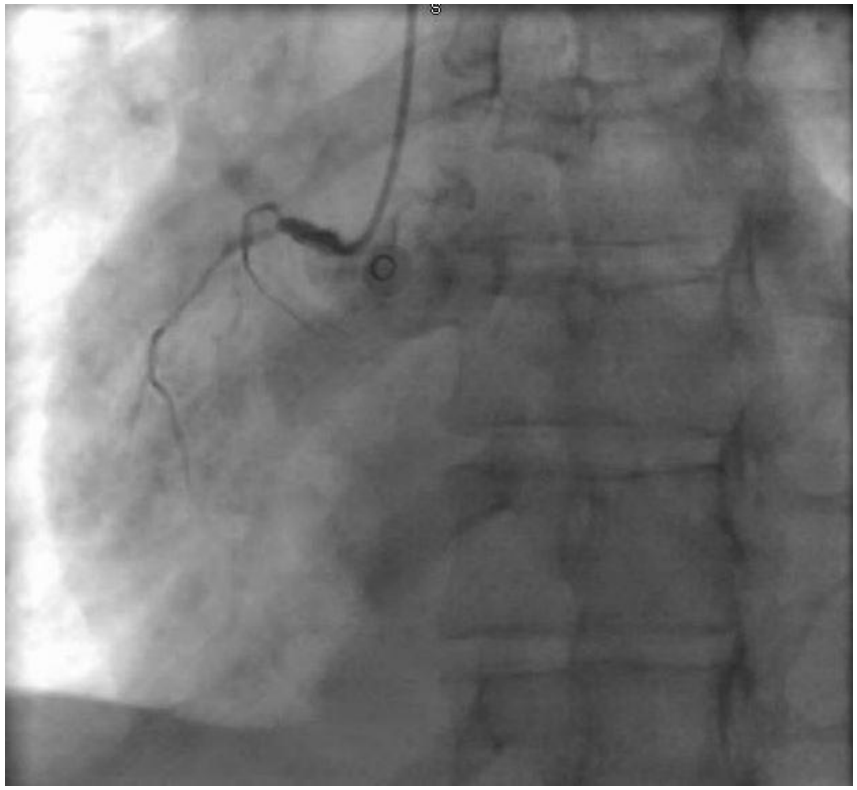
2021 euro PCR

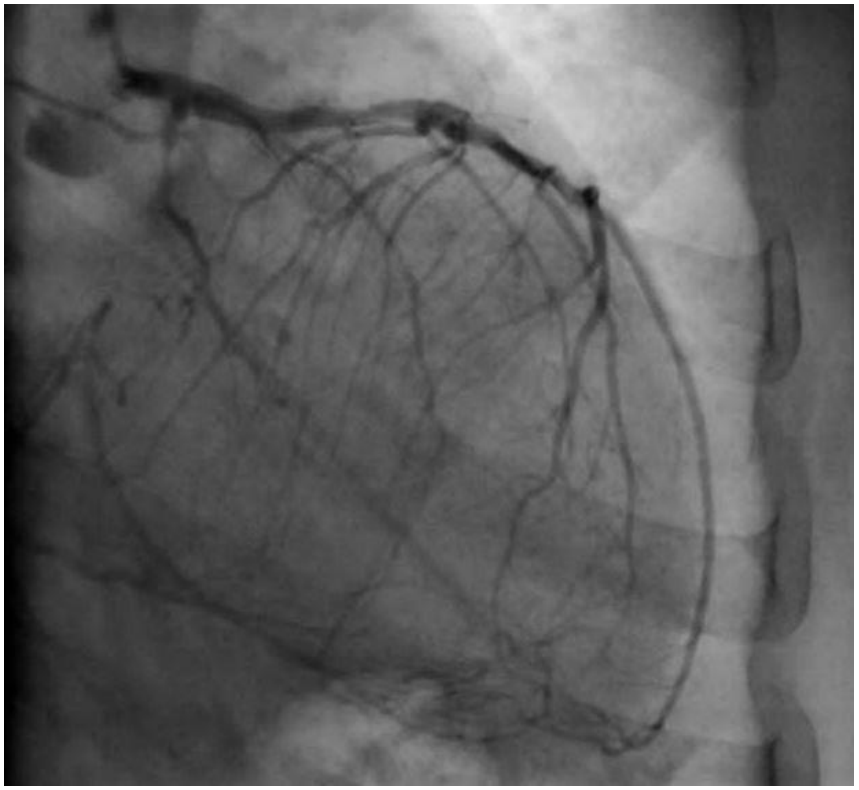
Look before you leap…

Background

- 71 yo lady admitted with acute pulmonary oedema and troponin of 600
- ECG – deep anterolateral T wave inversion
- Cardiac RF – Hypertension, current smoker, diabetes, dyslipidaemia
- Echocardiogram – EF 20/25%, inferior akinesis, septal/lateral/posterior hypokinesis
- Proceeded to coronary angiogram…

Diagnostic Coronary Angiogram





Diagnostic Coronary Angiogram

Left main – 20-30% atheroma

Left anterior descending – long segment of 70% narrowing involving a moderate sized third diagonal. Provides septal collaterals to right PDA

Left Circumflex – short, proximal occlusion after OM1. OM2 and OM3 fill retrogradely

Right Coronary Artery – dominant vessel with ostial occlusion

Discussed at Cardiothoracic Conference – for cardiac MRI +/- CABG

As part of CABG work up…

Ultrasound carotids:

- Left vertebral artery patent with retrograde transient flow

? Subclavian steal phenomenon

CT Angio Aortic Arch:

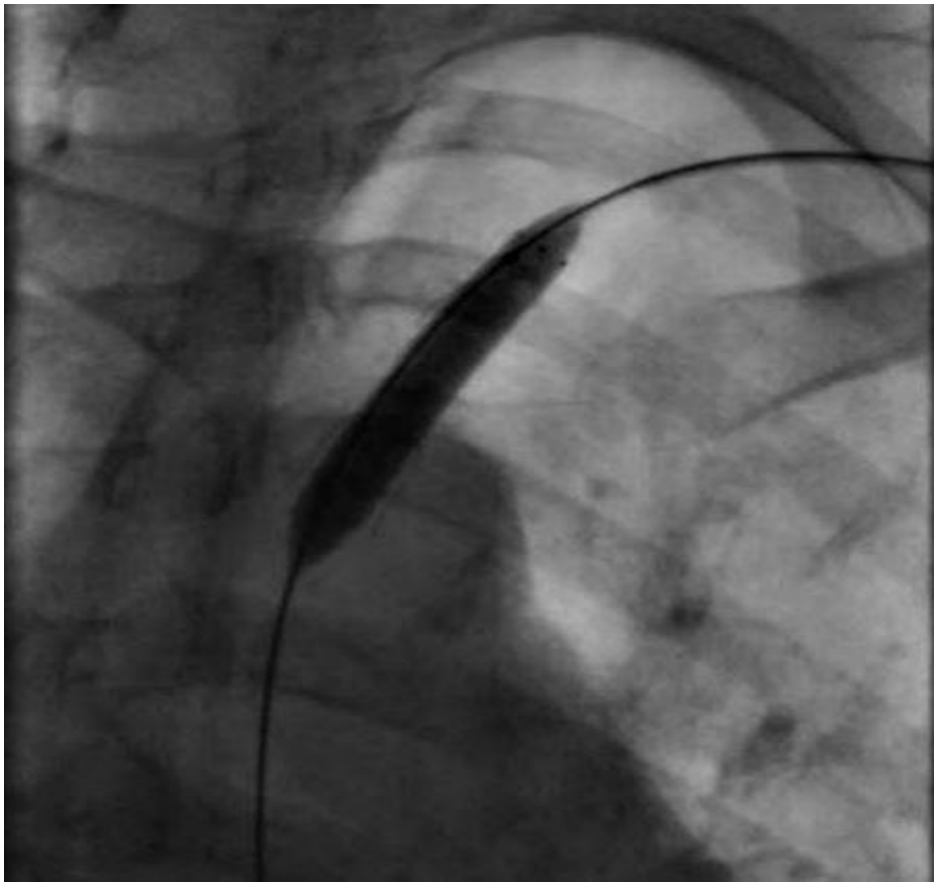
- Critical, short stenosis in the left subclavian artery, 1cm from its origin

Cardiac MRI:

- Severely impaired LV systolic function
- Multi territory inducible ischaemia (septum, inferior and lateral walls)
- All 17 segments viable

Left Subclavian Artery Stenting

- Hybrid approach –> stenting of left subclavian artery to facilitate the use of left internal mammary artery (LIMA) during CABG
- 10mm x 4cm S.M.A.R.T. stent (Self expanding nitinol stent)
- Balloon dilated to 8mm in diameter
- Good antegrade flow in left vertebral artery and LIMA widely patent at end of procedure

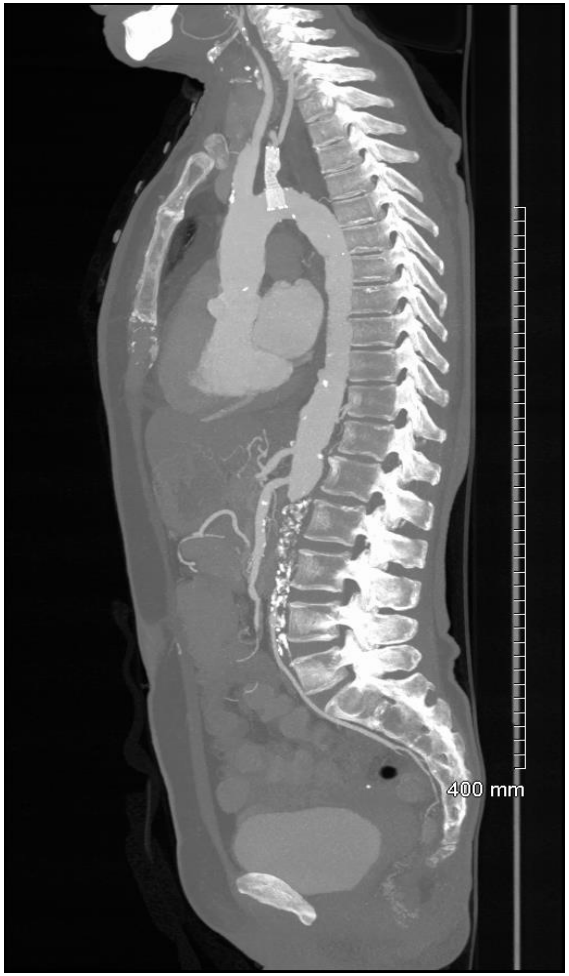


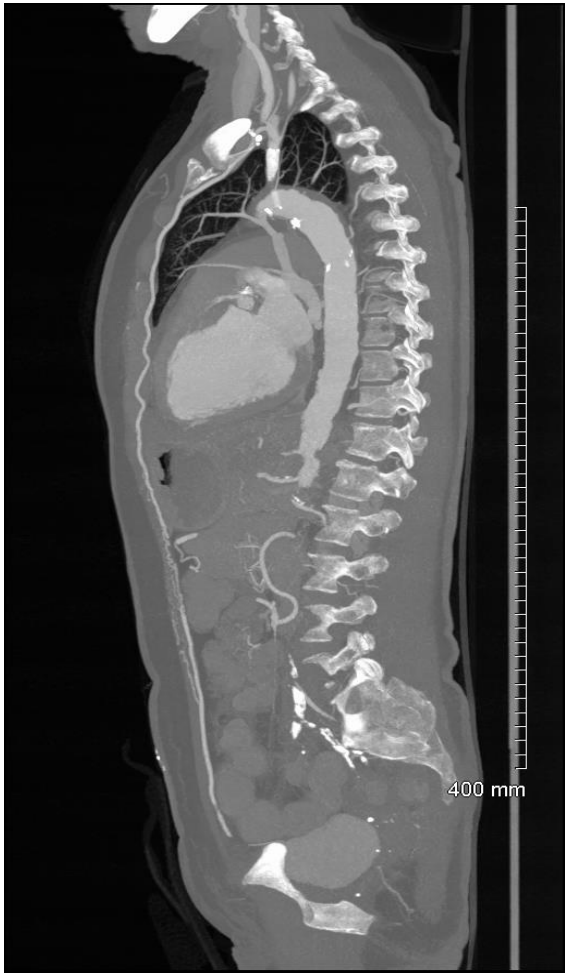
CT Angiogram of Thoracic/Abdominal Aorta

Given patient's severe, multilevel arterial stenoses CT was arranged – *Does the LIMA provide collateral supply to the lower limbs?*

CT Angio - Collateralisation of flow from the internal mammary arteries to the common femoral arteries bilaterally via inferior epigastrics

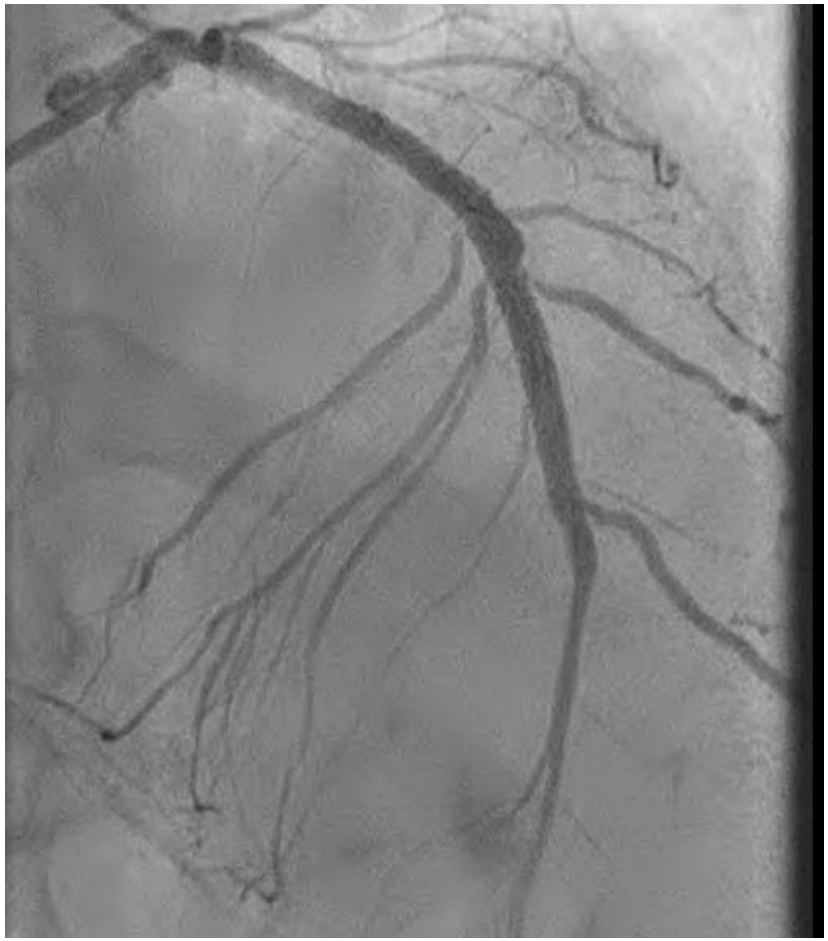
No other suitable conduits





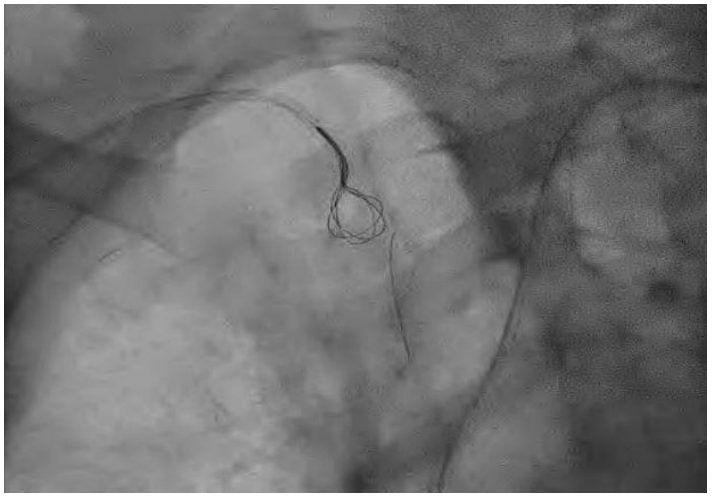
PCI to Left Anterior Descending Artery (LAD)

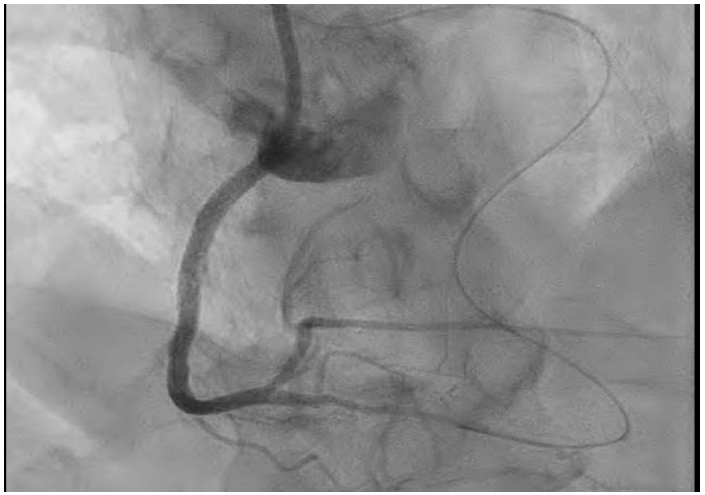
- RRA, 6F sheath
- Left anterior descending dilated with 3.0 x 15mm balloon and stented with 2.75 x 20 mm Promus DES jailing D3
- Post dilated with 3.0 x 15mm non compliant balloon
- Kissing balloon dilatation with 3.0 x 15mm balloon in LAD and 2.0 x 15mm balloon in D3
- LAD then stented with 3.5 x 32mm Promus DES and post dilated with 4.0 x 15mm non complaint balloon



PCI to CTO of Right Coronary Artery (RCA) Retrograde Approach

- Wired septals through LAD stent with Sion Black, found distal RCA
- Unable to pass Corsair 150 or Turnpike LP microcatheters
- Caravel microcatheter passed with advancement of Sion Black to proximal cap, crossed retrogradely with Gladius wire into aorta
- Replaced Gladius wire with RG3 300mm wire using Snare in aorta to externalise retrograde wire
- 2 overlapping DES, both Xience 3.5 x 48mm
- IVUS -> 4.0 X 12mm Xience DES at ostium of RCA
- Post dilated with 3.5 non compliant balloon and 4.0 non compliant balloon proximally





Conclusion

- Complex case – successful intervention to left subclavian artery, LAD and CTO of RCA.
- PCI to CTO of Left Circumflex to be considered in clinic
- Aorto-iliac occlusive disease (Leriche Syndrome) is a known, but infrequently encountered, coexisting disease process in patients with coronary artery disease
- In the presence of aorto-iliac disease, lower limb perfusion may depend on LIMA collaterals. Thus, LIMA harvest could result in lower limb ischaemia
- Fully determining collateral circulation prior to potential CABG is of the utmost importance to reduce perioperative cardiac morbidity and mortality