Number	Date	Scan type	CHI
1	30/03/2022	BLLA	1504412206
2/3	30/03/2022	BLLA	3103392257
4	06/04/2022	LLLA	0209612053
5	06/04/2022	LLLA	0903572028
6/7	07/04/2022	BLLA	0612432114
8	12/04/2022	LLLA	1811632084
9/10	25/04/2022	BLLA	2807462138
11	26/04/2022	LLLA	2002762171
12	26/04/2022	RLLA (target scan)	0602612152
13	09/05/2022	LLLA	2905425210
14	10/05/2022	LULA	2212030371
15	10/05/2022	RULA	1407752006
16	19/05/2022	LLLA	1305462254
17	23/05/2022	RLLA	2208532317
18	23/05/2022	RLLA	1410472027
19	31/05/2022	LLLA	1709452234
20/21	31/05/2022	BLLA	2401642404
22/23	31/05/2022	BLLA	1802442251
24	02/06/2022	LULA	0712802037
25	06/06/2022	RLLA	3009392052

The Vascular Laboratory
Aberdeen Royal Infirmary

Consultant: [redacted]
Vascular Surgeon
Ward 215 ARI

Episode date
30/03/2022

Ward
Outpatient

Patient:
[redacted]

Unit Number
0485086

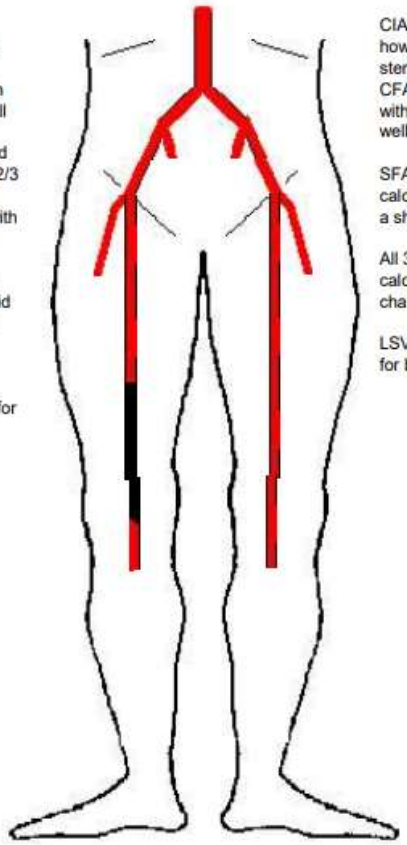
CHI
1504412206

Tests performed: **Bilateral Arterial Legs Duplex**

Results:

AAA 3.7cm. CIA and EIA appear calcified however no localalised stenosis.
CFA triphasic waveform with minor disease. Profunda well estabilised.
SFA - mild calcified diffussed disease with a occlusion at 2/3 thigh reconstituting at the popliteal. P-T trunk patent with significantly calcified walls.
ATA patent but calcified.
PTA patent proximally then appears to occlude in the mid segment and distally fed by peroneal.
Peroneal patent.

Only proximal LSV suitable for bypass (8cm in lenght)



CIA and EIA appear calcified however no localalised stenosis.
CFA sharp biphasic waveform with minor disease. Profunda well estabilised.

SFA and popliteal - mild calcified walls throughout with a sharp biphasic waveform.

All 3 calf vessel patent with calcified walls however good channel of flow.

LSV prox to mid thigh suitible for bypass

Scanned By:- Heather Lynn
Trainee Clinical Scientist

The Vascular Laboratory
Aberdeen Royal Infirmary

Consultant: [redacted]
Vascular Surgeon
Ward 215 ARI

Episode date
30/03/2022

Ward
Outpatient

Patient:
[redacted]

Unit Number
310339

CHI
3103392257

Tests performed: **Bilateral Arterial Legs Duplex**

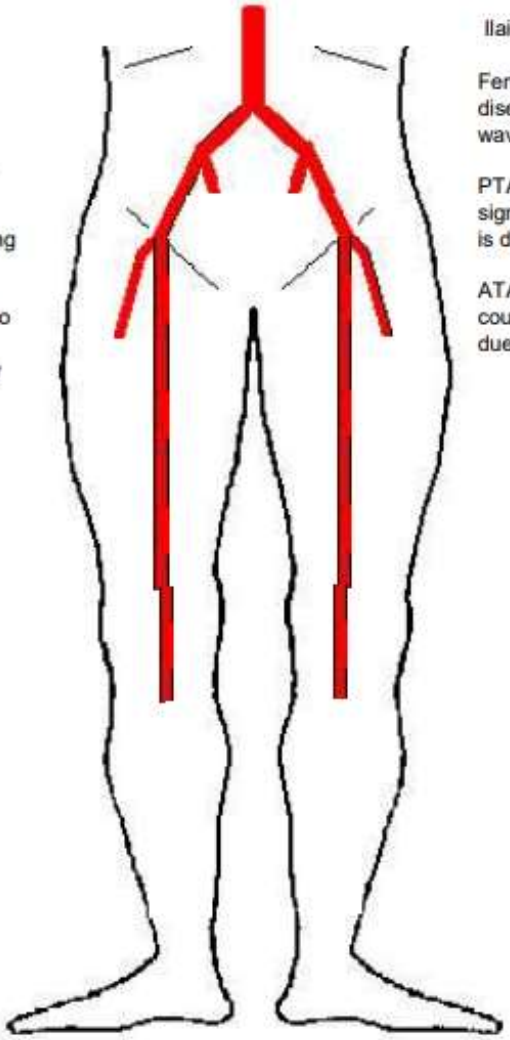
Results:

Aorta normal calibre. Ilaic minor calcified disease.

Fem -pop minor calcified disease with a triphasic waveform seen throughout.

PTA is patent however significant calcification making is difficult to assess.

ATA patent in the proximal to mid segment. can not demonstrate continuous flow distally.



Ilaic minor calcified disease.

Fem -pop minor calcified disease with a triphasic waveform seen throughout.

PTA is patent however significant calcification making is difficult to assess.

ATA - calcified throughout could not show in continuity due to calcified walls

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Trainee Clinical Scientist

The Vascular Laboratory
Aberdeen Royal Infirmary

Consultant: [redacted]
Vascular Surgeon
Ward 215 ARI

Episode date
06/04/2022

Ward
Outpatient

Patient: [redacted]

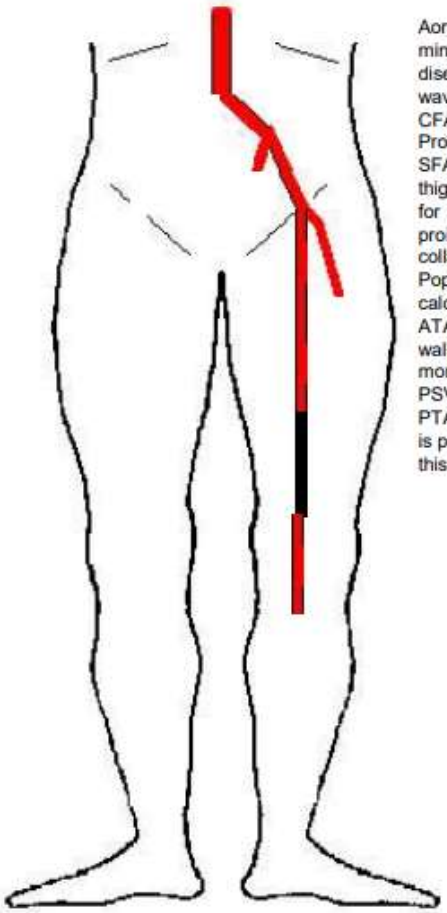
Unit Number
0280231

CHI
0209612053

Tests performed: **Left Leg Arterial Duplex**

Results:

Could only follow PTA to 2/3 calf. the vessel appears to occlude distally



Aorta - 2cm diameter with minor disease. iliacs minor disease with triphasic waveform.
CFA - Minor disease
Profunda well established
SFA minor disease until 2/3 thigh were the vessel occluded for 17cm, reconstiting at proixmal Popliteal.(good collateral seen)
Popliteal minor disease with calcified walls.
ATA is patent with calcified walls and a damped monophasic waveform with PSVs 10cm/sec
PTA - calcified wall, the vessel is patent until 3/4 calf distal to this no flow was detected.

Scanned By:- Heather Lynn
Trainee Clinical Scientist

The Vascular Laboratory
Aberdeen Royal Infirmary

Consultant: [redacted]
Vascular Surgeon
Ward 215 ARI

Episode date
06/04/2022

Ward
Outpatient

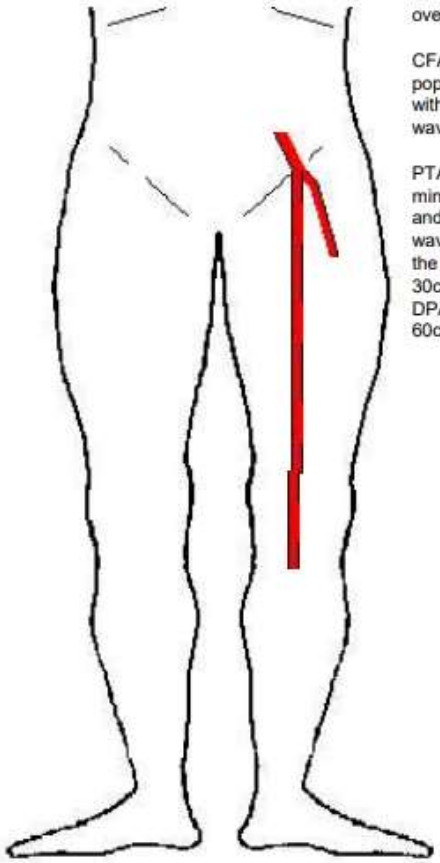
Patient:
[redacted]

Unit Number
2093193

CHI
0903572028

Tests performed: **Left Leg Arterial Duplex**

Results:



Aorta/iliac not imaged due to overlying bowel gas.

CFA, profunda, SFA and popliteal have minor disease with a sharp biphasic waveform seen thoughout.

PTA and ATA patent with minor/mild diffused disease and a sharp biphasic waveform. The velocities at the distal PTA are reduced ~ 30cm/sec compared to the DPA with has velocities of 60cm/sec at the foot.

Scanned By:- Heather Lynn
Trainee Clinical Scientist

The Vascular Laboratory
Aberdeen Royal Infirmary

Consultant: [redacted]
VSN
Ward 215 ARI

Episode date
07/04/2022

Ward
Outpatient

Patient:
[redacted]

Unit Number
0193763

CHI
0612432114

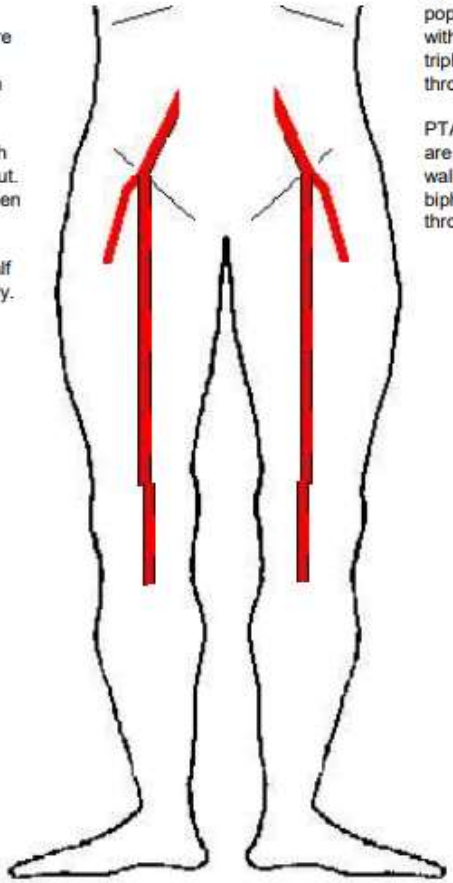
Tests performed: **Bilateral Arterial Legs Duplex**

Results:

Aorta and CIA difficult to image. EIA, CFA, Profunda, SFA and popliteal arteries are patent with mild calcified disease. Triphasic waveform seen throughout

PTA and ATA are patent with mild calcified walls throughout. Sharp biphasic waveform seen throughout

Peroneal imaged until 2/3 calf however can not seen distally.



EIA, CFA, Profunda, SFA and popliteal arteries are patent with mild calcified disease. triphasic waveform seen throughout

PTA peroneal artery and ATA are patent with mild calcified walls throughout. Sharp biphasic waveform seen throughout

Scanned By:- Heather Lynn
Vascular Lab Assistant

The Vascular Laboratory
Aberdeen Royal Infirmary

Consultant: Locum
Vascular Consultant
Ward 215 ARI

Episode date
12/04/2022

Ward
Outpatient

Patient: [redacted]

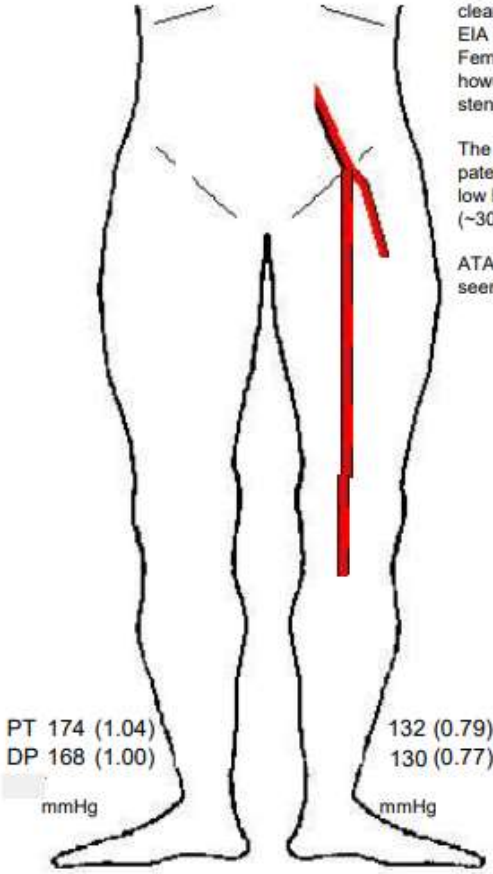
Unit Number
1099261

CHI
1811632084

Tests performed: **Ankle Brachial Indices** **Left Leg Arterial Duplex**

Results:

	Right	Left
Brachial	168	



Aorta and CIA not imaged clearly due to bowel gas. EIA mild diffused disease. Fem -pop Mild disease however no focal significant stenosis.

The PTA and peroneal are patent with mild disease and low PSV's seen distally (~30cm/sec)

ATA difficult to image and not seen in continuity.

Scanned By:- Heather Lynn
Trainee Clinical Scientist

The Vascular Laboratory
Aberdeen Royal Infirmary

Consultant: [redacted]
VSN
Ward 215 ARI

Episode date
25/04/2022

Ward
Outpatient

Patient: [redacted]

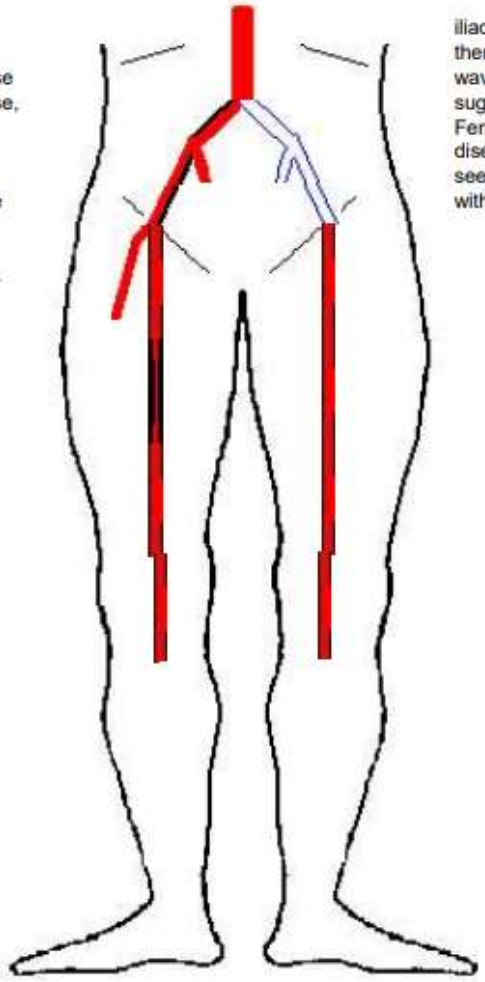
Unit Number
0302624

CHI
2807462138

Tests performed: **Bilateral Arterial Legs Duplex**

Results:

Aorta is 2.4cm in diameter. CIA not imaged. EIA patent with diffused calcified disease throughout. CFA mild disease, profunda well established. Proximal SFA mild disease mid SFA has significant diffused disease. Distally the vessel is patent with mild disease. Calf vessel are patent with diffused disease.



iliac difficult to image however there is a monophasic waveform in the CFA suggesting inflow disease. Fem - pop mild diffused disease throughout. PTA not seen in continuity. ATA patent with diffused disease.

Scanned By:- Heather Lynn
Trainee Clinical Scientist

The Vascular Laboratory
Aberdeen Royal Infirmary

Consultant: [redacted]
Vascular Surgeon
Ward 215 ARI

Episode date
26/04/2022

Ward
Outpatient

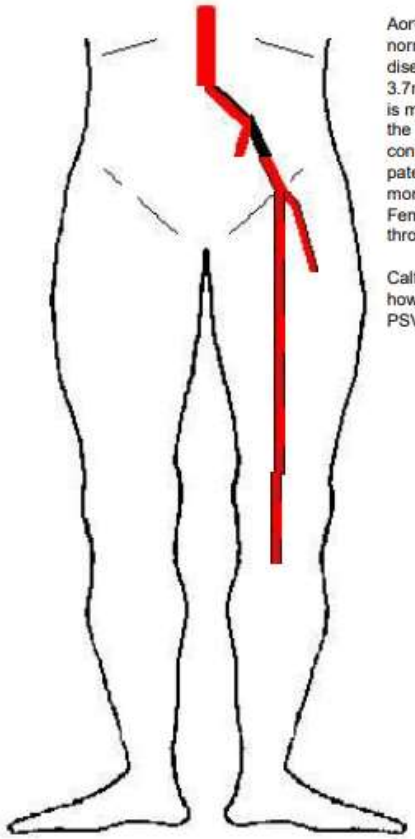
Patient:
[redacted]

Unit Number
0570951

CHI
2002762171

Tests performed: **Left Leg Arterial Duplex**

Results:



Aorta minor disease and normal calibre. CIA moderate disease with a calibre of 3.7mm, at the bifircation there is more significant disease and the EIA id difficult to image in continuity ? occlusion. CFA is patent with mild disease and a monophaisc waveform .
Fem -- pop mild disease throughout.

Calfe vessel are patent however unterfilling with low PSV's distally 10 -20 cm/sec.

Scanned By:- Heather Lynn
Trainee Clinical Scientist

The Vascular Laboratory
Aberdeen Royal Infirmary

Consultant: [redacted]
Vascular Surgeon
Ward 215

Episode date
26/04/2022

Ward
Outpatient

Patient:
[redacted]

Unit Number
060261

CHI
0602612152

Tests performed: **Generic Duplex**

Right distal SFA has a 4.1cm aneurysm with a length of 8cm . distally biphasic wavefrom, PTA and ATA have biphasic waveform at the foot

Scanned By:- Heather Lynn
Trainee Clinical Scientist

The Vascular Laboratory
Aberdeen Royal Infirmary

Consultant: [redacted]
VSN
Ward 215 ARI

Episode date
09/05/2022

Ward
Outpatient

Patient:
[redacted]

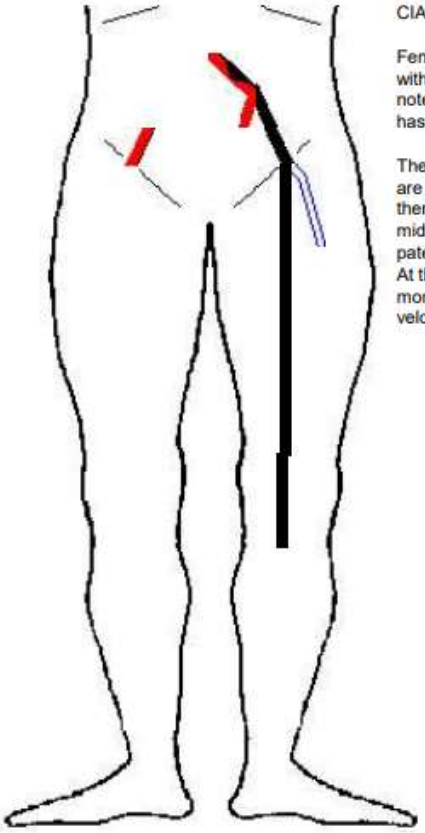
Unit Number
1398822

CHI
2905425210

Tests performed: **Left Leg Arterial Duplex**

Results:

CFA thas a shape triphasic waveform



No flow detected in the distal CIA and EIA.

Fem - pop is widely occluded with small collateral vessel noted thoughout. The plaque has mixed echogenicity.

The proximal PTA and ATA are not inontinuity however there is colleterals noted. The mid to distal ATA and PTA are patent mild minor disease. At the foot there is a monophasic waveform with velocities of 8cm/sec

Scanned By:- Heather Lynn
Trainee Clinical Scientist

The Vascular Laboratory
Aberdeen Royal Infirmary

Consultant: [redacted]
Vascular Surgeon
Ward 215 ARI

Episode date
10/05/2022

Ward
Outpatient

Patient:
[redacted]

Unit Number
2014812

CHI

Tests performed: **Segmental Arm Pressures** **Generic Duplex**

Left upper arm arterial. the mid to distal subclavian, axillary brachial and radial arteries are patent with a monophasic waveform seen throughout. The ulnar artery has > 10cm long area with occlusive thrombose, just below the bifurcation, at this point the vessel is enlarger. In the mid arm the vessel return to normal calibre and damped monophaisc flow is seen with velocities of 7cm/sec

Left CCA, ECA and ICA are patent and within norma limits. The vertibral artery is well established with a calibre of 7mm and retrograde flow with minimal antigrade flow.

Scanned By:- Heather Lynn
Trainee Clinical Scientist

The Vascular Laboratory
Aberdeen Royal Infirmary

Consultant: [redacted]
Vascular Surgeon
Ward 215 ARI

Episode date
10/05/2022

Ward
Outpatient

Patient:
[redacted]

Unit Number
140775

CHI
1407752006

Tests performed: **Generic Duplex**

RULA - There is triphasic flow throughout the Subclavian, axillary, brachial and radial artery with a sharp biphasic wavefrom seem in the ulnar. no notable disease.

Right - provocation test carried out in distal Sub and axillary artery. The waveform remained simailar with the arm at rest and when the arm was placed in the HOW position however when the arm was placed above the head there was a slight change in waveform from a sharp triphasic waveform to a sharp biphasic waveform.

Left provocation carried out in distal Sub and axillary artery - There was no abnormality noted.

Scanned By:- Heather Lynn
Trainee Clinical Scientist

The Vascular Laboratory
Aberdeen Royal Infirmary

Consultant: Locum
Vascular Consultant
Ward 215 ARI

Episode date
19/05/2022

Ward
Outpatient

Patient:
[redacted]

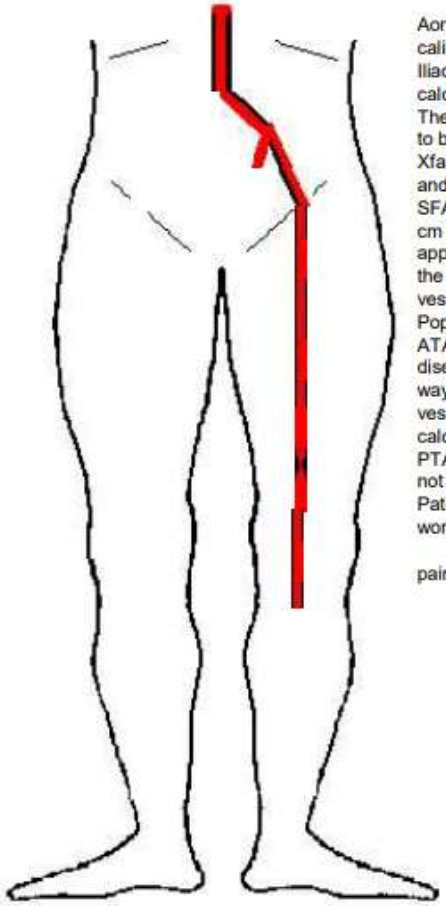
Unit Number
064890

CHI
1305462254

Tests performed: **Left Leg Arterial Duplex**

Results:

Not required



Aorta is patent, has a normal calibre and calciified.
Iliac are patent with moderate calcified disease thoughout. There was 2.5cm obsured due to bowel gas.
Xfa had a triphasic waveform and moderate calcied walls
SFA has a 10x stenosis 2-3 cm long at 2/3 thigh, which appears to have an effect on the flow. The rest of the vessel is patent and calcified.
Popliteal is calcified
ATA has a 2cm significant disease/ occlusion 3/4 of the way down. The rest of the vessel is patent but heavily calcified.
PTA is heavily calcified and not seen in continuity.
Patient report pain slightly worst then 1 week ago.

pain slightly worst

Scanned By:- Heather Lynn
Trainee Clinical Scientist

The Vascular Laboratory
Aberdeen Royal Infirmary

Consultant: [redacted]
Vascular Surgeon
Ward 215

Episode date
23/05/2022

Ward
Outpatient

Patient:
[redacted]

Unit Number
0553490

CHI
2208532317

Tests performed: **Generic Duplex**

Right - The aorta and iliac appear widely patent with mild diffused disease. The aorta has a biphasic waveform and the iliacs has a monophasic ? difficult to assess if the waveform is caused by proximal or distally disease due to good patency of iliacs.

At the foot PTA and DPA have damped monophasic wavefrom
Left at the foor PTA and DPA have monophasic waveforms

There was no suitable LSV's vein on the right of left.

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Trainee Clinical Scientist

The Vascular Laboratory
Aberdeen Royal Infirmary

Consultant: [redacted]
Vascular Surgeon
Ward 215 ARI

Episode date
23/05/2022

Ward
Outpatient

Patient: [redacted]

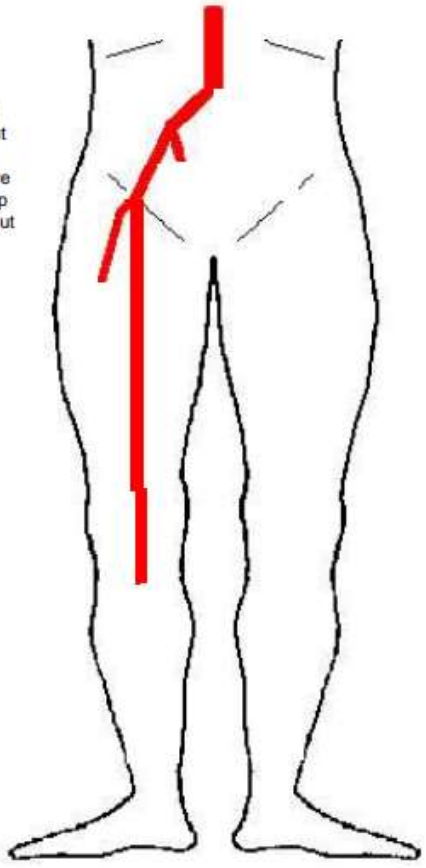
Unit Number
141047

CHI
1410472027

Tests performed: **Right Leg Arterial Duplex**

Results:

Aorta normal calibre. Iliac slighltly calcified with a triphasic waveform seen thoughout. CFA, profunda,SFA and popliteal has minor disease thoughout with a triphasic waveform. PTA, ATA and Peroneal have mild calcification with a sharp biphasic waveform throughout



Scanned By:- Heather Lynn
Trainee Clinical Scientist

The Vascular Laboratory
Aberdeen Royal Infirmary

Consultant: [redacted]
VSN
Ward 215 ARI

Episode date
31/05/2022

Ward
Outpatient

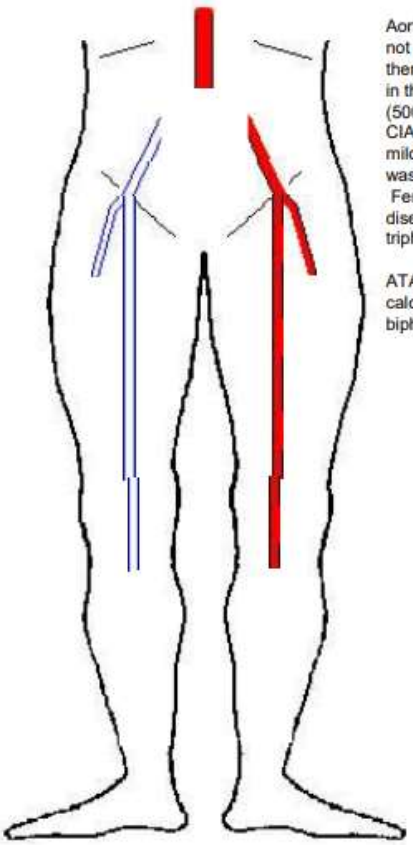
Patient:
[redacted]

Unit Number
0842385

CHI
1709452234

Tests performed: **Bilateral Arterial Legs Duplex**

Results:



Aorta - minor disease, could not image CIA stent however there was high velocities seen in the proximal CIA (500cm/sec) and in the distal CIA (300cm/sec) The EIA had mild disease throughout. there was a segtion obsured by BG. Fem -pop - Mild disffused disease throughout with a triphaisc waveform.

ATA and PTA have calcification with a sharp biphasic waveform.

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Trainee Clinical Scientist

The Vascular Laboratory
Aberdeen Royal Infirmary

Consultant: [redacted]
Vascular Surgeon
Ward 215 ARI

Episode date
31/05/2022

Ward
Outpatient

Patient:
[redacted]

Unit Number
0985704

CHI
2401642404

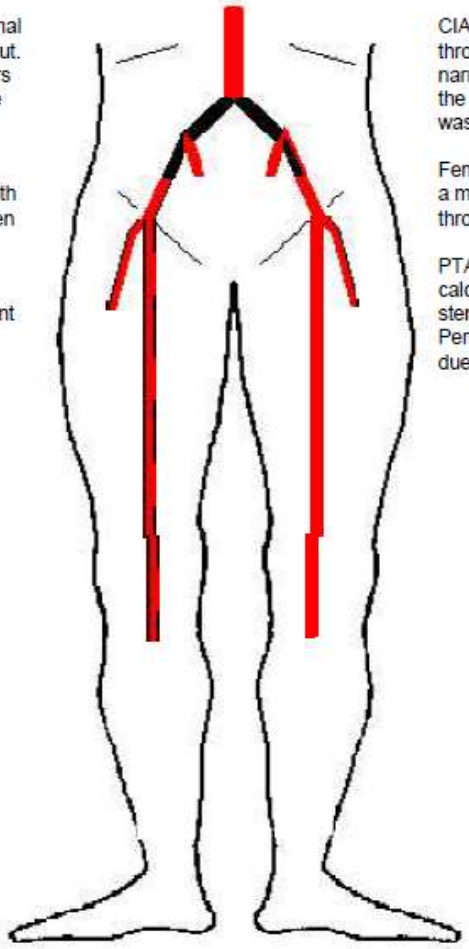
Tests performed: **Bilateral Arterial Legs Duplex**

Results:

Aorta patent, CIA and proximal EIA near occlusion throughout. The mid to distal EIA appears to be fed a collaeral from the IIA. Colateral network was noted.

Fem pop - minor disease with a monophasic wavefrom seen throughout.

PTA and ATA minor calcification with no significant stenosis noted.
Peroneal difficult to assess due to calcified walls



CIA and EIA near occlusion throughout. there was a narrow channel of flow seen in the EIA. Colateral network was noted.

Fem pop - minor disease with a monophasic wavefrom seen throughout.

PTA and ATA minor calcification with no significant stenosis noted.
Peroneal difficult to assess due to calcified walls

Scanned By:- Heather Lynn
Trainee Clinical Scientist

The Vascular Laboratory
Aberdeen Royal Infirmary

Consultant: [redacted]
Vascular Surgeon
Ward 215 ARI

Episode date
01/06/2022

Ward
Outpatient

Patient: [redacted]

Unit Number
2029844

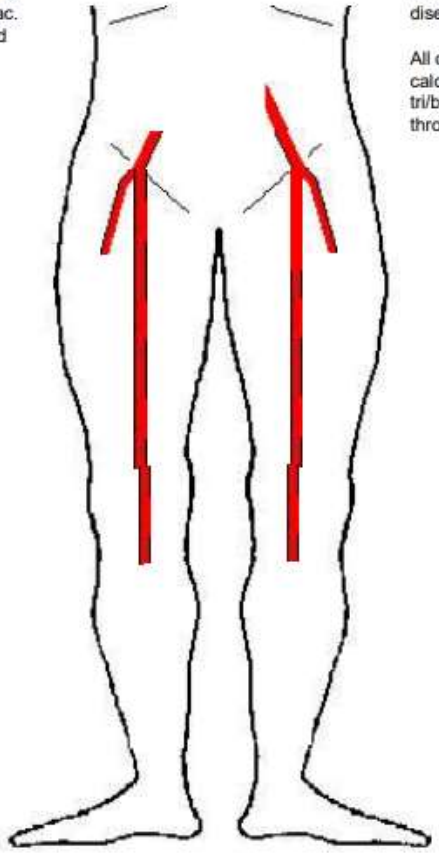
CHI
1802442251

Tests performed: **Bilateral Arterial Legs Duplex**

Results:

AAA measures 10cm, there is irregular thrombose in the sac. Fem -pop has minor calcified disease throughout

All calf vessel patent with calcified disease and a tri/biphasic waveform seen throughout



Fem -pop has minor calcified disease throughout

All calf vessel patent with calcified disease and a tri/biphasic waveform seen throughout

Scanned By:- Heather Lynn
Trainee Clinical Scientist

The Vascular Laboratory
Aberdeen Royal Infirmary

Consultant: [redacted]
Vascular Surgeon
Ward 215 ARI

Episode date
02/06/2022

Ward
Outpatient

Patient: [redacted]

Unit Number
0701160

CHI
0712802037

Tests performed: **Generic Duplex**

left upper limb arterial - The subclavian, axilllary, brachial, radial and ulnar appear within normal limits with a triphasic waveform seen throughout

Scanned By:- Heather Lynn
Trainee Clinical Scientist

The Vascular Laboratory
Aberdeen Royal Infirmary

Consultant: [redacted]
Vascular Surgeon
Ward 215

Episode date
06/06/2022

Ward
Outpatient

Patient:
[redacted]

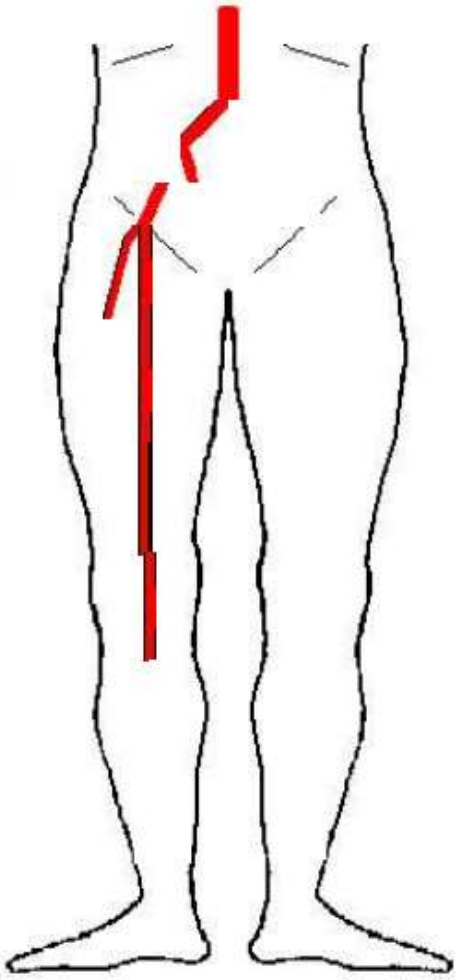
Unit Number
0107902

CHI

Tests performed: **Right Leg Arterial Duplex**

Results:

Aorta normal calibre, CIA 1.6cm diamater with minor calcified disease,
Fem - pop has mild diffised disease throughout with a sharp biphasic wavefrom.
Popliteal has normal calibre.
PTA appears occluded ATA norrow calcified vessels however patent



Scanned By:- Heather Lynn
Trainee Clinical Scientist

LOWER LIMB ARTERIAL ASSESSMENT

SCANNER SETTING:

Arterial

PROBES:

5-8MHz

PATIENT POSITION

Supine with support for head and neck.

DISEASE GRADING

Three factors are used to grade atheroma when scanning, appearance on ultrasound, colour flow and spectral Doppler waveform analysis.

Normal: - Walls of vessels should be smooth with intima seen but may have first signs of atheroma with fatty streaks or calcification within the wall. Colour flow should be uniform to the walls of the vessel. The Doppler waveform should be tri-phasic with clear definition of frequencies.

Minor/mild: - Irregular walls to the vessel due to atheroma causing less than 30% diameter reduction, with some colour flow disturbance. The Doppler waveform may exhibit some flow disturbance with spectral broadening and may still be bi-phasic but giving less than 2 times increase in Peak Systolic Velocity (PSV).

Significant: - Atheroma clearly evident causing significant reduction in diameter. Significant colour flow disturbance with aliasing. Localised mild stenoses may still have bi-phasic Doppler waveforms post stenosis, but causing at least 2 times increase in PSV. The more severe the stenosis the more damped and mono-phasic the Doppler waveform post stenosis. Distal to the area of significant disease the Doppler waveform may still be pulsatile but mono-phasic.

Severe: - Heavily congested with atheroma to the extent that it may appear occluded without the use of colour flow Doppler. Severe disease may be multiple tight stenoses or a long stenosis with just a residual lumen. Colour flow Doppler will help to distinguish this. Distal to the area of severe atheroma the Doppler waveform will be very damped and mono-phasic.

Occluded: - Atheroma throughout and may appear small in calibre due to age of disease. No colour flow Doppler or Doppler waveforms detected.

Stenosis grading: - Calculating increase in PSV's is performed by measuring the PSV just proximal to the stenosis in a preferably disease free area or area of minimal disease. A PSV is then measured in the jet of the stenosis. The stenosis PSV is then divided by the proximal PSV to obtain a ratio. 2 to 3 times increase is a mild stenosis and >3 times increase in PSV significant.

IMAGES AND REPORTING:

When obtaining images ensure that the correct side and site is recorded. Note any abnormalities or incidental findings. For reporting purposes split the SFA into proximal, mid and distal thirds. For each segment from the CFA to the popliteal artery measure the diameter of the vessel and in the presence of atheroma measure the lumen diameter (unless there is stenoses of =>3x PSV). Obtain images as necessary with descriptive text of what was seen and when assessing stenoses. Assess level of calcification as whether in walls only or heavily calcified plaque. When possible assess the type of plaque. Measure the length of any occlusions and if short (<10cm) location in segment.

SCANNING TECHNIQUE

AI segment

1. Start in a transverse view in B-mode, along the midline just above the level of the umbilicus. Identify the Abdominal aorta and IVC. To help identify the Abdominal aorta look for the SMA origin and also the bifurcation.

2. Assess for aneurysmal disease by scanning the length of the abdominal aorta. Identify the bifurcation, assessing for aneurysmal disease and noting the orientation of the CIAs.

3. Obtain measurements of the AP diameters of the Abdominal aorta and CIA's in longitudinal view ensuring the walls of the vessels are clearly defined.

4. Switch on the colour Doppler and repeat the scan looking for any flow disturbance or aliasing along the lengths of the aorta, CIAs and EIAs. If present assess with the pulsed Doppler, grading any disease present.

Femoral - Popliteal segment

1. At the level of the inguinal ligament place the probe in a transverse plane. Identify the common-femoral artery and vein and the bifurcation into the superficial-femoral and profunda arteries. Assess the common-femoral artery throughout its length in transverse plane. If no stenotic atheroma obtain a Doppler waveform from the middle of the vessel.

2. If necessary return to a transverse view to identify the profunda artery. Assess the vessel as far as possible in the thigh and obtain a Doppler waveform.

3. Return to the bifurcation and identify the origin of the superficial-femoral artery. Assess the vessel throughout its length, flexing the knee and externally rotating it as necessary. Obtain Doppler waveforms from the proximal and distal segments.

4. With the probe in a transverse view, identify the popliteal artery from behind the knee in the popliteal fossa. Assess the vessel throughout it's length in a longitudinal view by scanning proximally ensuring overlap with the distal SFA/adductor scan and then scan distally to identify the tibio-peroneal trunk. Obtain a Doppler waveform from the distal popliteal artery.

Tibial segment

1. Identify the origins of each of the tibial vessels and assess with the pulsed Doppler obtaining images from each.

2. Whilst in longitudinal view follow the posterior tibial artery from the tibio-peroneal trunk, distally to the level of the malleoli along the medial aspect of the tibia. Assess with pulsed Doppler as necessary and obtaining images. To add in the identification ensure the posterior tibial runs to the medial malleolus, if necessary start scan of PT from malleolus.

3. Return to the tibio-peroneal trunk and assess the peroneal artery throughout it's length to the ankle. The peroneal artery lies deep to the posterior tibial artery in medial view and also deep to the anterior tibial in lateral view.

4. Assess the anterior-tibial artery on the anterio-lateral aspect of the lower leg throughout it's length and that it feeds the dorsalis pedis directly.
5. If there is severe disease demonstrated proximally take AP diameter measurements of the patent tibial arteries proximally and distally.