

Supralevator Abscess Presenting with Pneumoarthrosis and Retroperitoneal Air: A Case Report

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Case Report

Received: 31-Jan-2022, Manuscript No. JCMCS-22-52998; **Editor assigned:** 02-Feb-2022, Pre QC No. JCMCS-22-52998 (PQ); **Reviewed:** 16-Feb-2022, QC No. JCMCS-22-52998; **Accepted:** 21-Feb-2022, Manuscript No. JCMCS-22-52998 (A); **Published:** 28-Feb-2022, DOI: 10.4172/J Clin Med Case Stud.7.2.003.

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Keywords: Supralevator abscess; Pneumarthrosis; Treatment; Surgery

ABSTRACT

74-year-old male presented to the emergency department with complaint of fever, weakness and fatigue and was admitted to the hospital for further workup. The patient was found to have gram negative bacteremia and *Clostridioides difficile* infection. Computed tomography imaging of the abdomen and pelvis was obtained and demonstrated air in the retroperitoneal/presacral space tracking to the left hemipelvis and femoral joint. Concern for possible septic joint lead to an orthopedic surgery evaluation and magnetic resonance imaging of the left hip and pelvis which revealed a complicated perirectal infection tracking to the left hemipelvis. The patient was taken to the operating room with colorectal surgery for further management and treatment.

INTRODUCTION

Anorectal abscesses are a common occurrence and often managed with simple incision and drainage. The vast majority of anorectal abscesses are from cryptoglandular infections [1]. Infection is thought to be due to cryptoglandular obstruction leading to inflammation, edema and bacterial infection [2]. Anorectal abscesses are classified based on anatomical location. Perianal location is the most common accounting for 60% of anorectal abscesses, ischiorectal 20%, supralevator and intersphincteric 5% and submucosal accounting for less than one percent. These abscesses will form a fistulous track in approximately 40% of cases [3]. Fistulas are classified based

on the Park classification which describes the location/track. Intersphincteric track between the internal and external anal sphincters, transsphincteric track through both internal and external anal sphincters, suprasphincteric encircle the entire sphincter mechanism and extrasphincteric course along the entire sphincter mechanism and levators. Fistula management of complex fistulas often requires specialized training for optimal outcomes [3]. This case highlights a rare presentation of supralelevator abscess and reviews diagnosis and treatment of these difficult abscesses.

CASE PRESENTATION

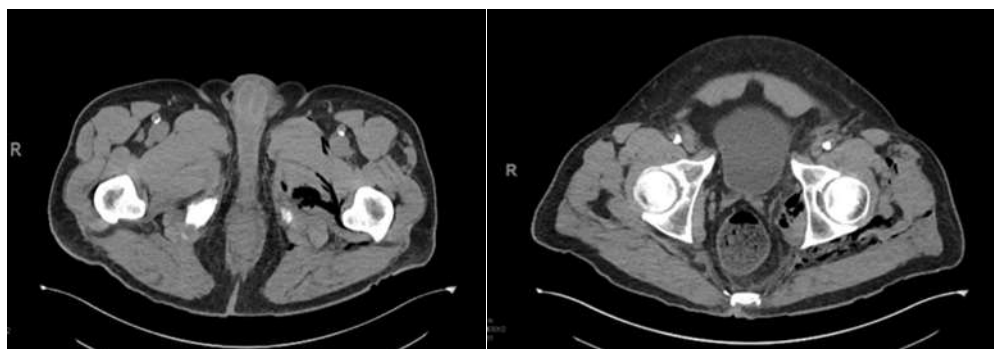
A 74-year-old male was brought into the emergency department for worsening subjective fevers, weakness and altered mental status over several weeks. The patient has a medical history of recent upper respiratory infection approximately 2 weeks prior and had been taking a 2 week course of antibiotics. Medical history included moderate ischemic heart disease. Surgical history includes a small bowel resection for ileal carcinoid tumor with metastasis to the liver and hepatic arterial embolization 16 years prior. Vitals: temperature of 36.9°C, blood pressure 102/56 mm Hg, respiration rate 20, heart rate 89. Physical exam demonstrated patient to be alert and orient to person, place, and time. Heart regular rate and rhythm, diminished breath sounds and abdomen were soft and nontender. Extremity exam showed mild tenderness with left hip movement. Significant labs included elevated white count of 13,100/uL with left shift and troponins five times upper limit of normal. Electrocardiogram (ECG) showed ST depression in lateral leads. Urinalysis was negative for infection. The patient was admitted to the medical service with concern for sepsis, fever of unknown origin and Non-ST Elevation Myocardial Infarction (NSTEMI). Chest x-ray was unremarkable.

The patient continued to have waxing and waning fevers with a T-max of 38.6°C, rising leukocytosis of 23,100/uL, gram negative bacteremia which eventually grew *E. coli* and *Proteus* and positive *C. difficile* infection. He was also begun complaining of left hip pain.

Cardiology consultation obtained echocardiogram showing ejection fraction on 40%-45% and no further evidence of ischemia was noted on cardiac catheterization and no further treatment indicated. Infectious Disease consultation recommended intravenous Gentamycin, Cefepime and Metronidazole and oral Vancomycin.

CT abdomen and pelvis obtained on hospital day one and showed enlarged bilateral adrenal masses consistent with metastatic carcinoid disease. More significantly, there was air in the left aspect of the pelvis and presacral retroperitoneal area. Air was also infiltrating the soft tissue musculature of the left hip surrounding the joint (Figure-1).

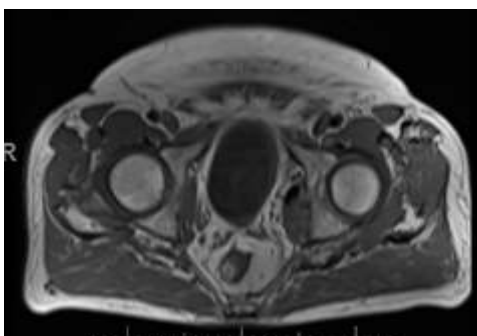
Figure 1. CT imaging depicting air in soft tissue around left hip joint (Left) and left hemipelvis (Right).



Evaluation by Orthopedic surgery for left hip pain and concern for septic joint found the patient to have no physical deficits, deformities or crepitus on exam but tenderness with movement of the left hip. General surgery was consulted and had no clinical suspicion for a necrotizing soft tissue infection, no intraperitoneal air and a benign abdominal exam excluded concern for bowel perforation and no clear indication for surgery. Recommendation was made for a left hip and pelvis Magnetic Resonance Imaging (MRI) after multi-departmental discussion.

MRI was significant for left posterior perianal fluid collection with gas, suspicious for abscess and possible fistulous communication with anal canal and skin and gas dissecting from the collection along the left hemipelvis (Figure-2).

Figure 2. MRI T1 weighted image depicting perirectal abscess (arrow head) with air tracking in left hemipelvis (arrows).



Colorectal Surgery was consulted on hospital day four and was taken to the operating room for rectal exam under anesthesia. Operative findings of a complex transsphincteric fistula with connection to a large supralelevator abscess. The fistula tract was partially opened outside of the sphincter complex and a seton placed. Given the large size of the abscess a Malecot drain was placed to assist and assure drainage of the abscess cavity.

The patient had routine postoperative course with resolution of leukocytosis and fevers and was discharged home on postoperative day two. The patient had the Malecot drain removed on his two week follow up appointment but retains a posterior silastic seton drain in the trans-sphincteric fistula.

DISCUSSION

Supralelevator abscesses are one of the least common types of abscess. There are rare causes such as appendicitis, diverticulitis, gynecologic origin, Crohn's disease or trauma. However, the majority are still due to cryptoglandular infection.

Presentation of retroperitoneal air and hip pain due to supralelevator abscess is rare and has not been previously described to this author's knowledge. Despite our literature review one case report of retroperitoneal air due to an ischiorectal abscess was found. Another case report of hip pain was inability to ambulate due to ischiorectal abscess [4]. Given supralelevator space proximity to the hip, it is speculated that this is the reason for hip pain and gas presenting in or near the hip joint [5,6]. The diagnosis of deep abscesses can be difficult, given patients will not always present with the typical symptoms and signs.

CONCLUSION

The treatment, however, remains the same with incision and drainage. Imaging is not usually necessary for the diagnosis of anorectal abscess. If an abscess is suspected and can't be diagnosed on physical exam due to patient cooperation or lack of physical features, exam under anesthesia should be done. Further diagnosis and surgical planning can be facilitated via pelvic MRI which is considered gold standard for anorectal anatomy. Patients may

not always present with the typical symptom of rectal abscess. Although rare, anorectal abscess should be on the differential for patients presenting with retroperitoneal air, especially when in the pelvis.

DECLARATIONS

Informed consent was obtained for all procedures and publication of this case report including all accompanying images. The corresponding author, Elisabeth Ekkel states on behalf of the all the authors that there have not been duplicate publications or submissions of this work. All authors have read and approved the manuscript and there is no financial arrangement or other relationship that could be construed as a conflict of interest. All data and material can be produced for review if required or needed.

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