Definition: Dysfunction of a nerve root

- Shooting, burning, or electrical pain travelling down through the buttock and down the leg or in the anterior thigh AND/OR
- Numbness or pins/needles along a specific dermatome AND/OR
- Weakness in a specific myotome (group of muscles innervated by the same nerve root) - muscular atrophy if longstanding AND/OR
- Lost or reduced reflex in a deep tendon whose muscle is controlled by the same suspected nerve root

Initial Assessment

- Ask patient to complete the OSWESTRY 2.1 questionnaire
- Ask patient to complete the Lifestyle questionnaire
- Ask patient to complete Visual Analog Scale (VAS) of Pain (0-10)
- Conduct a detailed neurological exam including motor, sensory testing, reflex.
- If there is any symptoms of urinary or bowel and bladder symptomatology then a rectal exam needs to be done to exclude cauda equina syndrome
- Conduct a crossed and supine Straight Leg Raise (SLR) + forward flexion, hyper-extension and slump tests to assess L4, L5, S1
- Conduct a Femoral Stretch (FST) test to assess L1, L2, L3 nerve root irritability
- Identify the type of pain and exacerbating factors
- Do a complete lower extremity physical examination to rule out a musculoskeletal cause of the pain
- Consider serious medical causes of radiculopathy ⇒ demyelinating disease, vitamin B12 deficiency, syphilis, herpes, diabetes and others.

Make a Decision

If your patient has muscle weakness/foot drop or bowel/bladder incontinence or retention (Red Flags) ⇒ send to the Emergency in your community and ask for a McGill surgical spine consult
If your patient’s condition is non-debilitating and there is a negative SLR or FST

1. Reconsider other non-radicular diagnoses. (ex. Hip OA, plexitis 2nd to meds...)
2. If back pain present then see LBP algorithm.
3. Prescribe medication for pain relief as per LBP algorithm (if needed)

If your patient’s condition is moderate and there is a positive SLR

A. Non-Narcotic Analgesics
   - Acetaminophen and,
   - NSAIDs (refer to the Conseil du Medicament, Quebec)
B. Narcotic Analgesics
   (short course)
   2. Advise patient to avoid heavy lifting or aggravating movements though staying active is very important

If your patient has a severe debilitating condition and there is a positive SLR

A. Narcotic Analgesics (short course)
B. Neuroleptics: gabapentin or pregabalin. (follow Canadian neuropathic pain guidelines)
C. Consider a steroid pack
   Prednisone: 60 mg X 2 days, 40 mg X 2 days, 20 mg X 2 days. (Understanding the risk and benefits of this procedure)
   2. Advise patient to avoid heavy lifting or aggravating movements though staying active is very important

SERIAL FOLLOW-UP VISIT (1 to 4 WEEK AFTER INITIAL VISIT)
Depending on severity and evolution of pain of your patient

Review Standardized Score

- Ask patient to complete the OSWESTRY 2.1 questionnaire and compare score to initial visit
- Ask patient to complete the Lifestyle questionnaire and compare score to initial visit
- Conduct the Visual Analog Scale (VAS) of Pain (0-10)
- Conduct the Straight Leg Raise (SLR) and Femoral Stretch test (FST)

Make a Decision
If your patient’s condition has changed and now has muscle weakness/foot drop or bowel/bladder incontinence or retention (Red Flags) ⇒ send to the Emergency in your community and ask for a McGill surgical spine consult

If the SLR is improving continue with the current treatment and:
- Initiate physiotherapy (Mackenzie physiotherapy) once he/she becomes more mobile in 0-10 days
- Review the medication
- Inform patient if he/she is improving he/she can gradually resume normal daily activities

If the SLR is not improving and the pain is worsening ⇒ obtain imaging
- MRI of relevant spinal region within 6 weeks or CT of relevant spinal region if access to MRI imaging is > 6 weeks
- EMG and nerve conduction velocities can help determine the specific level involved for steroid nerve block and/or surgical treatment as well as to exclude polyneuropathy
- Continue pain medication and neuromodulator such pregabalin, gabapentin (follow Canadian neuropathic pain guidelines)

If there are no nerve compression on imaging ⇒ consider non spinal origin & consider consultation to Neurologist
If pain persists then symptomatology may be from dynamic instability and consultation to spine specialist may be warranted if neurology has excluded medical origin.

Make a Decision

FOLLOW-UP VISIT

(6-10 WEEKS AFTER INITIAL VISIT/ONCE IMAGING RESULTS OBTAINED)

Purpose: Keep the diagnosis under review

Establish Standardized Score
- Ask patient to complete the OSWESTRY 2.1 questionnaire and compare score to initial visit
- Ask patient to complete the Lifestyle questionnaire and compare score to initial visit
- Conduct the Visual Analog Scale (VAS) of pain (0-10)
- Conduct the Straight Leg Raise (SLR)

Review Imaging (MR)
- Correlate clinical finding with imaging. I.e. Corresponding nerve compression on MRI and symptoms dermatome, reflex

If your patient’s condition has changed and now has muscle weakness/foot drop or bowel/bladder incontinence or retention (Red Flags) ⇒ send to Emergency in your community and ask for a McGill surgical spine consult
SPECIALIZED TREATMENT
WITHIN THE McGill SPINE PROGRAM
(12-16 WEEKS AFTER INITIAL VISIT)

Surgeon may recommend discectomy

If there is concordant imaging, and SLR & FST still positive
Symptoms are persisting > 3 month
Send for a nerve root block and reassess in 4 weeks
If patient is still symptomatic after 4 weeks then the patient is a surgical candidate
=> Refer to the McGill Spine Program

If there is non-concordant imaging (ie disc L3/4 and clinically S1 Radiculopathy) then diagnostic root block should be considered.
If symptoms are improving
If patient is still symptomatic after 4 weeks
=> Refer to the McGill Spine Program

If the symptoms are improving:
- Review the medication
- Transition to home exercise program after physiotherapy sessions are complete
References


