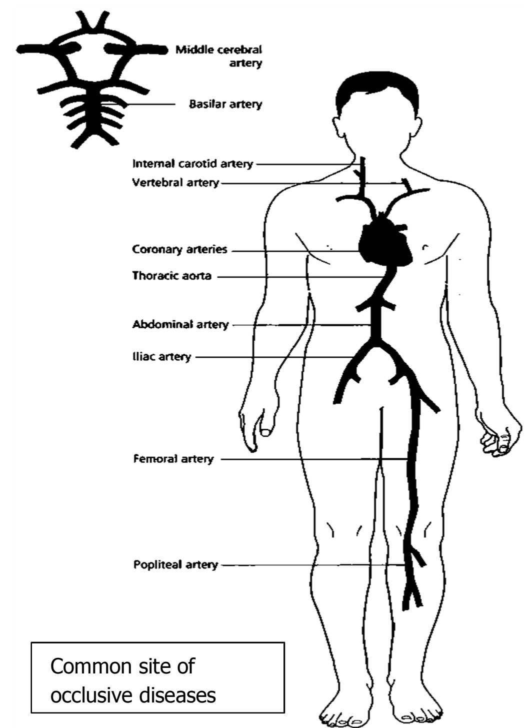
Chronic Arterial Occlusive Diseases – Dr. Shkar

Etiology



Common site of occlusive diseases

- Atherosclerosis (most common cause)
- Aneurysms
- Thrombangitis obliterans
- Inflammatory arteritis

Lower Limb AOD

- Essentials of Diagnosis
- General:
    - Decreased pulses.
    - Low ankle-brachial index.
    - Intermittent claudication.
    - Cramping calf pain with walking.
- Critical Limb Ischemia:
    - Rest pain of the foot relieved by dependency.
    - Ulceration of the foot or ankle.
    - Pallor of foot on elevation, rubor on dependency.
    - Gangrene and atrophy

Examination of the legs in a patient with peripheral vascular disease

<u>Inspection</u>
- Color
- Posture of the limb
- Venous guttering
- Gangrene
- Ulceration

<u>Palpation</u>
- Temperature
- Capillary refilling
- Pulses
- Sensation and movement

<u>Auscultation</u>
- Bruits

Intermittent Claudication

- Pain in muscles of the lower extremity associated with walking and relieved by rest.
- Symptoms are completely relieved after 2–5 minutes of inactivity.
- Occlusions proximal to the origin of the profunda femoris can extend the pain to involve the thigh.
- **Leriche syndrome** occurs in men with aortoiliac disease and includes claudication of calf, thigh, and buttock muscles; impotence; and diminished or absent femoral pulses.

Rest Pain

- Ischemic rest pain, a grave symptom caused by ischemic neuritis, indicates advanced arterial insufficiency that carries a risk of gangrene and amputation if arterial reconstruction cannot be performed.
- The pain is severe and burning, usually confined to the forefoot distal to the metatarsals.
- Aggravated by elevation of the extremity or by bringing the leg to the horizontal position

Dx

- Noninvasive:
    - ABI (normal=1.0), 0.7>intermittent claudication, 0.3> rest pain.
    - Diabetics may have false value need toe brachial index.
    - Treadmill + segmental BP after exercise cause drop in BP distal to the lesion

Imaging

- Doppler US
- Color duplex ultrasound
- CT angiography& MRA
- Conventional angiography

Mx

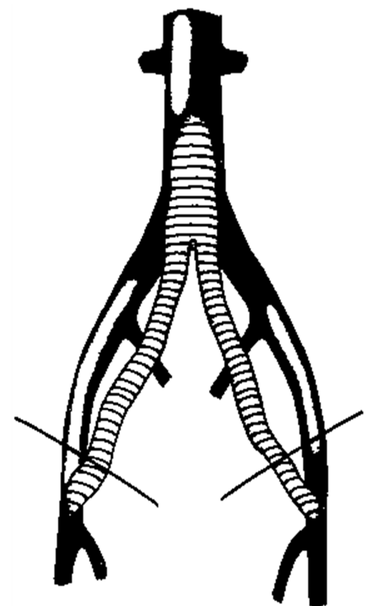
- Aims
  - Relieve symptoms
  - Prevent limb loss
  - Maintain bipedal gait

Non-operative Mx

1. Medical management of cardiovascular risk factors(stop smoking, aspirin, statins, ACE inhibitors, B-blockers, Mx of diabetes)
2. Exercise rehabilitation,
3. Foot care, and
4. Pharmacotherapy.

Operative Mx

- **Endovascular therapy** (ballooning or stenting)
- Lower short term morbidity & mortality
- Usually for short segment lesions
- Long term effect?
- Surgery remains superior



Surgical Aortoiliac Reconstructions

- Aortofemoral bypass (for aorto iliac occlusive diseases
- Iliofemoral bypass if the disease is unilateral or femorofemoral bypass
- Axillofemoral bypass for high risk patients

Femoropopliteal Disease

- Femoropopliteal bypass
- The procedure essentially for limb salvage, severe claudication.
- Saphenous vein is the conduit of choice
- PTFE is also used specially for above knee reconstructions.
- Below knee bypass SVG is superior in terms of patency

Tibioperoneal Reconstructions

- Used for limb salvage
- Endovascular treatment is not used frequently
- SVG is preferred conduit

Buergers Disease

- Thromboangitis obliterans is a clinical syndrome characterized by segmental thrombotic occlusions of small and medium-sized arteries in the lower and often the upper limb, accompanied by a dense inflammatory infiltrate that affects the arterial wall and often the adjacent veins and nerves as well.
- **Etiology**: Unknown, Men (90%) and there is a clear association with smoking.

Clinical Features

- Clinical
  - Males under 45 years old at onset of disease
  - Upper and lower limb involvement
  - Heavy smokers
  - Absence of embolic source, trauma, autoimmune disease, diabetes or hyperlipidaemia
- Arteriogram
  - Normal proximal arteries
  - Distal occlusions
  - Corkscrew collaterals

Mx

- Complete Cessation of tobacco
- Aspirin, CCB of doubtful benefit.
- Lumbar sympathectomy may be of benefit
- 30% limb loss

Extra cranial Vascular Diseases

- Symptoms most often not the result of hypoperfusion but are caused by emboli.
- The most common lesion is at the bifurcation of the carotid artery.

Clinical Features

- Asymptomatic
- TIA
- CVA
- Carotid bruit

Investigations

- Doppler
- Duplex
- CTA and MRA
- Angiography

Indications for Carotid Endarterectomy

- Carotid distribution transient ischaemic attacks
  - >70% ipsilateral stenosis
  - >50% ipsilateral stenosis with ulceration
- Stroke with good recovery after 1 -month delay
  - >70% ipsilateral stenosis
  - >50% ipsilateral stenosis with ulceration
- Controversial indications
  - Asymptomatic carotid stenosis
  - Vertebrobasilar symptoms with combined vertebral and carotid disease
  - Acute stroke within first few hours of occurrence

Tx

- Aspirin and Clopidogrel
- Endovascular treatment
- Surgery (carotid endarterectomy)