Arterial Disease of the Lower Limb

This document is based on the handout from the “Surgery for Finals” course. The notes provided here summarise key aspects, focusing on areas that are popular in clinical examinations. They will complement more detailed descriptions and are not intended to be comprehensive.

Intermittent claudication
• Means limping
• Pain felt in muscle
• Pain on exercise
• Disappears on rest
• Area of pain gives clue to site of stenosis

Site of stenosis and pain pattern
• Aortic bifurcation - buttock pain
• External iliac / femoral - thigh pain
• Superficial femoral or popliteal - calf pain

Leriche syndrome: bilateral buttock pain and erectile impotence
Ask about
• Claudication distance
• How long before muscle pain gets better
• Effects on activities of daily living
• Erectile function
• Symptoms of other vascular disease
• Family history and previous history
• Risk factors: smoking, lipids, diabetes
• Drugs: beta blockers

General inspection
• Corneal arcus
• Xanthelasmata
• Nicotine staining
• Scars of previous surgery
• Pulse ?atrial fibrillation
• BP and abdominal aorta
• Carotid bruits and fundi

Inspection of the legs
• Colour of toes: pale, blue, black
• Check between toes for ulceration/ infection
• Pressure areas ? evidence of ulceration
• Skin quality: colour, hair growth

Palpation
• Temperature with back of hand
• Normal side first
• Capillary refilling time after brief nail pressure
• Then pulses: femoral
• popliteal
• posterior tibial
dorsalis pedis

The pulses
• Femoral: half way ASIS to symphysis
• Popliteal: the hardest! Flex leg, thumbs on tibial plateau and press vessel backwards with fingers towards the back of the tibia
• Posterior tibial: just behind and below medial malleolus
• Dorsalis pedis: between heads of 1st and 2nd metatarsal
Buerger’s test
• Do straight leg raising slowly
• Normal side first
• Note point at which ischaemic leg goes pale
• This is Buerger’s angle: small angle severe
• Hang legs down: delay in return of colour followed by reactive cyanosis on affected side

Is there anything else you would like to do?
• Listen for bruits
• Ask for the BP
• Check abdominal aorta
• Ask the patient to hang legs over side of bed if not already done
• Check the urine for glucose (diabetes) and for protein and blood (? renal disease)

Critical ischaemia: symptoms
• Rest pain, usually in foot
• Hanging the leg out of the bed at night
  (dependency improves flow, as in Buerger’s test and keeps leg cool so reducing tissue oxygen demand)
• Prefers to sleep in chair

Critical ischaemia: signs
• Pale, cold, pulseless foot
• Skin damage over pressure areas
• Slow capillary filling
• Small angle on Buerger’s test
• Reactive cyanosis on dependency
• Confirmed by ankle brachial pressure index of 40% or ankle pressure < 50mm

Buerger’s disease
• Young men, heavy smokers
• Presents with severe Raynaud’s
• Vasculitis with thrombosis
• Medium vessels of forearm and calf and small vessels of hands and feet

Gangrene
• Infection plus ischaemia = gangrene
• Dead tissue is not painful
• Line of demarcation at junction
• Common in diabetics
The diabetic foot
- Peripheral neuropathy - loss of ankle jerk plus reduction in vibration sense - leads to injury, corns etc
- Dry skin (autonomic neuropathy with loss of sympathetic supply to sweat glands) leads to cracking and infection
- Large and small vessel disease
- Loss of alpha tone to a-v shunt-vessels: ischaemic toe with bounding pulse