Periurethral Abscess in Corpus Spongiosum Diagnosed on Ultrasonography: A Rarest Case Report

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Abstract

Corpus spongiosum abscess is a rare condition with no case reported as of now diagnosed on ultrasonography (USG). Here, we report a unique case of a 40-year-old Indian male with a 15 days' history of pain and difficulty during micturition. The patient had swelling and erythema in distal 1/3 of the penis. The patient was a known case of type 2 diabetes mellitus. Pain aggravated during micturition, there was no history of any urethral catheterization, trauma, or urethritis. On USG, fluid collection was noted in the corpus spongiosum on the posterior aspect of the distal penile urethra. The abscess was drained percutaneously under ultrasound guidance and was send for culture and sensitivity test. The culture yielded Acinetobacter and the patient was treated with 1 week of intravenous antibiotic according to the culture sensitivity test.

Keywords: Corpus spongiosum abscess, penile urethral abscess, stricture, ultrasonography, ultrasound-guided aspiration

INTRODUCTION

Penile abscess is an uncommon condition. As per history given by patient, he has diabetes mellitus which was uncontrolled from his ongoing treatment and can be considered a cause of his immunocompromised status. No other obvious etiology such as any urethral catheterization, trauma, or urethritis could be determined as per the best of our knowledge and history given by patient. The abscess was treated by percutaneous ultrasound-guided aspiration drainage and systemic antibiotic therapy.

CASE REPORT

A 40-year-old male presented with a history of pain with difficulty during micturition and swelling at distal 1/3 of the penis with erythema for 15 days. The patient was a known case of type 2 diabetes mellitus taking medication regularly as per history narrated by him. Physical examination revealed tenderness on the ventral aspect of distal 1/3 of the penis without skin erosion. The scrotum, testicular, and epididymal examinations were normal. Laboratory examination revealed total leukocyte count of 10700/mm³,

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random blood sugar level was 244 mg%, and urine analysis revealed 30–40 white blood cell per high-power field. He was referred for ultrasonography (USG) of the penis and scrotum.

Ultrasound of the penis was done with 17 MHz high-frequency transducer on Canon Aplio 400 system (Otawara, Tochigi, Japan). On USG, a 27 mm \times 9 mm \times 13 mm collection noted in the corpus spongiosum on the posterior aspect of the distal penile urethra [Figure 1].

The abscess was drained percutaneously under ultrasound guidance. After taking well-informed consent local anesthesia was given. Abscess was drained by inserting 16G needle [Figures 2 and 3], the drained pus was sent for microbiological examination and pus culture. The pus culture revealed acinetobacter species and sensitivity to linezolid; hence, the patient was treated with course of 1 week of intravenous (IV) linezolid antibiotic. On follow-up, USG no residual collection was noted [Figure 4].

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DISCUSSION

USG is excellent tool for the evaluation of normal and pathologic penile conditions with optimal accuracy in real time.^[1]

The penis is composed of three cylindrical bodies of endothelium-lined cavernous spaces: the paired dorsolateral corpora cavernosa, and single, ventral, midline corpus spongiosum.^[2] The corpus spongiosum arises within the perineum from the bulbous spongiosum and extends anteriorly to form the glans penis. The tunica albuginea surrounds both the corpora cavernosa and the corpus spongiosum. The Buck fascia surrounds the corpora cavernosa and separates them from the corpus spongiosum.^[3] External to the Buck's fascia is a loose layer of subcutaneous connective tissue [Figure 5].

The male urethra varies from 20 to 25 cm in length and consists of anterior and posterior portions, each of which is subdivided into two parts. The anterior urethra extends from the external meatus to the inferior edge of the urogenital diaphragm, coursing through the corpus spongiosum. The anterior urethra



Figure 1: Gray-scale penile ultrasonography. Transverse and longitudinal scan of the penis shows corpus spongiosum (CS) shows a well-defined mixed echogenic collection (solid circle) on the posterior aspect of the distal penile urethra. Corpus cavernosa (CC), Urethra (open arrowhead)



Figure 3: A transverse scan of the dorsal aspect of the midshaft of the penis shows the two paired corpora cavernosa (CC), the abscess in the corpus spongiosum (oval) is been drained by the 16G needle (solid arrowhead)

is conventionally divided into the penile and bulbous parts at the junction of the penis with the scrotum.

The posterior urethra is divided into the prostatic and membranous urethra. The prostatic urethra is approximately 3.5 cm long and passes through the prostate slightly anterior to the midline.

Corpus spongiosum abscess is a rare entity. In this case, patient presented with pain and burning sensation during micturition on the ventral aspect of the penile urethra. From a given history of uncontrolled type 2 diabetes mellitus given by patient immunocompromised status could be considered as one of the causative factors for this abscess. Urethral stricture can lead to urethral disruption causing extravasation of infected urine subsequently causing periurethral abscess.^[4] Subepithelial progression of an infection may lead to periurethritis, infection of periurethral glands, and abscess formation.^[5] To the best of our knowledge and history given by the patient, there was no history of any urethral catheterization, trauma, or urethritis. A case of corpus spongiosum abscess associated inpatient of rectal cancer diagnosed on computer tomography and magnetic resonance imaging have been mention in Japanese literature.^[6] No case of corpus spongiosum abscess diagnosed on USG has been reported with no associated etiology except



Figure 2: A transverse scan of the dorsal aspect of the midshaft of the penis shows the two paired corpora cavernosa (CC), the 16G needle (arrowhead) is inserted in the abscess in the corpus spongiosum (oval)



Figure 4: Gray-scale penile ultrasonography. Transverse and longitudinal scan of the penis shows no residual collection on follow-up ultrasonography of the patient

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Figure 5: A transverse scan of the dorsal aspect of the midshaft of the penis shows the two paired corpora cavernosa (CC) containing paired cavernosal arteries (oval), the corpus spongiosum (CS) containing the urethra (open arrowhead). The tunica albuginea (TA) appears as a thin echogenic line surrounding the penile bodies (solid arrowhead). Note that the Buck fascia (open arrow) is visualized near the CS, while the remaining portion is stuck on the TA

for immunocompromised status making it spontaneous abscess of corpus spongiosum.

In this patient, no underlying cause could be associated except for diabetes mellitus which can be a risk factor for the penile urethral abscess. Clinical suspicion of a penile urethral abscess based on local swelling and pain was confirmed by ultrasound.

Surgical evacuation is considered to be first line in treatment of penile abscess followed by systemic antibiotics.^[7] In this case, the abscess was treated by less invasive interventional technique, i.e., image-guided aspiration with adjuvant IV antibiotic for successful resolution of the abscess without long-term sequelae.

CONCLUSION

Non traumatic periurethral abscess is rarely seen. In this case of non-traumatic periurethral abscess in penile urethra restricted to corpus spongiosum only was not reported before. USG is real time and dynamic investigation modality for accurate localization and evaluation and management of the penile abscess.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that his name and initials will not be published and due efforts will be made to conceal the identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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