

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**?

