

GRAFT OCCLUSION

1. Thrombosis (early: technical/poor runoff)(late:inflow/runoff progressive disease/intimal hyperplasia)
2. Stenosis: highest infrainguinal/30% of infrainguinals; most asymptomatic; >70% compromises flow; can occlude

General factors:

Continued smoking = 3x risk of occlusions
Clotting tendencies

Local factors: inflow/runoff/conduit quality

(a) Supra>infrainguinal; fempop>femtib;

(b)Runoff: quality and number (?explanation for higher occlusion in gangrene)

(c)Conduit:

Above knee: autologous>prosthetic; below knee: PTFE + vein cuff>PTFE alone
Infrainguinal: Dacron>PTFE; Fempop Dacron=PTFE

Prevention of thrombosis:

Clinical review: history/exam/Dopplers + ABPI/ duplex ineffective in prostheses/extra surveillance = no benefit

Dutch BOA: aspirin for infrainguinal prostheses; warfarin for veins

CASPAR trial: DAPT doesn't improve limb.systemic outcomes in below-knee bypass; benefit in prostheses

Management:

(a) Failing graft – angio+selective stent use/surgery+jump graft to fresh runoff vessel

-surgery more durable long-term; preferred for longer stenosis/angio: short <2cm and late (>3mth)

(b) Failed graft -

- Thrombolysis: within 14days if prosthetic/surgery <3mths ago/infrainguinals only
- Suprainguinal: extra-anatomic bypass ie axillo or aortofem
- Infrainguinal: acute= vein graft difficult to thrombectomise/prosthesis thrombectomy first
chronic= angio and then decide
- EVAAR: OSR + thrombectomy or fem-fem crossover (clamp supracoeliac, dissect out iliacs)
- Carotid:

*fasciotomy in acutes, esp if pre-op calf swelling/tenderness → improves distal perfusion

*check inflow/outflow on angio; correct anastomotic stenosis

GRAFT INFECTON

Uncommon (1-5%) || prostheses>veins || (a)mortality (b) amputation

Treatment aim: survive, eradicate infection, revascularise durably, prevent further infection

Bacteriology: mostly skin commensals (wound breakdown)

**S. epidermidis (less virulent, presents later) | S. aureus (more virulent, presents early with high morbidity+mortality*

Risk:gangrene/elderly/obese/re-op in same admiss./female/diabetes/steroids/renal failure/haematoma/recent angio

Prevention: admit near surgery/isolate from infected pts/asepsis/lam. flow/iodine drapes/abx prophylaxis (3 doses)

*patients with prosthesis don't need abx prophylaxis for other-site surgery

Presentation: wound infection (Type1: skin, Type2:s/c tissue, Type3: graft)

- sepsis (local/systemic) -graft thrombosis→septic emboli -erosion of graft in viscus (duo/bowel)
- graft exposure -anastomotic haemorrhage (esp *Ps. aeruginosa*)

Diagnosis: pre-graft collection/sinus (aspirate pus)/imaging: CT/MRI/bloods: WCC, ESR, CRP/WCscan,PET if doubt
(peri graft fluid>3mths or gas>4wks is infection)

Management:

General: Excise graft

Wide complete debridement

Revascularise distally: extra-anatomic with autologous conduit (?rifampicin-laden/cryopreserved)

Prolonged antibiotics: 2-6weeks but debatable

GRAFT ANEURYSM

TRUE: Dacron=late ~10yrs, signif. 2-3%|PTFE axfem disrupted in shoulder abductn| |xenograft/cryopres. allografts| |rare in veins
Repair: covered stent/graft replacement

FALSE: arterial puncture site/trauma/infection esp salmonella/disrupted anastomosis → “pulsatile haematoma”

Femoral pseudoaneurysm: USG compression closes 80%; thrombin injection if fails

Anastomotics: prostheses>vein/near joints/80% groin)2% overall || femorals: surgery+graft interposition; iliacs: stent

OTHER

TEVAR: aortobronchial (→stent)/aorto-oesophageal (→OSR) || infection 3%; explant and replace

EVAAR: endoleaks treated endovascularly

CAROTID: infection (prosth?vein, 1%, swelling or sinus; positive culture → vein graft)

aneurysm (after CEA, low grade infection or pseudoaneurysm, repair if >2cm or if infection)

high mortality for CEA after CAS; only operate if neuro sx; cannot have further CAS