

# WSBC SEMINAR SERIES SPINE ASSESSMENT

Tamir Ailon, MD, MPH, FRCSC

Spinal Neurosurgeon, Vancouver General Hospital

Clinical Assistant Professor, University of British Columbia

# DISCLOSURES

- No relevant financial disclosures

# LEARNING OBJECTIVES

- Conduct a telehealth consultation for a patient presenting with a spinal condition
- Highlight key aspects of patient history to determine their suitability for a spine specialist referral
- Adapting the spine-focused neurological examination to the constraints of telehealth assessments
- Guidelines for interpreting spine imaging reports
- Identify red flag symptoms necessitating in-person assessment



# SPECTRUM OF SPINAL PATHOLOGY

Common	Concerning
<ul style="list-style-type: none"><li>- Low back pain</li><li>- Neck pain</li><li>- Radiculopathy – lower extremity (sciatica)</li><li>- Radiculopathy – upper extremity</li></ul>	<ul style="list-style-type: none"><li>- Myelopathy, progressive</li><li>- Cauda equina syndrome</li><li>- Tumour / metastatic disease</li><li>- Radiculopathy with significant / progressive weakness</li></ul>

# AXIAL BACK AND NECK PAIN

- Acute episodes primarily due to muscular strain
  - Expected resolution of days to weeks
- Chronic NP / LBP usually mechanical = arising from intervertebral discs, facet joints and muscular support structures.
  - Also termed non-specific low back or neck pain
- Treatment centered on symptom management through physical therapy / exercise and education on benign natural history
  - Imaging or specialist referral typically not indicated
  - Favor NSAIDs, avoid narcotics

# SPINE TELEHEALTH ASSESSMENT

- **History**
  - Identify any inciting events, most episodes insidious onset
  - Characterize pain location, timing, agg/all factors
  - Radiating pain – radiculopathy versus neurogenic claudication
  - Identify red flag symptoms (see below)
- **Physical exam**
  - Not absolutely necessary in absence of any red flag symptoms
  - Very unlikely to discover red flag signs in absence of any reported symptoms
  - Required if history reveals any red flags

# RED FLAG SYMPTOMS AND SIGNS

Symptoms	Signs	Concern
Significant weakness in one or more extremities (e.g. drop foot)	Motor weakness grade 3 or less, +/- SLR test +ve	Severe nerve impingement (single muscle group); cauda equina (multiple/bilateral muscle groups)
Saddle anesthesia, bilateral lower extremity sensory loss	Reduced light touch and pinprick sensation in perineum, lower extremities	Cauda equina syndrome
Severe pain, acute onset. Age>70, known osteoporosis	Point tenderness, kyphosis	Fracture
Fever, IVDU, immunosuppression with increasing axial pain +/- radicular symptoms	Variable	Spinal infection
History of Ca, night pain, wt loss	Variable	Spinal metastasis
Loss of dexterity, balance, diffuse numbness	Brisk reflexes, tandem gait impairment, pathological reflexes	Myelopathy (degenerative, tumor, other)

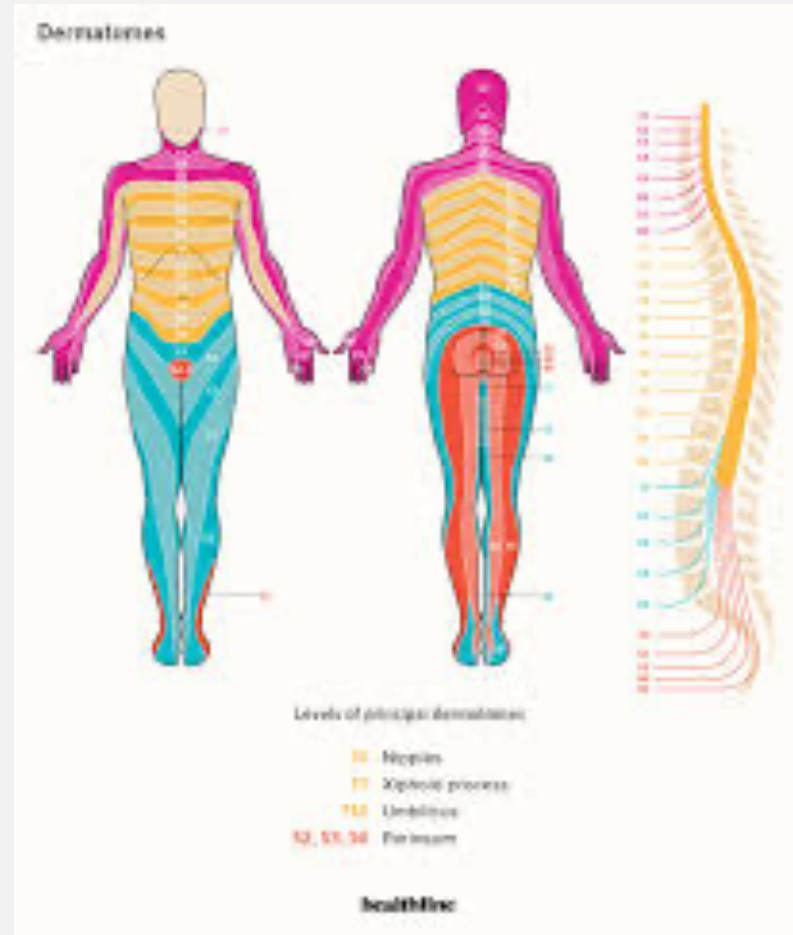
# VIRTUAL PHYSICAL EXAMINATION



- General:
  - Have patient stand upright – assess posture from AP and lateral plane
  - Look for sagittal / coronal plane deformity
  - Assess passive ROM of cervical and lumbar spine
- Gait examination
  - Walking normally – assess for wide/narrow base, spasticity, shuffling
  - “Heel-toe” tandem gait



# VIRTUAL PHYSICAL EXAMINATION



# VIRTUAL PHYSICAL EXAMINATION

- Motor examination
  - Tailor to patient's functional status
  - Test upper extremity strength by having patient lift known weight (e.g. bicep curl, shoulder abduction, wrist curl)
  - Triceps (C7) – wall press
  - Quadriceps (L3,4) – single-leg raise from chair, squats
  - Gastrocnemius (S1) – independent toe raises
- Reflexes – only testable if assistant available
- Palpation – limited utility

# VIRTUAL PHYSICAL EXAMINATION

- Special tests
  - SLR – requires assistant, could use family member
  - Spurling – have patient extend neck maximally. Radicular pain reproduction with ipsilateral rotation = positive test
  - Lhermitte test – flex / extend neck and ask about electrical sensations down spine



- 2** Don't routinely image patients with low back pain regardless of the duration of symptoms unless: (a) there are clinical reasons to suspect serious underlying pathology (i.e., red flags), or (b) imaging is necessary for the planning and/or execution of a particular evidenced-based therapeutic intervention on a specific spinal condition.
- 6** Don't use an opioid analgesic medication as first-line treatment for acute, uncomplicated, mechanical, back-dominant pain.
- 8** Don't use opioid analgesic medication in the ongoing treatment of chronic, non-malignant back pain.
- 3** Don't use epidural steroid injections (ESI) for patients with axial low back pain who do not have leg dominant symptoms originating in the nerve roots.

## Visual summary

### Managing low back pain and sciatica

A brief overview the new NICE guidelines, from the perspective of a patient presenting in primary care.



#### Consider alternatives

Exclude specific causes of low back pain, for example:

Cancer Infection Trauma Inflammatory disease Cauda equina

Referral

#### X Imaging

Only consider imaging:

In specialist care and

If likely to alter management

#### Assess likely recovery outcomes

The complexity and intensity of treatment may vary depending on how likely it is that the patient will have a good functional outcome

Consider using risk stratification –such as the **STarT Back** risk assessment tool

Possible indicators of poor outcomes

Fear / pain avoidance Low mood  
Job dissatisfaction Ongoing litigation

Good ← Likely outcomes → Poor

#### Provide self management information

Information on nature of pain Encouragement to continue activities

Self management is important for all patients, even those with acute symptoms and/or sciatica

#### Managing acute sciatica

- Neuropathic pain medication
- Epidural injections
  - Steroid
  - +
  - Local anaesthetic
- Spinal decompression

After acute symptoms of sciatica are controlled, it may be appropriate to (re)enter an exercise programme to manage underlying low back pain

To manage a specific episode

Group exercise

Manual therapy

Psychological therapy

Combined physical + psychological programme

Pain is persistent / treatment resistant

#### Consider pain relief options

Paracetamol  
X Not effective alone

NSAIDs\*  
✓ Consider oral NSAIDs

Weak opioids  
✓ If NSAID ineffective / not tolerated / contraindicated

X Do not offer acupuncture

\* NSAIDs = non-steroidal anti-inflammatory drugs

# GUIDELINES FOR INTERPRETING SPINE IMAGING REPORTS



- MRI OF THE LUMBAR SPINE

FINDINGS:

This patient has five lumbar type vertebral bodies. The vertebral body height is well maintained throughout. The conus medullaris terminates at the level of L1 and is normal in size and signal intensity.

- Bone marrow signal intensity appears normal apart from a focal high T2 and T1 signal intensity abnormality posteriorly within the L2 vertebral body felt to be a hemangioma.

L1-2: Mild disc desiccation without a focal protrusion.

L2-3: Minimal disc desiccation without a focal protrusion.

L3-4: Mild loss of disc height and mild generalized disc bulge without central canal or neural foraminal impingement. Small anterior osteophytes.

L3-4: There is **fairly severe bilateral facet arthropathy** with trivial anterolisthesis of L4 on L5 (3 mm). Minimal narrowing of the lateral recesses greater so on the right than the left is present without high grade central stenosis. Neural foraminal compromise is moderate on the right and more mild on the left.

L5-S1: There is moderate loss of disc height and diffuse generalized disc bulge is present extending into the region of the left lateral recess with mild narrowing at this site. Neural foraminal compromise is mild bilaterally.

Allowing for the limited field of view the soft tissues of the abdomen appear normal.

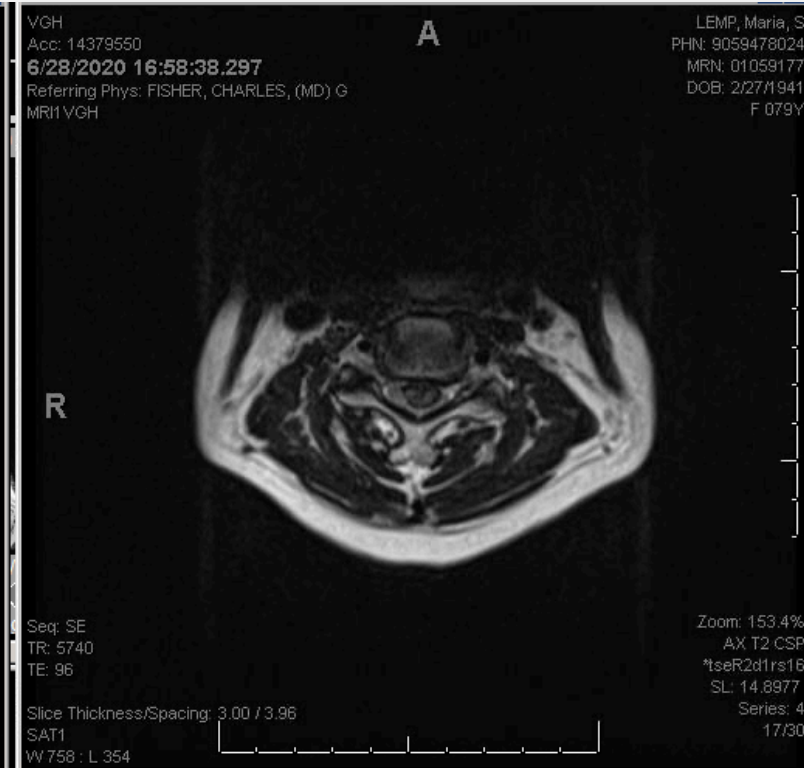
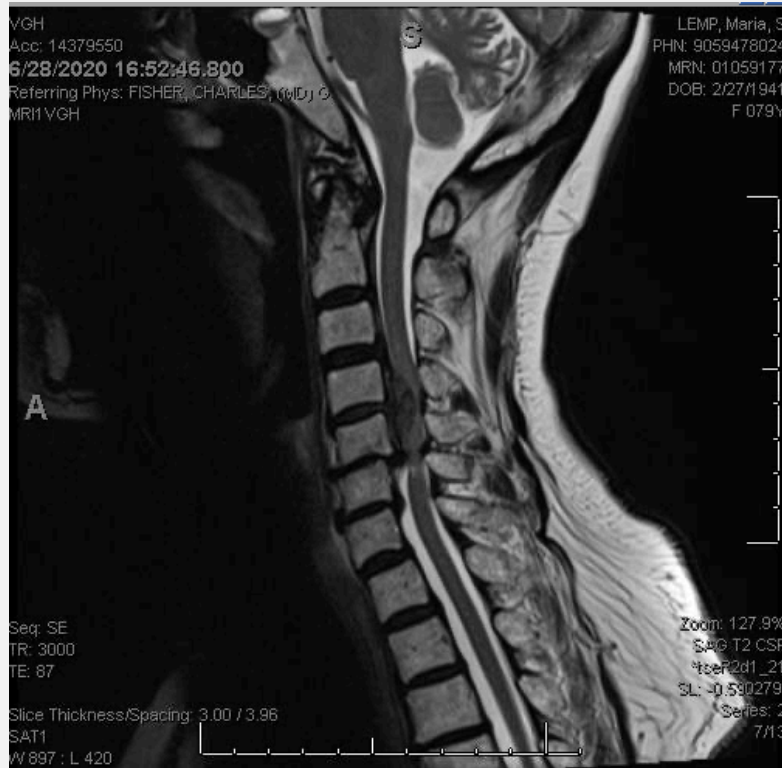
IMPRESSION:

Degenerative type disc space change lower lumbar spine with fairly severe facet arthropathy L4-5. Minimal progression when compared to prior CT 2013. **No acute focal disc protrusion or high grade central stenosis.**

# GUIDELINES FOR INTERPRETING SPINE IMAGING REPORTS

## Key points

- Spine surgeon's focus is on nerve root or spinal cord compression
- Must correlate to presenting symptoms – severe compression of thecal sac with no radicular symptoms does not necessarily imply need for referral
- Radiologists have no standardized criteria for mild / moderate / severe stenosis
- Generally, severe stenosis has high concordance between radiologist / surgeon





# GUIDELINES FOR INTERPRETING SPINE IMAGING REPORTS

- Severity of other degenerative changes (e.g. disc desiccation, facet arthropathy) poorly correlated with symptoms
  - Of less interest to spine surgeon
  - Can be misleading to non-specialists and patients: “But doctor, the report says I have severe degenerative disc disease!”

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