



Prostatosymphyseal Fistula and Pubic Osteomyelitis after Transurethral Resection of the Prostate: A Challenging Complication and Current Literature Review

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Abstract

Transurethral prostate surgery can lead to a rare and late complication known as a prostatosymphyseal fistula. In the literature, there are only a limited number of reported cases of this type of fistula. This case underscores the complexities involved in disease management, as well as the challenges in establishing an initial diagnosis, given the inadequacy of conventional imaging methods to detect prostate-symphyseal fistulas. The presence of non-urological symptoms in patients often impedes the recognition of prostato-symphyseal fistulas, leading to a delay in diagnosis. In this case report, a patient who presented to the emergency department with complaints of sudden-onset difficulty walking and fever in the second month after bipolar transurethral resection of the prostate is presented. The diagnosis of pubic osteomyelitis and prostatosymphyseal fistula was made using advanced examinations such as contrast-enhanced pelvic computed tomography and magnetic resonance imaging. In the treatment, transperitoneal fistula tract excision and repair with an omental flap were performed. No complaints were observed during the 1-year postoperative follow-up. The surgeon's vigilant approach is paramount for promptly identifying this rare complication.

Keywords: Osteomyelitis, transurethral prostate resection, prostatosymphyseal fistula

Introduction

Benign prostatic hyperplasia is a prevalent condition among older males, impacting millions of people annually. Various medical and surgical therapeutic approaches are available for the treatment of these conditions. Among surgical interventions, transurethral resection of the prostate (TURP) is the gold standard procedure (1). TURP can lead to a rare and late complication known as prostatosymphyseal fistula (PSF). In the literature, there are only nine reported cases of this type of fistula after TURP (2). The case depicts the intricacies of disease administration, along with the intricacies of making the preliminary diagnosis because conventional imaging methods were inadequate to discern PSF. Prostatosymphyseal fistula recognition is often impeded by the presence of non-urological symptoms, which can lead to a delay in diagnosis. Hence, the surgeon's acute

discernment plays a pivotal role in promptly recognizing this uncommon complication.

Case Report

A 56-year-old male patient was admitted to the emergency department with complaints of nausea and vomiting for 3 days, right inguinal pain that started when he woke up in the morning, and an inability to stand and walk. No dysuria or lower urinary tract symptoms were present.

His fever was 38.9 °C. He was using acetylsalicylic acid at 100 mg/day because of coronary artery disease. He had bipolar TURP 2 months ago. There was no capsule perforation or suspicion during the surgery, and there were no intraoperative or immediate postoperative complications. In routine blood tests, the hemoglobin level was 11.9 g/dL, the white blood cell count was

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15.9×10⁹/L, C-reactive protein level was 14.2 mg/L, and the procalcitonin level was 108.8 ng/L. Serum urea and creatinine levels were within normal limits. *Escherichia coli* growth was positive in blood culture, whereas midstream urine culture was negative. Contrast-enhanced pelvic computed tomography (CT) showed an infective collection area of 80-18 mm with air densities extending from the right obturator forosa to the right inguinal region and air densities compatible with osteomyelitis adjacent to the symphysis pubis in both pubic rami (Figures 1 and 2). Pelvic magnetic resonance imaging (MRI) showed a fistula tract extending from the anterior of the prostatic urethra to the symphysis pubis (Figure 3). Piperacillin-tazobactam 4x4.5 g intravenous treatment was initiated, and urinary drainage was performed using suprapubic bladder catheterization. The fistula tract was removed by median laparotomy and closed with an omental flap. The abscess area was drained. The patient started to mobilize on the first postoperative day. In the first month postoperatively, cystourethrography revealed no extravasation, and the suprapubic catheter

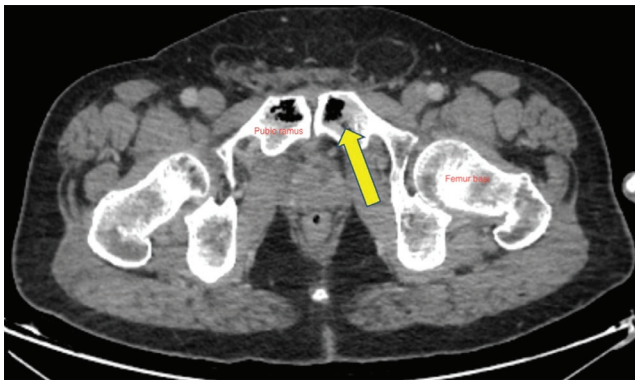


Figure 1. Pelvic CT. Air densities consistent with osteomyelitis were observed adjacent to the pubic symphysis in both pubic rami (arrow)

CT: Computed tomography



Figure 2. Pelvic CT. Infective collection area with air densities extending from the right obturator forosa to the right inguinal region (arrow)

CT: Computed tomography

was removed. The patient voided normally and was on the continent. He did not have any complaints during the first year of follow-up.

Discussion

Transurethral resection of the prostate is generally a safe method; however, it has known complications such as bleeding, urinary incontinence, urethral stricture, and retrograde ejaculation (1). Fistula formation from the prostatic urethra to the symphysis pubis, defined as a PSF, is a very rare complication. PSF has been reported not only after TURP but also after transrectal prostate biopsy, photoselective vaporization of the prostate, radical prostatectomy, radiotherapy, and salvage cryotherapy (3-8).

The underlying cause of PSF is believed to be an injury in the anterior prostatic capsule following therapeutic approaches, possibly due to tissue weakening from previous RT or fortuitous perforation in the course of surgery (9). During the procedure, a hypovascular zone may be created beyond the visible area, which may ultimately lead to necrosis and tissue sloughing. Bleeding resulting from capsular perforation, along with the subsequent application of prolonged coagulation, can intensify tissue necrosis and contribute to the pathogenesis of the condition. The use of indwelling catheters may additionally precipitate secondary bacterial infections, seeding the pubic symphysis and culminating in pubic osteomyelitis, ultimately predisposing patients to PSF.

When patients present with pain in the pubic region and/or groin following prostate procedures, particularly during ambulation, it should prompt clinicians to initiate further investigations. Complementary diagnostic tools such as CT and MRI play pivotal roles in evaluating patients suspected of having PSF (10). CT scans, particularly during the excretory phase of contrast injection, aid in identifying

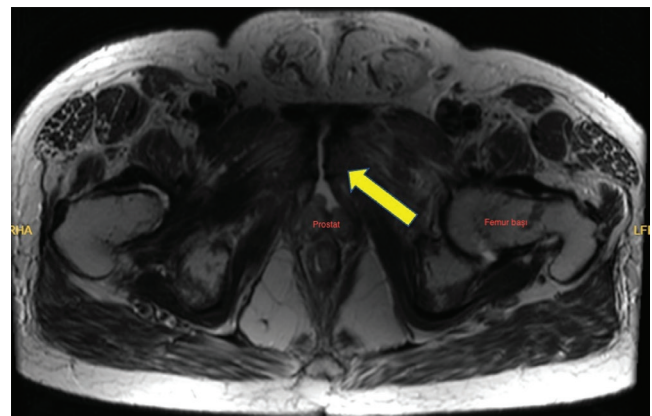


Figure 3. Pelvic MRI. Axial T2 image demonstrates the prostatosymphyseal fistula (arrow)

MRI: Magnetic resonance imaging

the presence of urine within the joint space, a hallmark of PSF. On the other hand, MRI exhibits higher sensitivity in detecting inflammatory changes in the pubic bone or adjacent soft tissues in patients with PSF. Therefore, a combination of these imaging techniques proves invaluable in diagnosing and managing PSF.

Surgical repair methods such as debridement of the symphysis pubis and fistula closure using the rectus abdominis muscle, omental or peritoneal interposition flaps, radical prostatectomy, and urinary diversion are the main approaches in treatment (2-4). At present, the available evidence does not suffice to ascertain the most effective invasive approach for PSF, whether through radical retropubic prostatectomy coupled with symphysis pubis debridement to remove the entire fistula tract or via fistula debridement with an interposition flap such as omental or peritoneal. Further research with extended follow-up periods is imperative to develop definitive treatment guidelines. It has recently been reported that PSF secondary to TURP, radical prostatectomy, and RT was successfully treated with urinary diversion and intravenous vancomycin, as well as oral ciprofloxacin and clindamycin (3).

Prostatosymphyseal fistula is an uncommon complication that may arise because of the variety of therapeutic options available for treating prostate disease. This condition can result in significant disability for affected patients. However, it poses a clinical quandary because of the limited role of diagnostic methods and delayed presentation. Furthermore, effective management of this complication requires a multidisciplinary approach involving specialists in urology, infectious disease, and orthopedic surgery. As a result, it is critical for healthcare providers performing procedures to be aware of the possibility of PSF, particularly when patients exhibit orthopedic symptoms or persistent infective symptoms upon follow-up.

Ethics

Informed Consent: Informed consent was obtained from the patient for the publication of this case at the time of discharge.

Authorship Contributions

Surgical and Medical Practices: - Concept: - Design: - Data Collection or Processing: - Analysis or Interpretation:

- Literature Search: - Writing: Both authors contributed equally.

Conflict of Interest: No conflicts of interest were declared by the authors.

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