

Back Pain

"Long" Summary from Rosen's By Stace Breland

Epidemiology

- 97% of pts complaining of low back pain ultimately are Dx w/ mechanical back pain (strain and/or degenerative in origin) but a very small % end up having more serious concerns like herniated disc, spinal stenosis, fracture, and congenital disorders. About 1% of all back pain pts will have "true" sciatica.
- 72% will have completely recovered in 1 yr.
- For those with chronic back pain (lasting longer than 3 months) it is common to have persistent pain or recurrence within 12 months

Pathophysiology

- Numerous causes including vascular, visceral, infectious, mechanical, or rheumatologic with pain possibly originating from spinal column, cord or root, musculature, or visceral organs.
- 95% of herniations occur at either L4-L5 and/or L5/S1 disc spaces with the majority being posterior herniations due to posterior thinning of the annulus fibrosus in those areas.
- Anatomic disc bulging and focal annulus tears with focal disc protrusion are usually asymptomatic whereas disc extrusion (a small % of overall instances) is usually symptomatic.

Differential Diagnosis

- Vast majority of causes are non-emergent but consideration should always be given first to the possible emergent life threatening causes and should be addressed immediately.
 - Emergent Diagnoses
 - Aortic Dissection
 - Cauda Equina Synd.
 - Epidural Abscess or hematoma
 - Meningitis
 - Ruptured or expanding Aortic Aneurysm
 - Spinal fracture or subluxation w/ cord or root impingement
 - Numerous other Referred or Visceral causes such as Cholecystitis or Biliary Colic, Esophageal Disease, Nephrolithiasis, Ovarian Torsion/mass/tumor, pancreatitis, Peptic Ulcer Disease, Pelvic Inflammatory Disease, Endometriosis, Pleural Effusion, Pneumonia, Prostatitis, Pulmonary Embolism, Pyelonephritis, Retroperitoneal hemorrhage or tumor.
 - Urgent Diagnoses
 - Back pain w/ Neuro deficits
 - Disc Herniation causing neuro compromise
 - Malignancy
 - Sciatica with nerve root compression
 - Spinal fracture without cord compression
 - Spinal Stenosis
 - Transverse myelitis
 - Vertebral Osteomyelitis
 - Common/Stable Diagnoses
 - Acute muscle strain
 - Acute ligamentous injury
 - Ankylosing Spondylitis
 - Degenerative Joint Disease
 - Herpes Zoster
 - Intervertebral disc disease without impingement
 - Pathologic fracture without impingement
 - Seropositive arthritis
 - Spondylolisthesis

Signs and Symptoms

- Abnormal vital signs may suggest a life-threatening process (e.g., hypotension and tachycardia with ruptured abdominal aortic aneurysm, hypertension with aortic dissection, fever with abscess, osteomyelitis, or diskitis).
- Assess gait, ROM, and standing posture and palpate the area of complaint for indications on pain severity
- Neurologic assessment may be abnormal in more serious etiologies of back pain.

Work-up

- Palpation of peripheral pulses for symmetry/quality, pulmonary and cardiac auscultation, and abdominal exam for tenderness/masses should be completed.
- Straight Leg Test should be performed if possible as it is the classic test for sciatic nerve root irritation. It is 92% sensitive but only 28% specific for disk disease.
 - This test is often negative in pts with Spinal Stenosis!
- A rectal examination can assess sphincter tone and anal wink. Testing for perianal sensation is necessary if there is any history of bowel or bladder dysfunction.
- Laboratory tests- Often of little use for mechanical causes but consideration should be given to ESR, WBC, and Urinalysis if etiology is possibly infections or possibly renal in nature but even these have poor prognostic values.
- Imaging- The vast majority of pts do not require radiographic evaluation in the ED. Exceptions to this are when “red flag” signs/symptoms are present or there is a Hx of trauma or bony tenderness in which case radiography may be warranted and based on the specific red flag noted.
 - Plain film- used for straightforward evaluation for fracture, or as a screening tool for other issues when the prior probability of serious injury or pathology is low.
 - CT- used if a spine fracture has been identified or a more complex fracture is suspected.
 - MRI- used if a disk condition, hematoma, infection, or a mass is suspected to be the cause of the problem.
 - ***Emergency MRI, CT, or, rarely, myelogram (in order of preference) is indicated **ONLY** if an acute, significant neurologic deficit such as motor loss, loss of reflexes, cauda equina syndrome, or one of the serious non-mechanical back pain sources is suspected.

Empiric Management

- The initial empirical management of acute back pain depends on the presenting vital signs and the patient’s overall appearance.
 - Stable Pts- Early effective pain management can be of significant value.
 - Unstable Pts- Treat the underlying cause.
- Pain management should be the goal in stable pt’s with non-life threatening causes with the choice of analgesic dictated by the patient’s and physician’s perception of the degree of pain. NSAIDs should be considered for non-severe pain while opioids such as morphine or hydromorphone may be considered for severe pain.
 - There is no credible evidence supporting the use or effectiveness of “muscle relaxants” or “antispasmodic agents,” such as methocarbamol and cyclobenzaprine, and they have significant adverse effects. The best approach is to provide adequate analgesia for the patient, supplemented by a benzodiazepine when the pain syndrome is particularly severe.

Disposition

- Depends on the diagnosis. Obviously those with life threatening causes require admission and further treatment and some (cord compression, epidural abscess/hematoma) will require neurosurgical consultation.
- Patients who are unable to walk or require continued IV analgesics for adequate pain control should be considered for admission to the hospital or observation unit.
- If pain can be adequately controlled with oral analgesics, patients can be discharged with appropriate follow-up so long as adequate discharge instructions detailing do’s and don’ts are provided.
- Repeat visits to the ED for chronic back pain should prompt counseling of the patient regarding the necessity of management by the primary care physician or a pain management center.
 - *** Opioid medication should **NOT** be administered or prescribed in the ED for such patients, absent a new, acute condition.