

Chronic Pubis Osteomyelitis After Reconstructive Surgery for Bladder Prolapse

Alireza Sadegpour,¹ Feridon Jamali,² Mohammadreza Moharrami,¹ and Ali Tabrizi^{3,*}

¹Associated Professor of Orthopedics Surgery, Shohada Educational Hospital, Tabriz University of Medical Sciences, Tabriz, Iran

²General Surgeon, Shohada Educational Hospital, Tabriz University of Medical Sciences, Tabriz, Iran

³Assistant Professor of Orthopedics Surgery Department, Imam Khomeini Hospital, Urmia University of Medical Sciences, Urmia, Iran

*Corresponding author: Ali Tabrizi, MD, Moderres Ave, Imam Khomeini Educational Hospital, Urmia University of Medical Sciences, Urmia, Iran. Tel: +98-9143130829, E-mail: ali.tab.ms@gmail.com

Received 2016 August 08; Revised 2016 August 31; Accepted 2016 September 18.

Abstract

Introduction: Pubis osteomyelitis is a rare bone infection disease. The clinical manifestations of this disease are highly misleading. The symptoms are non-specific and the patients feel pain in their pelvis and have difficulties in walking. The risk factors for this disease are pelvic and urological surgeries.

Case Presentation: In this report, a 40-year-old female with suprapubic fistula secretion 6 months after reconstructive surgery for bladder prolapse was introduced. In fistulectomy surgery, pelvic pubis osteomyelitis was identified and treated by curettage and debridement. In microorganism culture of the samples, *Staphylococcus epidermidis* was the result, which was resistant to methicillin.

Conclusions: Antibiotic treatment is not enough for pubic osteomyelitis. Curettage and jet lavage surgeries are suggested. Closing the possible route by the urogenital tract is of great importance in controlling the disease.

Keywords: Pubis Osteomyelitis, *Staphylococcus epidermidis*, Pubic Osteitis

1. Introduction

Osteomyelitis of symphysis pubis is a rare bone infection disease, which involves only 1% of cases with osteomyelitis (1). Most studies on this matter were reports. Pubis osteomyelitis, inflammation, and septic arthritis symphysis pubis can be observed in patients during pregnancy, after delivery and surgical interventions, and even after vascular invasion interventions (1).

Osteomyelitis of symphysis is unusual and the clinical manifestations are similar to those of pubis osteitis. Since it is rare, its non-specific symptoms and complications may lead to misdiagnosis, lack of diagnosis or delayed management. The clinical manifestations of pubis osteomyelitis are deep pain of pelvis associated with point tenderness above the symphysis pubis (2, 3). Difficulty in walking due to severe pain has also been reported. One of the most important differential diagnoses that have the same symptoms is pubis osteitis (2, 3). In this report a rare case with pubis osteomyelitis one year after reconstruction bladder prolapse surgery is presented; complication was the caused by *Staphylococcus epidermidis*.

2. Case Presentation

The patient was a 40-year-old female with mild pain in her hip for 6 months and fistula with yellowish sanies in

suprapubic, and was referred to our orthopedic clinic (Figure 1). She had reconstruction bladder prolapse surgery the previous year; yet, the symptoms emerged after 6 months. She had mild pain in the hip that was intense after walking and occasional mild fever. She had undergone a tenderness examination in the lower abdominal. Laboratory evaluation showed an increase in inflammatory factors. The erythrocyte sedimentation rate (ESR) was 30 mm in the first hour and C reactive protein was 75 mg/L (normal value less than 10 mg/L). The number of white blood cells was 10500/mm² (normal range 3500 to 9800) with 80% neutrophils. The pelvic radiograph was normal (Figure 2). The bone scan showed an increased uptake in symphysis pubis. The patient was suspected of second bladder fistula due to the previous surgery and deep infection, and therefore, in collaboration with the general surgical team, exploration by suprapubic incision was performed. At the time of surgery, the secreted fistula was spread to symphysis pubis, retro pubic, and inferior ramus, hence, complete excision was performed. The fistula was followed to the bladder and it was detected by injecting dye to the route of fistula in the urine bag. Therefore, the route of fistula was followed to the bladder, which showed rich growth of *Staphylococcus epidermidis*. Antibiogram of allergies to clindamycin, amikacin, cotrimoxazole, minocycline, and ofloxacin, was studied and revealed resistance to methicillin. The patient was administered intravenous an-

tibiotics, including flucloxacillin, and non-steroidal anti-inflammatory was prescribed. Treatment with antibiotics lasted for 6 weeks. After the treatment duration, all symptoms were removed. In follow-up after surgery, the patients had no pain and the skin of suprapubic was not secreted (Figure 3).



Figure 1. The Clinical Picture of Suprapubic Showing the Previous Scar of Surgery and Secreted Fistula



Figure 2. Pelvic Radiograph Showing no Significant Bony Distraction

3. Discussion

Osteomyelitis symphysis of pubis is among rare bone infection diseases. The etiology of pubis osteomyelitis includes factors such as iatrogenic, traumatic, and hematogenous factors (after urological and gynecological surgeries) (4). Clinical diagnosis of pubis osteomyelitis infection is very difficult. In some cases, there have been misdiagnoses, and anti-inflammatory treatment has been prescribed for osteitis pubis (5). Generally, what leads to misdiagnosis is rarity of the disease and the non-specific symptoms and side effects (1). However, in cases with a history of



Figure 3. Pelvic Radiograph After Surgery with Infected Parts Resected

surgery or intervention in pelvis, clinical suspicion is pubis osteomyelitis or infectious factors. In the study by Gupta et al. on 10 cases with pubis osteomyelitis after prostate cancer, the most important symptoms were pain in pelvis, suprapubic pain, difficulties when walking, and recurrent urinary infection (6). Surgical treatment involves removal of the entire effected bone and closing the link within the fistula was successful in 7 cases (6). In a study by Graham et al. on pubis osteomyelitis after surgery of bladder neck, it was revealed that the average time for emerging symptoms is 2 to 18 months after the intervention, which caused pubis osteomyelitis (7). The most important clinical symptom was mild pain in pelvis and/ or draining wound. In all cases, staphylococcus was culture. *Staphylococcus epidermis* is the most important bacterial agent reported in these cases (7). This type of staphylococcus causes osteomyelitis symphysis of pubis, which in most cases, is resistant to methicillin (7). In a report by Pauli on a 23-year-old patient, it was indicated that the most important bacterial agent involved in pubis osteomyelitis was *Staphylococcus aureus*; this patient had no history of surgery or intervention in his pelvis. The main manifestation was that found in the current study (5). In the report by Sturgess, staphylococcus in a 77-year-old female caused pubis osteomyelitis; identification of the infectious agent was done by the culture method (8). These bacteria are part of the normal skin flora. Most bacteremia caused osteomyelitis in pubis (8). In the report by Wilmes, one case of *kingella kingae* caused osteomyelitis symphysis of pubis in a female with immunodeficiency (3). Regarding urological interventions, it seemed that the most common infectious agent after surgery is *Staphylococcus epidermis*, and aggressive treatment is the best controlling method, while prescription of a good antibiotic should also be considered.

3.1. Conclusion

Pubis osteomyelitis can have serious side effects. In most urologic or gynecological surgeries, most bacterial agents are resistant to methicillin. Antibiotic treatment is not enough by itself. Curettage and jet lavage surgeries are suggested. Closing the possible link with urological tract should be considered to control the disease.

Footnote

Conflict of Interest: There was no conflict of interest.

References

- Alqahtani SM, Jiang F, Barimani B, Gdalevitch M. Symphysis pubis osteomyelitis with bilateral adductor muscles abscess. *Case Rep Orthop.* 2014;**2014**:982171. doi: [10.1155/2014/982171](https://doi.org/10.1155/2014/982171). [PubMed: [25580335](https://pubmed.ncbi.nlm.nih.gov/25580335/)].
- Tekin R, Ceylan Tekin R, Ceylan Cevik F, Cevik R. Acute osteomyelitis of the symphysis pubis after inguinal hernia surgery. *Case Rep Rheumatol.* 2015;**2015**:845867. doi: [10.1155/2015/845867](https://doi.org/10.1155/2015/845867). [PubMed: [25973280](https://pubmed.ncbi.nlm.nih.gov/25973280/)].
- Wilmes D, Omoumi P, Squifflet J, Cornu O, Rodriguez-Villalobos H, Yombi JC. Osteomyelitis pubis caused by *Kingella kingae* in an adult patient: report of the first case. *BMC Infect Dis.* 2012;**12**:236. doi: [10.1186/1471-2334-12-236](https://doi.org/10.1186/1471-2334-12-236). [PubMed: [23031309](https://pubmed.ncbi.nlm.nih.gov/23031309/)].
- Koakutsu T, Kawamura M, Takada K, Itoi E. Osteomyelitis of the pubic symphysis as a complication of bladder neck suspension procedure with use of bone anchors: A case report. *Rheumatol: Curr Res.* 2014;**16**(01):1-3. doi: [10.4172/2161-1149.s16-002](https://doi.org/10.4172/2161-1149.s16-002).
- Pauli S, Willemsen P, Declerck K, Chappel R, Vanderveken M. Osteomyelitis pubis versus osteitis pubis: a case presentation and review of the literature. *Br J Sports Med.* 2002;**36**(1):71-3. doi: [10.1136/bjism.36.1.71](https://doi.org/10.1136/bjism.36.1.71). [PubMed: [11867499](https://pubmed.ncbi.nlm.nih.gov/11867499/)].
- Gupta S, Zura RD, Hendershot EF, Peterson AC. Pubic symphysis osteomyelitis in the prostate cancer survivor: clinical presentation, evaluation, and management. *Urology.* 2015;**85**(3):684-90. doi: [10.1016/j.urology.2014.11.020](https://doi.org/10.1016/j.urology.2014.11.020). [PubMed: [25733290](https://pubmed.ncbi.nlm.nih.gov/25733290/)].
- Graham CW, Dmochowski RR, Faerber GJ, Clemens JQ, Westney OL. Pubic osteomyelitis following bladder neck surgery using bone anchors: a report of 9 cases. *J Urol.* 2002;**168**(5):2055-7. doi: [10.1097/01.ju.0000033455.44723.b3](https://doi.org/10.1097/01.ju.0000033455.44723.b3). [PubMed: [12394707](https://pubmed.ncbi.nlm.nih.gov/12394707/)] discussion 2057-8.
- Sturgess I, Martin FC, Eykyn S. Pubic osteomyelitis caused by *Staphylococcus simulans*. *Postgrad Med J.* 1993;**69**(818):927-9. doi: [10.1136/pgmj.69.818.927](https://doi.org/10.1136/pgmj.69.818.927). [PubMed: [8121867](https://pubmed.ncbi.nlm.nih.gov/8121867/)].