Cheatography

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)

- \rightarrow 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

$\hfill\square$ 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

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