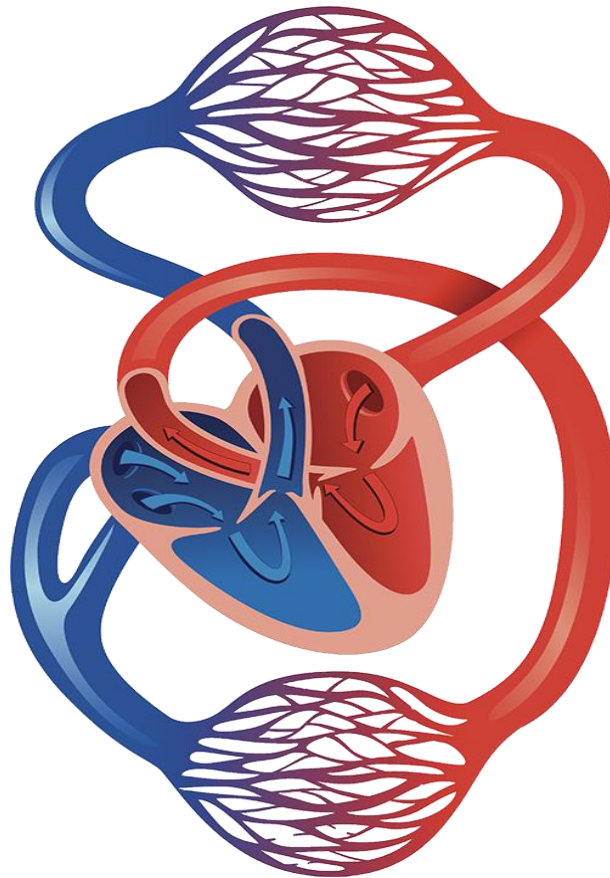


Arterio Venous Fistula



Definitions

- Abnormal communication between an artery and a vein(or veins).



Classification

Congenital

- May present as multiple small lesions.
- Present from birth.
- Clinically manifest 10–20 years.
- May enlarge to involve most of the limb
- e.g. AV malformation.

Acquired

- Due to trauma
- e.g. stabbing, arteriography

Iatrogenic

- Created for dialysis



Clinical features

Central effect

- Cardiac failure

Peripheral effect

- Low volume pulse
- Pallor
- Cyanosis
- Oedema
- Elevated temperature near fistula
- Ulceration
- Gangrene of the digits
- Intermittent claudication
- Varicose veins
- Local gigantism



Signs

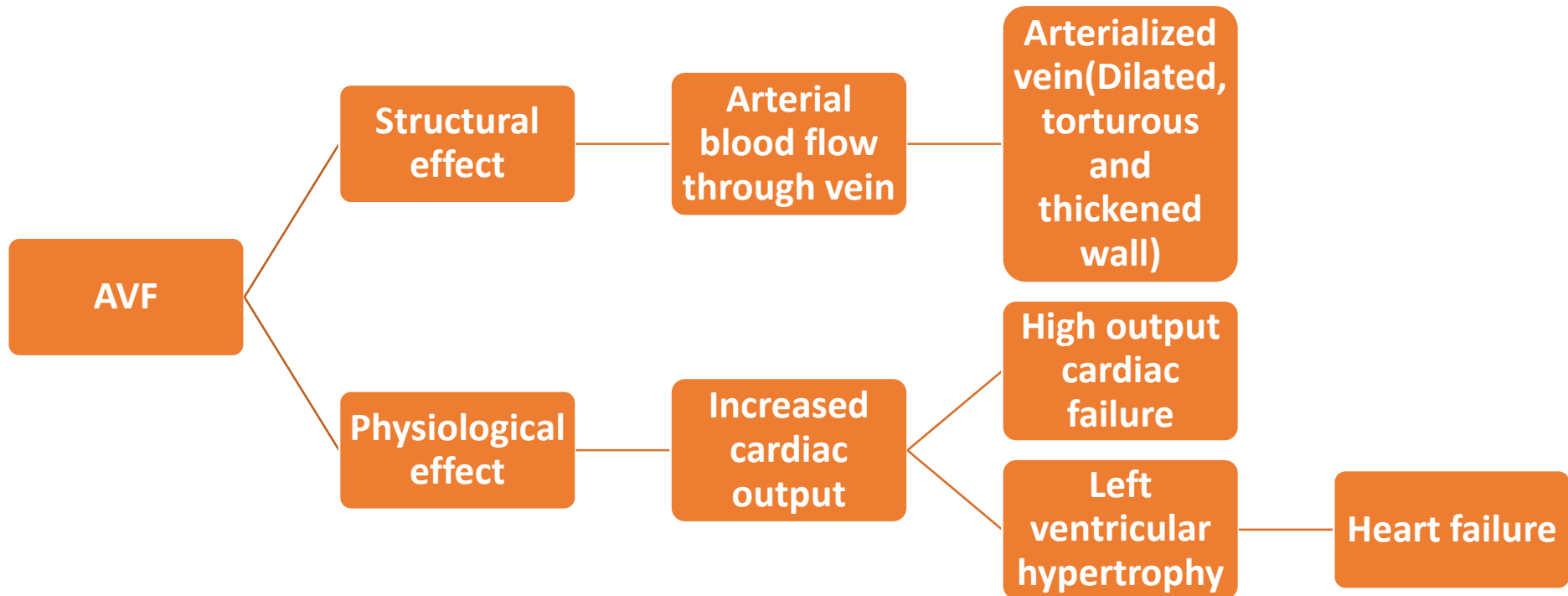
- Buzzing continuous bruit ('machinery murmur').
- Pressure on the artery proximal to the fistula reduces the swelling and the thrill and bruit cease.
- Branham sign or Nicoladoni sign
 - ☐ Bradycardia and hypertension when manually compress the proximal end of the fistula.



Complications

- Cosmetic
- Haemorrhage
- Thrombosis
- Distal ischaemia
- Venous hypertension in limb
- High output cardiac failure





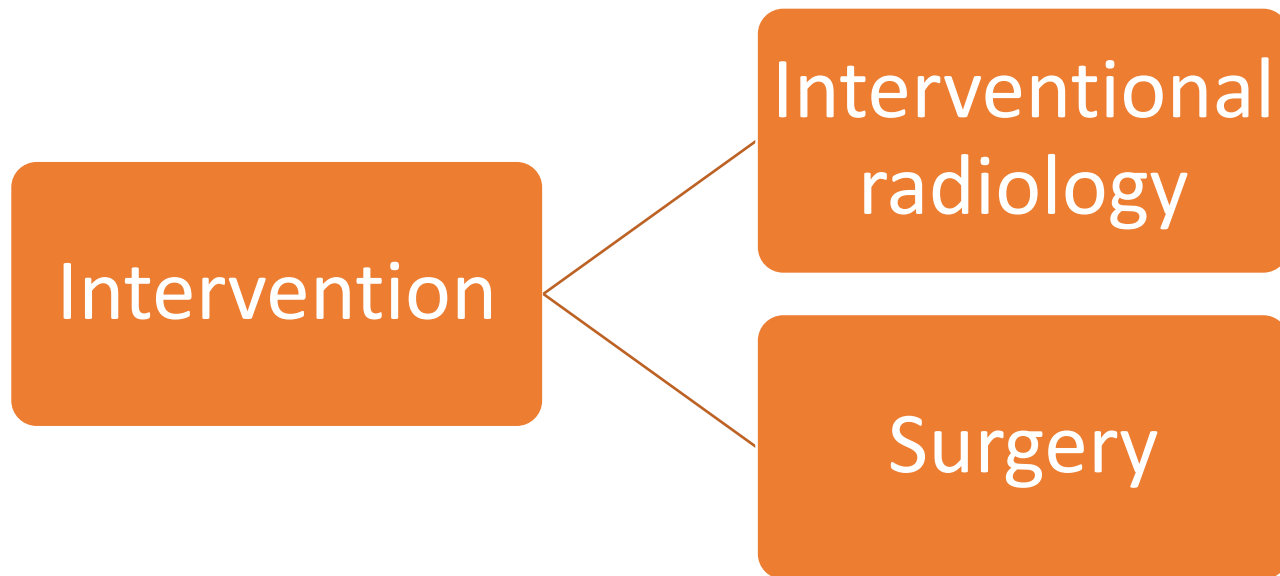
Investigations

- CXR - Cardiomegaly
- Limb radiograph - Bone elongation
- Colour duplex
 - ☐ Diagnoses lesion
 - ☐ Estimate flow rate
 - ☐ Useful for follow-up monitoring
- MRI - Will show the true extent of the lesion
- Arteriography
 - ☐ Reserved for high flow lesions when suitability for embolization or surgery is being assessed



Management

- Not all arteriovenous fistulae require treatment.
- Small peripheral fistulae may be observed and frequently will never cause difficulties.



Indication for intervention

- Haemorrhage
- Expansion
- Severe venous or arterial insufficiency
- Cosmetic deformity
- Heart failure



Interventional radiology

- Percutaneous or intravascular embolization using wire coils or sclerosant under radiological guidance.
- Complications-
 - ☐ Infection
 - ☐ False aneurysm formation
 - ☐ Inadvertent embolization of adjacent vessels
 - ☐ Tissue necrosis after successful lesion embolization.
 - ☐ Post-embolization syndrome



Surgery

- Small lesions may be excised completely.
- Obliteration of small superficial venous malformations can be undertaken by direct puncture and injecting a sclerosant such as STD (sodium tetradecyl sulphate).
- Open surgery is mostly confined to high flow lesions after preoperative embolization.

