Superselective angioembolization in posttraumatic pseudoaneurysm of corpora cavernosa presenting as acute urinary retention

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INTRODUCTION

Traumatic pseudoaneurysm of corpora cavernosa is unusual but a recognized condition. Pseudoaneurysm generally occurs from a penetrating injury and is occasionally secondary to blunt trauma.¹ Traumatic pseudoaneurysm of corpora cavernosa frequently causes nonischemic priapism. Pseudoaneurysm of corpora cavernosa presenting with acute urinary retention has not been documented in the literature as of date.

CASE

A 47-year-old male sustained blunt trauma to the perineum secondary to an accidental fall from a wooden chair; 2 h later, he developed difficulty in voiding and poor flow of urine. There was no history of priapism. His complaints increased over the next 4 days, and the patient developed retention of urine. On examination, suprapubic fullness was present, genital and perineal examinations were normal. He underwent retrograde urethrogram, which was normal. Ultrasonography (USG) of the abdomen revealed 500 cc of urine. 16 Fr Foley catheter was passed without any difficulty, and residual urine was drained. Catheter-free trial was given 10 days later but his complaints persisted and he was re-catheterized and referred to our institution for further management.

A cystic swelling was palpable at the root of penis and an USG of the perineum was done, which revealed a hypoechoic cystic lesion of 23 mm × 15 mm × 22 mm size in the corpora cavernosa at 12 o’clock position [Figure 1a]. Color Doppler detected pseudoaneurysm of corpora cavernosa with two feeder vessels [Figure 1b]. Diagnostic angiography and subsequent selective arterial embolization of feeder arteries were undertaken.

Under local anesthesia, a right brachial artery was cannulated and a 6 Fr sheath was placed, followed by insertion of a diagnostic catheter. A dye study was performed, which was suggestive of pseudoaneurysm at corpora cavernosa

ABSTRACT

Pseudoaneurysm of corpora cavernosa is rare and its presentation as acute urinary retention has not been reported in the literature so far. We report a 47-year-old gentleman who presented with acute urinary retention. Doppler ultrasound revealed pseudoaneurysm of corpora cavernosa at bulbar urethra region with 2 feeder vessels with turbulent flow inside. Selective internal pudendal artery angiogram was done and two feeder arteries from bilateral pudendal arteries were confirmed. Trans perineal thrombin & fibrinogen instillation and selective coil embolization of left internal pudendal artery were done, leading to complete obliteration of pseudoaneurysm and alleviation of patient’s symptoms.

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with feeding arteries from bilateral cavernosal arteries [Figure 2a and b]. Under USG guidance, a mixture of 2 ml thrombin and 2 ml fibrinogen was instilled into pseudoaneurysm transperineally. Postembolization angiogram revealed obliteration of flow from the right pudendal artery and significantly reduced flow from the left pudendal artery. By performing a transarterial angiogram, the left internal pudendal artery was localized and microcoils were placed in the feeder artery. Postembolization angiogram showed complete obliteration of flow. The procedure was uneventful. Postembolization Doppler was done on postoperative day 1, which revealed complete obliteration of blood flow. Per urethral catheter was removed, following which the patient voided well without any postvoid residue. At 3-month follow-up, the patient was asymptomatic with retained potency.

DISCUSSION

Posttraumatic acute urinary retention due to urethral injury is common. However, pseudoaneurysm of the corpora cavernosa secondary to perineal or penile trauma would usually cause painless priapism, not retention. In the case reported by Govindarajan et al., a patient with pseudoaneurysm of corpora cavernosa presented with a vague unilateral hip pain. Excluding the above case, all patients reported in the literature with pseudoaneurysm of corpora cavernosa presented with priapism. Our patient is unique wherein he presented with urinary retention and no priapism. The absence of an arterio cavernous fistula may be the reason for the nondevelopment of priapism. Our patient developed a pseudoaneurysm of cavernosal arteries immediately after sustaining perineal trauma, which by compression of bulbar urethra led to retention of urine.

Color Doppler USG is currently considered the radiological investigation of choice for diagnosis of pseudoaneurysm of corpora cavernosa as it is sensitive, noninvasive, and widely obtainable. It can assess arterial inflow and venous leakage. Doppler USG shows extravasation of blood from the traumatized cavernosal artery as a characteristic color blush. In addition to the identification of arterial-lacunar fistula, the penile vasculature can be evaluated to identify the feeding vessels.

Bilateral internal pudendal angiography is the gold standard in the diagnosis of pseudoaneurysm,[2] but it is commonly agreed that color Doppler USG is as sensitive as angiography for diagnosis of pseudoaneurysm.

Definitive and minimally invasive treatment of pseudoaneurysm includes selective arterial embolization of feeder vessels. Wear et al.[4] performed the first embolization of a high-flow priapism in 1977, using an autologous clot. Autologous clots, Gelfoam, n-butyl cyanoacrylate, and metallic microcoils are common embolic agents. The radiopaque characteristic of coils allows its precise deployment, thereby the most preferred embolic agents. Another treatment option is surgical ligation of feeding arteries which yields variable results in terms of potency.[5]

Our patient was young and sexually active; hence, transperineal embolization of pseudoaneurysm was planned instead of performing bilateral angioembolization of cavernosal arteries, which can lead to erectile dysfunction. Angiography suggested narrow communication with both cavernosal arteries. Post embolization, the flow from the right side was obliterated but the left feeding artery required embolization with microcoils. Embolization ensures a minimally invasive, less time-consuming, and definitive treatment of pseudoaneurysm of corpora cavernosa.

CONCLUSION

Pseudoaneurysm of corpora cavernosa is an unrecorded cause of acute urinary retention. We found posttraumatic pseudoaneurysm of corpora cavernosa compressing the bulb urethra as a cause for acute urinary retention which resolved after combined transperineal and angioembolization.

Declaration of patient consent

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

REFERENCES

1. Bennett DE, Cherry JK. The natural history of traumatic aneurysms of the aorta. Surgery 1967;61:516‑23.
2. Govindarajan A, Sai PM, Anupama C, Joseph SS. Post-traumatic cavernosal artery pseudoaneurysm presenting as right hip pain: An imaging evaluation. J Clin Imaging Sci 2012;2:15.
3. Lue TF, Hellstrom WJ, McAninch JW, Tanagho EA. Priapism: A refined approach to diagnosis and treatment. J Urol 1986;136:104‑8.
4. Wear JB Jr., Crummy AB, Munson BO. A new approach to the treatment of priapism. J Urol 1977;117:252‑4.
5. Kwak BK, Joo SS, Lee HY, Shim HJ, Kim YG, Kim KS. Post-traumatic arterial priapism: Doppler ultrasonographic findings and therapeutic embolization. J Korean Radiol Soc 1997;36:307‑11.

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