Penetrating arterial trauma

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Clinical History / Examination

- 55 y old male
- stab wound to distal lateral R thigh.
- Haemodynamicaly stable
- Oozing wound
- Dusky lower leg.
- Diminished Pulses + reduced Doppler signals.

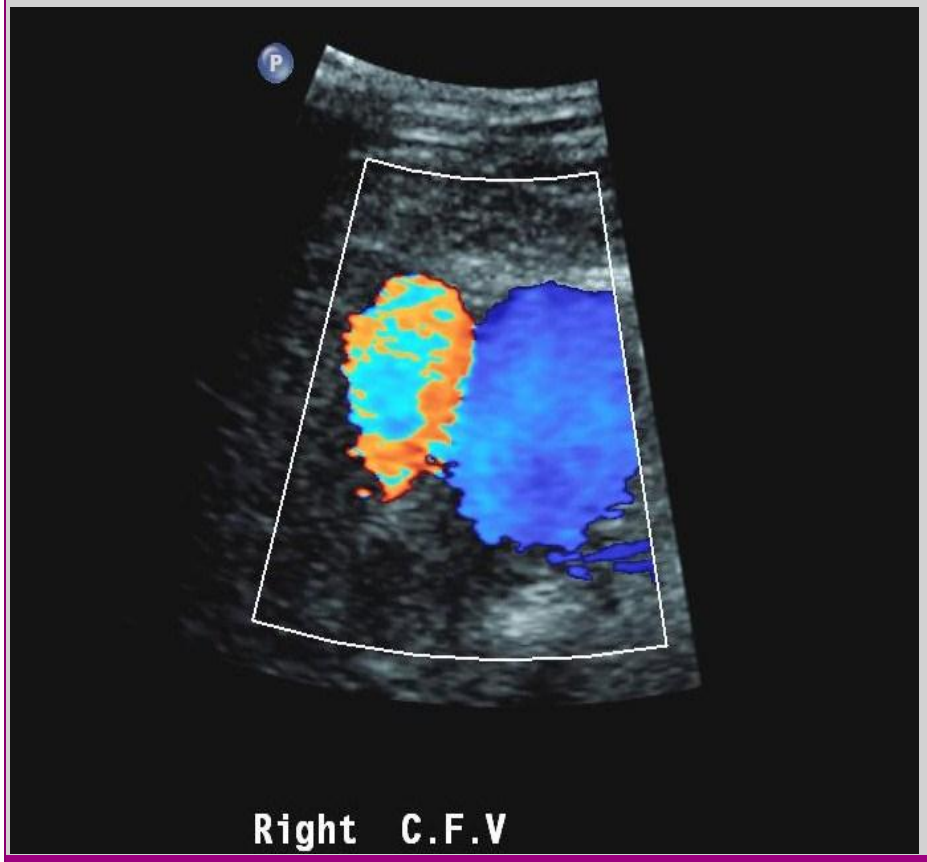
Clinical History / Examination

- Wound debridement was carried out
  - No bleeding or neurovascular injuries identified after releasing the tourniquet.
  - Wash out and closure

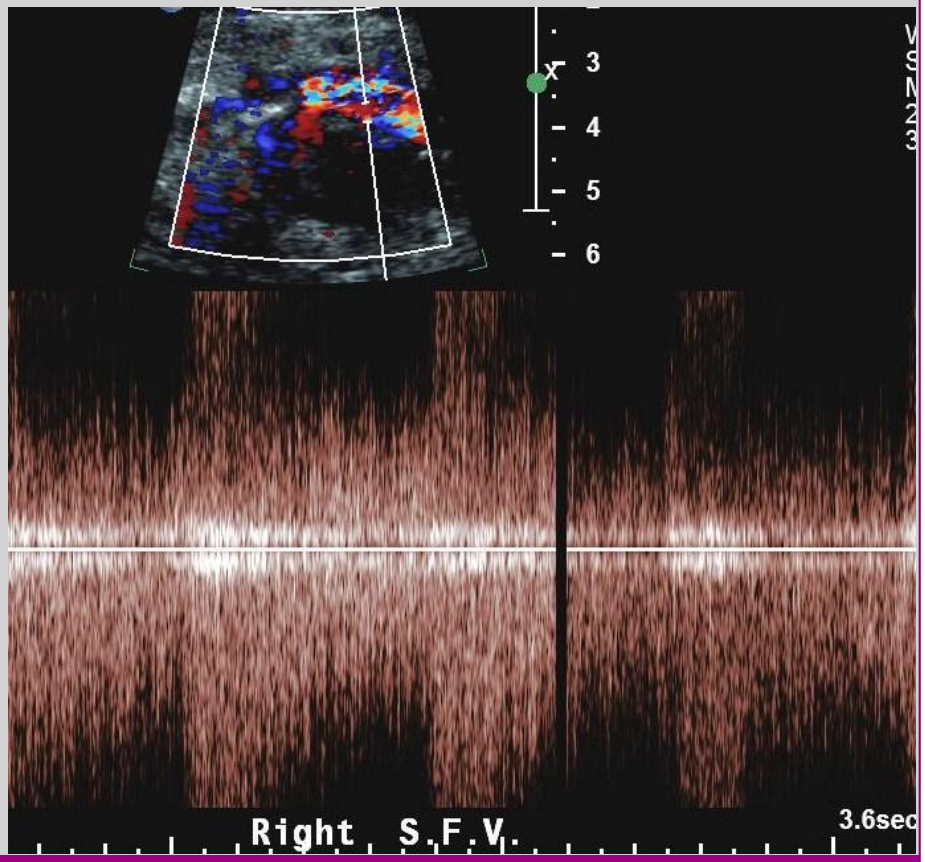
- One week later
  - presented to his GP with right leg swelling.
  - DVT suspected / anticoagulation.
  - Venous duplex ultrasound arranged.

Duplex scan finding

- R. CFV distended + not easily compressible.



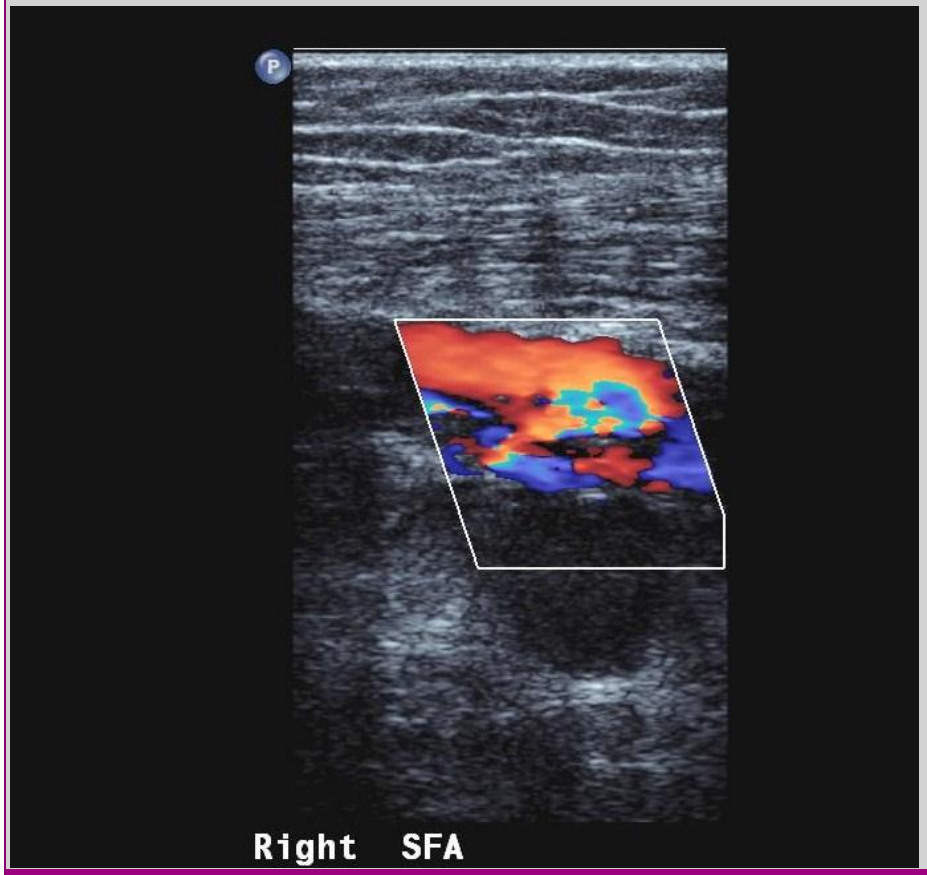
- Turbulent flow in the SFA +SFV



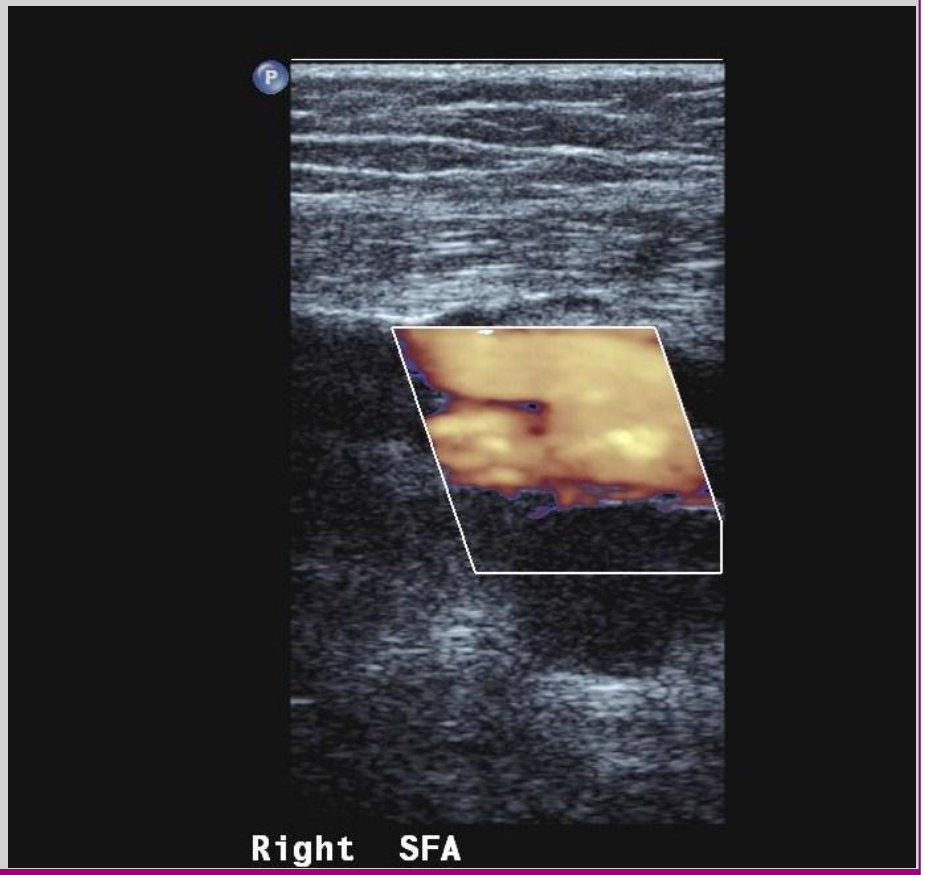
Duplex scan finding

Impression: traumatic R. AVF.

- Z shaped connection between the SFA +SFV

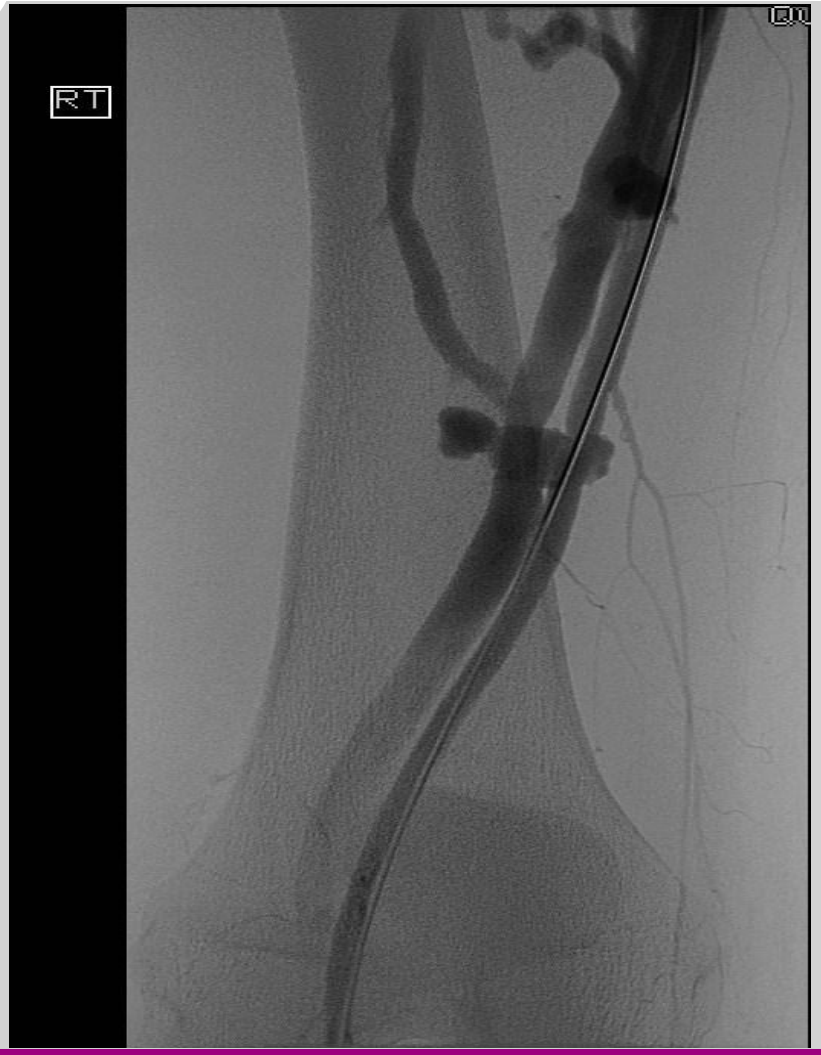


- Damped signal in distal R. Pop A



Management

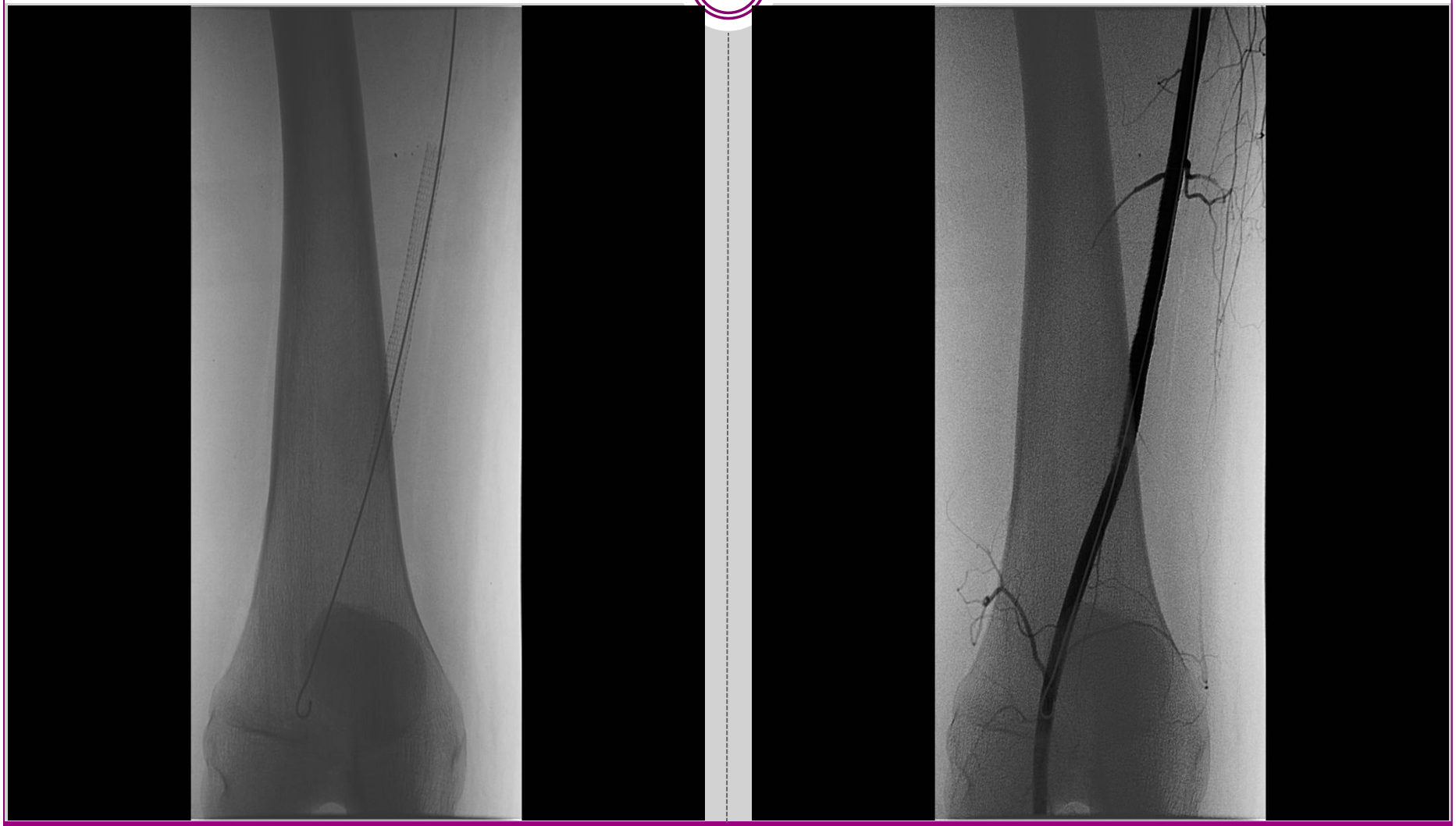
- Angiography
  - large defect within the distal SFA
  - High flow AVF
  - Rapid drainage up the SFV.
  - Moderate sized surrounding cavity (false aneurysm).



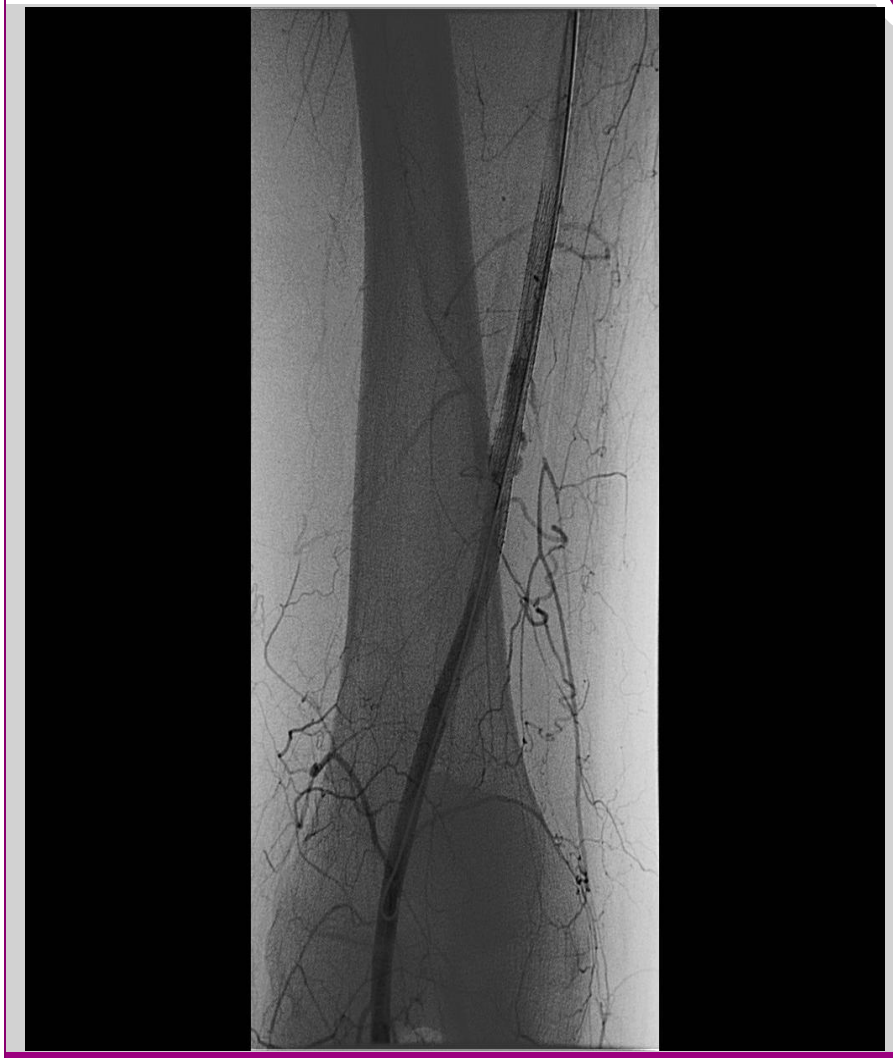
Management

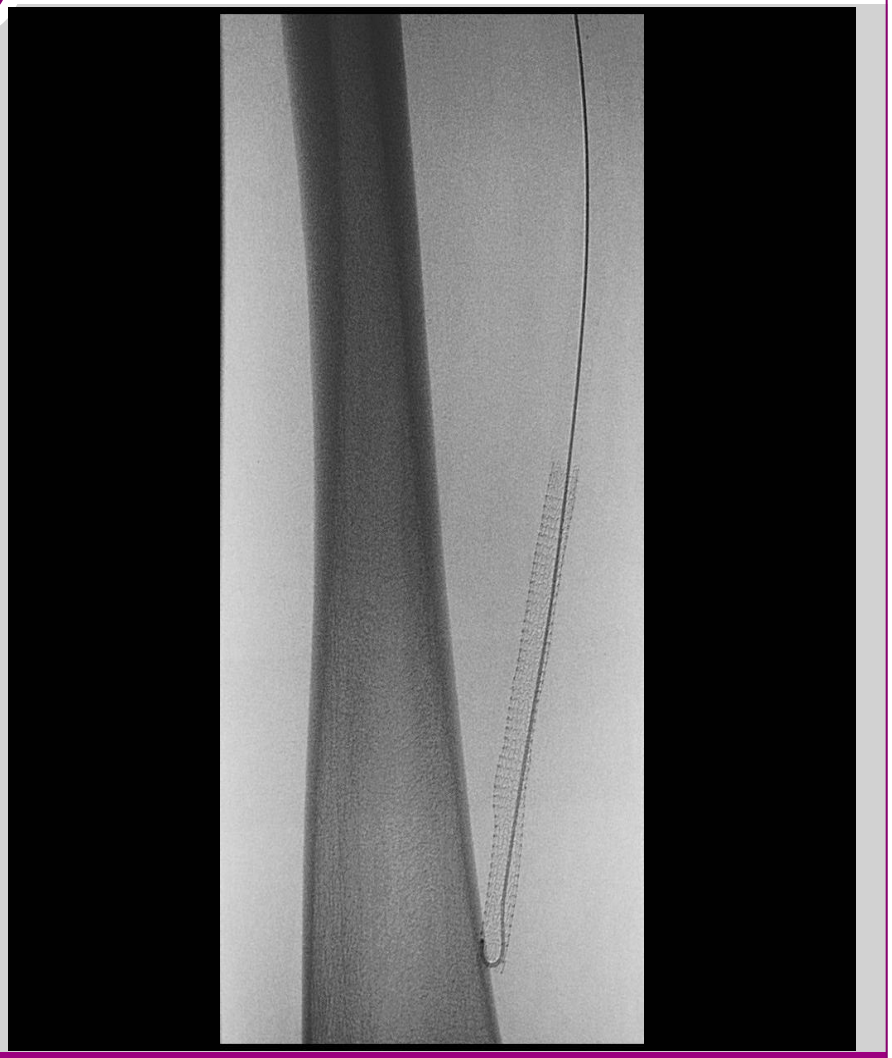
- arterial injury was crossed using a hydrophilic wire and cobra catheter.
- 7 mm wide, 10 cm long covered stent was placed in the arterial aspect of the fistula.
- Minimal distal overlap to avoid compromising future femoral- popliteal bypass in the event of stent occlusion.

Management

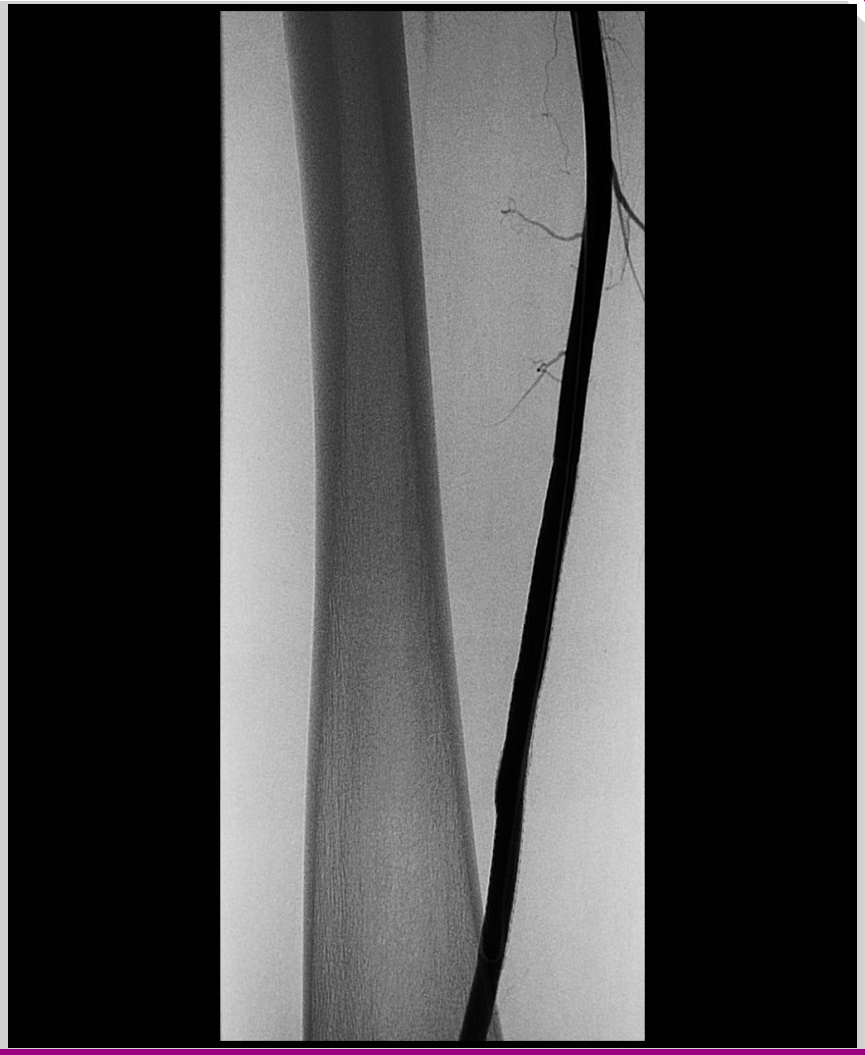


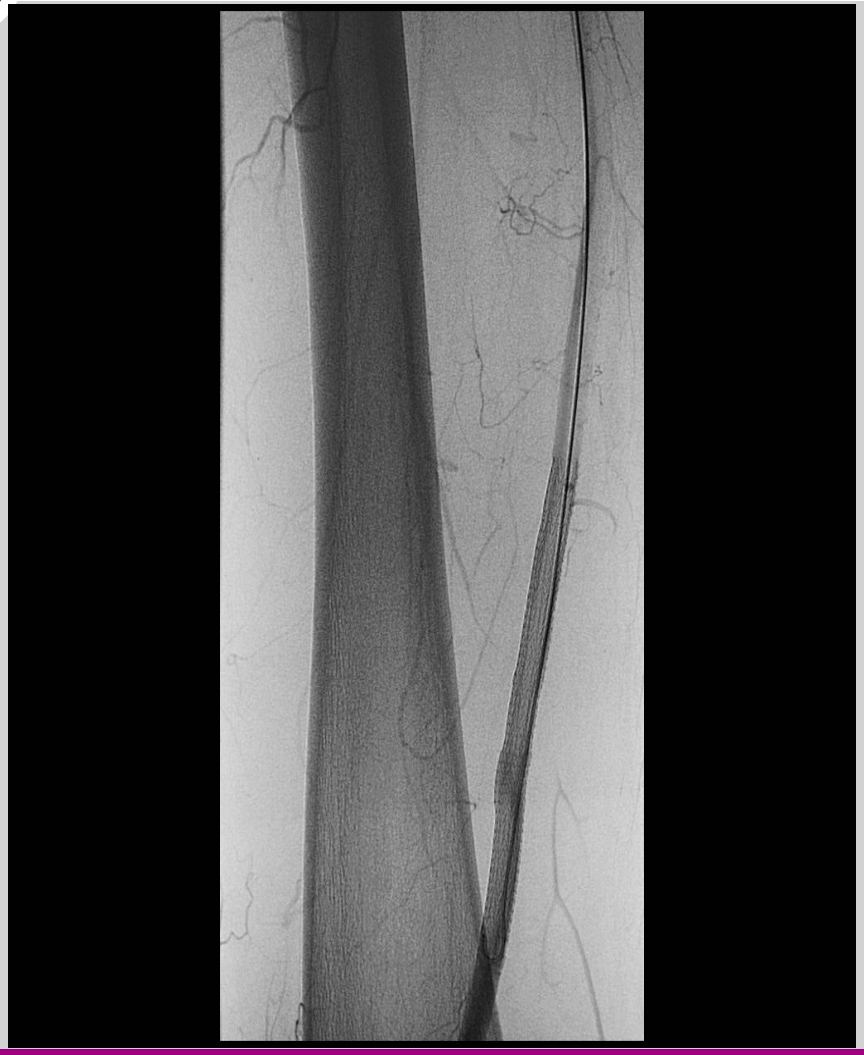
Management





Management





Learning points

- Penetrating trauma sites of arterial injury may be distant to skin wounds

- Duplex ultrasound examination findings of a grossly distended non compressible vein with high velocity, low resistance, very turbulent flow are highly suspicious for AVF and are sufficient to plan endovascular treatment.

Learning points

- Endovascular placement of a covered stent rapidly controls haemorrhage, restores limb perfusion and reduces venous pressures and limb swelling.

- Covered stent mechanical properties should be matched to those of the treated artery.