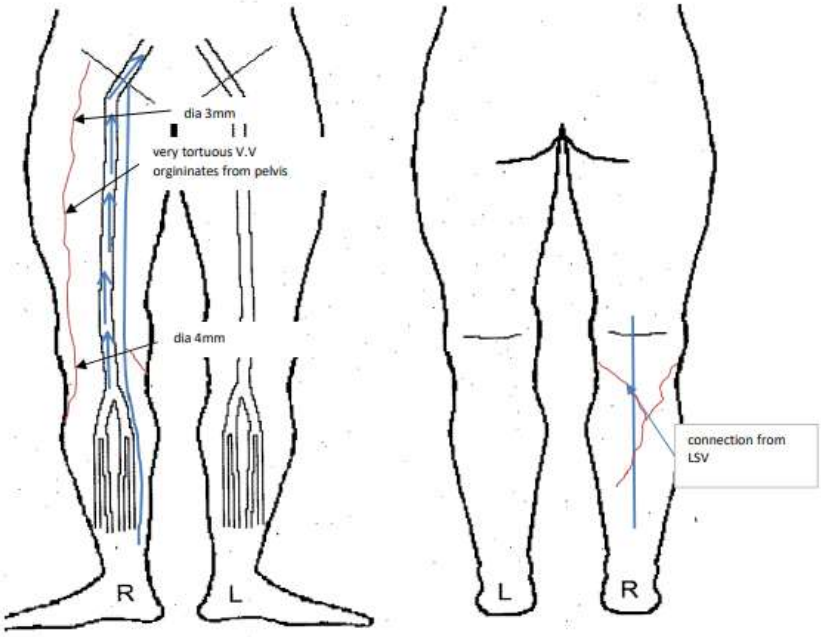
To: Mr [redacted]
Consultant Vascular Surgeon
Ward 507 - ARI

Date: 06/04/2022

Patient: **Hosp.No:** 1801615527 **D.O.B:** 18/01/1961

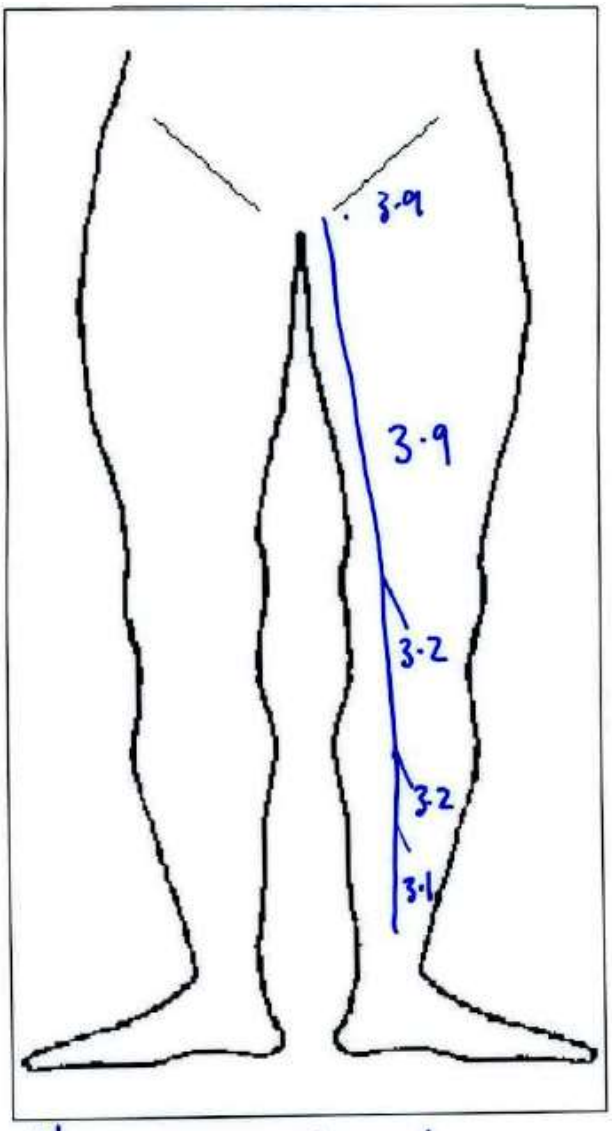
Date of Test: 04/04/2022

Test: Right lower limb venous



Left venous - The deep veins and SSV are patent and competent. LSV is competent with a conection to the VV seen in the calf. The Varicose vein in the anterior thigh stem from the pelvis.

Heather Lynn



Vein map + mark

[redacted]

1909615595

[redacted]

5/4/22

[redacted]

The Vascular Laboratory - Ward 507
Aberdeen Royal Infirmary

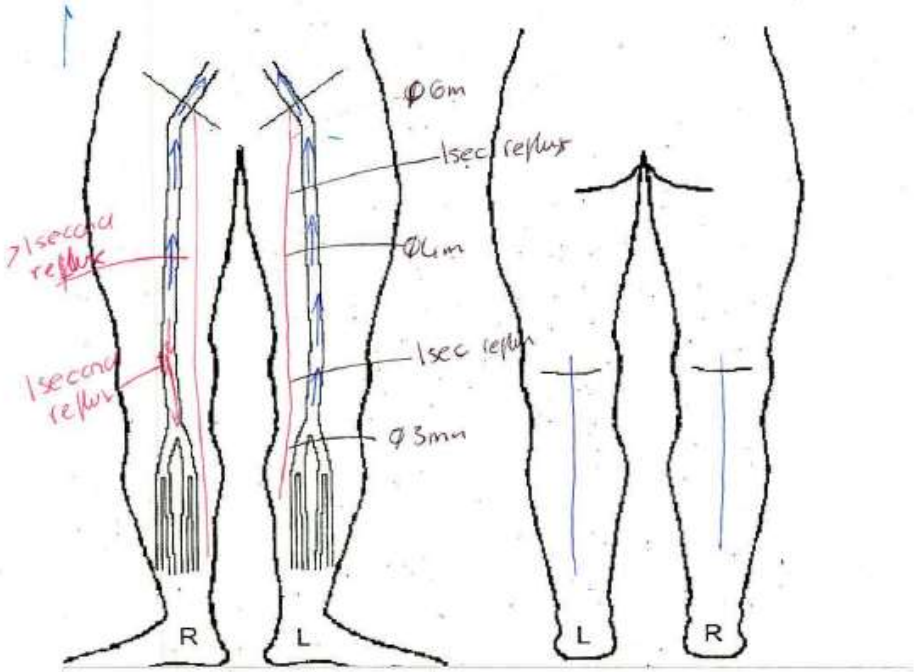
To: Mr [redacted]
Consultant Vascular Surgeon
Ward 507 - ARI

Date: 12/04/2022

Patient: [redacted] **Hosp.No:** 2010572076 **D.O.B:** 20/10/1957

Date of Test: 12/04/2021

Test: Bilateral venous duplex

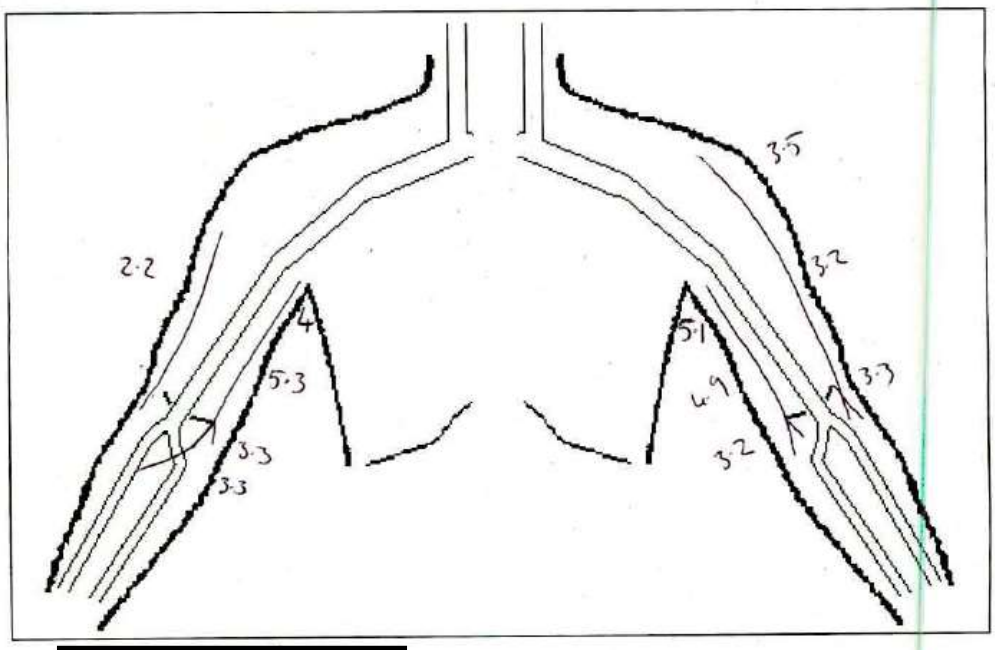


Right venous - The CFV and proximal to mid SFV is patent and compenet, The distal SFV and popliteal vein has mild reflux ~ 1 second. It was noted the distal SFV has a bulge ~ 16mm diameter the remainder of the vessel is 9mm
The LSV minor reflux < 1 second and the SSV is patent however slightly thicken walls

Left venous - Deep veins are patent and competent LSV has mild reflux ~ 1 second. SSV is patent and competent

Heather Lynn

lynshe 12/04/2022 10:02



[redacted]

08086722B

Vein map

[redacted]

Aberdeen Royal Infirmary

Consultant: [redacted]
Vascular Surgeon
Ward 215 ARI

Episode date: 20/04/2022

Ward: Outpatient

Patient: [redacted]

Unit Number: 2085525

CHI: 1604820306

Tests performed: **Generic Duplex**

Post op resection for venous TOS - The subclavian and brachial veins are patent and compressable in rest.

The arm was scanned at rest, in the HOW position and above the head. In all 3 position there was good venous flow and there was no obvious compression in the subclavian vein.

Scanned By:- Heather Lynn
Trainee Clinical Scientist

The Vascular Laboratory
Aberdeen Royal Infirmary

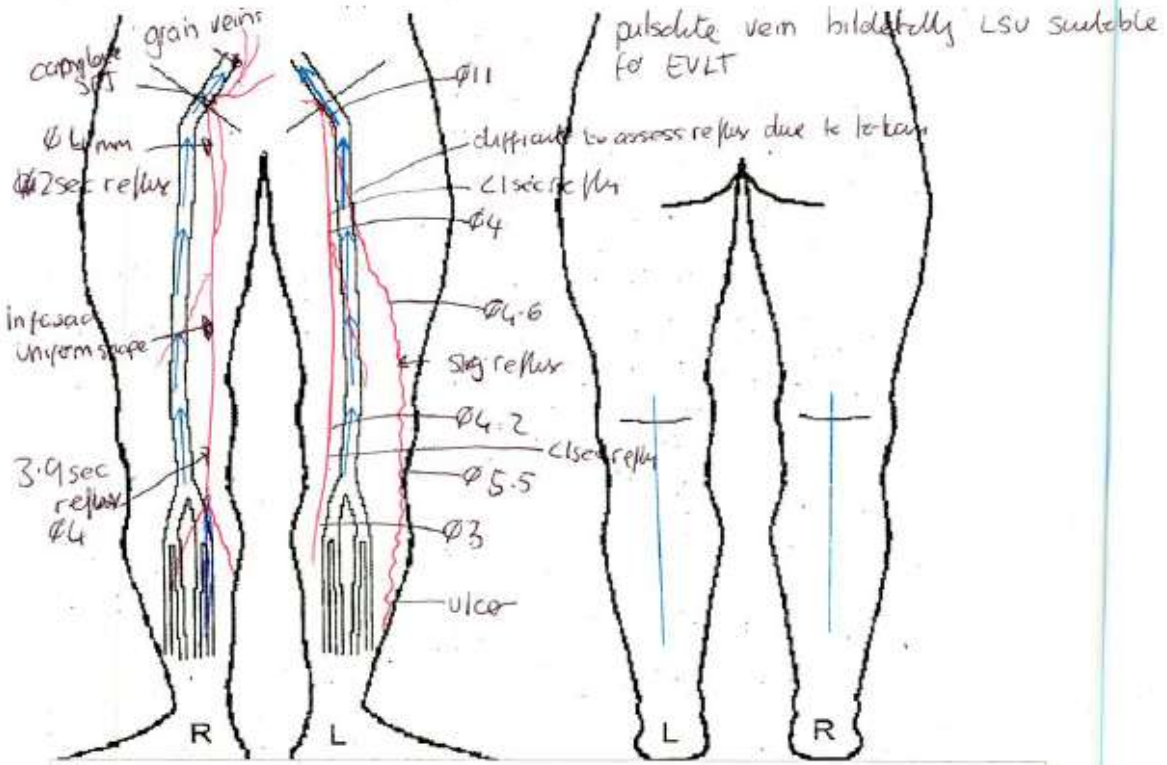
To: Mr [redacted]
Consultant Vascular Surgeon
clinic - ARI

Date: 21/04/2022

Patient: [redacted] **Hosp.No:** 2504502346 **D.O.B:** 25/04/1950

Date of Test: 21/04/2022

Test: Bilateral lower limb venous

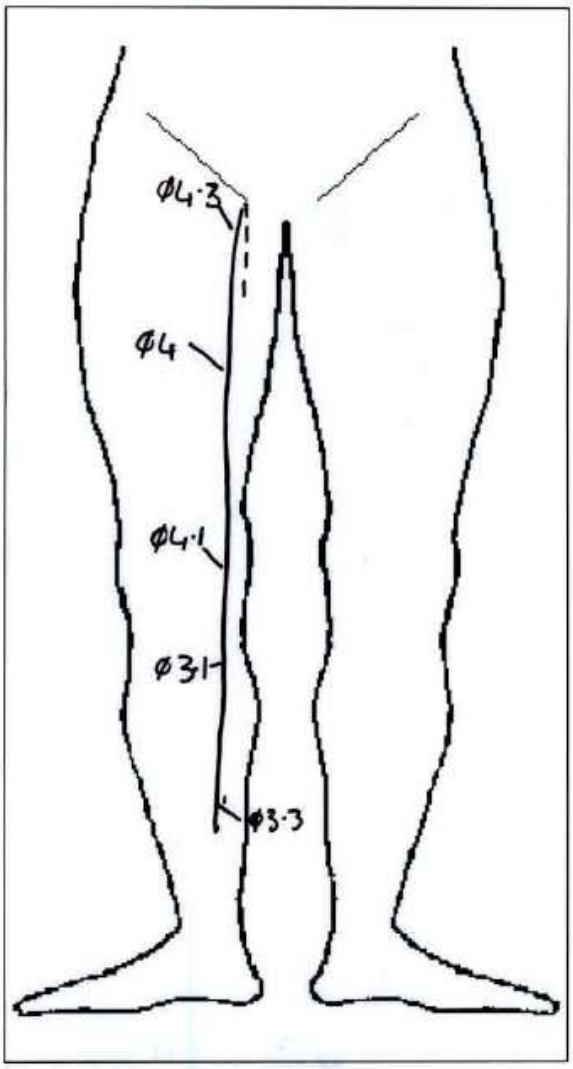


Venous

Right deep veins are patent and competent. It was noted that the CFV and proxinal SFV are pulsatile. LSV is incompetent until the calf were it feds incompetent branch however at this point the natiuve vessel become competent. The vessel is mainly uniform in shape and remains in fascia there is however a slightly tortuouys area at 1/3 thigh were it conects to an incompetent branch fed from the groin. SSV patent and competent. The SFJ is complexed because there is incompetent groin veins feeding into the juction and there are very pusatile. SSV patent and competent

Left - Right deep veins are patent and competent. The SFJ is incompetent and puslatile and feds a tortuous incomptent thigh vein that runs down the leg and near the ulcer. The LSV has minor reflux ~ 1 sec. it is uniform in size and has remains in the fascia. SSV is patent and competent.
Heather Lynn

lynnhr 21/04/2022 12:02



[redacted]

[redacted]

Vein map
Mr Renwick
28/4/22

The Vascular Laboratory
Aberdeen Royal Infirmary

Consultant: [redacted]
VSN
Ward 215 ARI

Episode date
03/05/2022

Ward
Outpatient

Patient:
[redacted]

Unit Number
0947565

CHI
2110532386

Tests performed: **Generic Duplex**

? DVT difficult scan due to excessive swelling with this in mind there was a good response to valsalva manuover, The CFV, SFV and popliteal are patent and compressable. The LSV is patent and compressable. There was no obvious thrombose in the SSV however on the posterior lateral calf there appeared to be chroic thrombose in the gastrocnemius veins.

FU with shockwave clinic in 2 weeks

Scanned By:- Heather Lynn
Trainee Clinical Scientist

The Vascular Laboratory - Ward 507
Aberdeen Royal Infirmary

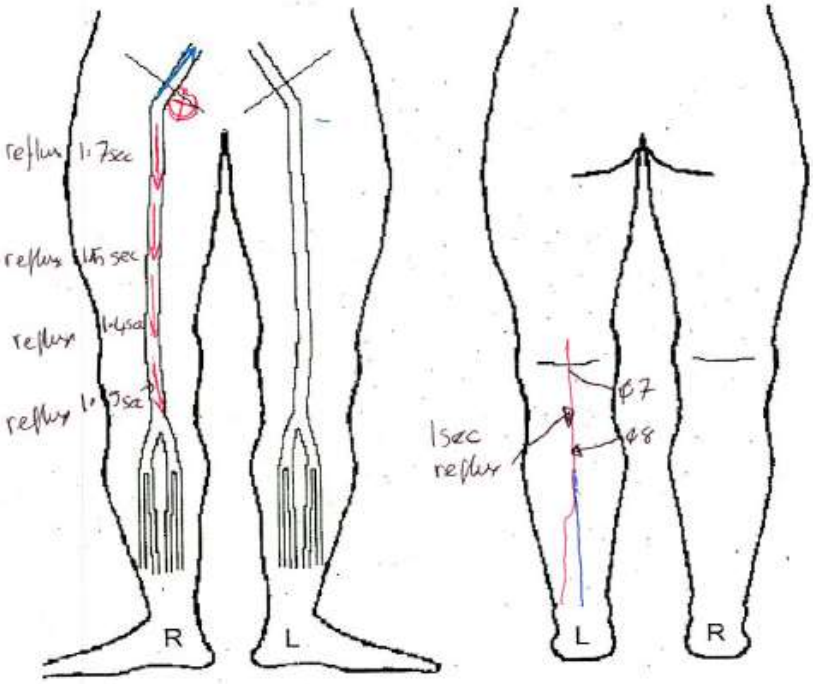
To: Mr [redacted]
Consultant Vascular Surgeon
Ward 507 - ARI

Date: 10/05/2022

Patient: [redacted] **Hosp.No:** 2706462132 **D.O.B:** 27/06/1946

Date of Test: 10/05/2022

Test: Right venous duplex



Right - CFV is patent and competent. SFV and popliteal are incompetent throughout with ~ 1.5 seconds of reflux. SSV is incompetent proximal and then drains' in the a branch. LSV has and previous surgery no junction remnants.

Heather Lynn

[illegible] 10/05/2022 11:00

The Vascular Laboratory - Ward 507
Aberdeen Royal Infirmary

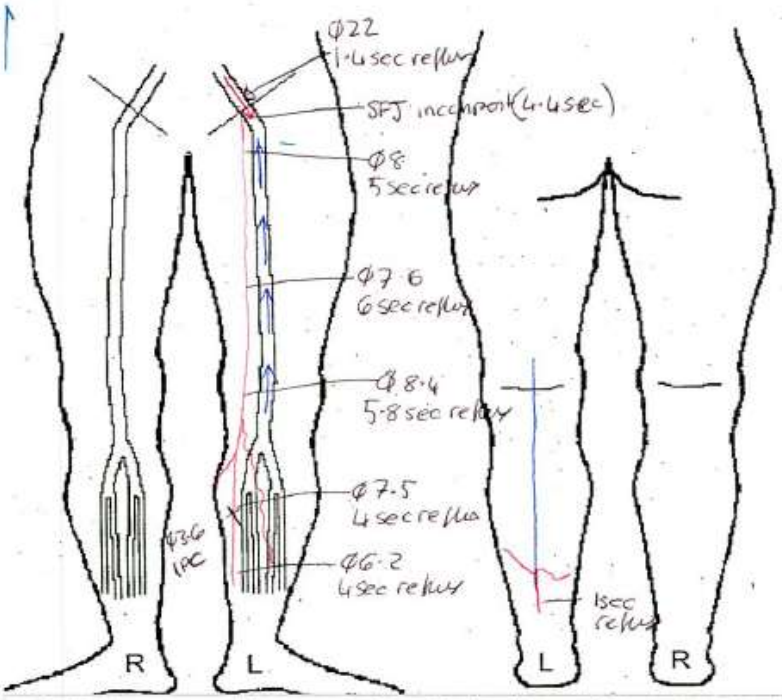
To: Mr [redacted]
Consultant Vascular Surgeon
Ward 507 - ARI

Date: 24/05/2022

Patient: [redacted] **Hosp.No:** 2003808051 **D.O.B:** 20/03/1980

Date of Test: 24/05/2022

Test: Left lower Limb venous



Left - CFV is incompetent with 1.4 seconds reflux with a large diameter of 22mm, SFV and popliteal patent and competent. LSV is incompetent throughout including the SFJ. In mid calf there is an incompetent perforator. SSV is patent and competent until 3/4 down were it becomes incompetent due to a branch fed by the LSV. It was noted that the PTV pair and peroneal pair were large in diameter (~ 7mm) and minor reflux was seen (< 1 second)

Heather Lynn

rjeatte 24/05/2022 10:43

The Vascular Laboratory - Ward 507
Aberdeen Royal Infirmary

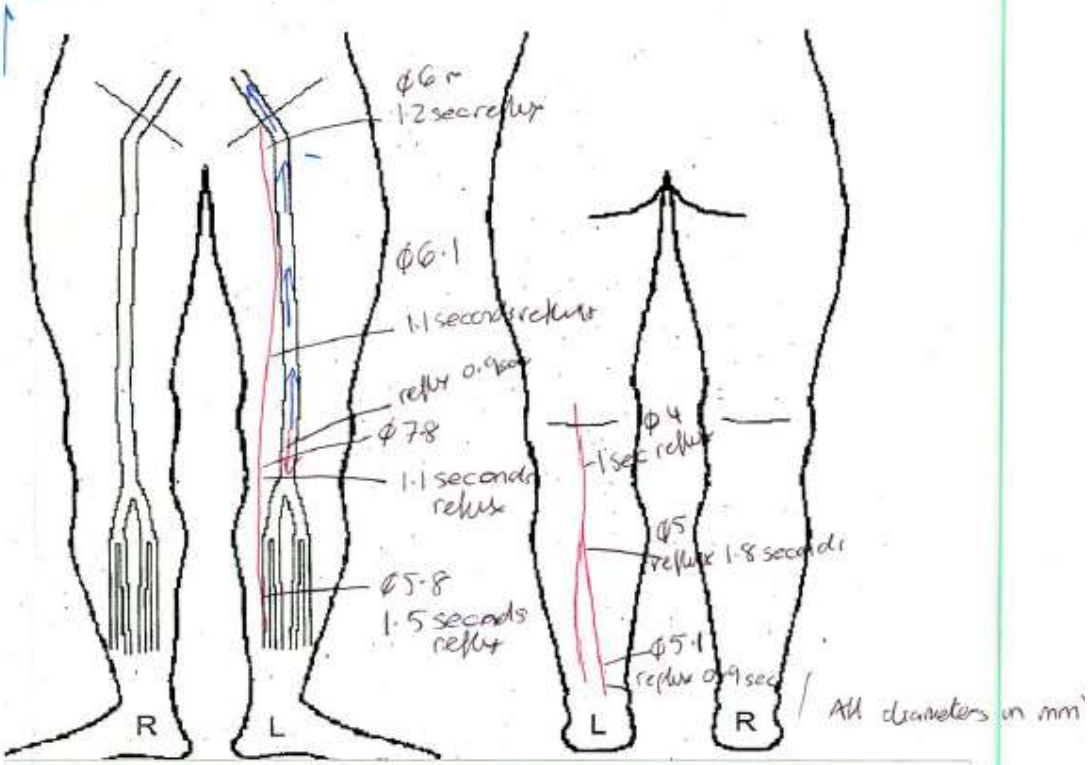
To: Mr [redacted]
Consultant Vascular Surgeon
Ward 507 - ARI

Date: 31/05/2022

Patient: [redacted] **Hosp.No:** 408462132 **D.O.B:** 04/08/1946

Date of Test: 31/05/2022

Test: Left limb duplex



Left the CFV and SFV are patent and competent, The popliteal vein has minor reflux (0.9 seconds)
The SSV and LSV are patent with incompetence throughout. both veins remain in the fascia throughout and are suitable for EVLT.

Heather Lynn

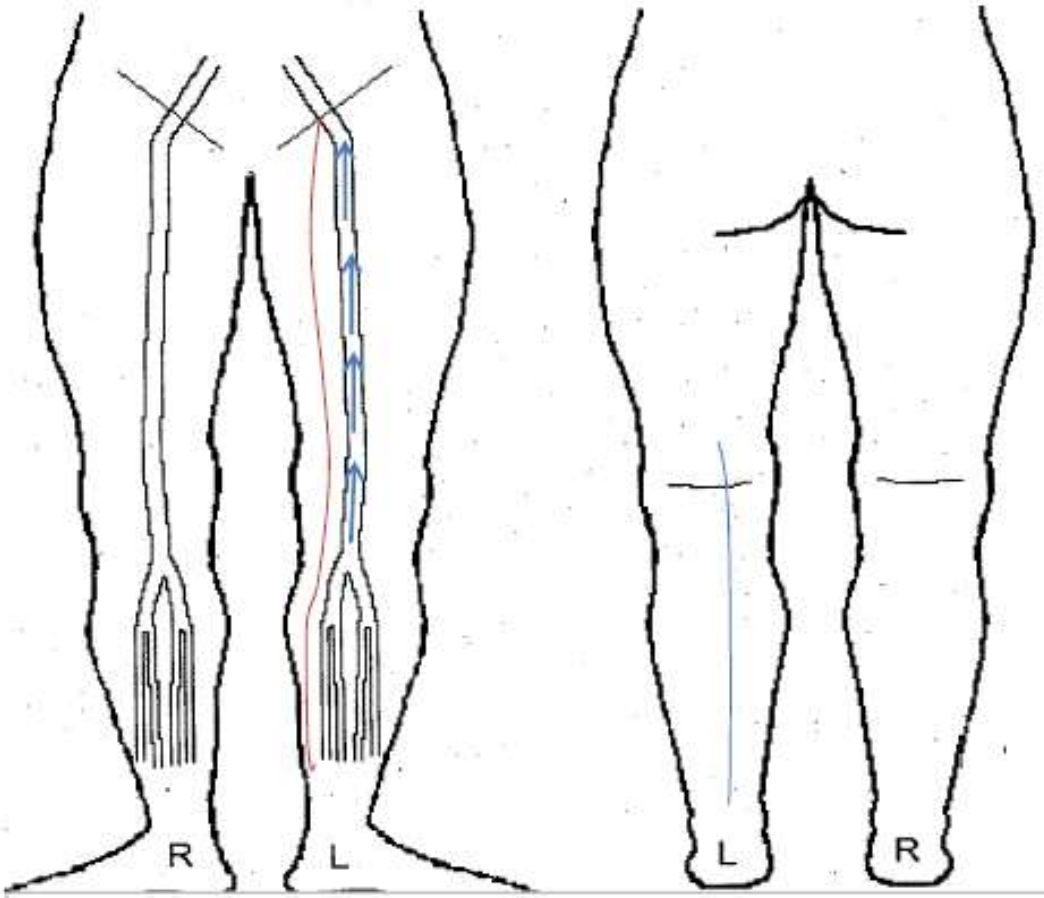
To: [redacted]
Consultant Vascular Surgeon
Ward ... - ARI

Date: 06/06/2022

Patient: [redacted] Hosp.No: 2403552453 D.O.B: 24/03/1955

Date of Test: 06/06/2022

Test: Left lower limb venous and left arterial



LLLV - The deep vein are patent. The SSV is patent and competent and the LSV has a minor reflux > 1 second. All veins are uniform in calibre and have a normal flow pattern. It was noted SFV is bifed.

LLLA - The aorta and CIA have a normal calibre, with slightly calcified walls. The Fem pop have minor calcified disease with a triphasic waveform seen throughout. No aneurysmal areas seen. The calf vessel are patent however they are narrow in calibre with a diamater < 2mm and have minor calcification.

No obvious AVM and no pulsatile veins noted.

LOWER LIMB VENOUS ASSESSMENT

SCANNER SETTING:
Venous

PROBES:
5-7MHz for deep system and 8-10MHz for superficial system.

PATIENT POSITION:

Supine on a tilting table, at an angle of at least 30 degrees to the horizontal.

If necessary for assessing the posterior of the leg have the patient prone.
Alternatively have the patient sitting on the edge of a raised couch with the foot resting on the operators' knee.

Spontaneous Flow: Flow in the legs should be spontaneous and phasic going with breathing.

AUGMENTATION MANOUVRES:
Valsalva – Ask the patient to take a deep breath and hold it for a few seconds until you ask them to relax. Flow should significantly reduce or stop. Repeat at least twice to confirm.
Augmentation Squeeze - Perform a firm squeeze of the calf muscle to compress the venous sinusoids and enhance flow in the CFV and SFV and release quickly. Repeat at least twice to confirm. A squeeze of the mid thigh when assessing the CFV can be of benefit if there is a poor response from the calf squeeze.

COMPRESSIBILITY: Using the probe in transverse view, with gentle pressure, press down on the limb. This should compress the vein so that the anterior and posterior walls meet completely. This technique is used to see if there is any thrombus within the vein that is not clearly visualised.

Images: When obtaining images ensure that the correct side and site is recorded. Note any abnormalities and specific structures related to the investigation. Obtain images including the pulsed Doppler flow waveform demonstrating augmented flow at specified sites, even if normal and any reflux.

Prior to scanning: Ensure the patient is comfortable and not in distress. When assessing for varicose veins, visually examine the patients' leg to assess how the varices are distributed.

SCANNING TECHNIQUE
DEEP SYSTEM – use to assess for DVT or as part of assessing Varicose veins

1. The patient should have their weight on the contralateral leg. Using a 5 – 7MHz probe identify the common-femoral vein at the level of the inguinal ligament in transverse view. Assess the vein for spontaneous flow with the colour Doppler and for compressibility. Identify the sapheno-femoral junction, if present, by scanning distally until the LSV is seen coming off the CFV and becoming superficial. Rotate the probe into a longitudinal view and follow the CFV proximally as far as possible. Using the pulsed Doppler assess the flow in the CFV looking for spontaneous flow going with breathing. Perform a valsalva manouvre and an augmentation squeeze. Obtain an image.

2. Still in longitudinal view scan down to the sapheno-femoral junction and assess the junction for incompetence with an augmentation squeeze. Obtain an image.

3. Have the patient flex their knee a little and rotate outwards supporting as necessary. With the probe in a transverse view scan distally identifying the femoro-profunda junction. Continue scanning distally compressing the SFV every 3 to 4cm until the adductor canal, assessing for possible thrombus.

4. Return to the femoro-profunda junction and image in longitudinal view. Scan superficial-femoral vein distally until 4 to 5cm below the femoro-profunda junction. Using the pulsed Doppler assess for spontaneous venous flow, perform a valsalva manouvre and an augmentation squeeze. Obtain an image. Scan distally assessing flow at mid SFV as necessary.

5. At the level of the adductor assess flow using the pulsed Doppler, for spontaneous flow. Perform an augmentation squeeze. Due to the depth of the vessel at this point the returning Doppler signal can be weak and increasing the Doppler gain and also having the cursor and colour box straight can help enhance the signal, as the vessel tends to dive away into the popliteal fossa.

6. View the popliteal vein from the popliteal fossa. With the probe in a transverse plane identify the popliteal vein at the level of the knee crease. Scan proximally and then distally assessing compressibility and identify the sapheno-popliteal junction, if present. Rotate the probe into a longitudinal view and assess the short saphenous origin with the pulsed Doppler for spontaneous flow, perform an augmentation squeeze. Obtain an image.

7. Scan distally in longitudinal view and assess the distal popliteal vein with the pulsed Doppler for spontaneous flow, perform an augmentation squeeze. Obtain an image.

If examining for varicose veins go to Superficial Vein Scanning.

Otherwise when assessing for thrombus and none is found in the femoro-popliteal segment assess the deep veins of the calf.

8. Whilst scanning in the popliteal fossa assess the gastronemus and soleus veins for patency by performing compression and an augmentation squeeze.

9. Assess the posterior tibial pair veins by positioning the probe at mid calf level on the medial aspect. To help identify the veins look for the posterior tibial artery. Flow is not usually observed to be spontaneous so an augmentation squeeze at the ankle or foot is the primary mode of assessing patency of calf veins. Scan as proximally as possible and then distally to the ankle. Obtain an image.

10. To assess the peroneal pair veins use the same view as for the posterior tibial pair. The peroneal veins lie deeper and it is sometimes necessary to move the probe a little more posteriorly. Assess for patency and scan as proximally as possible and then distally to the ankle. Obtain an image.

11. The anterior tibial pair veins are usually small and not easily seen and only an augmentation squeeze will make the veins identifiable. To view them assess from an anterior-lateral view of the calf. It is not always necessary to assess the anterior tibial veins, as they tend not to be a main source of DVT.

SUPERFICIAL VEIN SCANNING

Due to the variation in distribution and sites of reflux and recurrence take as many images as required with sufficient descriptive text to allow for review at a later stage.

Perforating veins - can be found along the length of the leg primarily along the medial aspect connecting the long saphenous vein with the deep system. Only incompetent perforating (ICP) veins need to be noted and recorded with an image. ICPs in the thigh with diameters of >2mm and which appear to be the main source of reflux in the superficial varicose vein need to be noted, and for ICPs in the calf, diameters of >3mm need to be

noted. Diameter measurements should be taken at the level of the fascia or just inside the muscle group. If reflux appears equivocal with the colour Doppler assess with the pulsed Doppler.

12. Using an 8 – 10MHz probe in transverse view identify the sapheno-femoral junction and proximal long saphenous vein. Due to previous surgery a junction may not be evident and therefore careful determination of any neovascularisation or any incompetent veins that can arise from the pelvic region is required. Measure the diameter of the as proximally as possible also noting the depth. Follow the LSV medially down the thigh assessing for reflux with an augmentation squeeze every 5 –6cm. If reflux is demonstrated with the colour Doppler, assess in longitudinal view with the pulsed Doppler and obtain an image noting the length and how straight the LSV is. If no reflux is demonstrated still obtain an image at knee level. Note on any images taken sites of reflux and any incompetent branches when the LSV itself appears competent. Note the depth of the LSV and any incompetent branches, measure the diameter and depth just above the medial femoral condial and also just below.

A major branch of the LSV, which can be important, is the lateral accessory vein, which divides off the LSV soon after the sapheno-femoral junction. This vein tends to run anteriorally in the thigh and can be the main conduit for reflux instead of the LSV. This vein can also sometimes be mistaken for the LSV.

13. Move to the popliteal fossa to assess the short saphenous vein identify the sapheno-popliteal junction in transverse view and scan distally assessing for reflux with an augmentation squeeze every 5 – 6cm. As for the LSV measure the diameter proximally and distally and the length and depth of the SSV. It may be seen that the Giacomini vein is clearly evident and may be the source of reflux feeding the SSV. Assess the Giacomini just before the junction with the SSV and if incompetent follow it proximally to find its origin usually off the proximal LSV, although the reflux in it may be from a posterior thigh ICP. Obtain an image from the mid to distal SSV.

14. Return to the long saphenous vein distribution at knee level, with the probe in transverse view. Whilst keeping the tibia in view on the left hand side of the image scan down the leg assessing for segmental reflux, significant branches and perforators as necessary. Repeat this with the probe in a more posterior aspect of the calf ensuring that there is some overlap with the previous scanning. Repeat this until you are overlapping with the scan of the SSV.

15. If varices are identified on the lateral aspect of the leg, scan them and try to determine their origin. Obtaining images as required.