

Pott's Disease with Psoas Abscess in a Diabetic Patient: A Conservative Approach

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Abstract

Pott's disease, also known as tubercular spondylitis, is a well known condition in developing countries. Here we report a case of Pott's disease with bilateral psoas abscesses in a 51 years diabetic male with poor glycaemic control. Diagnosis is done on the basis of history, physical examination, plain radiology & MRI imaging and history of exposure to a tuberculosis case. He was treated conservatively and responded well to anti-tubercular chemotherapy.

Key words: Pott's disease; psoas abscess; diabetes; tubercular spondylitis.

INTRODUCTION

Psoas abscess is a rare condition with vague presentation and insidious onset making its diagnosis difficult particularly for primary care physicians^{1,2}. Pott's disease, named after the scientist Percival Pott, who first introduced and described spinal tuberculosis (TB), may be a rare cause of psoas abscess³.

Tuberculosis is still a significant global health problem especially after the surge of opportunistic mycobacterium in AIDS and other immunocompromised patients. One third of the world population is infected with *M. tuberculosis* and 1.7 million people die from TB each year⁴. Extra-pulmonary TB is not uncommon. Pott's disease is the commonest form of bone TB⁴. TB spine represents 50% of skeletal TB, 15% of extra-pulmonary TB and 2% of all cases of TB⁵. Patients with uncontrolled diabetes mellitus have neutrophil dysfunction and cardiovascular compromise, so they are increased risk of infection⁶⁻⁷.

CASE HISTORY

A 51 years Muslim male who was non-smoker & non-alcoholic, presented with dull aching back pain (VAS = 6) for eight months which was progressive with radiation to left lower limb making him gradually unable to stand from sitting, to walk and finally for the last two week, making him bed ridden. The pain was associated with weight loss in the last 3-4 months and fever (up to 103⁰F) with chills. Weakness and malaise was common with him. He has been a diabetic patient with poor control proved from his past records of glucose level and history of severe scrotal abscess 5 years back. He has been hypertensive for 5 years. He gave history of contact with one of his cousin who had pulmonary TB 2 years back. He underwent no abdominal surgery or epidural injection. He took losartan potassium, metformin and subcutaneous insulin for last 7-8 years.

Physical examination revealed low grade pyrexia (101⁰F), tachycardia (96/min), and low body weight, with lower motor neuropathy in both lower limbs (muscle weakness & wasting with areflexia). Tender lower lumbar region and pain on forceful flexion of right hip (a sign of psoas muscle irritation) is noted. Straight leg raising was 40 degree on right and 60 degree on left side. There was no sphincter involvement and no saddle anaesthesia, either. Other examination findings were normal.

Laboratory investigation showed significantly raised ESR (76 mm/hr), hemoglobin level 11.10%, total count of WBC $7.97 \times 10^9 /L$ with polymorphs 72% and lymphocyte 20%. Liver function test, renal function test and urine analysis was normal. Radiology showed destruction of L3 & L4 vertebra and narrowing of their intervening space. MRI (figure 1) of lumbar spine represented destructive lesions in L3 & L4 vertebra and intervening disk with bilateral psoas abscesses (more predominant on right) with thin and smooth enhancement of abscess wall. He was HIV negative and PPD skin test produced 05 mm induration at 72 hours.



Figure 1: MRI lumbosacral spine (longitudinal view) shows destruction of lumbar three and four vertebra with psoas abscess.

The patient was treated empirically with four drug regimen of anti-tubercular chemotherapy along with one month bed rest, back splinting with isometric exercises of the lower limbs. His insulin dose was adjusted for good diabetes control.

He was followed up at two & 6 weeks of conservative treatment and significant functional improvement was noted. There were reduction of pain in back and limb (VAS=2), improvement in muscle strength and elimination of bouts of rise of temperature. No signs of cord compression or spinal deformity were seen.

DISCUSSION

Vertebral osteomyelitis and psoas abscess are inter-related infections and share the same risk factors. They may result from a local contiguous source or from haematogenous dissemination⁸. Psoas abscess is classified as primary and secondary depending on the source⁹. Primary psoas is haematogenous in origin from distant foci mostly caused by *Staphylococcus* (80%)¹⁰. *Mycobacterium* is also a common cause of primary psoas abscess¹¹. Secondary psoas abscess (in our case) is associated with spread from a contiguous source like gastrointestinal, genitourinary & musculoskeletal infections¹. Common causes of psoas abscess are chron's disease (60%), appendicitis (16%), ulcerative colitis, diverticulitis & colon cancer (together 11%) and vertebral osteomyelitis (10%)⁷. Nearly two third of the vertebral osteomyelitis is pyogenic and only one third is tubercular¹³. So, Pott's disease is not a common cause of secondary psoas abscess.

Spinal tuberculosis is the most common and serious form of skeletal TB¹⁴. It traverse into paravertebral spaces, adjacent soft tissue, fascia through subligamentous spread causing different complications including psoas abscess¹⁵. It commonly involves lower thoracic spine (40-50%), followed by lumbar spine (35-45%) and cervical spine (10%).

Pott's disease usually presents with back ache (90- 100%), weight loss (58%), neurological involvement (32-76%)^{17,18}. Our patient also came with similar presentations, although he had diabetic neuropathy from the past. He lost 25% of his previous weight. A study in Chittagong Medical College Hospital, Chittagong, Bangladesh showed, weight loss may be a single most important physical finding in extra-pulmonary TB¹⁹. Mean age of onset of Pott's disease found in a study in southern US is 51 years which equals our patient's age²⁰.

PPD skin test was negative (5mm) in our subject but it is positive in only 66.6% of extra-pulmonary TB cases found in the same study in Chittagong Medical college Hospital¹⁹. Radiology and MRI findings of this patient was consistent with classical findings of Pott's disease. MRI is the best diagnostic tool of TB spine²¹. MRI can diagnose spinal tuberculosis 4-6 weeks before it can be diagnosed by other forms of investigations²¹. Plain radiograph findings are also consistent with TB spine in 91-99% cases¹⁸. But MRI and other radiological imaging cannot distinguish TB spine from pyogenic spondylitis and neoplasm.

Confirmation of diagnosis needs needle aspiration, staining and culture. Our patient refused any intervention. However, considering the history of contact with a TB patient, high endemic region and other clinical and radiological findings, we started four drug anti-tubercular chemotherapy (recent recommendation for TB spine)²².

Indications for surgical treatments of Pott's disease include neurological deficit, spinal deformity with instability or pain, no response to medical therapy and large paraspinal abscess²³. Our patient had neurological deficit due not to TB spine but to diabetes. He had spinal damage but no deformity or instability. He had mild pain which responded well to conservative treatment. He had no strong indication for surgery except large abscess on right psoas.

No significant functional improvement noted except elimination of fever on 2nd week follow up. On 6th week follow up, he reported reduction of pain (VAS= 2) & weakness and absence of fever (temp 99^oF) attack and we found improved strength & mobility & lowered ESR level 25mm in 1st hour). Straight leg raising became 70^o on both side. Patient refused to do check MRI.

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CONCLUSION

This case report represents the complexity of clinical scenario in a patient with Pott's disease that was accompanied with uncontrolled diabetes which might predisposed the patient to mycobacterial infection and psoas abscess formation.

This was also an initiative to conservative treatment towards tubercular psoas abscess. This initiative might draw further attention of the researchers because less invasive measures are invaluable for a low resource county like Bangladesh.

DISCLOSURE

All the authors declared no competing interest.

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