

Effective Management of Psoas Abscess with Cutaneous Fistula Secondary to Tuberculous Spondylitis

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Tuberculosis, caused by mycobacteria in human, is a common infective disease in developing countries, including South Korea. Psoas and paraspinal abscesses associated with spinal tuberculosis are very rare with uncertain clinical appearance, so that misdiagnosis or delayed diagnosis often occurs. Psoas abscess may spread to adjacent structure or hematogenous route from a distant site. The aim of this case report is to present our experience in management of a persistent cutaneous fistula associated with a psoas abscess and paraspinal abscess secondary to TB spondylitis. (*J Korean Wound Management Soc* 2015;11:31-34)

Key Words: Tuberculosis, Spondylitis, Psoas abscess, Cutaneous fistula

INTRODUCTION

Tuberculosis, caused by mycobacteria in human, is a common infective disease in developing countries, including South Korea. Spinal tuberculosis (Pott's disease), in particular, is a frequently encountered extra-pulmonary form of the disease. Psoas and paraspinal abscesses associated with spinal tuberculosis are very rare with uncertain clinical appearance, so that misdiagnosis or delayed diagnosis often occurs. Infection begins in the antero-inferior aspect of the vertebral body with destruction of the intervertebral body with destruction of the intervertebral disc and adjacent vertebrae.¹ It can be extended to the surrounding tissue. The aim of this case report is to present our experience in management of a persistent cutaneous fistula associated with a psoas abscess and paraspinal abscess secondary to TB spondylitis.

CASE REPORT

A 19-year-old female presented to the hospital with complaints of large and soft mass-like swelling on her flank and back for 3 months. The patient had a history of pulmonary tuberculosis 13 months ago. The patient was previously treated with anti-tuberculosis medication for 9 months for pulmonary tuberculosis. Abdomen-pelvis computed tomography (CT) showed a large cystic lesion with a thick enhancing wall with mild infiltration into adjacent tissue, extending between right latissimus dorsi and erector spinae, involving iliopsoas muscle and posterior pararenal space, which was suspicious of a cold abscess (Figure 1A). The irregular shaped osteolytic lesion on T11, 12 vertebral body and thick mildly enhancing fluid collection along the paraspinal space was observed. Magnetic resonance imaging (MRI) also showed a large abscess cavity along the right paravertebral muscular lesion to the psoas muscle area (Figure 1B).

Percutaneous drainage (PCD) was performed 2 times initially. The pus-like discharge was sent for polymerase chain reaction (PCR) for *Mycobacterium tuberculosis* and the result was positive. Anti-tuberculosis medication was also re-started. However pharmacologic therapy

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Figure 1. (A) Preoperative CT: Showing large cystic lesion with thick enhancing wall with infiltration into adjacent tissue, extending in between right latissimus dorsi and erector spinae, involving iliopsoas muscle and posterior pararenal space of cold abscess. (B) Preoperative MRI: Showing TB spondylitis at T9~T12 with adjacent paravertebral abscess with huge cold abscess.



Figure 2. Preoperative photograph: Despite of decreasing size of abscess due to repeated percutaneous drainage, cutaneous fistula was formed and persisted pus-like discharge was continued.

(isoniazid, rifampin, pyrazinamide, and ethambutol) and percutaneous drainage yielded unsatisfactory results. Despite decreasing size of the abscess due to repeated percutaneous drainage, a cutaneous fistula formed and persistent pus-like discharge continued (Figure 2). The patient was forced to undergo exploratory surgery for open drainage of her cutaneous fistula from the abscess (Figure 3). We removed the necrotized and unhealthy tissue and curettage around the extending soft tissue along the fistula. The excised tissue was compatible with tuberculosis. The result



Figure 3. Intraoperative photograph: Exploratory surgery for open drainage of cutaneous fistula from abscess.

showed tuberculosis granulation tissue (Figure 4). After the surgical intervention, there was no more discharge from her skin and soft tissue. She was in good condition after surgery without symptoms. Postoperative abdomen-pelvis computed tomography (CT) showed removal of the abscess pocket and cutaneous fistula (Figure 5).

DISCUSSION

In developing countries, spinal tuberculosis is considered the most common cause of abscess formation. Approximately 5% of cases of spinal tuberculosis



Figure 4. Histopathologic analysis of Tb spondylitis: The result showed tuberculosis granulation tissue (H & E, ×200).

developed a psoas abscess.² Psoas abscess, a collection of pus in the muscle compartment, can easily spread to surrounding tissue. Most cases of abscess present with healthy general condition and only about 30% of patients present with a triad of symptoms: back and flank pain, limitation of hip movement and fever. Uncertain features can also cause a delay in diagnosis and appropriate treatment is needed to prevent serious morbidity and mortality. Diagnosis of psoas abscess requires thorough history taking, meticulous examination including radiological study and histopathologic study.³

Psoas abscess often easily extends distally and can also cause paraspinal and cutaneous fistula as in our case. Computed tomography (CT) and magnetic resonance imaging (MRI) are considered optimal modalities for evaluation for psoas abscess. PCR analysis technique for detection of *Mycobacterium tuberculosis* is a rapid and reliable test, and the results are available within 6.5 hours with reasonable sensitivity (76.4%) and excellent specificity (99.8%).⁴

Management of psoas abscess and fistula is based on appropriate antimicrobial therapy. Secondary abscess and fistula such as due to tuberculosis spondylitis also required management of infected focus. Abscess drainage could be performed initially with percutaneous or surgical intervention as in our case. Interval

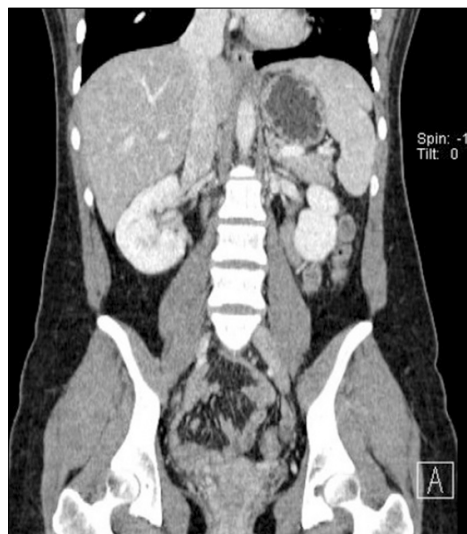


Figure 5. Postoperative CT: Showing improvement of Tb spondylitis with psoas abscess and paraspinal abscess.

percutaneous drainage may be used safely as an initial treatment modality.¹ The percutaneous catheter or drain may be removed when drainage has decreased and repeated imaging shows a satisfactory result. Cutaneous fistula abscess often required surgical intervention and open drainage in case of percutaneous drainage failure.

CONCLUSION

In summary, psoas abscess may spread to adjacent structure or hematogenous route from a distant site. In endemic areas, mycobacterium is the most frequent cause of psoas abscess secondary to spinal tuberculosis. Psoas abscess secondary to tuberculosis is uncommon because of non-specific symptoms. The diagnosis must be suspected on clinical examination and confirmed on imaging study such as CT and MRI. Polymerase chain reaction (PCR) is a good diagnostic tool and material and blood sample investigations should be performed. This abscess and fistula are usually managed with percutaneous drainage and proper anti-tuberculosis therapy, however, some patients require ultimate adjuvant surgical intervention. Our patient was treated well with open surgical debridement and curettage

followed by percutaneous drainage and anti-tuberculosis pharmacologic therapy.

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