Spinal Tuberculosis with Bilateral Iliopsoas Collection Causing Bilateral Hydronephrosis in Immunocompromised patient

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SUMMARY

The spine is the most frequent site of osseous involvement in tuberculosis. Extension of tuberculosis from the vertebra and disk to adjoining ligaments and soft tissues is seen frequently. Paravertebral psoas abscess in the lumbar spine may extend into the groin and thigh which lead to bilateral hydronephrosis. We report a case of spinal tuberculosis which caused bilateral iliopsoas abscess and lead to bilateral hydronephrosis in immunocompromised patient.

Key words: Spinal tuberculosis, iliopsoas abscess, hydronephrosis

1.0 Introduction

Tuberculosis (TB) infection is one of the commonest infections worldwide with spinal tuberculosis as the most common amongst TB infection (1). Most patients presented with chronic back pain, loss of appetite, loss of weight and night sweats. This infection may cause serious disability in immunocompromised patient as demonstrated in our case report. Common complications involve deformity (gibbus), septicaemia, neurological deficit etc (1). As in our patient, serious complications which occurred were extensive bilateral iliopsoas collections causing bilateral hydronephrosis which rarely demonstrated in other literatures. Pathophysiologically, it resulted from severe immunocompromised state and septicaemia which was observed in this patient (2). Management of spinal tuberculosis includes surgical intervention which is mandatory if decompression is required due to neurological deficit. In this patient, multidisciplinary approach was required for both therapeuetic effect and symptoms relief as a result of serious complications

2.0 Case Report

We report a 44-year-old gentleman with history of Hepatitis C who complained of worsening lower back pain for the past one month which was associated with night sweats, loss of appetite and loss of weight. He denied history of contact with TB patients. On examination,
he was cachexic and weak with demonstrated fever (38.5°C). Vital signs were normal. ESR and CRP were elevated.

Plain lumbosacral spine radiograph (Figure 1) showed sclerosis L2 and L3 with irregular body and end plates as well as bony erosion. MRI Lumbosacral Spine (Figure 2a and 2b) showed spondylitis of L2 and L3 vertebral bodies with subligamentous spread and causing spinal canal stenosis. This caused extensive bilateral iliopsoas rim enhancing collections which extend to bilateral rectus femoris muscles (Figure 2d). The collections were displacing and compressing the ureters bilaterally resulting in bilateral hydronephrosis (Figure 2c).

Transpedical biopsy was done shows Mycobacterial tuberculosis. Anti TB Akurit was started to continue for 9 months. After 6 weeks of Akurit, repeat MRI Thoracolumbar and Pelvis was performed showing enlarging iliopsoas collections and worsening bilateral hydronephrosis which required further intervention for symptomatic relief. Factors such as compliance and dosage adequacy were highlighted in view of poor response as well as worsening symptoms and radiological features. This patient was planned for incision and drainage procedure for multiple pelvic collections and possible bilateral nephrostomy for hydronephrosis.

Figure 1: Lumbosacral X-ray (a) Anteroposterior view and (b) Lateral view showed sclerosis L2 and L3 with irregular body and end plates as well as bony erosion (arrows).
Figure 2: MRI of lumbosacral (a) Sagittal and axial (b) view showed spondylitis (head arrows) which caused bilateral iliopsoas collection (stars) and lead to bilateral hydronephrosis (arrows) (c) and (d) coronal views.
3.0 Discussion

Spinal Tuberculosis is a challenging disease because of the prolonged time of conservative treatment and the technical difficulties of surgical intervention. The disease still important in developing countries and also in developed countries due to immigration and especially in the immune compromised patient (3). Spinal tuberculosis is also known as “Pott’s disease”, is the most common form of skeletal tuberculosis with the upper lumbar and lower thoracic spine being involved most frequently, and it constitutes about 50% of all cases of tuberculosis of bones and joints, 15% of extra pulmonary TB and 2% of all cases of tuberculosis (1). It is most common during the first three decades of life. The usual clinical symptoms in active stage of the disease are malaise, loss of appetite, loss of weight, night sweats and evening rise of temperature.

Spinal tuberculosis was described by Pott in 1776 as the cold abscess that as a result of hematogenous dissemination from a primary focus. The infection reaches the vertebral body through the arteries after bacillemia or rarely through the Batson’s plexus of veins. The disease spreads to the adjacent vertebral bodies under the longitudinal ligament. The abscess tends to remain localized under anterior longitudinal ligament and enters the spinal canal through intervertebral foramina. This results in narrowing of the spinal canal and the normal thoracic kyphosis forces the pathological tissue inside the spinal canal causing cord compression, unlike in lumbar spine where it trickles down in psoas muscle (3). Paravertebral psoas abscess in the lumbar spine can extend into the groin and thigh like in our case.

MRI of the spine is useful in diagnosing tuberculosis spondylitis. It is often difficult to differentiate between tuberculous and pyogenic spondylitis, both clinically and on images. Tuberculous discitis is often seen in immunocompromised patients or IV drug abusers and can have a more indolent clinical course than the more commonly seen pyogenic discitis, with a subsequent longer delay in diagnosis of up to 6-8 months. On imaging studies, the typical MRI signal intensity changes in the bone marrow may be absent, and bony destruction can be pronounced with relative sparing of the disc space (4). A lack of proteolytic enzymes in Mycobacteria infections in comparison with pyogenic infections has been proposed as the cause of the relative preservation of the intervertebral disk and of the subligamentous spread of infection by the former organism. Skip lesions, extensive paraspinal inflammation, and abscess formation are common (5). Other differential diagnosis for tuberculous spondylitis include vertebral body metastases, sarcoidosis, primary vertebral neoplasm (lymphoma, multiple myeloma, chordoma), and rare spinal infections such as brucellosis, fungal disease, and echinococcosis.

Managing spinal tuberculosis with serious complications is very challenging to the clinician. It involves multidisciplinary approaches which require both medical and surgical intervention. Failed conservative treatment, presence of a large abscess, progressive neurologic deficit, instability and deformity are indicated for surgery. The radical surgery, Hong Kong radical operation such as thorough debridement of the tuberculous focuses until the complete decompression of the cord, excising of the pus, caseous tissue and necrotic bone has been described. However, with this patient frequently required prolonged immobilization or additional posterior instrumentation (3).

Another alternative method for radical debridement is combined with instrumented anterior stabilization. The use of a cage and bone grafts instead of a structural bone graft alone allows
for more secure and dependable deformity correction. The cage provides a more rigid fixation construct and minimizes the risk of graft subsidence or dislodgement that is well-documented complications when structural bone graft alone is used. Several approaches for tuberculous spine have been described as anterior, posterior, combined, anterolateral (extrapleural) or posterior transfominal. The surgical approach depends on the nature of cage, the availability of appropriate facilities and trained personnel (3).

4.0 Conclusion and recommendation

Spinal tuberculosis is a known contributing factor to morbid spinal conditions in both developed and developing countries, which constitutes about 50% of all cases. It is causes severe morbidity and disability in most patients. Complications such as iliopsoas collections, septicemias, and bilateral hydronephrosis can occur like in this case. Such complications may require further intervention either for therapeutic effects or symptoms relief. Medical management should be emphasized on dosage adequacy, duration and patient’s compliance in order to achieve successful treatment.

Declaration

Author(s) declare that there is no conflict of interest in the preparation of this article and for publication in this journal.

References


