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Radio-Diagnosis

ACUTE OSTEOMYELITIS OF THE PUBIC SYMPHYSIS: A CASE REPORT

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KEYWORDS :

INTRODUCTION

Osteomyelitis of the pubic symphysis (SAS) are uncommon disorders that affect various patient groups for various reasons. Together, they account for fewer than 1% of all instances of osteomyelitis (1). The primary manifestations are clinical indicators, such as fever, lower abdomen pain and soreness in the pubis.

Osteitis pubis and acute osteomyelitis of pubis can have symptoms that are similar, thus it's important to diagnose the two disorders correctly in order to distinguish between them. Clinical symptoms and imaging are used to diagnose AOP, with MRIs and CT scans serving as the primary diagnostic tools (2).

A multidisciplinary strategy is necessary to address the difficult treatment of AOP, which entails combining IV antibiotic medication with surgical debridement. IV broad-spectrum antibiotics, which should cover Staphylococcus aureus, Streptococcus, and Gram-negative bacteria appropriately, are the foundation of pharmacological treatment. Four to six weeks of antibiotic treatment is the minimum, and in severe or recalcitrant cases, tissue excision is necessary. With an average recovery period of three to six months, the prognosis of AOP relies on a number of variables, including the timing of diagnosis, the severity of the infection, and the patient's reaction to therapy (2).

Case Description

A 59 years old male who is a known case of chronic kidney disease and diabetes mellitus came with chief complaints of lower abdomen pain, fever and difficulty in walking for 2 weeks. No history of trauma, loss of weight or loss of appetite. No previous history of similar complaints. No family history of similar complaints in the past. No history of tuberculosis.

Vitals: Pulse rate: 82/ minute, BP: 120/80 mm Hg, SpO2: 98%@ room air.

Routine blood investigations Hb – 7.8 mg/dl, total leucocyte counts mildly elevated and CRP and ESR was elevated and renal parameters were deranged.

On examination tenderness was noted in the pubic symphysis region. Proceeded with X-Ray and MRI.

Later USG guided FNAC was done and aspirated fluid was sent for analysis.

Radiograph Findings

A partly well-defined radiolucent area is noted in the left pubic crest with adjacent subtle cortical irregularities and minimal fluid is noted in the articular surface (Figure 1).

MRI Findings

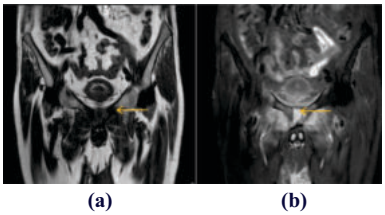
Bony cortical irregularities with ill defined STIR hyperintensity noted in bilateral parasymphyseal aspect of the pubic symphysis and medial half of bilateral superior pubic ramus (Figure 2).

Mild fluid is noted within the pubic symphyseal joint with extraarticular extension of fluid inferior to the left pubic ramus (Figure 3).

Edema of the bilateral obturator externus and adductor muscle with bilateral inguinal lymphadenopathy (Figure 4).

Bladder is minimally distended and appears thickened with thickness of ~ 10mm with surrounding STIR hyperintensity (Figure 5).

Figure 1: Frontal radiograph of pelvis shows a partly well-defined radiolucent area (Black arrow) in the left pubic crest with adjacent cortical irregularities of both opposing articular surface is noted in the articular surface.



(a) **(b)**

Fig:2

A.) MRI T1 coronal section - Bony cortical irregularities in bilateral parasymphyseal aspect of the pubic symphysis and medial half of bilateral superior pubic ramus.

B.) MRI T2-Fat supperession coronal section - hyperintensity is noted in the aforementioned area with surrounding muscle showing hyperintensity.

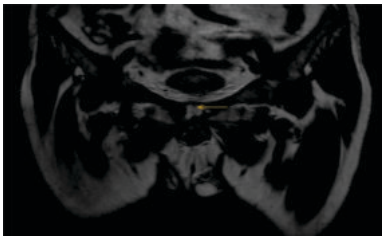


Fig: 3 MRI T2 coronal section shows fluid within the pubic

symphyseal joint with extraarticular extension of fluid inferior to the left pubic ramus.

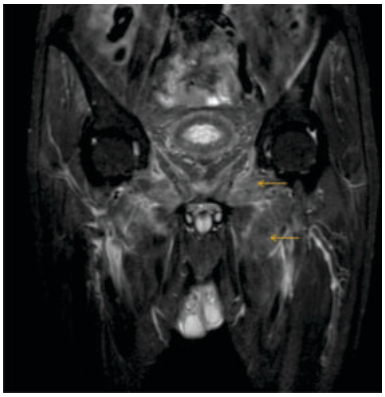


Fig.4 MRI T2 fat saturation coronal section edema of the bilateral obturator externus and adductor muscle.

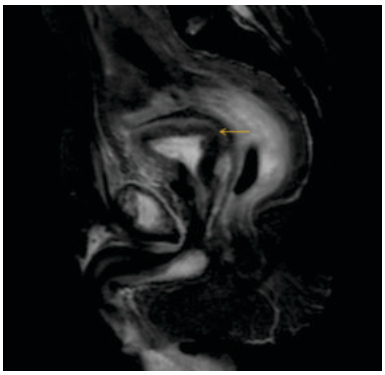


Fig.5 MRI T2 fat saturation sagittal section shows thickened urinary bladder wall with thickness of ~ 10mm with surrounding hyperintensity.

Differential Diagnosis

Possibility of differentials of osteomyelitis of pubic symphysis and osteitis pubis was given. Further, USG guided fluid aspiration was advised and performed.

FNAC and FLUID Cytology

Aspirated fluid culture showed Pseudomonas Aeruginosa growth.

Final Diagnosis

Final diagnosis of acute osteomyelitis of pubic symphysis (AOP) was done. Following the orthopedics team's review, an IV cefazolin regimen was initiated for a duration of three weeks, as the diagnosis of AOP was confirmed. The patient made good progress while in the hospital, continuing to be in good overall health, walking without pain, and having lower levels of inflammation (leukocytes 6,320/mm3 and CRP 5 mg/L). It was chosen to discharge patients from the hospital after six weeks of exposure to an oral antibiotic (cotrimoxazole), followed by an outpatient follow-up with the orthopedics departments. He did not exhibit any pain when walking or exercising during the assessment. There were no indications of cutaneous problems or recurrence at the intervention site. In terms of laboratory testing, the leukocyte count was 6,300/mm3 and the CRP level was 2 mg/L. Because of the positive progress, it was decided to stop the treatment.

DISCUSSION

AOP is an uncommon pathology that is characterised as an inflammatory state brought on by bacteria or other infectious microbes, primarily S. aureus (3). In patients who have had previous pelvic surgery or who have immunosuppressive conditions like diabetes mellitus, chronic debilitating condition other bacteria such group A and B streptococcus, pseudomonas, Streptococcus pneumoniae, and Mycobacterium tuberculosis are linked to AOP (4).

The clinical presentation is non-specific, characterized by pubic pain (5-13%), fever (74%), pain with hip movement (45%), and abdominal discomfort, so its incidence may be underdiagnosed, explaining the few reports currently available in the literature (2)

Regarding diagnosis, the initial study includes laboratory tests, particularly inflammatory markers such as leukocytes and CRP, which provide indications of infectious processes; however, they have low specificity (3).

In terms of imaging studies, conventional radiography is not typically recommended for investigating AOP. This is because it can only show changes at the bone level 10-14 days after the onset of the infection, such as osteopenia, bone resorption, bone destruction, loss of cortical bone, and periosteal reaction. Thus, its true utility lies in ruling out other non-infectious pathologies (5).

Pelvic MRI may distinguish between the degree of cortical damage, anomalies in the bone marrow, and inflammation in the soft tissues. It is an extremely sensitive technique for the early identification of AOP (6). This allows the precise location of the lesion as well as the extent to which it has migrated to nearby muscles and perivesical adipose tissue (2).

A biopsy from the affected site and an etiological study based on cultures are needed for a definitive diagnosis (7). In our case, a suprapubic approach was used, which allowed direct visualization of the affected bone tissue and, subsequently, the collection of samples of said tissue, increasing the efficiency and obtaining more representative cultures and biopsies.

The preferred course of treatment is to clean and debridate the necrotic tissue along with an antibiotic regimen that is modified based on the cultures' outcomes. In our instance, the patient underwent three weeks of IV cefazolin while still hospitalised, and during that time, he made good progress. He then finished six weeks of oral cotrimoxazole. His inflammatory parameters returned to normal as a result, and he stopped exhibiting any clinical symptoms. The literature lacks a definitive length of time for antibiotic therapy, but case reports generally concur that antimicrobial treatment should be continued until vital tissue replaces the overflowing tissue and inflammatory parameters return to normal (8).

CONCLUSION

SAS are rare conditions, occurring often after pelvic surgery and presenting with symptoms such as pelvic pain and impaired gait. The extent and severity of the infection can be visualized by MRI. Treatment of choice is early surgical debridement, often in collaboration with surgeons from other relevant departments, followed by at least a 6-week antibiotic regimen. The antibiotic regimen should always be planned in collaboration with a microbiology specialist. For most patients this resulted in pain relief, improved walking ability and a low recurrence rate (1).

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Ethical Consideration

This article followed all ethical standards for carrying out research. Data availability statement: The authors confirm that the data supporting the findings of this study are available within the article.

DISCLAIMER

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors.

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