

Spontaneous penile abscess: A case report with literature review

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Abstract

Penile abscess is an unusual pathology in the practice of urologists, given the rarity of cases. It can occur spontaneously or be secondary to trauma, injection, or endourethral procedures. Diagnostic confirmation is achieved through imaging. Treatment involves surgical or radiological drainage, depending on the size and location of the abscess, along with antibiotic therapy. Postoperative complications may include erectile dysfunction and penile deviation, necessitating subsequent surgical repairs.

Keywords: Abscess; Penis; Drainage; Urologists

1. Introduction

Penile abscess is a rare urological emergency, infrequently reported in the literature. It often occurs following trauma and is rarely spontaneous. The primary causes include urinary infection, injections, or manipulation of the urethra, especially in individuals with immunosuppressive conditions such as diabetes or HIV infection. The most commonly implicated bacteria are *Staphylococcus aureus* and *Streptococcus*.

Diagnosis can be established through ultrasound, CT scan, or MRI, which help identify the etiology and assess the extent of the abscess. In this report, we present the case of a patient with a spontaneous penile abscess.

2. Case Report

The patient is a 75-year-old diabetic, on oral antidiabetic agents, with a history of recurrent urinary tract infections and poor therapeutic compliance. He denies any prior penile manipulation or injections. Over the past 3 days, he has experienced lower urinary tract symptoms such as burning sensation during urination and increased frequency, followed by penile pain accompanied by cutaneous inflammatory signs.

Upon physical examination, the patient presented with fever, stable hemodynamics, and respiratory status. There was an extensive, localized, and painful swelling of the penis upon palpation. Digital rectal examination revealed a soft, non-painful prostate weighing 40 g.

Laboratory findings indicated a hemoglobin level of 13 g/dL. The patient exhibited an inflammatory syndrome with a white blood cell count of 33,000/mm³ and a CRP level of 260. The glycated hemoglobin was at 8%.

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An initial ultrasound revealed a hypoechoic collection on the dorsal aspect of the penis, with infiltration of the scrotal tunics, and no post-micturition residue.

Additional CT scans revealed an abscessed collection involving the entire length of the penis from its base, including the spongy and cavernous bodies, up to the glans anteriorly. The collection exhibited a thickened wall enhancing with a hypodense liquid center. After contrast injection, it measured 18x70 mm in diameter, extending into the left inguinoscrotal canal, with liquid infiltration of the scrotal tunics and abdominal wall.

The patient was initiated on broad-spectrum antibiotic therapy consisting of Ceftriaxone, Gentamicin, and Metronidazole. Subsequently, he underwent drainage in the operating room, releasing 300cc of purulent material. This involved an incision at the site of the collection, excision of infected tissues, and discharge incisions at the suprapubic, scrotal, and abdominal levels.



Figure 1 An abscessed swelling on the dorsal surface of the penis

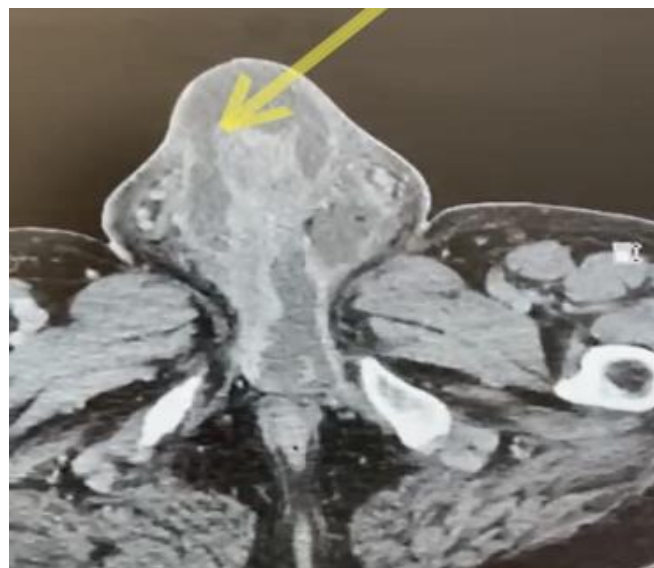


Figure 2 Cross-section of penis showing the collection of the penis

The urine culture was positive for *E.coli*, and pus samples showed polymicrobial growth. The patient responded well to antibiotic therapy, with marked clinical and biological improvement. Delbet's blades were removed on day 7, and the patient was discharged on day 10 postoperatively.

Follow-up consultations revealed good healing, and the wound edges were approximated. The patient reported normal erections without deviation.



Figure 3 Postoperative appearance of the dorsal surface of the penis after drainage.

3. Discussion

Penile abscess is a rare condition [1] that can develop as a complication following endourological procedures, cavernosography, penile injections, penile instrumentation, trauma, gonorrhea complications, or tuberculosis. It may be favored by relative immunosuppression, such as in diabetes. However, there are cases where it occurs spontaneously without an underlying cause [2] [3].

Various microorganisms can be identified in swabs, depending on the etiology of the penile abscess, including *Streptococcus constellatus*, *Streptococcus intermedius*, *Prevotella bivia*, *Streptococcus anginosus*, *Enterococcus faecalis*, *Escherichia Coli*, *Mycobacterium tuberculosis*, and *Staphylococcus aureus* [1].

Clinical suspicion of a penile abscess can be confirmed through ultrasound, CT scan, or MRI. Ultrasound, being a cost-effective and accessible imaging modality, allows simultaneous drainage of the penile abscess [4]. However, distinguishing between inflammatory tissue and abscess containing necrotic tissue can be challenging. CT scan has been used for image-guided aspiration, and MRI, especially diffusion-weighted imaging, can be a powerful tool for diagnosing penile abscess [5]. Initial investigations should include the culture of urine, blood, and any discharge or pus before starting antibiotic therapy to identify causative organisms [6].

Despite the benefits of the conservative approach, surgical evacuation remains first line in the treatment of penile abscess because of the risk of abscess recurrence in the event of incomplete evacuation.[1] Surgical drainage is used in cases in which the penile abscess is spontaneous, and in those cases complicated by coexisting

penile trauma, extensive infection, or failed conservative management. In cases in which penile trauma has precipitated the development of abscess, surgical drainage allows concurrent treatment of both the abscess and its inciting event. In addition,

surgical management has the added benefit of allowing surgeons to assess any compromise of the surrounding anatomy.

The common possible complications include poor erectile function affecting sexual activity and secondary fibrosis leading to penile deviation[7]. These complications are more common with open surgical drainage than ultrasonic aspiration of penile abscess.

In our case, patient developed slight left sided penile deviation following open surgical drainage though it did not affect his erectile function and sexual life. These postoperative complications can be managed, if required, by implantation of penile prosthesis or plastic surgical intervention to correct the penile deviation

4. Conclusion

Penile abscess is a rare emergency seldom encountered by urologists. Its occurrence can be spontaneous or secondary to various factors. Diagnosis is confirmed through imaging, and the management involves drainage with bacterial sampling.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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