Case

- 57 y.o. female
- Back pain; T/L junction
- Onset 1 day ago whilst bending forward cleaning the bath
- Sudden onset, excruciating pain

- Severe pain
- Nauseous w/ pain
- 10/10 onset
- Now 5/10
- Constant pain & nausea

AF: Any movement, painful to lie on back, couldn't sleep duet pain at night
RF: Rest, ice, gentle walking, paracetamol & ibuprofen
AA: Movement; especially sudden

Extras
- Chiro treatment for previous "rotator cuff" pain, treatment helped w/ US & home exercises, no manipulation
- IBS (upset tummy & nerves)
- Dizziness, GP diagnosed w/ vertigo
- Menopause 8 yrs ago (49)
- Osteoporosis; diagnosed 5 yrs ago
- Prescribed medication (doesn't recall name) & calcium but doesn't take them (worried about side effects)
- Mother: osteoporosis

Physical Examination Findings cal

General observations
- Mild swelling over T/L junction
- Appears tired & frail
- All movements guarded

Gait
- Extremely guarded

- Unable to lie supine due to pain

Tx & Lx ROM
- Unable to perform due to pain

Closed fist percussion
- **Purpose:** symptomatic (sharp, sudden pain) compression fracture
- **Findings:** pain over T/L junction

Percussion
- Pain over T11-12 & L1

Vibration
- No pain
- Discomfort over the T/L area

Palpations
- Generalised pain & tenderness over Tx spine
- Very TTP over T10-L2

Discussion

Working diagnosis

- Compression fracture of the Tx spine
- Why a 57 y.o. would get a fracture so easily w/ such minimal trauma?

1. Extremely osteoporotic: due to bone density loss, fracture complications, multiple fractures, underlying health conditions (chronic RA, hyperthyroidism, GI disorders, prolonged use of steroids), hormonal factors (decline of oestrogen aka menopause, low testosterone), lack of treatment, age
2. Pathological fracture (osteoporosis, cancer, bone infection, Paget's disease, osteogenesis imperfect, osteomalacia, genetic disorder, nutritional deficiencies) & there's underlying, undiagnosed cause for bone weakness

How does compression fracture affect her MSK management?

- Avoid high-velocity or high-impact spinal manipulations
- Soft tissue & lifestyle focus
- Combined management plan w/ secondary healthcare professional

What is vertigo?

- Dizziness characterised by a sensation of spinning, swaying, & tilting when standing still
- Possible issue w/ inner ear (balance), brain, sensory pathways

What other examinations could have been done?

- Assess for gait, balance & mobility (for fall prevention purposes to minimise further injury to osteoporotic pt)
- Sensory examination (pt cannot lie supine due to pain ∴ try lying down)
- Referral for MRI

Learning outcomes

Osteoporosis:

☐ ***Sx & Ssx:***

- Height loss
- Back pain
- Fractures
- Stooped posture
- Decreased grip strength

☐ ***Treatment:***

- Routine assessment (not required if >40 y.o.)
- Avoid high-velocity or high-impact spinal manipulations
- Soft tissue & lifestyle focus
- Refer to GP for osteoporosis education / investigations in younger pts

☐ ***Management*** (if risk assessment suggest significant fracture risk):

- Refer for imaging investigations & medication advice
- Lifestyle advice: no smoking, alcohol consumption <2 units / day
- Food/diet: calcium & vitamin D intake
- Fall prevention (strength & balance training)

☐ ***Why this pt so bad?***

- Drop in oestrogen from menopause (causing bone loss, increasing risk of osteoporosis)
- Pt not taken their medication
- Underlying pathological cause?

Different types of fractures in the Tx spine:

- Compression/anterior wedge (most common; due to osteoporosis; post-menopausal, >50 y.o.)
- Burst (axial compression; can cause neurological deficits)
- Flexion-distraction (due to extreme forward bending force [RTA]; can cause posterior ligament tear)
- Pathological (caused by infections/tumours; full vertebral collapse)

Rotator cuff disorder (supra/infraspinatus, teres minor, subscapularis - SITS):

- **Rotator cuff tendinitis:** inflammation of the tendons of the rotator cuff muscles; typically caused by overuse/repetitive motions
- **Rotator cuff tear:** tear in one or more rotator cuff tendons, can be partial or complete
- **Rotator cuff impingement:** rotator cuff tendons & bursa compression
- **Rotator cuff bursitis:** inflammation of the bursa around the rotator cuff tendons

☐ ***Presentation:***

- Pain in shoulder: especially lifting or reaching overhead
- Weakness in the shoulder, making it difficult to lift or carry objects
- Limited ROM shoulder
- Clicking/popping when moving shoulder
- Swelling/tenderness in shoulder

** Adhesive capsulitis (frozen shoulder) might present w/ Sx & Ssx suggestive of rotator cuff disorder, but in this condition passive ROM is limited as well**

☐ ***Diagnosis:***

- Medical Hx, physical exam: AF, RF, ROM, strength, tenderness? swelling? deformity?
- Referral for imaging: MRI (gold standard), US, x-ray, CT

☐ ***Management:***

- If acute rotator cuff tear caused by trauma is suspected (trauma, pain, & weakness), refer!
- Rest (acute phase)
- Referral for corticosteroid injection
- Paracetamol (if not helping, NSAIDs)
- Stretching & strengthening of the rotator cuff & scapular muscles
- Manual therapy / mobilisation

Difference between IBS & IBD

☐ ***Irritable bowel syndrome (IBS):***

- Functional GI disorder affecting colon
- Not associated w/ inflammation or damage to intestinal lining
- **Presentations:** recurrent abdominal pain/discomfort, changes in bowel habits (diarrhoea, constipation)
- **Diagnosis:** through Sx & exclusion of other conditions (no specific diagnostic tests)
- **Management:** dietary modifications (avoid caffeine, alcohol, spice, fatty foods), medications, stress management

☐ ***Inflammatory bowel disease (IBD):***

- Chronic inflammatory disorder affecting whole digestive tract (inc. Crohn's & Ulcerative Colitis)
- Inflammation & damage to intestinal lining
- **Presented:** abdominal pain, diarrhoea, rectal bleeding
- **Diagnosis:** medical Hx, physical exam, blood tests, imaging tests (endoscopy or colonoscopy)
- **Management:** medication (corticosteroids, immunodulators), nutritional support, surgery, lifestyle changes (exercise, avoid smoking & stress)

Menopause & treatment

- Ovaries stop producing eggs, levels of hormones (oestrogen &progesterone) decrease
- Can contribute to osteoporosis development (oestrogen regulates bone turnover [oestrogen drops = bone turnover increases = less bone density/mass])
- **Sx & Ssx:** hot flashes, night sweats, vaginal dryness, mood changes, sleep disturbances
- **Treatment:** hormone replacement therapy (HRT [slows down bone turnover]), non-hormonal medications (e.g. SSRIs [reduce hot flashes & improve mood]), lifestyle (regular exercise, reducing stress, avoid triggers [caffeine or alcohol])