Management of primary iliopsoas abscess in an immunocompetent patient followed by streptococcal toxic shock syndrome: A case report

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Abstract

Objectives: Clinical diagnosis of iliopsoas abscess can be challenging, as this pathology often presents without obvious focal findings. Iliopsoas abscess should thus be a differential diagnosis for patients presenting with fever of unknown origin.

Patient and methods: A 62-year-old healthy Japanese man showed primary iliopsoas abscess of *Klebsiella pneumoniae* complicated by shock after a complete course of treatment for streptococcal toxic shock syndrome. Successful treatment was achieved with culture-driven antibiotic selection and delayed drainage.

Results: This case demonstrates the importance of identifying the causative microorganisms in iliopsoas abscess to guide therapy. The standard treatments for iliopsoas abscess are antibiotics and drainage of the abscess. Management of this case included successful antibiotic use along with delayed drainage.

Conclusion: This case report advances the knowledge on the etiology of iliopsoas abscess and sheds light on the need for scientific development of a treatment strategy.

Keywords

Abscess drainage, causative microorganisms, iliopsoas abscess, streptococcal toxic shock syndrome

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Introduction

Iliopsoas abscess (IPA) is a relatively rare but potentially life-threatening disease.\(^1\) It is well documented that IPA can be difficult to diagnose because of the variable and non-specific symptoms.\(^3\)\(^-\)\(^5\) IPA can be classified as primary or secondary.\(^6\) Primary IPA has no definite etiology, while secondary IPA occurs as a consequence of direct spread from adjacent infected structures. Although several case reports have described the treatment of IPA using antibiotics alone,\(^7\)\(^-\)\(^9\) the standard treatment involves drainage of the abscess. Drainage can be performed either with computed tomography (CT)-guided percutaneous drainage (PCD) or surgery, but no consensus exists on when to use either approach.

This case report illustrates an extremely uncommon presentation of primary IPA followed by streptococcal toxic shock syndrome (STSS) for which we provided treatment with antibiotics and delayed drainage. *Klebsiella pneumoniae* is considered the causative microorganism for IPA, but it is common in immunosuppressed patients. This etiologically uncommon case also provides important lessons on the management of IPA, including timing of drainage.

Case

Written informed consent for publication of this case report and accompanying images was obtained from the patient. The National Defense Medical College Ethics Committee approved this article, and we obtained written consent from the committee (ID: 2113).

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A 62-year-old healthy Japanese man was admitted through a local hospital to our university hospital with fever and hypotension. He had a 2-day history of high-grade fever, arthralgia, and generalized malaise prior to presenting to the local hospital, where shock was identified based on a systolic blood pressure (BP) of 72 mmHg and a heart rate (HR) of 110 beats per minute. He also complained of pain in the lateral aspect of the right elbow. The patient was immediately transferred to our hospital for diagnostic work-up and treatment.

On arrival at our hospital, he was tachypneic but not in shock (a BP of 102/66 mmHg, a HR of 114 beats per minute, and a respiratory rate of 28 breaths per minute). He was febrile (38.5°C) and required oxygen (oxygen saturation, 94% on 3 L/min cannula). Chest and abdominal examinations did not show any abnormalities. The lateral aspect of the right elbow was erythematous and visibly swollen with tenderness on palpation. Soon after admission, he entered a state of shock (a BP of 102/66 mmHg, a HR of 114 beats per minute, and a respiratory rate of 28 breaths per minute). He also complained of pain in the lateral aspect of the right elbow. The patient was immediately transferred to our university hospital with fever and hypotension.

As discussed earlier, the causative microorganism in our case was *Klebsiella* sp. Results for *Klebsiella* sp. were positive in the two sets of blood culture when diagnosing the primary IPA. As far as causative microorganisms, most cases of primary IPA described in the literature have been caused by *Staphylococcus aureus* (88.4%). Other causative microorganisms include non-Group A *Escherichia coli* (2.8%). *Klebsiella pneumoniae* was encountered more often as a causative microorganism for primary IPA in immunosuppressed patients. Chang et al. analyzed IPA cases in Taiwan and concluded that *Klebsiella pneumoniae* should be considered as an important pathogen for IPA in diabetic patients. Primary IPA has been reported to occur due to hematogenous spread. STSS may have altered the immune capability in the patient, allowing metastatic infection by *Klebsiella* sp. While our patient did not demonstrate any evidence of immunocompromised state previously, this case illustrates the importance of investigating causative microorganisms to guide appropriate treatment.

Treatment of IPA involves appropriate antibiotic treatment with drainage, using either CT-guided PCD or surgery. We tried to perform CT-guided PCD at the time of diagnosing IPA, but hemodynamic instability of the patient delayed the intervention, and we finally pursued PCD after these acute issues stabilized. No consensus has yet been reached on the timing of drainage for IPA. Several reports have described successful antibiotic treatment for IPA without drainage. Tabrizian et al. reported that patients with bacteremia and small abscesses (<3.5 cm) responded well to antibiotics alone. Hamano et al., however, reported that all cases with septic shock underwent either PCD or surgical drainage along with antibiotic treatment. They also reported
a high mortality rate after surgical drainage of IPA. When a patient is in shock or critically ill, surgical drainage may not be the best choice. Delayed drainage was successfully performed after stabilizing the underlying shock, DIC, and MOF in the present case with a relatively large IPA. Appropriate antibiotics probably helped in stabilizing the condition. At present, appropriate timing of drainage is still unclear and likely needs to be individualized. Hopefully, future studies will systematically investigate prognosis related to the timing of drainage for IPA as a treatment strategy.

**Conclusion**

Shock can be a presenting sign of IPA. Causative microorganisms for primary IPA vary, and investigation is important.
for therapeutic purposes. Although drainage and systemic use of antibiotics are the standard treatment of IPA, timing of drainage by either CT-guided PCD or surgery may be individualized as a treatment strategy.

Declaration of conflicting interests
The authors declare that there are no conflicts of interest.

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