

## **Psoas abscess secondary to Pott's Disease - an unusual presentation in a young child**

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### **Abstract**

Psoas abscess in neonates and infants are rare. Primary psoas abscesses are said to be more common in young children. Limping, fever and abdominal pain has been described to be the way psoas abscesses usually present. The authors describe the unusual presentation and successful treatment of a young child with a unilateral psoas abscess secondary to advanced spondylodiscitis.

### **Introduction**

Psoas abscess in the pediatric population is a rare clinical entity with various etiologies and non-specific clinical presentation, frequently resulting in delayed diagnosis, increased morbidity and prolonged hospitalization. Mycobacterium tuberculosis is endemic in South Asia<sup>1,2</sup> and can present in several unusual ways in young children of our region. CT-guided percutaneous catheter drainage has been proven to be an effective means of treating large tuberculous psoas abscesses when combined with medical therapy.<sup>3,4</sup>

### **Case Report**

An 18 months old boy from rural Pakistan presented in the pediatric clinic with a 5-month history of low grade fever, abdominal pain and distention as well as failure to thrive. There was also a 2-month history of difficulty in walking. According to the mother, the child started limping which gradually worsened. At the time of presentation, the boy was unable to walk and sat only with support. He lay down most of the time with the right hip flexed. There were no associated respiratory symptoms, no diarrhoea or vomiting, no urinary complaints and no history of trauma. He was not vaccinated against Mycobacterium tuberculosis (MTb) but there was no history of contact with any person having tuberculosis.

The physical examination showed an ill-looking, pale and cachectic child lying with flexion of the hip on the right side. He was afebrile with no lymphadenopathy and normal respiratory and cardiovascular examinations. The abdomen was distended, firm and a mass was palpable in the right iliac fossa which was fluctuant. No signs of peritoneal irritation were present. Examination of back revealed posteriorly protruding lumbar vertebral processes without associated spinal tenderness. The child could not stand or maintain a sitting posture without

support.

After admissions the laboratory tests performed showed hemoglobin 6.9 g/dl; white blood cells 18,500/mm<sup>3</sup> with 49% lymphocytes; platelets 711,000/mm<sup>3</sup>; erythrocyte sedimentation rate 119mm/hr; C-reactive protein 6.0; Blood and urine cultures showed no growth. Ultrasonography revealed a large right psoas abscess, volume of which was over 200 ml and it was pushing the bladder to the left side and the right kidney laterally and downwards. The left psoas muscle appeared to be normal.

The day after admission MRI of lumbar spine was performed under general anaesthesia followed by CT-guided drainage of the unilateral psoas abscess and catheter placement.

Gram stained smear and cultures as well as stain and culture for acid fast bacilli of the aspirate were negative. The MRI scans revealed destruction of the 4th and 5th lumbar vertebral bodies with complete obliteration of the intervening disc (Figure 1). A large right paraspinal mass was present which occupied all the lumbar region along the psoas tendon (Figure 1, 2). Post contrast images showed ring enhancement confirming presence of abscess (Figure 1). An epidural inflammatory mass at L4/L5 level was seen to be extending



Figure 1. Sagittal T1 weighted post contrast image of the lumbar spine showing collapsed L5 vertebral body with an epidural and para vertebral abscess formation.

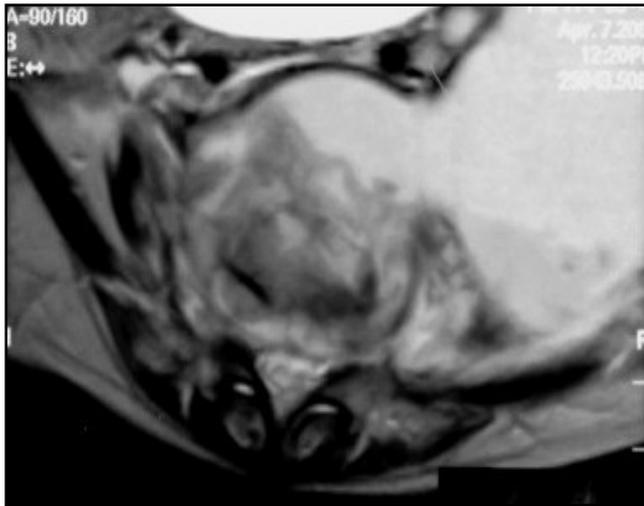


Figure 2. Axial T2 weighted image of the pelvis showing hyperintense collection (abscess) in the left iliopsoas muscle.

posteriorly and indenting into the thecal sac compressing the cauda equina (Figure 1). Slight malalignment was also noted with backward slip of 3rd lumbar vertebral body in respect to 1st sacral vertebra (Figure 1).

Empiric antituberculous treatment was started after the procedure due to endemicity of tuberculosis in our region. The boy started walking without discomfort a week after the procedure and the drains were discontinued after 14 days. He was discharged in good condition after 17 days of hospital stay. The child completed the 9-month course of medical antituberculous treatment and has responded well to it exhibiting normalization.

## Discussion

Psoas abscesses are unusual in infants and children.<sup>5</sup> Nevertheless these abscesses are potentially life-threatening and awareness of this entity and the timely use of appropriate imaging studies prevent the sequelae caused by a delay in diagnosis.

In the early part of the 20th century, tuberculosis was responsible for majority of the cases of iliopsoas abscess seen by physicians. With control of tuberculosis in the West, secondary iliopsoas abscesses with gastrointestinal causes became the type usually seen there.<sup>6</sup> MTb is endemic in South Asia and more than three-quarters of the world's cases are found in south and east Asia and sub-Saharan Africa.<sup>1</sup> Therefore the Indian subcontinent is one of the hardest hit areas by tuberculosis. Children remain the most likely to be infected in endemic areas. It is also known that tuberculous psoas abscesses are usually secondary to vertebral involvement.<sup>3</sup> Despite these facts we were unable to find, in English literature, any reported cases from the endemic regions, of young children who presented with psoas abscess secondary to advanced tuberculous spondylodiscitis and associated paraparesis.

The case we presented had a protracted history of fever and failure to thrive before diagnosis was established. The long interval of diagnosis for spinal tuberculosis can be explained by the slow progression of tuberculous infection and should be evaluated as an important factor while considering tuberculosis in the differential diagnosis.<sup>1</sup> The presence of an abdominal mass in the right iliac fossa and presence of a limp two months before presentation are the signs of a psoas abscess that have been widely described in literature.<sup>3,5</sup> But in our case, the limp had progressed to paraparesis with the right hip flexed and we explain it by compression of the cauda equina by an epidural abscess.

The MRI scan revealed features consistent with the classic picture of vertebral osteomyelitis described by Pervical Pott in 1779.<sup>1</sup> According to Kang et al.<sup>7</sup> an irregular thick or smooth thin rim enhancement in post-contrast images suggests a cold abscess of tuberculosis which is observed in the MRI scan of our patient. Pyogenic abscesses show a diffuse enhancement. Furthermore, the MRI also showed an inflammatory mass at L4/L5 level extending posteriorly and indenting into the thecal sac compressing the cauda equina. This finding explains the paraparesis at the time of presentation. The MRI gives clear definition of the epidural and paravertebral psoas abscesses and the extent of cord compromise.<sup>1</sup> The MRI plays a pivotal role in the diagnosis of spinal tuberculosis.<sup>1,8</sup> In endemic regions, subacute or chronic bone infection with insidious onset is treated as MTb until proven otherwise<sup>1,8</sup> and that is the reason for starting the treatment without tissue diagnosis.

Percutaneous catheter drainage has been recommended as an adjunct to medical therapy in the management of a large tuberculous psoas abscess.<sup>3,9</sup> In the presented case, the boy was started on empiric antituberculous treatment after percutaneous abscess drainage, and responded well to it exhibiting normalization. No spinal deformity developed.

## References

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