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Case Report

A rare case report of tuberculosis osteomyelitis of pubic symphysis

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ABSTRACT

Less than 2% of all hematogenous osteomyelitis occurs in the pubic symphysis, making it a very uncommon condition. 10-15% of all instances of extra-pulmonary tuberculosis are caused by skeletal TB. We describe a rare instance of pubic osteomyelitis caused by tuberculosis in a 58-year-old woman who initially complained of discharge in the suprapubic region for 8 months. Patient was admitted due to suspected pubic symphysis osteomyelitis caused by TB. Based on preoperative studies, surgery was planned. Due to a suspicion of tuberculosis, debridement was performed and stimulan antibiotic beads were inserted. CB-NAAT and histopathology samples were sent. When CB-NAAT tested positive for multidrug-resistant tuberculosis (MDR-TB) and started on antitubercular therapy (ATT), HPR indicated granulomatous inflammation. After receiving MDR-TB treatment, there was no discharge from the location. Following surgery, there was a year of follow-up. Patient made a full recovery without any site discharge. This example serves to illustrate our approach to treating pubic symphysis osteomyelitis caused by TB.
Osteomyelitis of the pubic symphysis, stimulating antibiotic cement beads, CB-NAAT, MDRTB, ATT.

1. Introduction

Less than 2% of all hematogenous osteomyelitis occurs in the pubic symphysis, making it a rare osteomyelitis. The diagnosis of osteomyelitis pubis is commonly postponed or disregarded due to the condition's uncommon and inconsistent appearance. It typically develops as a result of indirect trauma to the lower leg, knee, or even foot, as well as urological or gynaecological procedures, and it spreads via the hematogenous pathway.[1] This infection is frequently caused by the opportunistic microorganisms Staphylococcus aureus (S. aureus) and Pseudomonas aeruginosa (P. aeruginosa). Intravenous drug abuse, pelvic malignancy, intense physical activity, and previous female incontinence surgery are the main risk factors. Pubic and groyne pain, pubic tenderness, a temperature of at least 380, and bacteremia are typical clinical symptoms of this illness.[2] The main strategies for treating osteomyelitis include removing necrotic tissue quickly, administering local antibiotic therapy, and controlling dead space.[3] Fifth, tuberculosis There are very few cases of osteomylitis of the pubic symphysis recorded in the literature. Skeletal TB is the root cause of 6, 710–15% of extra-pulmonary tuberculosis cases. Unusual body components such the pubic bone, sacroiliac, and sternoclavicular joints may be affected.[4] The debridement and local antibiotic therapy combined with ATT therapy used to treat tuberculosis osteomyelitis remains the same.

This report describes a unique case of TB osteomyelitis of the pubic bone in a female patient who had undergone trauma, how it was treated in our department, and how it progressed over the course of a year.

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2. Presentation of a Case

A 58-year-old female patient came in with a primary complaint of watery discharge in the suprapubic region for the past eight months.

Investigations that were needed to be done. According to X-Ray results, the pubic symphysis bone may have osteomylelitis (Figure 1). Undefined hypoechoic collection was detected by USG in the left suprapubic area through a sinus tract that measured 3.5 cm in length and opened externally in the skin without communicating with the peritoneal cavity. Patient was admitted due to suspected pubic symphysis osteomyelitis caused by TB. Based on preoperative studies, surgery was planned. A pfannenstial incision was made, exposing the surgery site. Due to a suspicion of tuberculosis, debridement was performed and stimulan antibiotic beads were inserted. Streptomycin powder was used as the foundation for the antibiotic beads, coupled with 2g of Vancomycin and 3 vials of Tobramycin injections (Figure 2). The suprapubic area received these created antibiotic beads (Figure 3). Pelvic binder was administered right away after surgery, and the necrotic tissue that was removed was sent for HPR, culture and sensitivity testing, and CB-NAAT. On “post op day 10”, the patient’s HPR was suggestive of granulomatous inflammation and the CB-NAAT was positive (Figure 5). The patient was immediately put on routine antibiotics after surgery. Patient promptly began using ATT. After receiving MDR-TB treatment, there was no discharge from the location. A year of postoperative follow-up was conducted (Figure 6). Patient made a full recovery without any site discharge.

Fig. 1: Preopereative radiograph suggestive of osteomyelitis of pubic symphysis

Pubic symphysis bone discussion Comparing osteomyelitis to other localizations such the knee, hip, or tibia, osteomyelitis is less frequently observed in bones and joints.[5] The existence of a clinical or radiological fistula

Fig. 2: Antibiotic cement beads prepared using Streptomycin powder as bas with Vancomycin 2g and 3 vials of Tobramycin injections

Fig. 3: Intraoperative photograph –placement of antibiotic cement beads

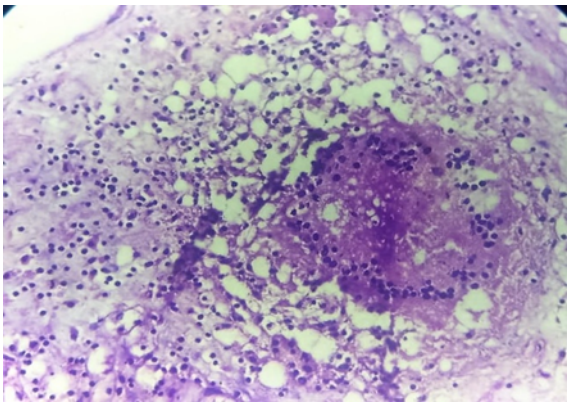

Fig. 4: Histopathology showing granulomatous inflammation

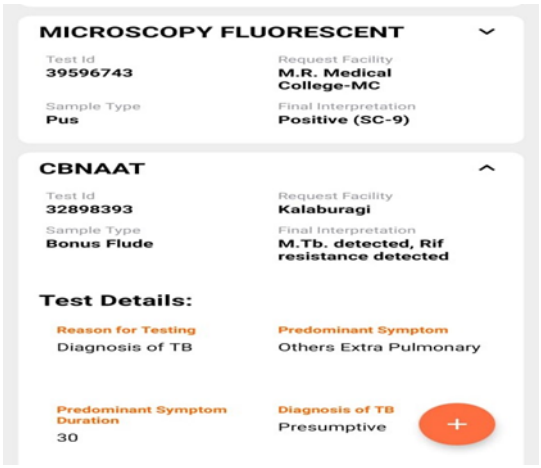

Fig. 5: CB-NAAT report showing positive for MDR-TB

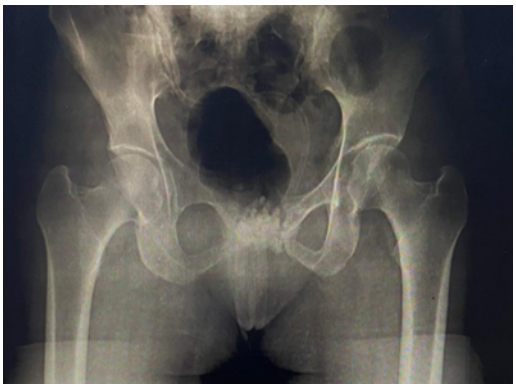

Fig. 6: Postoperative radiograph

communicating with the pubis can be used to identify pubic osteomyelitis.

1. Irritatory symptoms found during a histopathological examination
2. Virtuous culture

The basic treatment modalities for osteomyelitis are aggressive debridement of necrotic tissue, local antibiotic therapy, and dead-space management.[3] Surgery debridement, which removes any necrotic, avascular tissue, including involucrum, sequestra, and bacterial biofilm, is the primary treatment for osteomyelitis.[6,7]

In our case, the patient experienced suprapubic discharge, and after radiological evaluation, we determined that the patient had osteomylitis of the pubic symphysis. We planned surgical debridement with local antibiotic therapy based on the diagnosis. A specimen was sent for a histopathological report (HPR) and a CB-NAAT, and the patient received postoperative systemic antibiotic medication. Granulomatous inflammation was detected by HPR, and CB-NAAT was positive. The patient began receiving antituberculosis treatment. Patient experienced no problems a year after therapy.

Osteoarticular tuberculosis is the second most common site of the illness, accounting for 10% to 15% of all extra-pulmonary tuberculosis cases11. The hip, knee, and ankle joints are the next most common locations, after the spine. There have only ever been a few number of cases with TB of pubis reported in the literature.[8,9] In 1855, Thilsen was the first to describe pubic symphysis TB; Hennies followed in 1888. According to a review of the literature, the majority of cases manifested late because of the disease's sneaky progression and vague symptomatology. There have been reports of a number of problems, including the development of sinus or fistula, cold abscess, and hypogastric mass.[10]

The course of therapy for TB osteomyelitis is still local vigorous debridement and local antibiotic therapy along with antituberculosis therapy. Moon et al. had positive outcomes with a straightforward curettage and antitubercular chemotherapy.[11]

After debridement, we used antibiotic beads made with Streptomycin powder as a basis, 2g of Vancomycin, and 3 vials of Tobramycin injections. Because they physically obstruct phagocytic clearance and antimicrobial agents, reduce antibiotic penetration, and induce a change in bacterial metabolic activity to a more sessile state, which can reduce nutritional dependence and improve resistance to reactive oxygen species, bacterial biofilms are particularly difficult to remove with systemic antibiotics.[12–14]

Gamble et al. (2006) used a single-stage approach with calcium phosphate beads loaded with tobramycin and vancomycin[15] to successfully treat a case of female pubic symphysis osteomyelitis that developed in the third trimester of pregnancy. There is some research that suggests treating infected total joints with antibiotic resorbable biocomposites in a single stage.[16,17] In a study that was published in 2021, Henry et al. showed that strict debridement, local antibiotic therapy, and the filling of dead spaces with antibiotic-impregnated PMMA beads were effective in treating pubic symphysis osteomyelitis without any indications of infection recurrence at a mean follow-up of 19 months.

In our example, pubic symphysis removal without subsequent internal fixation did not cause pelvic instability, as shown by pelvic radiographs and the patient's ability to fully bear weight after surgery.

The Indolent nature of the infection and challenges with cultivating the organism have made TB osteomyelitis of the pubis an unusual presentation of tuberculosis infection, making it challenging to detect. This study describes our approach to treating pubic symphysis osteomyelitis caused by tuberculosis, which combines rigorous local debridement with local antibiotic therapy and antitubercular therapy.

3. Source of Funding

None.

4. Conflict of Interest

All of the authors that have been listed above declare that they have no conflicts of interest.

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