

## Low Back Pain

Erika Yamada, MD

### Educational objectives:

1. Focus on the salient points of the history and physical exam in patients with low back pain
2. Discuss differential diagnoses of pain in the low back
3. Review the evidence and recommendations for imaging
4. Examine the evidence for treatment, both pharmacologic and non-pharmacologic

### Case 1, Part 1

Mr S is a 57 yo male with a long history of intermittent back pain related to his work as a truck driver. He presents with severe back pain radiating down his left leg that began 2d ago when he was helping a friend move. He says that his left leg feels weak. He has to urinate 1-2x/nightly and has slight urinary hesitancy.

1. What kind of back pain does he have by history?
2. What is the most likely pathophysiology for this kind of back pain?
3. What movements or maneuvers commonly exacerbate this kind of pain?
4. Is there anything concerning about his history?
5. Within the routine back exam, what parts of the physical do you want to focus on?

### Case 1, Part 2

His exam is significant for a bmi of 28, left SLR causes pain at 45 degrees which radiates below knee, great toe dorsiflexion is weak, ankle jerk is diminished on the left. Prostate gland is enlarged, normal sphincter tone. No sensory deficits. He says that he has never had pain like this before and asked for pain pills and to be able to lie down.

1. Are there any red flags?
2. What nerve root is involved?

3. **What will you tell him?**
4. **Will you order imaging?**
5. **In addition to analgesics and follow up, what is the best management?**
  - a. Lumbosacral traction therapy
  - b. Chiropractic adjustments
  - c. Physical therapy back school and exercise program
  - d. Orthopedic referral
  - e. Bedrest with activity as tolerated

### **Case 2, Part 1**

Mr T is a 67 yo male who present for urgent evaluation of a 2 month history of low back pain radiating down his right leg that has worsened over the past 3 days, causing him walking difficulty due to leg weakness. He has also been unable to urinate for the past 24 hours. His medical history is notable for COPD, dm, prostate cancer, and hyperlipidemia. Meds include bronchodilator inhalers, insulin, leuprolide, simvastatin and aspirin.

1. **Are there any red flags? If so, what are you worried about?**
2. **How do you want to focus your exam?**

### **Case 2, Part 2**

He is in obvious discomfort. He is afebrile, hr 88, bp 148/72. He has severe lower lumbar spinal tenderness to palpation with no bony abnormalities. Lower extremity strength is 4/5 bilaterally and the SLR is positive on the right. On rectal exam, there is decreased rectal sphincter tone, diminished sensation of the perineal region and buttocks and the prostate is asymmetric and hard.

1. **Which of the following is the most appropriate diagnostic imaging evaluation for this patient?**
  - a. CT lumbar spine
  - b. MRI lumbar spine
  - c. Radiography lumbar spine
  - d. Positron emission tomography
  - e. Radionuclide bone scan

### Case 3

Mr. U is a 28 yo man who underwent a renal transplant 1y ago. He presents with a 5 week history of low back pain which is present at all times, even at rest, but is particularly severe with any jarring motion of the spine. The patient does not have fever, le numbness, m weakness, or difficulty urinating. He takes combination immunosuppressive therapy.

He is afebrile with normal vital signs. Palpation of the spinal reveals localized tenderness and muscle spasm at the upper lumbar spine. Neurologic examination is normal. A radiograph of the lumbar spine shows demineralization of the endplates and loss of definition of the anterior aspect of the bony L1-L2 margin. Ppd testing shows 7mm induration. A cxr is normal.

1. **What kinds of things cause unrelenting nocturnal back pain?**
2. **Does he have a positive ppd?**
3. **Which of the following diagnostic studies should be done next?**
  - a. CT guided needle biopsy of the spinal lesion
  - b. CT scan of the chest
  - c. MRI of the entire spine
  - d. SPEP and UPEP
  - e. Testicular ultrasound and whole body positron