CLINICAL VIGNETTE

Pediatric Patient with Iliopsoas Abscess

Roya Mojarrad, MD

A 5-year-old male was brought to the office by his mother with 2 weeks of right hip pain. He was seen at outside urgent care a week before and had normal hip and knee x-rays and started on ibuprofen. Patient and mother denied fever, decreased appetite, night sweats and prior known injury.

His past medical history was negative and family history only included mild asthma in his mother. Exam included vital signs: T 97.5°F, BP 95/65 mm/hg HR 102/min. He had mild abdominal tenderness in the RLQ without rebound. R hip had mild tenderness with positive psoas sign, pain with extension with improvement with hip flexion. Labs included CBC, CRP and BMP with elevated WBC of 18,000 with 79% neutrophils and CRP of 90 with normal BMP. He was referred to the ER for possible appendicitis or septic arthritis. ER confirmed his elevated WBC count. Ultrasound of R hip showed no joint effusion but noted fluid collection in left iliac fossa. CT of abdomen and pelvic confirmed iliopsoas abscess. The patient was admitted and underwent ultrasound guided drainage with about 5ml of pus aspirated.

The aspirate showed leukocytes and gram positive cocci. He was started on clindamycin while waiting for culture results which showed staphylococcus aureus sensitive to clindamycin. Blood cultures were negative.

He received parenteral antibiotics for 3 days and repeat ultrasound was negative. He remained afebrile with improving pain and was discharged with oral Clindamycin for 6 more weeks. At follow-up 4 weeks after discharge he had no pain and normal physical exam, labs and normal repeat ultrasound. He has remained well with normal exams and labs for one year after his hospitalization.

Discussion

Iliopsoas abscess is a collection of pus in the iliopsoas muscle compartment.[1] It may arise via contiguous spread from adjacent structures or by hematogenous spread from a distant site, which may be occult.[2] Primary psoas abscesses are rarely seen in children and young adults and are more common in developing countries.[2] The most common bacterial cause is *Staphylococcus aureus*, including methicillin-resistant *S. aureus* (MRSA).

Secondary psoas abscess results from direct spread of infection to the psoas muscle from an adjacent structure. It may be uncertain whether involvement of a contiguous structure is the cause or a consequence of the psoas muscle abscess.[3]

Psoas abscesses are more common in males than females. The median age of patients is 44 to 58 years in developed countries. However, psoas abscesses occur more frequently among patients <20 years in developing countries, while uncommon in children in developed countries.

Symptoms and signs of psoas abscess include back or flank pain, fever, inguinal mass, limp, anorexia, and weight loss.[1] Fever is present in up to 75 percent of cases, and psoas abscesses may present as a fever of unknown origin.[4]

Lower abdominal pain is often exacerbated when performing movements in which the psoas muscle is stretched or extended. The "psoas sign" is pain brought on by extension of the hip. Limitation of hip movement is common, and patients frequently prefer to flex their hip to decrease discomfort and may have increased lumbar lordosis.[5] Unlike septic arthritis, hip pain in patients with psoas abscesses is usually diminished with hip flexion.

The presenting symptoms may be nonspecific, and the onset is often subacute. Symptoms may be present for a few weeks and up to six months.[6]

Leukocytosis (>10,000/mL) is reported in up to 83 percent of cases and anemia <11 g/L is frequent.[7] Thrombocytosis is observed less frequently.[7] Elevated erythrocyte sedimentation rate may be observed and the C-reactive protein is often elevated.[2] Elevated aspartate aminotransferase has also been described.[7]

The diagnosis of a psoas abscess may be suspected on clinical grounds and confirmed on imaging studies. Computed tomography (CT) is the optimal modality to evaluate psoas abscess though sensitivity may be limited early in the course of disease.[1,7] In most cases, an abscess is obvious. Magnetic resonance imaging (MRI) may show improved definition of soft tissues and adjacent structures, especially visualization of the vertebral bodies.[1,2]

Ultrasound has low sensitivity and specificity as bowel gas and the pelvic bone may make ultrasound diagnosis difficult.[4] Although ultrasound imaging may be diagnostic in up to 50 percent of cases, ultrasound may miss a diffuse phlegmon or small lesions.[6]

Both blood cultures and abscess material should be obtained in all cases and sent for Gram stain and bacterial culture.

Abscess drainage may be achieved with percutaneous or surgical intervention. Percutaneous drainage with ultrasound or computed tomographic guidance is an appropriate initial approach.

Surgical drainage may be warranted if percutaneous drainage is unsuccessful.

Directed antimicrobial therapy based on the gram stain and cultures is preferable to empiric therapy. If prompt microbial diagnosis is not feasible, empiric antibiotic therapy should include activity against *S. aureus*, including methicillin-resistant *S. aureus* in regions where prevalence is substantial and enteric organisms, both aerobic and anaerobic enteric flora.[6]

The optimal duration of antibiotics is uncertain. Three to six weeks of therapy following adequate drainage is likely appropriate.[6]

Psoas abscess can cause significant morbidity and mortality. Risk factors for mortality include delayed or inadequate treatment, advanced age, presence of bacteremia, cardiovascular disease, and infection due to *E. coli*.[6]

Conclusion

Iliopsoas abscess is uncommon in children and symptoms may be nonspecific and subacute. Our patient had symptoms for about two weeks. This physical exam included the psoas sign and abnormal hip exam with initial leukocytosis and elevated CRP which suggested infection in the hip area. Ultrasound had a vital role in diagnosis and CT confirmed the diagnosis followed by successful ultrasound guided drainage of the abscess. Since staphylococcus infection is common in primary abscess, clindamycin was started and continued after return of culture and sensitivities. Clinical response to parenteral antibiotics was observed before discharge on oral clindamycin for six weeks. The patient has done well with symptom resolution and normal excuses one year after the infection.

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