

"He who studies medicine without books sails an uncharted sea, but he who studies medicine without patients does not go to sea at all." – William Osler



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MEDICINE
TEAMWORK

BACK PAIN An Approach to a Common Symptom



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Back Pain

It is an extremely common symptom experienced by most people at some time in their lives. Only a few patients have a serious underlying disorder.

In the assessment of back pain you have to make sure that you have gone through these points;

- Site. {It could be lumbar or thoracic}
- Duration. {Chronic or acute}
- **Pattern.** {It gives the type of back pain. e.g. Inflammatory back pain}
- Severity.
- Relieving/aggravating factors.
- Associated symptoms.
- Neurological deficit. {Weakness, Impaired hearing or vision, disturbance of sensation, etc.}
- Affection on activity and quality of life.
- **Occupation.**
- **Past medical/surgical history.**

Low back pain is one of the most common reasons for visits to physicians in the ambulatory care setting. The total cost related to back pain, both direct and indirect, is estimated to be >\$100 billion per year in the U.S.

If approach is **not** systematic, cost/identification of non-clinically significant lesions/worsening of psychological condition will all be affected.

Types of patients with back pain seen in the A&E, primary care, neurology, neurosurgery, orthopedic, rheumatology are different.

Guidelines of the American College of Radiology are clear, safe and simple to follow.

Non-specific back pain:

Is not associated with significant functional impairment or rapidly progressive neurologic deficits.

Treat them by one of these drugs:

- Paracetamol/Muscle relaxants.
- NSAID's.
- Opioids.

- Referrals for physical or occupational therapy may also be considered.
- Imaging and invasive interventions are not recommended at this stage.
- After 4 weeks, if there is improvement, educational materials are provided, and instructions on self-care are reinforced.
- If no improvement, with no red flags or radiculopathy/Spinal stenosis, imaging with MRI may be recommended. {CT and lumbar scans are useless, except in some cases}

Table 1. Adult with low back pain (acute)

- History and physical key points
 - Duration and nature of symptoms
 - Presence of red flags (trauma history, unintentional weight loss, immunosuppression, history of cancer, intravenous drug use, steroid use, osteoporosis, age > 50 y, focal neurologic deficit, progression of symptoms)
 - Symptoms of spinal stenosis, radiculopathy
- Decision point (<4 weeks of symptoms)
- No red flags, signs, or symptoms of spinal stenosis or radiculopathy
 - Go to order set for nonspecific acute low back pain
- Signs or symptoms of spinal stenosis or radiculopathy
 - Go to order set for acute low back pain with radiculopathy or spinal stenosis
- Red flags present
 - Go to order set for acute low back pain with red flags

Red flags:

Recent significant trauma
Milder trauma if age > 50
Unexplained weight loss
Unexplained fever
Immunosuppression
History of cancer
Intravenous drug use
Osteoporosis
Chronic corticosteroid use
Age > 70 years
Focal neurological deficit
Duration > 6 weeks

Radiculopathy:

Radiculopathy is defined as nerve root dysfunction manifesting as pain, paraesthesia, reduced sensory function, decreased deep tendon reflexes, or weakness.

It is not a cause of back pain; rather, nerve root impingement, disc herniation, facet arthropathy, and other conditions are causes of back pain.

In a radiculopathy, the problem occurs at or near the root of the nerve, along the spine. However, the pain or other symptoms often radiate to the part of the body served by that nerve. For example, a nerve root impingement in the neck can produce pain and weakness in the forearm. Likewise, an impingement in the lower back or lumbosacral can be manifested with symptoms in the foot.

The onset of symptoms in patients with lumbosacral radiculopathy is often sudden and includes Lower Back Pain. Preexisting back pain may disappear when the leg pain begins.

Sitting, coughing, or sneezing may exacerbate the pain, which travels from the buttock down to the posterior or posterolateral leg to the ankle or foot.

Patients in this category can be managed conservatively such as the nonspecific. Not because it is not serious, but because there is no strong evidence for doing other modalities.

Ideally, effective treatment aims to resolve the underlying cause and restores the nerve root to normal function. Common mainstream treatment approaches include physical therapy, medication, and relaxation.

Spinal stenosis:

- It is a progressive narrowing of the spinal canal and it may occur alone or in combination with acute disc herniation.

- The compression will cause neurogenic claudication, which is; pain, weakness, and numbness in the legs while walking.

- Onset of symptoms during ambulation is believed to be caused by increased metabolic demands of compressed nerve roots that have become ischemic due to stenosis.

- Pain is relieved when the patient flexes the spine. Flexion increases canal size by stretching the protruding ligamentum flavum, reduction of the overriding laminae and facets, and enlargement of the foramina.

- Treatment includes:

Education, medicines to relieve pain and inflammation such as NSAIDs and physical therapy.

Patients with radiculopathy and spinal stenosis should be assessed for:

- Depression.
- Coping.
- Psychosocial support.
- If improved, educational materials are provided, and instructions on self-care are reinforced.
- If no improvement, request pain service (easing the suffering and improving the quality of life), or psychiatry, or neurology consult.
- MRI as the imaging modality. {Just if the patient did not improve}

Red flags:

- Their presence indicates the possibility of a serious underlying condition, such as malignancy, vertebral infection, vertebral compression fracture, cauda equina syndrome, and ankylosing spondylitis.
- Depending on the condition, early referral to the appropriate specialty has a major impact on the outcome.
- There is a role of lumbosacral X-ray.

Para spinal abscess:

- Acute paraspinal infections are most commonly bacterial while sub-acute could be anything. (staph Aureus, E. Coli, TB, Brucella).
- Localized back pain is the 1st symptom other symptoms include; fever, chills and night sweats.
- Hematogenous spread with seeding is the suspected source of infection in young. Primary source includes bacterial endocarditis, IV drug use {IV drug abusers can have infections anywhere}, infected catheters, UTI, and others.
- If sub-acute, ask about TB or brucella risk factors.
- There is usually limited motion of the spine that is affected, and movement typically produces severe muscle spasms.
- Compression of the spinal cord or the cauda equina can lead to paralysis or varying degrees of weakness, numbness and bladder dysfunction.

Inflammatory back is characterized by:

- Young age.
- **Early morning stiffness.** Back pain worse in the morning improves with activity. {It is the most important symptom that differentiates between inflammatory and mechanical back pain}
- Nocturnal back pain.
- Alternating back pain.
- Dramatic response to NSAID's
- Presence of symptoms suggestive of spondylarthritis.

Cauda Equina Syndrome:

- It refers to a characteristic pattern of neuromuscular and urogenital symptoms resulting from the simultaneous compression of multiple lumbosacral nerve roots below the level of the conus medullaris.
- Symptoms include low back pain, sciatica, saddle sensory disturbances, bladder and bowel dysfunction, and variable lower extremity motor and sensory loss. (L3, L4, L5)
- **This is a surgical emergency!**