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Case Report

Huge Iliopsoas Abscess with Delayed Sigmoid Colonic Perforation in a Child

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Abstract Iliopsoas abscess is rare in childhood and reported complications include septic shock, ileus and hydronephrosis. The authors encountered such a case in a 2-year-old girl with a huge left iliopsoas abscess adjacent to the sigmoid colon, descending downward into the groin area. Delayed sigmoid colonic perforation occurred after surgical drainage of the abscess. Local inflammation of the bowel wall due to irritation by the abscess may be the pathogenesis of intestinal perforation.

Key words Child; Colonic perforation; Iliopsoas abscess

Introduction

Iliopsoas abscess, a collection of pus in the iliopsoas muscle compartment,[1] is rare, especially in children. It is difficult to diagnose because of its nonspecific symptoms and signs. Iliopsoas abscesses can be classified as primary or secondary. Primary iliopsoas abscess tends to occur in children and as a result of haematogenous or lymphatic seeding from distant site.[2,3] Secondary iliopsoas abscess may arise via contiguous spread from adjacent structures. The treatment includes percutaneous or surgical abscess drainage and appropriate antibiotic therapy. Septic shock, paralytic bowel ileus, deep venous thrombosis, hydronephrosis, and death are reported complications.[1,4,5] This article discusses a unique case of a 2-year-old girl with a huge iliopsoas abscess who had a rare complication as delayed sigmoid colonic perforation.

Case Report

A 2-year-old girl had had intermittent abdominal pain, fever and diarrhoea for the past three weeks. She was admitted with the above symptoms increasing in intensity and difficulty in walking over the recent week. The physical examination was unremarkable except for the abdominal examination. The lower abdomen was slightly protuberant; there was marked tenderness localised to the left lower abdomen, overlying a firm, fixed mass (10×7 cm). The haemoglobin level was 90 g/L, and total white blood cell count was 35.11×10^9/L. The platelet count was 534×10^9/L, and C-reactive protein (CRP) was 1326.5 nmol/L. Abdominal sonography showed left huge intra-abdominal mass. A computed tomographic (CT) scan of the abdomen showed a 90×60×180 mm irregular cystic lesion replaced left iliopsoas muscle adjacent to the left side of the sigmoid

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colon, descending downward into the groin area (Figure 1). A huge iliopsoas abscess was favoured. Empiric antibiotic therapy of cefotaxime, oxacillin and metronidazole was kept initially.

Because of the abnormal image findings, it was decided that a surgical intervention for drainage of the abscess should be performed. During the operation, sigmoid colon was found to adhere to the peritoneum (Figure 2). Two drainage tubes were inserted to the abscess-occupied cavity. Abscess culture was collected and *Staphylococcus aureus* was yielded. Vancomycin was initiated after the culture report. After operation, the drainage amount reduced gradually, and CRP also decreased to 223.14 nmol/L. Repeat surgical drainage for the abscess was performed one week later because of unremitting high fever and sonographic finding showed recurrent abscess accumulation. The intra-operative finding of second operation was oedematous change of sigmoid colon without evidence of perforation. Repeated abscess drainage and debridement was done carefully. However, some faecal-like fluid was drained out three days later after the second operation. Exploratory laparotomy was arranged and a perforation over the sigmoid colon was found. A temporary loop colostomy was made. Postoperative course was uneventful, and fever improved immediately after the operation.

Histology confirmed the diagnosis of a perforated sigmoid colon with abscess formation. On microscopic examination, it showed ulcerative intestinal mucosa with diffusely necrotising inflammation, with acute and chronic inflammatory cells infiltrating transmurally and fibrinoid substance coating on the serosa. The patient was discharged 2 weeks after surgery and her total admission period was 30 days. The operation to restore intestinal continuity was performed 2 months later. The patient continued to remain free of abdominal pain on three-year follow-up at our outpatient clinic.

Discussion

Iliopsoas abscess is rare and it is classified as primary or secondary, according to the pathophysiology. In children or young adults with this condition, primary iliopsoas abscess is more common, and the most common bacterial cause is *Staphylococcus aureus*.[3] There is a classic triad of back pain, limp and fever, but this may only be present in 30% of cases.[6] Many patients start with nonspecific features including malaise or low-grade fever, and this might progress into more specific symptoms such as flank pain or pain on movement. Most cases of primary abscess are due to haematogenous or lymphatic mechanism spread to the iliopsoas muscle. The exact pathogenesis is unknown. Some studies have suggested that transient bacteraemia may cause primary iliopsoas abscess, but primary muscle infection is still a rare condition even in children with septicaemia.[7] The pathogenesis of secondary iliopsoas abscess is known as the cause of local inflammation or infection, such as septic arthritis, Crohn's disease, appendicitis, osteomyelitis and so on. *Escherichia coli* is

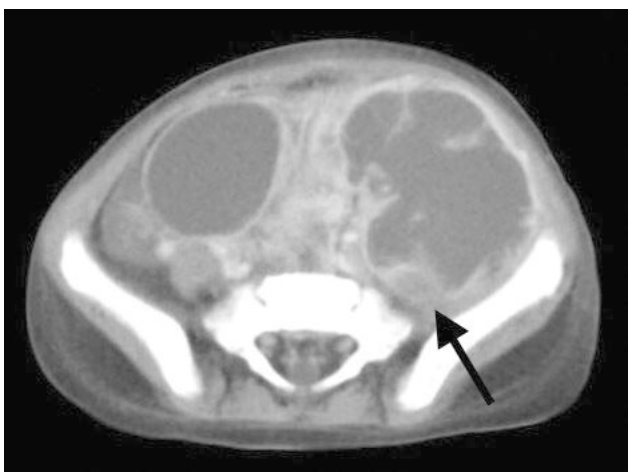

Figure 1 Note an irregular cystic lesion (arrow) took the place of left iliopsoas muscle. The intraperitoneal organs were displaced by the lesion.

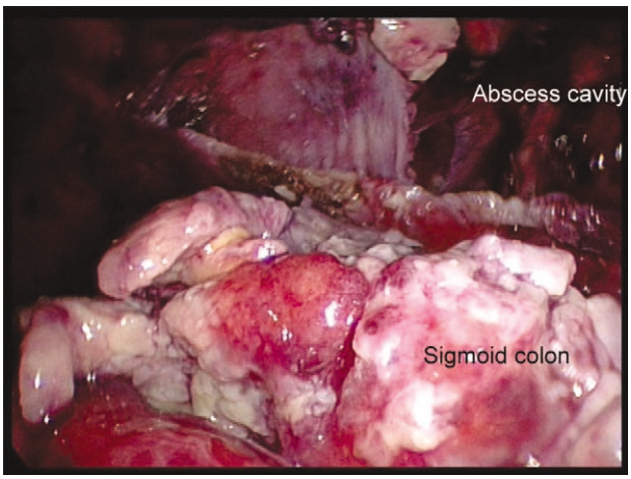

Figure 2 Note the sigmoid colon adhered to the abscess cavity.

the most common organism when its origin is from gastrointestinal or genitourinary systems.[3]

In the present case, the patient initially presented with fever, abdominal pain and diarrhoea, which were not specific for iliopsoas muscle abscess. The variety of symptoms made it hard for early diagnosis. The initial imaging modality for paediatric iliopsoas muscle is ultrasound, which is more convenient and a device with rapid diagnosis, and ultrasound-guided percutaneous drainage is an effective option. Abdominal sonography is also a useful tool to monitor for any recurrent abscess. CT or magnetic resonance imaging (MRI) appears more sensitive. CT could help us to clearly identify the adjacent structures and perform CT-guided drainage as well. MRI has better delineation of the area of inflammatory tissue,[8] but it takes time and sedation is needed for infants or children.

Well-known complications of iliopsoas abscess include paralytic bowel ileus, deep venous thrombosis, or hydronephrosis. Reported incidence of septic shock was about 20%, and the pathogenesis may be caused by leukocyte migration and exposure of subendothelial elements associated with sepsis.[9] The pathogenesis of deep vein thrombosis, including venous stasis and endothelium damage, could occur due to extrinsic compression of iliac vein and then cause venous stasis in turn.[10] However, delayed sigmoid colonic perforation as a complication of iliopsoas muscle abscess has never been reported. Direct irritation due to infection that affects adjacent organs such as the sigmoid colon causing ileus then further leading to delayed perforation could be the possible mechanism.

Conclusion

The case report presented a relatively uncommon clinical problem in a child with iliopsoas abscess complicated by delayed sigmoid colonic perforation. The content and amount of drainage provided us with important information for possible rare complication such as intestinal perforation. Local inflammation of the bowel wall caused by irritation by the huge iliopsoas abscess might be the pathogenesis of perforation. Even though bowel perforation is rarely associated with iliopsoas abscess, it should take into consideration as a possible complication.

Conflict of Interest

We declare that we have no conflict of interest.

References

1. Malick IH, Thougeeq MH, Rajendran TP. Iliopsoas abscess. Postgrad Med J 2004;80:459-62.
2. Mückley T, Schütz T, Kirschner M, Potulski M, Hofmann G, Bühren V. Psoas abscess: the spine as a primary source of infection. Spine (Phila Pa 1976). 2003;28:E106-13.
3. Navarro López V, Ramos JM, Meseguer V, et al; GTI-SEMI Group. Microbiology and outcome of iliopsoas abscess in 124 patients. Medicine (Baltimore) 2009;88:120-30.
4. Arai Y, Kawakami T, Soga H, Okada Y. Psoas abscess associated with iliac vein thrombosis and piriformis and gluteal abscess. Int J Urol 1999;6:257-9.
5. Demuren OA, Abomelha M. Psoas abscess presenting with femoropopliteal vein thrombosis. Saudi Med J 2002;23:96-8.
6. Chern CH, Hu SC, Kao WF, Tsai J, Yen D, Lee CH. Psoas abscess: making an early diagnosis in the ED. Am J Emerg Med 1997;15: 83-8.
7. Yacoub WN, Sohn HJ, et al. Psoas abscess rarely requires surgical intervention. Am J Surg 2008;196:223-7.
8. Wall SD, Fisher MR, Amparo EG, Hricak H, Higgins CB. Magnetic resonance imaging in the evaluation of abscesses. AJR Am J Roentgenol 1985;144:1217-21.
9. Huang JJ, Ruaan MK, Lan RR, Wang MC. Acute pyogenic iliopsoas abscess in Taiwan: clinical features, diagnosis, treatments and outcome. J Infect 2000;40:248-55.
10. Ijaz M, Sakam S, Ashraf U, Marquez JG. Unusual presentation of recurrent pyogenic bilateral psoas abscess causing bilateral pulmonary embolism by iliac vein compression. Am J Case Rep 2015;16:606-10.