5002 Case 11 Cheat Sheet

by bee.f (bee.f) via cheatography.com/180201/cs/38654/

Case

- 59 y.o., car mechanic
- Lower Lx spine (L>R) into the lateral aspect of L thigh to the anterior shin & into the toes
- Insidiously 2 months ago

Back pain

- Deep ache & stiff
- 5/10
- Constant pain
- Stiffness is worse in the morning & at the end of the day after work

Leg pain

- Feels like "pinched nerve"
- Shooting pain
- Feeling of "dead leg"
- 8/10
- Pain depends on what he's doing

-Getting worse

-**AF:** standing, working overhead

- **RF:** Sitting down (slouched) diminished leg pain, sleeping on side (firm bed helps)
- **AA:** Work; is careful with ADL

Extra

- High BP
- Motorbike accident 10 years ago resulted in a painful L shoulder (resolved itself)
- Surgery at age 3 for *pyloric stenosis*
- Naproxen takes the edge off (GP prescribed)
- 1 cigar / day
- Drinks 1 bottle of wine every day
- Doesn't exercise now due to pain
- Mother passed due to cancer
- Stools are a bit loose atm (needs further investigations; consider risk of bowel cancer due to age)

Physicsl Examination Findings

- High BP
- **Posture/stance:** hypolordotic Lx spine; kyphotic Tx spine
- **Gait:** reduced arm swing bilaterally; reduced Tx movement (very rigid)

ROM

- **AROM Lx:** extension limited & painful in LB & down leg into shin
- **PROM hip:** full & pain free bilaterally

- **SLR:** 90° bilaterally, muscle stretch @ end point
- **Active SLR:** same as SLR
- **Percussion & vibration Lx:** negative (-ve)
- **Trigger points:** in ES, glut. max. & glut. med. bilaterally
- **Spinal palpations:** L T11-L2 restricted; L L4-S1 restricted & tender; L SI restricted

Clinical tests

Kemps
- **Purpose:** assess Lx spine facet joint pain
- **Findings:** L +ve w/ L leg pain into shin; R -ve

Single leg hyperextension
- **Purpose:** SI & Lx nerve root irritation
- **Findings:** -ve bilaterally

Slump's
- **Purpose:** detect altered neurodynamics or neural tissue sensitivity
- **Findings:** pulling in LB (L>R)

Faber's
- **Purpose:** diagnose hip pathology by attempting reproducing pain
- **Findings:** -ve bilaterally

SI distraction
- **Purpose:** provocation of the SIJ
- **Findings:** -ve

Modified Thomas
- **Purpose:** measures the angle of femur abduction relative to pelvis
- **Findings:** tight bilaterally (L>R)

Gaenslen's
- **Purpose:** diagnose SIJ lesion, pubic symph. instability, L4 nerve root lesion
- **Findings:** -ve bilaterally

McGill's
- **Purpose:** assess radiographic Lx instability
- **Findings:** both -ve

Pheasant
- **Purpose:** indicates an unstable spine segment
- **Findings:** increased pain in Lx

Nerve tension
- **Findings:** tibial -ve; fibular -ve; sural -ve

Discussion

Working diagnosis
- L5 radiculopathy
- Most likely 2° to progressive degenerative change occurring in the lower Lx & mechanical dysfunction, resulting in DNE (dynamic nerve entrapment)

- Insidious onset + LB stiffness + pt's age = suggest degenerative change (predisposing cause of the problem)
- Supporting evidence: +ve Kemp's (reproducing pain), -ve Slump's & SLR

- Increased pain on Pheasant's test likely due to extension intolerance &/or facet pain associated with degenerative change

→ Most pts w/ radicular pain have **associated LBP**, &/or Hx of LBP
- **Typical presentation:** LBP that progresses to leg pain, w/ leg pain later being more painful than LBP **(peripheralisation)**

→ Radicular pain that is **2° to IVF encroachment**; leg pain may
- **Relieved:** sitting & bringing the knees to the chest (anything that flexes Lx & increases the IVF space)
- **Aggravated:** standing & walking

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Discussion (cont)

→ Radicular pain **2° to disc herniation**

- **Aggravated:** prolonged sitting

2 categories of "mechanical" (ortho neurological) nerve root syndromes (can coexist)

1. Spondylosis & related **degenerative** change: must be more specific & identify whether there's lateral entrapment or central stenosis (LSS)

2. Disc herniation: (lateral entrapment) should identify whether it's likely to be a *fixed nerve entrapment* (FNE) or *dynamic nerve entrapment* (DNE)

Learning Outcomes

Differentials for LBP w/ leg pain

- Cauda equina syndrome (CES)
- Lx central stenosis syndrome (LSS)
- Disc herniation
- Spinal stenosis
- Sciatica
- Lx radiculopathy
- Spondylolisthesis
- SIJ dysfunction
- Piriformis Syndrome

Red flags for pts w/ radicular leg pain

- Bowel/bladder dysfunction
- Progressive unilateral / bilateral neurological deficits (e.g. major motor weakness [e.g. knee flexion])
- Saddle anaesthesia
- Bilateral radiculopathy
- Severe unremitting pain
- Unrelenting night pain
- Sensory changes around rectum
- Major trauma (or mild trauma aged 70+)
- Point tenderness over a vertebra
- Erectile dysfunction
- Unexplained weight loss

How to screen for cauda equina syndrome (CES)?

☐ ***Symptoms:***

- LBP
- Bilateral leg radiculopathy (sharp shooting pain or dull ache that radiates down the legs)
- Saddle anaesthesia
- Bladder/bowel incontinence
- Lower extremity motor & sensory loss

☐ ***Imaging:***

- **MRI & CT** screening for compression / damage of cauda equina
- **Cauda Equina Screening Tool (CEST):** set questions to assess risk of CES
- **Electromyography (EMG):** measures electrical activity of muscles & nerves, detecting nerve damage

How to screen for bowel cancer?

☐ Screening starts at 45 y.o.

- **gFOBT**(fecal occult blood test): checking for blood in stool
- **Sigmoidoscopy:** scope in lower colon
- **Colonoscopy:** scope an entire colon
- **Capsule endoscopy:** swallow pill-sized camera

Understand the pathophysiology of the mechanical & chemical pathophysiology processes that occur in lateral nerve entrapment

☐ **Lateral nerve entrapment:**

- Peripheral nerve becomes compressed or entrapped by surrounding structures
- Can occur due to anatomical abnormalities, trauma, inflammation, or repetitive motion
- **Sx & SSx:** pain, numbness, tingling, muscle weakness, & loss of function in area supplied by affected nerve

☐ ***Mechanical pathophysiology:***

- **Compression:** can disrupt the normal function of the nerve, causing pain &/or abnormal sensations
- **Tension:** tension/stretching of nerve, resulting in irritation & dysfunction; can arise from muscle imbalances repetitive movements that place strain on the nerve
- **Ischaemia:** prolonged compression or tension on the nerve can compromise its blood supply, leading to reduced O2 & nutrient delivery; Ischaemia (lack of blood flow) can cause nerve damage & contribute to development of symptoms

☐ ***Chemical pathophysiology:***

- **Inflammation:** compression irritation can trigger inflammatory response (cytokines & prostaglandins) in surrounding tissue; chemicals further irritate nerve & contribute to amplifying pain / other symptoms
- **Chemical irritation:** chemicals (histamine, substance P, bradykinin) released from damaged tissues, directly stimulate pain receptors in the nerve; resulting in pain & sensitivity
- **Neurotoxicity:** metabolic disturbances lead to accumulation of toxic substances within the nerve tissue; can further damage the nerve cells & exacerbate symptoms

Biopsychosocial issues for this pt

☐ ***Biological factors:***

- **Genetics:** mother passed from cancer
- **Physiology:** loose stools, however appears healthy

☐ ***Psychological factors:***

- **Mental health:** feeling anxious (due to episodic leg pain)
- **Coping mechanisms:** 1 cigar + 1 bottle of wine / day
- **Beliefs & attitudes:** N/A

☐ ***Social factors:***

- **Socioeconomic:** own shop/garage
- **Support system:** Wife + 4 healthy children
- **Cultural background:** N/A