

A Rare of Penile Abscess Involving the Corpus Spongiosum and Anterior Urethra

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ABSTRACT

Penile abscess is an urological condition rarely described in literature. Multiple etiologies of penile abscess has been reported including idiopathic, complication of endourology procedure such as cavernosography, penile injection, penile instrumentation, trauma, gonorrhoea complication, tuberculosis, priapism, as well as hematological spread of distant infection. A 42-year-old circumcised male presented for 2 days history of redness and painful swelling of the mid-distal ventral penile shaft and fever of 39°C. The patient had a history of a urethral catheterization 4 days before presentation as he had a problem of progressing difficulty to urinate since 7 days before. 600cc gross hematuria was observed at the initial catheterization. Physical examination showed edema, induration, and tenderness in the mid-distal ventral penile shaft. Skin break was found at the ventral side of coronal sulcus, excreting brownish-red discharge with pus. Laboratory examination showed normal WBC (7,720/mm³), normal random blood sugar (106 mg/dl). Urine analysis showed pyuria (15–16 WBC/hpf) and hematuria (4–5 RBC/hpf). The patient was treated with incision and drainage of the abscess, necrotomy, and systemic antibiotics for ten days. The remaining viable urethral tissues were stitched to the surrounding penile shaft skin in accordance to the "First stage of Johanson procedure" urethroplasty. Percutaneous cystostomy was also performed for urinary diversion. Most reported penile abscesses are cavernosal abscesses. In this patient, the abscess occurred in the corpus spongiosum in anterior urethra region, possibly caused by prior urethral instrumentation. Penile abscess after catheterization is an uncommon condition. Prompt drainage of purulent material and evacuation of necrotic area were the treatment goals. Surgical evacuation remains the first-line treatment.

Keywords: penile abscess, corpus spongiosum

ABSTRAK

Abses penis adalah suatu kondisi di bidang urologi yang jarang dibahas dalam literatur. Beberapa etiologi abses penis telah dilaporkan, antara lain idiopatik, komplikasi pascaprosedur endourologi seperti kavernosografi, injeksi pada penis, instrumentasi pada penis, trauma, komplikasi penyakit gonore, tuberkulosis, priapismus, serta penyebaran hematologis dari infeksi di area tubuh lainnya. Pasien laki-laki berusia 42 tahun yang sudah disirkumsisi datang ke UGD dengan keluhan kemerahan, bengkak, dan nyeri pada batang penis di sebelah ventral di bagian mid-distal dan demam dengan suhu 39°C sejak 2 hari sebelumnya. Pasien memiliki riwayat kateterisasi uretra

4 hari yang lalu di UGD sebuah rumah sakit karena sulit buang air kecil sejak 7 hari sebelumnya. Pada kateterisasi awal, didapatkan 600cc hematuria. Pada pemeriksaan fisik tampak edema, indurasi, dan nyeri tekan pada batang penis sebelah ventral di bagian mid-distal. Pada sisi ventral sulkus koronarius, terdapat luka yang mengeluarkan cairan berwarna merah kecoklatan bercampur dengan nanah. Pemeriksaan laboratorium menunjukkan leukosit normal ($7.720/\text{mm}^3$) dan gula darah sewaktu normal (106 mg/dl). Urinalisis menunjukkan piuria (15-16 sel darah putih/hpf) dan hematuria (4-5 sel darah merah/hpf). Tatalaksana dilakukan dengan insisi drainase abses, nekrotomi, dan antibiotik sistemik selama 10 hari. Jaringan uretra yang viabel dijahit ke kulit batang penis di sekitarnya dengan prosedur urethroplasti "First stage of Johanson". Sistostomi perkutan dilakukan untuk diversi urin. Abses penis yang paling banyak dilaporkan adalah abses kavernosol. Pada pasien ini, abses terjadi pada korpus spongiosum di bagian uretra anterior yang kemungkinan disebabkan oleh riwayat kateterisasi sebelumnya. Abses penis pascakateterisasi adalah kondisi yang jarang terjadi. Drainase segera cairan purulen serta evakuasi area nekrotik adalah target tatalaksana abses penis. Evakuasi bedah merupakan lini pertama.

Kata kunci: Abses Penis, Korpus Spongiosum

INTRODUCTION

Penile abscess is an urological condition rarely described in literature.¹ Multiple etiologies of penile abscess has been reported including idiopathic, complication of endourology procedure such as cavernosography, penile injection, penile instrumentation, trauma, gonorrhea complication, tuberculosis, priapism, as well as hematological spread of distant infection.²⁻⁵ Most reported penile abscesses are cavernosal abscesses.⁶ Meanwhile, spongiosal abscesses are rarely reported. Treatment options include intravenous antibiotics, radiologically guided needle aspiration, or open surgical drainage.⁴ In this case report, we present a rare case of a penile abscess involving corpus spongiosum and urethra in a healthy circumcised patient treated by incision and drainage, necrotomy, followed by the "First stage of Johanson procedure" urethroplasty and systemic antibiotic therapy.

CASE REPORT

A 42-year-old circumcised male presented to the hospital with redness and painful swelling of the distal penile shaft at the ventral side and fever of 39°C since 2 days before. The patient had a history of a urethral catheterization 4 days before presentation as he had a problem of progressing difficulty to urinate since 7 days before. 600 cc gross hematuria was observed at the initial catheterization.

The patient denied any history of urethral purulent discharge, diabetes, recent sexually transmitted infection, high-risk sexual behaviour, trauma, urological surgery, drug use, and any penile injection. The patient works as a vendor and lives separated from his wife since one and a half year.

Physical examination showed edema, induration, and tenderness in the mid-distal ventral penile shaft. Skin break was found at the ventral side of coronal sulcus, excreting brownish-red discharge with pus. The testicular and epididymal, digital rectal examinations were normal. Other clinical examination was normal and no other possible primary site of infection was detected.

Laboratory examination showed normal WBC ($7,720/\text{mm}^3$), normal random blood sugar (106 mg/dl). Urine analysis showed pyuria (15–16 WBC/hpf), hematuria (4–5 RBC/hpf). Other blood investigations were all within normal range.

The patient was treated with incision and drainage of the abscess, and also necrotomy. We found 5 cm length of necrotic subcutaneous tissue, fascia, expanding to the corpus spongiosum, and ventral side of the anterior urethra. The remaining viable urethral tissue was stitched to the surrounding penile shaft skin in accordance to the "First stage of Johanson procedure" urethroplasty. Percutaneous cystostomy was also performed for urinary diversion. Antibiotic therapy consisting of 750 mg of levofloxacin once daily and 500 mg of metronidazole three times per day was given for five days, followed by 200 mg of cefixime two times per day and 300 mg of metronidazole three times per day for five days. Total duration of antibiotic therapy was ten days.



Figure 1. Penile abscess involving the corpus spongiosum and the urethra



Figure 2. Skin break excreting brownish-red discharge containing pus



Figure 3. "First stage of Johanson procedure" urethroplasty

DISCUSSION

Penile abscess is an uncommon condition.¹ Most reported penile abscesses are cavernosal abscesses, and corpus spongiosum is rarely affected. Therefore this case is a very uncommon presentation of penile abscess. Penile abscess can develop as a complication after endourology procedure such as cavernosography, penile injection, penile instrumentation, trauma, gonorrhoea complication, tuberculosis, priapism, as well as hematological spread of distant infection. Rare case like dental caries infection spreading hematogenously once reported. Penile abscesses might also occur spontaneously or in the absence of an underlying cause. Relative immunosuppression, for example in people with diabetes mellitus is also associated with the incidence of penile abscess.²⁻⁶ In this patient, the possible etiology is from the prior urethral instrumentation several days before his presentation to the hospital. The other interesting point about this case is its location in corpus spongiosum.

The common identified microorganisms from cultures of cavernosal abscess materials were *S. aureus*, *Streptococci*, *Bacteroides* and *Fusobacteria*.⁶ Other organisms cultured in various case reports include the following: *Streptococcus constellatus*, *Streptococcus intermedius*, *Prevotella bivia*, *Streptococcus anginosus*, *Enterococcus faecalis*, *Escherichia Coli*, *Mycobacterium tuberculosis*, and *Staphylococcus aureus*.⁷

Clinical suspicion of a penile abscess is based on local swelling and pain and may be confirmed by ultrasound, CT, or MRI. Ultrasound is the most frequently used imaging modality for diagnostic confirmation and allows concomitant drainage. However, distinguishing between inflammatory tissue and abscess containing necrotic tissue could be challenging. Computed tomography (CT) scan has also been used to aid image-guided aspiration. Magnetic resonance imaging (MRI), especially diffusion-weighted imaging, can be a powerful tool for diagnosing abscess in the penis.⁸ Initial investigations should include culture of urine, blood, and any discharge or pus prior to antibiotic therapy to identify causative organisms.⁷

Treatment options for penile abscess include intravenous antibiotics, radiologically guided needle aspiration, or open surgical drainage. Surgical evacuation remains the first line in the treatment of penile abscess followed by systemic antibiotics. Open surgical evacuation allows thorough drainage and washout of the abscess also extensive exploration of the lesion for concomitant pathology.⁴ In this case, 5 cm length of necrotic subcutaneous tissue, fascia, expanding to the corpus spongiosum and ventral side of the anterior urethra was found and debridement was done. Remaining viable urethral tissue was stitched to the surrounding penile shaft skin according to the "First stage of Johanson procedure" urethroplasty. The next procedure in this patient would be "Second stage of Johanson procedure" urethroplasty, which is usually performed three to six months after the first stage urethroplasty, depending on the patient's condition. Complications are more common in open surgical drainage, including erectile dysfunction, secondary fibrosis leading to penile curvature, fistulae, and abscess recurrence.^{9,10}

CONCLUSION

Penile abscess after catheterization is an uncommon condition. Prompt drainage of purulent material and evacuation of necrotic area is the treatment goal and surgical evacuation remains the first-line of treatment.

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