

Low back pain

Source → Dr.Fadi Al-Hadidi

-Low back pain is very common, it's the 2nd most common complaint after URTI.

-Recurrence rate is high (about 40%.) and our main concern is to prevent this.

-Low back pain is classified to:

1. Acute, less than 6 weeks duration
2. Subacute, 6 weeks-3 months.
3. Chronic, more than 3 months.

History:

- SOCRATES
- Site: ask the patient to point to the exact place.
- Duration: it can be acute on top of chronic.
 - sudden (Muscle spasm , Renal Colic , Ligaments strain or rupture)
 - gradual (Disc prolapse, Bone mets, inflammation, tumors, infections, ankylosing spondylitis , canal stenosis.)
- Frequency.
- Its relation to walking and movement (to determine if it's mechanical or inflammatory). Pain at rest, decreases with motion → inflammatory pain.
Increase with motion → mechanical
- Aggravating and relieving factors are very important
- Associated symptoms (fever, weight loss. Think of malignancy esp mets from the lung or breast) \\
stiffness (muscle spasm or musculoskeletal And Infections as Osteomyelitis or epidural abscess)

- History of trauma (fracture)
- Recent heavy exercise
- Ask about previous episodes (recurrent)
- Patient's hobbies. → (Patients' hobby may indicate MRI from the 1st visit)

Differentials:

In young adults:

- Disc prolapse
- Spondylolisthesis (mechanical pain, related to change in position)
- Muscle spasm (acute/ sudden pain that decreases with time but it's constant and related to the use of the muscle affected)

In old age:

- Osteoporotic fracture
- Metastasis (tumor pain is usually chronic and constant)

Also think of spinal vs non-spinal causes of low back pain as pancreatitis and ureteral stones can cause such pain.

Radiculopathy: nerve root compression → sharp well localized, in dermatological pattern pain, reaches below knees (except for L2, L3 roots usually above the knees.).

Referred pain: not localized, Not below knees, dull aching → transmitted through C-fibers

Physical Exam:

- Look
 - Deformity , can be seen in muscle spasm or disc prolapse and if it's found it indicates significant pathology but its absence doesn't exclude them.
- Feel
 - Interspinal area (to palpate discs and determine the affected segments)
 - Landmark: iliac crest L4/L5 → pain or tenderness could be above or below it.
 - Paraspinal muscles. The patient might avoid the pain by GUARDING which is muscle spasm (feel if the muscle is tensed, if the muscle is relaxed you can tell that the pain isn't that severe) → Malingering effect.
 - Palpation of interspinous spaces for ligament pathology or paraspinal for muscles if both are tender think of Disc prolapse
- MOVE
 - Range of movement
 - In disc prolapse the pain increases with flexion and it's relieved with lying down (which decrease intradiscal pressure → decrease protrusion)
 - Muscle spasm pain also increases with flexion.
 - In spondylolisthesis the pain is worse with extension
 - In spinal canal stenosis → increases with extension, relieved by flexion
- Special tests
 - Straight leg raising test, if <60 it's positive .
If positive, ask about the exact site where the pain is felt→ in the leg or back
It's a sensitive test but not specific (if positive indicates many pathologies)
 - Cross sciatic sign (straight leg test on the contralateral leg)
In disc prolapse there would be severe pain in the affected limb.
More specific and sensitive for compression.
 - Femoral stretch test, the patient lies prone, the knee is passively flexed to the thigh and the hip is passively extended; the test is positive if the patient experiences anterior thigh pain. This test is usually strongly positive in patients with protrusions at L2–L3 and L3–L4, slightly positive or negative in L4–L5 disc protrusions and negative in cases with a lumbosacral protrusion.
+ve if the patient have Back pain with shooting thigh pain not frank thigh pain, thigh pain can present in most people as weak and short muscles can cause it

Investigations

- X Ray only to show bone, if we think of fractures.
- MRI to see disc prolapse. But this can be seen even if no symptoms were present (asymptomatic with disc prolapse on MRI), in 35% in the lumbar area and 20% in the "cervical area" neck region.

Management:

- **NSAIDs**: Either COX1 or COX2, but keep in mind that COX 1 has GI side effects while COX2 has cardiac side effects.
 - NSAIDs and not paracetamol because there's inflammation
 - **Skeletal muscle relaxants**, they're used to decrease the guarding. It was also found that they have a synergistic effect with NSAIDs.
 - Because those patients complain of spasm (which is a reflex to prevent motion when there's pain), but this spasm itself causes pain and that's why we give muscle relaxants
 - NSAIDs + muscle relaxants → synergistic effect
 - **Topical creams (NSAIDs)** that act locally, can also be used for muscle spasm but they need to be applied at least 3 times and their effect increases with increased use (Effectiveness of topical treatment depends on frequency)
 - **Cold compressors**, for acute pain as they work as pain killers and reach deep in the tissues (so it's applied only for 5 minutes). They affect the acute inflammatory phase (first 72 hrs) and cause vasospasm to decrease the inflammatory mediators in the affected area.
 - **Hot compressors**, for chronic pain because they work as vasodilators and allows more medications to reach the affected area, it also works as a muscle relaxant. It acts superficially so it's given for half an hour and for higher frequency.
 - **Rest** is useful in the acute phase (first 2-3 days), but if it lasts for a long time it can cause muscle weakness and increase the incidence of relapse. So you should encourage the patient to return to normal activities after taking a few days of rest.
 - **LIFESTYLE MODIFICATIONS!** They're important especially if there is recurrent attacks of pain. These include exercise, changing the chair used at work, increase the muscle strength, avoid carrying heavy objects.
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- Lower back pain is usually self limiting, it takes about 6 weeks for it to disappear. If it was recurrent with no new symptoms, it needs physiotherapy.
 - If the pain continues for more than 6 weeks → ask the pt for follow up
 - If the patient return back to you after 6 weeks and still has the same complain, what should you do for him ?
 - Again do history and physical examination.
 - If the symptoms and signs are the same to those in the first visit, we try the previous treatment (NSAIDs and muscle relaxants) and we add physiotherapy.
 - After we try this, if the patient return back again with the same complain we should do further investigations like MRI and blood test.
 - Physiotherapy is not to be performed in the acute stage because it may make the Condition worsen.
 - If the pain is not acute, physiotherapy is effective in some cases, but it's not necessary to start it from the 1st visit.

Notes:

- Most patients deny previous attacks of low back pain.
- Pain after lifting a heavy object → disc prolapse or muscular pain.
- Buttocks pain is usually referred from the back.
- In sciatica pain is in a dermatomal distribution.
- Age of back pain is between 20 and 45, above or below this is usually abnormal.
- Most common type of back pain is non-specific back pain.
- Education is very important to prevent recurrence.
- Back pain → 60% resolve spontaneously within 6 weeks. 40% become chronic (> 3 months or Multi recurrent in 3 months)
- 85% of back pain is due Musculoskeletal causes
- History is the most important thing in Dx.
- In Disc prolapse the spine tilt away from the pathology when the nerve compressed from above , and tilt toward the pathology when compressed from below.
 - Sciatic scoliosis and lumbar disc herniation. They found that if the lesion is located laterally in the disc space, then the list occurs to the contralateral side.
 - If the protrusion is lateral to the nerve root, then the patient will lean away from the lesion, whereas if the protrusion is medial to the root the list will be towards the lesion
 - Patients with lumbar disc herniation and sciatica scoliosis tended to list to the side opposite to the sciatica, producing convexity towards the side of the sciatica
- Thrombosis is rare but can cause back pain , it come in (severe pain , old age , history of vascular diseases and not affected by position as disc pain).
- A pt with lower back pain , -ve red flags, -ve vascular, -ve neural signs :
 - Reassure the patient , give NSAIDs , give muscle relaxant , local NSAIDs if needed , must be used in high frequency , topical apply and for 2-3 min uncovered to be absorbed.
 - Rest is for 2 days only. after that you encourage the pt to return to his daily activity .
 - Physiotherapy : Cold for analgesia (early) , Hot for increase blood supply → increases the level of the drugs reaching the tissue
 - Pt education about the activity he can do and the best positions of sitting and lifting objects .. etc.
- The chronic back pain that come and go unnoticed , usually there is minor traumatic events that cause fissuring in the annulus fibrosus and when the major lifting happened it cause the herniation .
- 80 % there is a trauma (Normal disc } that cause the disc to fissure, 20 % of cases the cause is degenerative (black disc) and usually pt's have sitting intolerance (not able to sustain a specific sitting position for long time)
- Some disc prolapses are positional, you need dynamic MRI to detect.
- 93% of patient with disc prolapse only need conservative tx. and 7 % need surgery