

### Case

- 80 y.o., pensioner
- Pain in R leg
- Onset 4 months ago
- Pain comes on about half way through his walk to shop (400m), eases off if he sits for a while, then able to resume
- Same thing happens on way back
- 'Cramp-like' sensation
- **ABPI** (diagnosis PAD): 0.8 (results last week)

**AF:** walking

**RF:** sitting

**AA:** walking to shop

### Extras

- Hypertension since 55 y.o.
- Hypercholesterolemia diagnosed 10 yrs ago
- Coronary angioplasty 2 yrs ago (following episodes of angina)
- Aspirin (300mgs/day; NSAID)
- Atorvastatin (prevents cardiovascular disease in high risk pts)
- Lisinopril (treats high BP)
- Smoked 20/day since teens
- Drinks pint of ale most nights
- Lives alone (wife died 2 yrs ago)
- 2 children who he doesn't see often
- Doesn't enjoy eating much anymore now he is on his own

### Physical Examination Findings

**BP:** R+L 160/100

### General observations

- Looks underweight
- Feet look pale & feel cool to the touch
- No swelling in legs

### Skin

- Nicotine staining on fingers from smoking

### Chest, cardiovascular & respiratory

- Bruit (partially occluded artery) one the R femoral artery

### Peripheral inspection & pulses

- Diminished dorsals pedis \* posterior tibia's pulses in the R leg

### Clinical tests

- Good ROM at the hips & knees
- Full Lx ROM
- Feels muscle stretch behind knees on full flexion

### Discussion

### Working diagnosis

- Peripheral Arterial Disease (PAD)
- Non-MSK
- Vascular w/ key Hx findings being **cramping** pain
- **AF**: set distance
- **RF**: sitting
- ABPI: **0.8**, which supports working Dx
- Several risk factors for PAD including **existing CV disease** & being a **heavy smoker & drinker**
- Feet look **pale** & are **cool**: suggests that PAD is more advanced than the ABPI suggests
- **Diminished pulses** in LL w/ **bruit** over R femoral artery

### Yellow flags

- High blood pressure
- Underweight
- Nutritional status
- Limited social interactions / social isolation
- Possible depression

### Learning Outcomes

#### Understand Peripheral Arterial Disease (PAD)

- Describes **stenosis/occlusion** of **peripheral arteries**, affecting blood supply to extremities, usually LL
- Commonly caused by **atherosclerosis**
- ☐ **Acute limb ischemia:**
  - Sx & Ssx develop over <2 weeks
  - **Sudden** onset leg pain
  - Sudden deterioration of **claudication**, associated **loss of pulses** &/or **pallor**
  - **Coldness/cyanosis** of limb
  - **Loss of motor/sensory** functions
- ☐ **Chronic limb ischemia:**
  - Progressive development of **cramp-like** pain in calf, thigh or buttock (atypical terms: tired, giving way, sore, hurts - rather than describing cramp)
  - LL pain on **walking/exercise**, relieved by **rest**
  - Unexplained leg/foot pain
  - **Non-healing** wounds to LL
  - ABPI 0.0-0.4
- ☐ **Risk factors:**
  - Smoking
  - Drinking
  - Hx of CV disease
  - Diabetes mellitus



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### Learning Outcomes (cont)

#### Differentiate vascular from neurogenic claudication

##### ☐ **Vascular claudication:**

- Caused by **reduced** blood flow to LL

##### → **Sx & Ssx:**

- pain in calves, thighs, or buttocks
- Pain during walking/exercise
- Relieved by rest
- 'Cramping' or 'burning' sensation
- Legs may feel cold, numb, or weak
- Visible signs of poor circulation: skin may appear paler blue, slow wound healing
- Absent/poor LL pulses

##### ☐ **Neurogenic claudication:**

- Caused by nerve compression/damage in lower back

##### → **Sx & Ssx:**

- Pain in lower back, buttock, legs (above knees usually)
- Aggravated by standing & walking
- Relieved by sitting or leaning forward
- 'Deep ache' or 'numbness' sensation
- Associated tingling, weakness, shooting pains in legs

##### ☐ **Investigations:**

- **Ankle-brachial index test** (ABPI): evaluate blood flow to the legs
- **Electromyography** (EMG) or **nerve conduction studies**: evaluate nerve function
- **MRI** or **CT**: evaluate the spine & surrounding structures

#### Differentiate PAD from other vascular disorders

##### ☐ **PAD:**

- Pain in the calves, thighs, buttocks
- Pain during walking/exercise
- Improves w/ rest
- Other Sx: numbness, weakness, coldness
- Skin may appear pale, shiny, discoloured, cool to touch
- Hair loss/slow growth
- Slow wound healing
- Ulcers/sores

##### ☐ **DVT:**

- Pain unilaterally
- Other Sx: swelling, redness, warm area
- Aggravated by standing/walking
- May not improve w/ rest
- Skin may appear discoloured, veins visible on skin surface
- Risk: Hx immobility, surgery, family Hx of clots

##### ☐ **Chronic Venous Insufficiency (CVI):**

- Pain, fatigue, heaviness in legs
- Swelling, possible varicose veins
- Skin appeared thickened, discoloured
- Pain worse w/ prolonged standing/sitting, may improve w/ leg elevation
- Risk: pregnancy, family Hx of varicose veins

### How to interpret ABPI?

- <0.5: suggests severe arterial disease
- 0.6 - 0.7: suggest presence of arterial disease or mixed arterial/venous disease
- 0.8 - 1.3: suggest no evidence of significant arterial disease
- >1.3: may suggest presence of arterial calcification (such as pts w/ diabetes, RA, systemic vasculitis, atherosclerotic disease, & advanced chronic renal failure)

### Differentiate typical from atypical cramp

#### ☐ **Typical cramp:**

- Often occur in legs (esp. calves), feet, hands
- **AF:** during/after exercise & may be related to muscle fatigue or dehydration
- **RF:** stretching or massage
- Last up to 10 min
- Doesn't usually occur frequently or interfere significantly w/ ADL

#### ☐ **Atypical cramp:**

- In any muscle, including those not typically affected by cramps
- Occur without obvious trigger / after minimal activity
- Accompanied by other Sx: weakness, stiffness, twitching
- May last longer, & feel more severe
- May occur frequently or interfere w/ ADL

### AECC clinic risk management for hypertension

- <140/90: no action required
- 140/90 - <160/100: BP to be measured at next follow-up appt; Letter to GP within 1 week if still >140/90
- 160/100 - <180/110: Tell pt to see GP within 1 week; Tutor send letter to GP within 48hrs; BP to be measured at 1st follow-up appt
- >180 systolic OR >110 diastolic: Floor tutor check BP manually; tutor tell pt to see GP the same day; Tutor to follow up GP letter same day

### Screening questions for depression

1. During the last **month** have you often been feeling down, depressed or hopeless?
  2. During the last **month** have you often been **bothered** by having little interest or pleasure in doing things?
- IF ANSWER 'YES' TO ONE/BOTH, FOLLOW UP WITH:
- *During the last month, have you often been bothered by:*
3. Feeling **bad** about yourself or that you're a failure or have let yourself or your family down?
  4. Poor **concentration**?
  5. **Tiredness**/ low energy levels?
  6. Changes in **appetite** (reduced or increased)?
  7. Changes in your **sleep pattern** (sleeping too much, problems getting to sleep, waking in the night or waking early)?
  8. Being so **slowed down**, or so **restless/fidgety**, that other people have noticed?
  9. Thoughts of **death**?

