



TRAUMATIC T2 FRACTURE PRESENTING AS PATHOLOGICAL FRACTURE

General Medicine

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ABSTRACT

Complete T2 ASIA lesion due to old traumatic fracture presenting as a pathological fracture is an unusual presentation requiring multidisciplinary and holistic approach. Mixed lytic and sclerotic lesions of vertebra is commonly a feature of pathological fracture, but can sometimes be associated with traumatic fracture. Being aware of this as a potential differential diagnosis of such bony lesion on CT scan, although rare, significantly obviates the delay in diagnosis and management.

KEYWORDS

Traumatic T2, ASIA lesion, Pathological fracture, Sclerotic lesions on CT scan

Case Presentation-

A moderately obese man in his mid sixties presented with sudden onset of loss of power and sensation below nipple level bilaterally. On examination, the power was 0/5 in both legs and sensation 0/2 below T4 level. He had tenderness over T2 spine. There was no preceding acute trauma but he had a history of fall on his back 8 weeks prior to presentation. He had some back pain and spasms but no neurological deficit prior to this presentation. No history of fever or recent illness was present. He had a series of scans and blood tests over next few weeks to make a definite diagnosis. He was inpatient for around 3 months with ongoing investigations and awaiting a rehabilitation bed. He developed multiple infections for which he had to be referred to medical specialist team. Long term hospital stay and delay in management led to significant depression requiring intervention from mental health team.

Investigations-

Routine biochemical and hematological tests were normal. A CT scan of thoracolumbar spine showed T2 lesion suspicious of pathological fracture (Fig.1). A CT CAP was arranged subsequently to find out any primary source of malignancy (Fig.3). Although no primary malignancy was found, it was reported as abnormal T2 appearance with mixed lytic and sclerotic lesions with a fracture, advising to perform PSA and myeloma screening. PSA, CEA and myeloma screen were negative. Oncology referral was done who advised a diagnostic biopsy of spine to confirm malignancy. The case was subsequently discussed with the regional spinal surgery team who advised to perform a repeat CT scan of spine to see fracture healing that showed abnormal T2 with no significant change from previous scan and no other bone lesions (Fig.2). MRI is an investigation of choice but that couldn't be performed as patient had an ICD incompatible with this test. A further FDG PET scan was performed to find the source of these solitary T2 metastases. It was reported as T2 lesion not avid, suggesting differentials like traumatic fracture, discitis and osteomyelitis. Basically it ruled out the pathological etiology and pointed more towards traumatic lesion supported by concurrent findings of multiple healing rib fractures and lumbar transverse process fractures. Blood cultures were negative and so was serum aquaporin 4 done to rule out neuromyelitis optica.

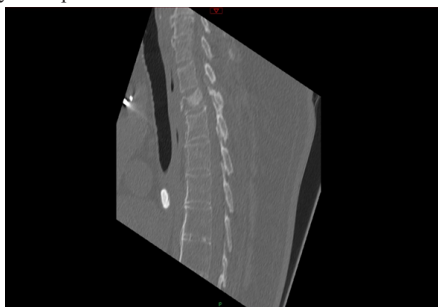


Fig.1 Initial CT scan showing T2 lesion



Fig.2 CT scan in next 6 weeks showing no significant change

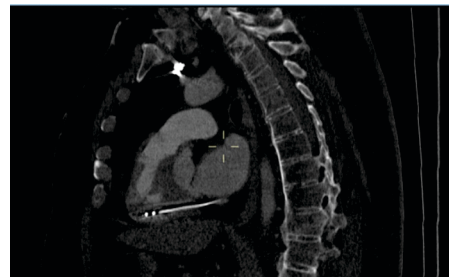


Fig.3 CT CAP showing T2 lesion but no primary malignancy

Patient was in hospital for 12 weeks now, so as advised by spinal surgeons, a repeat CT scan of thoracic spine was done to see fracture healing. It showed loss of T2 vertebral body height by 4mm but with preserved alignment (Fig 4). Patient was receiving physiotherapy and other general care while awaiting for a rehabilitation bed and a further CT scan was done in next 6 weeks. A decision for conservative management was made from neurosurgeons.



Fig.4 CT scan showing loss of height in 12 weeks of presentation

Differential Diagnosis-

The initial appearance was of pathological T2 fracture, but no source of primary malignancy was found. The common differentials were traumatic fracture but he had no history of acute trauma. A discitis or osteomyelitis would have different clinical picture with fever and abnormal inflammatory markers in blood.

Treatment-

It involved a multidisciplinary approach. Under the care of orthopaedic

team, he received general treatment for his pain, spasms, nursing care and physiotherapy. He was also seen by oncology team giving their advice on management. Regional spinal surgeons guided further investigations and treatment. The advice from radiologist was of utmost importance in proper treatment. As the case was likely pathological fracture initially, patient was worried with the word cancer and went into depression when he was treated by psychiatry team. Local pain team were very helpful for his pain management. Neurologists saw him as well, on patient's request to rule out any neurological pathology, which gave patient an emotional satisfaction. Finally it was decided to manage him conservatively. He was sent to spinal rehabilitation centre and a local spinal team follow up was arranged.

DISCUSSION-

T2 fracture with complete spinal cord injury can appear as mixed lytic and sclerotic lesions on CT scan, which is typical appearance for a pathological spinal fracture. This can misguide the diagnosis towards malignant etiology. If this differential is kept in mind, it will prevent the delays in reaching the final diagnosis and management of patient. Moreover, it'll decrease the subsequent distress to the patient.

Learning points:

- Consider spinal fracture as a potential differential diagnosis to lytic and sclerotic lesion of spine, and investigate further before concluding to a final diagnosis
- Never confidently tell a patient that he has got cancer merely on the basis of radiological findings
- Choice of words while talking to patient should be emphasized to prevent miscommunication

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