

ACUTE APPENDICITIS LEADING TO PYOGENIC PSOAS ABSCESS; CASE REPORT.

Piyojenik psoas apsesine yolaçan akut apandisit; Olgu sunumu.

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ABSTRACT

The iliopsoas compartment is an extraperitoneal space which contains the iliopsoas and iliacus muscles. Psoas muscle lies in close proximity to organs such as the sigmoid colon, appendix, jejunum, ureters, abdominal aorta, kidneys, pancreas, spine, and iliac lymph nodes and infections in these organs can spread to the muscle. Pyogenic abscess seen in the psoas muscle are further classified as either primary or secondary depending on the presence or absence of any underlying disease. We present a case of secondary psoas abscess due to an acute attack of retrocaecal appendicitis.

Key words: Psoas; abscess; appendicitis, secondary, and laparotomy.

ÖZET

İliopsoas kompartmanı iliopsoas ve iliak kasları içeren retroperitoneal bir boşluktur. Psoas kası; sigmoid kolon, apendiks, jejunum, ureter, abdominal aorta, böbrek, pancreas, omurga ve iliak lenf nodları ile bunlara ait enfeksiyonların çok yakın komşuluk gösterdiği bir yapıdır. Piyojenik psoas apseleri ultta yatan bir hastalığın olup olmamasına göre primer ve sekonder olarak iki grupta tanımlanabilirler. Burada, retroçekal apandisit sonrasında gelişen bir psoas apsesi sunulmuştur.

Anahtar kelimeler: Psoas, apse, apandisit, seconder ve laparotomy.

INTRODUCTION

The iliopsoas compartment is an extraperitoneal space which contains the iliopsoas and iliacus muscles. The psoas major is a long fusiform muscle placed on the side of the lumbar region of the vertebral column and brim of the lesser pelvis arising from the lateral borders of T₁₂ to the L₅ vertebrae. The muscle proceeds downward across the brim of the lesser pelvis passing beneath the inguinal ligament and in front of the capsule of the hip joint and ends in a tendon inserting into the lesser trochanter of the femur. Psoas muscle lies in close proximity to organs such as the sigmoid colon, appendix, jejunum, ureters, abdominal aorta, kidneys, pancreas, spine, and iliac lymph nodes and infections in these organs can spread to the muscle. The abundant blood supply of the muscle is believed to predispose it to haematogenous spread from occult sites of infection. Pyogenic

abscess seen in the psoas muscle are further classified as either primary or secondary depending on the presence or absence of any underlying disease (1).

Case

A 16 year male was admitted in the emergency with history of pain in the right lower abdomen and high grade fever since 2 days. Patient also had a history of unable to extend his hips since the attack. On general examination patient was febrile, pulse 110/min and BP 110/80 mmHg. Examination of right hip joint showed a fixed flexed position with severe pain on passive extension. Abdominal examination revealed severe tenderness over right iliac fossa without any obvious palpable mass and absent bowel sound. On investigating the total leukocyte count was 35000/cu.mm with differential leukocyte count showing 86% neutrophil, 8% lymphocyte, 3% mono-

cyte and 3% basophil. Random blood sugar, renal function tests and liver function tests were within normal limits.

Sonography of abdomen showed a bulky right psoas muscle without any focal collection within the muscle mass (Figure 1). Oral and intravenous contrast enhanced CT scan of abdomen was planned which showed evidence of right psoas abscess involving the whole dimension of the muscle. Abdominal viscera were reported to be normal (Figure 2 and 3). Plain radiology of the lumbar-sacral spine showed to be a normal study.



Figure 1: Sonography of abdomen showing a bulky right psoas muscle.

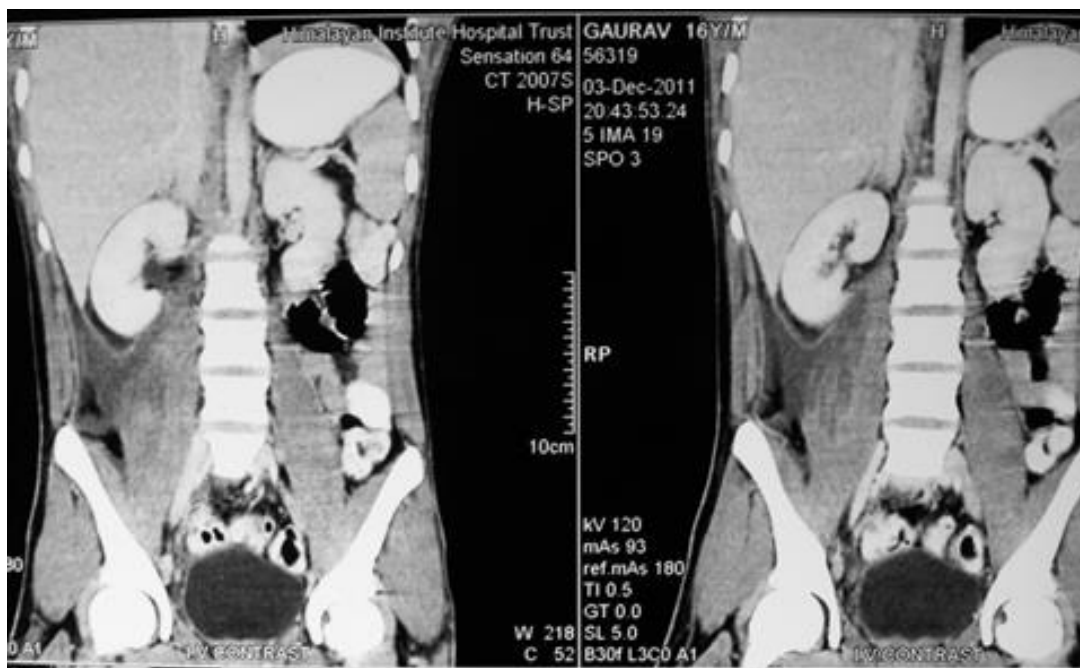


Figure 2: CECT Abdomen showing a right psoas abscess.



Figure 3: CECT Abdomen showing a right psoas abscess.

Exploratory laparotomy was planned. The findings on exploration were right psoas abscess with an inflamed and edematous retrocaecal appendix. Debridement and drainage of the abscess was done by transperitoneal approach. Appendectomy was done. Abdominal drain was placed within the abscess cavity and the laparotomy wound was closed. Patient had an uneventful postoperative recovery. Organism from the pus culture was found to be *E. Coli*. Histopathology of the appendix specimen confirmed as acute appendicitis.

DISCUSSION

Secondary pyogenic psoas abscesses are commonly associated with pathologies of gastrointestinal or urogenital tract. Diverticulitis, appendicitis, Crohn's disease, colorectal malignancies and appendicular tumor have been reported as gastrointestinal causes in the literature. Urological causes include urinary tract infection, malignancies and following extra corporeal shock wave lithotripsy. Vertebral osteomyelitis, lumbar spondylodiskitis, infectious sacroiliitis and septic arthritis are musculoskeletal causes reported in the literature. Instrumentations or procedures performed in the groin, lumbar, or hip areas are at a particular risk of developing an iliopsoas abscess. Rarely secondary pyogenic psoas have also been reported following Endocarditis, femoral artery catheterization, infected abdominal aortic aneurysm, hepatocellular carcinoma, trauma, intrauterine contraceptive device, acupuncture, spinal surgery sepsis, suppurative adenitis and long-term hemodialysis or peritoneal dialysis (2).

Staphylococcus aureus is the common pathogen in 80% of cases of primary pyogenic psoas abscess whereas secondary pyogenic psoas abscess is usually caused by enteric bacteria. Primary psoas abscess is a rare affection and is usually associated with a predisposing factor like diabetes or immunosuppression. *Escherichia coli*, streptococcus species, enterobacter species and *Salmonella enteritidis* are the common organisms isolated from secondary psoas abscesses. The rare causative organisms include proteus, *Pasteurella multocida*, bacteroides, clostridium, *Yersinia enterocolitica*, klebsiella and methicillin resistant *Staphylococcus aureus*. Gas forming abscess both unilaterally or bilaterally are also reported associated with this entity (1-3,7,11,12).

Clinical presentation of secondary pyogenic psoas abscess is similar to primary pyogenic psoas abscess. Patients may present with fever, flank or abdominal pain, and or a limp. Because of the innervation of the psoas muscle by L₂, L₃, and L₄, pain due to inflammation sometimes radiates anteriorly to the hip and thigh. Other symptoms are nausea, malaise, and weight loss. Hip is found to be mildly flexed and externally rotated with knee moderately flexion. Flexion and stretching or contraction of the inflamed psoas muscle results in pain. Patients may present

with a painless swelling below the inguinal ligament. Compressive symptoms have been also rarely reported with these conditions. Hydronephrosis due to ureteric compression and deep venous thrombosis because of iliac venous compression has been associated with this entity (2,3,7,9).

Leucytosis (mean count- 15000/mm³), elevated erythrocyte sedimentation rate (ESR), elevated blood urea nitrogen (BUN) and liver enzymes are common laboratory abnormalities reported in the literature with this condition. Pus and or blood cultures may be positive for a particular organism causing the abscess. Gas forming abscesses can be seen as mottled gas shadows in the retroperitoneum in plain abdominal radiography. Abdominal CT has a diagnostic accuracy of around 80% to 100% whereas abdominal ultrasonography is diagnostic in nearly half of the cases. Magnetic resonance imaging (MRI) does not have an important role in the diagnosis of psoas abscess. However some authors believe that magnetic resonance imaging is superior to computed tomography because of better discrimination of soft tissues and the ability to visualise the abscess wall and the surrounding structures without the need of a intravenous contrast medium. But Gallium-67 scanning and FDG-positron emission tomography (PET) may be used to diagnose these inflammatory lesions (1,4-8,10,13).

Treatment involves the use of appropriate antibiotics along with drainage of the abscess and treatment of the primary cause. Drainage of the abscess may be done through computed tomography guided percutaneous drainage (PCD) or open surgical drainage. Broad spectrum antibiotics (covering both aerobic and anaerobic bacteria) should be considered for the treatment of this entity (7).

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