

Case series

Septic arthritis of the pubis symphysis: clinical and therapeutic features



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Abstract

Septic arthritis of the pubis symphysis is rare and difficult to diagnose. The objective of our study was to describe the biological, clinical, radiological and therapeutic aspects of this disease. This is a retrospective study of 4 cases of septic arthritis of the pubic symphysis collected in the Department of Rheumatology and Orthopaedics in Sousse in Tunisia over a period of 16 years (2000-2016). Our population consists of 3 women and one men. The mean age was 47 years (18-83). Clinical signs of appeal were inflammatory groin pain, pubic pain and fever. Symptoms appeared after forceps delivery in 2 cases, after surgery on the pelvis in one case and in a context of sepsis in one case. Radiographs showed pubic disjunction with irregular shoreline in all cases. CT performed in all patients and MRI in 2 patients showed erosions of the banks of the pubic symphysis with infiltration of the soft parts in all cases. The causative organisms were isolated in 3 cases by biopsy of soft tissue abscess under CT in 2 cases and vaginal swab in one case. Identified germs were staphylococcus aureus Méti-S (n=1), proteus mirabilis (n=1) and varied flora (n=1). The treatment consisted of appropriate antibiotics in all cases and surgical drainage of soft tissue abscess resistant to medical treatment in 2 cases. The outcome was favorable in all cases. Diagnosis of septic arthritis of the pubic symphysis is based on clinic supported by microbiologic culture results, image methods, and proteins augment during acute phase.

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Introduction

Septic arthritis or osteomyelitis of the pubis symphysis is a rare condition that occurs in less than 1% of cases of osteomyelitis [1-3]. It is often misdiagnosed due to the fact that the usual presenting symptoms are very nonspecific, thus delaying definitive treatment [1-3]. It should be suspected in patients with inflammatory groin pain, pubic pain and fever [1,2,4]. It is frequently associated with prior gynaecological/urological surgery or pelvic malignancy [1,5]. Radiographic signs can be delayed or undetected in certain modalities of radiological investigation. Therefore, the diagnosis can be missed and treatment delayed [1,4]. The objective of our study was to describe the biological, clinical, radiological and therapeutic aspects of septic arthritis of the pubic symphysis.

Methods

This is a retrospective, descriptive study of 4 cases of septic arthritis of the pubic symphysis collected in the Department of Rheumatology and Orthopaedics in Sousse in Tunisia over a period of 16 years (2000-2016). Demographic, clinical, microbiologic, treatment, and outcome data were collected from the medical record using a data collection ficed. The diagnosis of septic arthritis of the pubic symphysis was retained on clinical, biological and imaging evocative signs.

Results

Our population consists of 3 women and one men. The mean age was 47 years (18-83). No comorbidity was recorded. Clinical signs of appeal were inflammatory groin pain, pubic pain and fever. Symptoms appeared 2 weeks after forceps delivery complicated by infectious endometritis in 2 cases, after surgery on the pelvis in one case and in a context of sepsis in one case. Walking was impossible in 2 cases. The mobilization of the hips and the pressure at the pubic symphysis were painful. The biological inflammatory syndrome was present in all cases. Plain radiographs showed pubic disjunction with irregular shoreline in all cases (Figure 1). CT performed in all patients (Figure 2) showed erosions of the banks of the pubic symphysis with infiltration of the soft parts. MRI of the

pelvis performed in 2 patients (Figure 3), confirmed the pubic symphysis with an infiltration and abscess of the soft parts. A puncture biopsy of the pubic symphysis under CT was performed in all patients (Figure 4). The causative organisms were isolated in 3 cases by biopsy of soft tissue abscess in 2 cases and vaginal swab in one case. Identified germs were *staphylococcus aureus* Méti-S (n=1), *proteus mirabilis* (n=1) and varied flora (n=1). The treatment consisted of appropriate antibiotics in all cases and surgical drainage of soft tissue abscess resistant to medical treatment in 2 cases. The outcome was favorable in all cases.

Discussion

Septic arthritis of the pubic symphysis, so called osteomyelitis pubis is the infection which involves pubic symphysis and its joint [1]. It is usually associated with pelvic surgery, pelvic malignancies, pregnancy, intravenous drug use and recent athletic activity [1,2,5-9]. This disease is not specific to any age group and can range from 7 to 86 years of age [7]. The diagnosis of osteomyelitis pubis is often missed or delayed due to the infrequency of the disease and its variable presentation [10]. Most common presenting signs and symptoms include fever, pubic tenderness, antalgic gait, and pain with active/passive range of motion of hip [1,3,7]. Insidious symptoms often delay the diagnosis; therefore, clinicians should consider this entity in patients presenting with pubic, groin or abdominal pain that increases on ambulation, and acute onset of fever [2]. The most common pathogen causing infections of pubis symphysis was found to be *Staphylococcus aureus*; however, *Pseudomonas aeruginosa*, *Escherichia coli*, *Enterococcus* sp., *Mycobacterium tuberculosis*, *Salmonella* sp., and *Streptococcus* sp., as well as others have also been reported in literature [1-3,7]. Infection of the symphysis pubis and non-infectious inflammation of the same joint, or osteitis pubis, are distinct entities that present similarly [10].

Septic arthritis of the pubic symphysis is distinguished from osteitis pubis by positive cultures [3]. Diagnosis is based on clinic supported by microbiologic culture results, image methods, and proteins augment during acute phase [1]. Laboratory values were not always abnormal, as in the study of Ross and Hu leukocytosis was observed in only 35% of patients [7]. ESR and CRP may be abnormal but are nonspecific [7]. Bacteremia, not a useful marker in the ED, was present in 73% of patients in the same study with blood culture

results reported. Cultures of needle aspirates of the symphysis pubis were more sensitive with 86% positive in the same study [7]. CT and MRI examinations are essential to substantiate the diagnosis or to guide sampling [11]. Despite MRI being the most sensitive imaging test, only aspiration (ie, microorganism isolation) provides the ultimate proof of the presence of infection [4]. CT scan of the pelvis showed mild widening and erosive changes involving the pubic symphysis associated to fluid collection [5]. Microbiology cultures from an ultrasound or scan guided aspiration of the fluid collection reveals the germ [5].

The different diagnosis of osteolytic, destructive, and inflammatory processes around the symphysis are infectious osteitis pubis, inflammatory osteitis pubis, posttraumatic benign pubic osteolyses in elderly women, and malignant neoplasia [12]. Accurate diagnosis can be a challenge and requires a methodical approach and the use of a variety of diagnostic measures [12,13]. The antibiotic treatment is adjusted depending on the microbiological diagnosis, adding NSAIDs, and bed rest [1,7]. The duration of antibiotic therapy is on average 6 weeks [5,11]. Despite long-course intravenous antibiotic therapy, >50% of cases require surgical debridement [7,14]. When adequate treatment is instituted, most individuals recover completely [1,4,7,11]. The emergency physician can make a difference in the course of the disease by recognizing the condition early, and starting the patient on the road to definitive workup and treatment, which involves pain control and long-term intravenous (IV) antibiotic therapy [10].

Conclusion

Septic arthritis of the pubic symphysis is a rare cause of pubic and hip pain. His diagnosis is often missed or delayed due to the infrequency of the disease and its variable presentation. It should be suspected in patients with inflammatory groin pain, pubic pain and fever especially after delivery and pelvic surgery. In front of an osteolytic processes around the symphysis, the search for an infectious cause is paramount. Diagnosis is based on clinic supported by microbiologic culture results, image methods, and proteins augment during acute phase. MRI is essential for diagnosis. Long delays between the symptom onset and diagnosis are frequent and therefore awareness is paramount for early case detection. Long-course antibiotic therapy is required and, in some cases, may preclude the need for surgical debridement.

What is known about this topic

- Septic arthritis of the pubis symphysis is rare and difficult to diagnose;
- It follows in most cases pelvis surgery or delivery;
- The treatment is based on antibiotic therapy.

What this study adds

- clinical features of Septic arthritis of the pubis symphysis in the region of the center of Tunisia;
- benefits of biology and imaging in the diagnosis of Septic arthritis of the pubis symphysis;
- The progression is favorable if the diagnosis is early and antibiotic therapy is adapted.

Competing interests

The authors declare no competing interests.

Authors' contributions

All authors of orthopedics and Rheumatology Department contributes in conception and design, acquisition of data, or analysis and interpretation of data; drafting the article or revising it critically for important intellectual content; and final approval of the version to be published.

Figures

Figure 1: Radiography of the pelvis: disjunction of the pubic symphysis with erosions of the banks

Figure 2: Scan of the pelvis: erosions of the banks of the pubic symphysis with infiltration of the soft parts

Figure 3: MRI of the pelvis: pubic symphysis with inflammatory aspect of the major adductor muscles and thickening of the prepubic soft tissues

Figure 4: Puncture biopsy of the pubic symphysis under CT in a patient with an infectious pubic symphysis

References

1. Mezouar IE, Abourazzak FZ, Mansouri S, Harzy T. Septic arthritis of the pubic symphysis: a case report. *Pan Afr Med J.* 2014 Jun 17; 18:149. [PubMed](#) | [Google Scholar](#)
2. Ghislain L, Heylen A, Alexis F, Tintillier M. Septic arthritis of the pubic symphysis: an atypical abdominal pain. *Acta Clin Belg.* 2015 Feb; 70(1):46-9. [PubMed](#) | [Google Scholar](#)
3. Alqahtani SM, Jiang F, Barimani B, Gdalevitch M. Symphysis Pubis Osteomyelitis with Bilateral Adductor Muscles Abscess. *Case Rep Orthop.* 2014; 2014:1-3. [PubMed](#) | [Google Scholar](#)
4. Cardoso L, Alves P, Santos F, Ross JJ. Septic arthritis of the pubic symphysis. *BMJ Case Rep.* 2017 Feb 20;43(1):16-22. [PubMed](#) | [Google Scholar](#)
5. To F, Tam P, Villanyi D. Septic arthritis of the pubic symphysis from *Pseudomonas aeruginosa*: reconsidering traditional risk factors and symptoms in the elderly patient. *BMJ Case Rep.* 2012 Aug 24;2012. [PubMed](#) | [Google Scholar](#)
6. Choi H, McCartney M, Best TM. Treatment of osteitis pubis and osteomyelitis of the pubic symphysis in athletes: a systematic review. *Br J Sports Med.* 2011 Jan;45(1):57-64. [PubMed](#) | [Google Scholar](#)
7. Ross JJ, Hu LT. Septic arthritis of the pubic symphysis: review of 100 cases. *Medicine (Baltimore).* 2003 Sep;82(5):340-5. [PubMed](#) | [Google Scholar](#)
8. Lawford AM, Scott K, Lust K. A case of massive vulvar oedema due to septic pubic symphysis complicating pregnancy. *Aust N Z J Obstet Gynaecol.* 2010 Dec;50(6):576-7. [PubMed](#) | [Google Scholar](#)
9. Hochedez C, Pelissier A, Mosbah R, Raimond E, Gabriel R, Graesslin O. Arthrite septique de la symphyse pubienne au cours de la grossesse. *Gynecol Obstet Fertil.* 2015 Jun;43(6):472-3. [PubMed](#) | [Google Scholar](#)
10. Yax J, Cheng D. Osteomyelitis Pubis: a Rare and Elusive Diagnosis. *West J Emerg Med.* 2014 Nov;15(7):880-2. [PubMed](#) | [Google Scholar](#)
11. Salomon S, Lasselin-Boyard P, Lasselin J, Goëb V. Symphysite pubienne infectieuse post-chirurgicale. *Prog En Urol.* mars 2015;25(3):169-74. [PubMed](#) | [Google Scholar](#)
12. Budak MJ, Oliver TB. There's a hole in my symphysis: a review of disorders causing widening, erosion, and destruction of the symphysis pubis. *Clin Radiol.* 2013 Feb;68(2):173-80. [PubMed](#) | [Google Scholar](#)
13. Tiemann AH, Röhm C, Hofmann GO. Putrid infectious pubic osteitis: case report and review of the literature on the differential diagnosis and treatment of infectious pubic osteitis and inflammatory pubic osteitis. *Eur J Trauma Emerg Surg.* 2010 Oct;36(5):481-7. [PubMed](#) | [Google Scholar](#)
14. Mehin R, Meek R, O'Brien P, Blachut P. Surgery for osteitis pubis. *Can J Surg.* 2006 Jun;49(3):170-6. [PubMed](#) | [Google Scholar](#)



Figure 1: Radiography of the pelvis: disjunction of the pubic symphysis with erosions of the banks

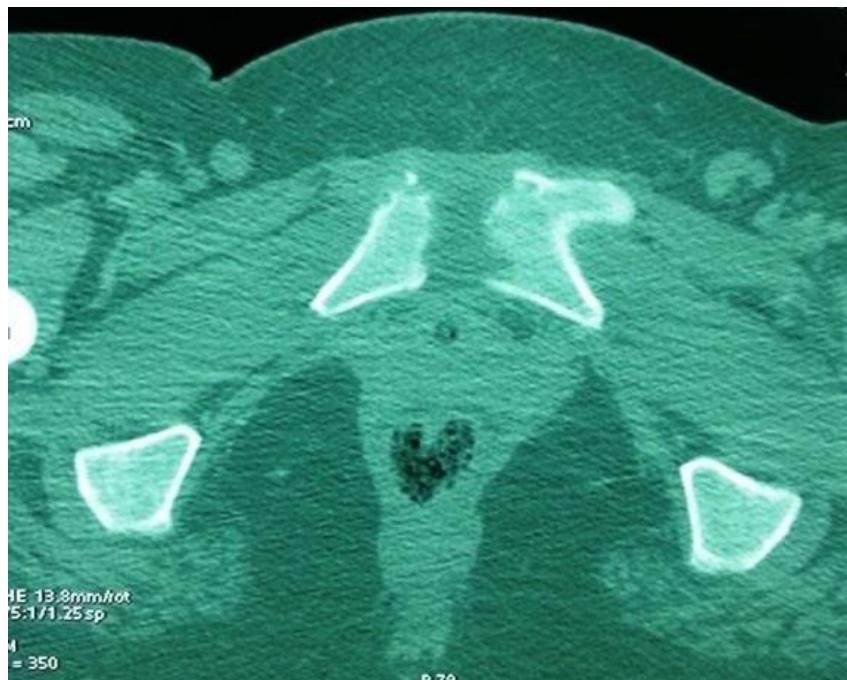


Figure 2: Scan of the pelvis: erosions of the banks of the pubic symphysis with infiltration of the soft parts



Figure 3: MRI of the pelvis: pubic symphysis with inflammatory aspect of the major adductor muscles and thickening of the prepubic soft tissues



Figure 4: Puncture biopsy of the pubic symphysis under CT in a patient with an infectious pubic symphysis