

## Case Report

### A case of low back pain

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- Back pain mostly thoracic and lumbar region for 2 years
- Fatigue and weight loss for same duration
- Patients is smoker and having type 2 DM

#### Present Illness :

A 60-year-old man from rural Bengal presented with back pain, fatigue, weight loss. The patient had been generally well until approximately 2 years before, when persistent pain of the thoracic and lumbosacral spine developed. The patient was seen by various primary care physicians and treated with analgesics and muscle relaxants. He was also advised LS belt and physiotherapy. The pain improved with treatment only to recur. But during the last 6 months, the pain worsened and he lost approximately 4.5 kg. The pain was chronic with exacerbations, was localized in the thoracic and lumbar regions without radiation, worsened when at night and it prevented him getting sleep. The patient had a previous history of life-long smoking and Type 2 diabetes mellitus (T2DM) treated with oral hypoglycemic drugs. There was no relevant family history.

#### On Examination :

At present, Physical examination showed the vitals were normal. There was tenderness over the paraspinal regions of the lower thoracic and upper lumbar regions, without pain over the spinal processes. There was trace pitting edema bilaterally, Power was 5/5 in both legs and mild loss of sensation of light touch in the toes, but there were no signs of spinal cord compression or other neurological deficit.

At the onset of disease by primary care physician X Ray examination of spine was done and it was non contributory at that time. No further investigation was done except routine blood examination, which were also normal at that time.

#### Differential diagnoses :

(a) *Nonspecific back pain*

(b) *Systemic etiologies*

(i) *etiologies within spine*

*Spinal cord or cauda equina compression*

*Metastatic cancer*

*Spinal epidural abscess*

*Vertebral osteomyelitis*

*Vertebral compression fracture*

*Radiculopathy*

*Spinal stenosis*

(i) *etiologies outside spine*

*Sacroiliac joint dysfunction*

*Psychologic distress*

#### **Nonspecific back pain :**

The vast majority of patients seen in primary care (>85 per-

cent) will have nonspecific low back pain. Many of these patients may have musculoskeletal pain. Most patients with nonspecific back pain improve within a few weeks.

**Etiologies within spine — Spinal cord or cauda equina compression** — The most common cause being herniation of the intervertebral disc. Other causes include ankylosing spondylitis, trauma, malignant and benign tumors including metastasis and infection. Pain is usually the first symptom of cord compression, but motor (usually weakness) and sensory findings are present in the majority of patients at diagnosis. Bowel and/or bladder dysfunction are generally late findings. Early diagnosis and treatment improves outcomes.

**Metastatic cancer** — A history of cancer (excluding non-melanoma skin cancers) is the strongest risk factor for back pain from bone metastasis. Among solid cancers, metastatic disease from breast, prostate, lung, thyroid, and kidney cancers account for 80 percent of skeletal metastases. Approximately 60 percent of patients with multiple myeloma have skeletal lytic lesions present at diagnosis. In patients with a history of cancer, sudden, severe pain raises concern for pathologic fracture. Patients may also have neurologic symptoms from either spinal cord compression or spinal instability.

**Spinal epidural abscess** — Initial symptoms (eg, fever and malaise) are often nonspecific; over time, localized back pain may be followed by radicular pain and left untreated, neurologic deficits. Risk factors include recent spinal injection or epidural catheter placement, injection drug use, and other infections (eg, contiguous bony or soft tissue infection or bacteremia). Immunocompromised patients may also be at higher risk. Urgent antibiotic treatment and surgical therapy for patients with spinal epidural abscess.

**Vertebral osteomyelitis** — Increasing age, male sex, immunocompromised state and injection drug use are predisposing factors. Acute osteomyelitis typically presents with gradual onset of back pain over several days but may not have fevers or other systemic symptoms. Prompt antibiotic treatment improves outcomes.

**Vertebral compression fracture** — Approximately 4 percent of patients presenting in the primary care setting with low back pain will have a vertebral compression fracture. While some produce no symptoms, other patients present with acute onset of localized back pain which may be incapacitating. There may be no h/o preceding trauma. Risk factors include advanced age and chronic glucocorticoid use.

**Radiculopathy** — Radiculopathy refers to symptoms or impairments related to a spinal nerve root. The clinical presentations of lumbosacral radiculopathy vary according to the level of nerve roots involved. Over 90 percent are L5 and S1 radiculopathies, who have a sharp or burning pain radiating down from the buttock along the course of the sciatic nerve, sensory loss, weakness, and/or reflex changes. Many patients improve gradually with supportive care.

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**Table 1 — Red flags or potentially serious underlying cause of low back pain<sup>5</sup>**

Red flag item	Description	Rationale
Trauma :	History of major trauma (eg, motor vehicle accident, fall from height) or minor trauma in the setting of possible osteoporosis	Possible fracture, especially in an older or osteoporotic patient
Age :	More than 50 years or less than 20 years fracture, infection	Increased risk of tumor, abdominal aortic aneurysm,
History of cancer :	Past or present history of any type of cancer arising from the lung, breast, kidney, prostate,	increases risk of back pain caused by metastatic tumors
Fever, chills, nightsweats, weight loss :	Oral temperature 37.8°C (100°F), chills, sweats, temperature changes at night Unexplained weight loss >4.5 kg (10 lbs) in 3 months, not directly related to a change in activity or diet	Constitutional symptoms increase risk of infection or cancer. May indicate cancer or infection
Recent infection :	Recent bacterial infection such as a urinary tract infection	Increases risk of infection
Immuno-suppression :	Immunosuppression for any reason (e.g., transplant, steroid use, IV drug abuse, HIV)	Increases risk of infection
Recumbency or night pain :	Pain that is worsened by recumbency or awakens the patient from sleep, unrelated to movement or positioning	Increases risk of cancer, infection, or an abdominal aortic aneurysm
Saddle : numbness	Reduced sensation in the second to fifth sacral dermatomes (perianal region)	May indicate cauda equina syndrome
Bladder or bowel dysfunction :	Urinary retention, increased frequency of urination, incontinence of urine or stool, dysuria, hematuria	May indicate cauda equina syndrome or infection
Lower extremity-neurological deficit :	Progressive or severe neurological deficit in one or especially both lower extremities, weak anal sphincter	May indicate severe nerve root injury or cauda equina syndrome

**Spinal stenosis** — Lumbar spinal stenosis is most often multifactorial. Spondylosis spondylolistheses, and thickening of the ligamentum flavum are the most common causes, typically affecting patients >60 years. Ambulation-induced pain localized to the calf and distal lower extremity resolving with sitting or leaning forward (“pseudoclaudication” or “neurogenic claudication”), back pain and sensory loss and weakness in the legs. Symptoms can usually be distinguished from vascular claudication .

**Ankylosing spondylitis**—In primary care settings for back pain, approximately 0.5 percent will have ankylosing spondylitis . It is most commonly diagnosed in men under the age of 40 years. Back pain, which often has characteristics suggesting an inflammatory etiology (morning stiffness, improvement with exercise, pain at night).

**Osteoarthritis** — Low back pain may be a symptom of osteoarthritis of the facet joints spine. Patients may also complain of hip pain, Osteoarthritis most commonly presents in patients over the age of 40. Pain is typically exacerbated by activity and relieved by rest . Osteoarthritis can lead to spinal stenosis.

**Etiologies outside the spine** — Examples of other etiologies include pancreatitis,

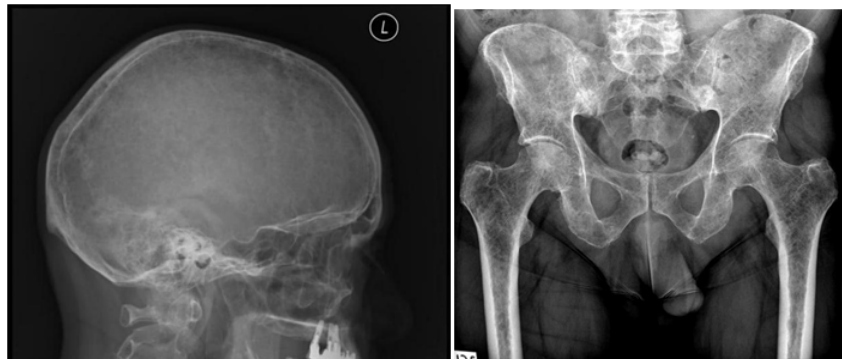


Fig 1 — X Ray of the skull and pelvis : shows multiple osteolytic lesions



Fig 2 — MRI of Dorsal Spine showing T2 hyperintensities with enhancement of gadolinium contrast

nephrolithiasis, pyelonephritis, abdominal aortic aneurysm, or herpes zoster. Patients generally have other accompanying symptoms.

**Sacroiliac joint dysfunction** — "Sacroiliac joint dysfunction," a term to describe pain in the region of the sacroiliac joint believed to be due to malalignment or abnormal joint movement.

**Psychologic distress** — Psychologic distress (eg, depression or somatization) may contribute to the severity symptoms of low back pain or may be a cause of nonorganic back pain.

#### **Investigation :**

Initial routine laboratory examinations showed Hb 7.6 gm/dl, The erythrocyte sedimentation rate was 57 mm per hour (reference range, 0 to 13), serum electrolytes including calcium, and serum creatinine. Liver function and coagulation tests were within the normal range. The patient was also sent for a 24 hour urine test which showed: creatinine 1.10 mg/dL, 24 hour proteinuria 0.42 g/24 h (normal 0.00 - 0.30), urine calcium 7.48 mg/dL, Serum protein electrophoresis normal. Both upper and lower gastrointestinal endoscopic studies were normal.

**X Ray of the pelvis and skull** — which shows multiple osteolytic lesions (Fig 1).

**Magnetic resonance imaging** — of the thoracic and lumbar spine demonstrated generalized skeletal lytic lesions, hyperintense in T2-Steir and enhanced uptake of gadolinium contrast intensely consistent with malignant infiltration. A partial destruction of the cortex and minimal invasion of the spinal canal in its anterior portion was noted. Degenerative changes were seen from C4 to C7 (Fig 2).

**Biopsy of L5 vertebra** — which showed a marked focal and interstitial plasma cell infiltrate. **The bone marrow biopsy** revealed a hypercellular bone marrow with a massive plasma cell infiltration (62%) and residual granulopoiesis. **Urine protein electrophoresis** yielded positive free kappa light chains of 1.03 mg/dL (normal 0.00 - 0.50).

#### **Diagnosis of Multiple Myeloma established.**

#### **Conclusion :**

Low back pain (LBP) is one of the most common patient complaints in a primary care setting. Approximately two thirds of adults are affected by low back pain at some point in their lives.

Though 85% of cases having non smoking causes, 15% having underlying definite etiology. So LBP requires careful assessment and proper followup.

#### **Editorial Comments :**

- **Low back pain common in population**
- **85% cases having non specific causes**
- **Rest having specific etiologies**
- **Careful evaluation and follow up mandatory**

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