Case Report

Postsurgical High Flow Priapism Treated by Transarterial Embolizaion: A Case Report

Chalida Aphinives MD*,
Vallop Laopaiboon MD**, Akekarin Chotikawanit MD***

** Diagnostic Radiologist, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand*
*** Interventional Radiologist, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand*
**** Urologist, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand*

The authors report a case of painful priapism, caused by iatrogenic arterial injury from endoscopic internal urethrotomy procedure for stricture urethra, which increased blood circulation in the penis. On physical examination, there was sustained erection, turgid corpora, swelling of penis and prepuce and tenderness at the perineal area. Bilateral selective internal iliac angiograms showed a prominent right internal pudendal artery and deep penile artery terminating in an arterio-sinusoidal fistula. This case was treated by superselective arterial embolization with Gelfoam pledgets and the treatment was successfully carried out in one session. However, the patient sill had erectile dysfunction for six months. After that, the erectile dysfunction gradually improved. Finally, the patient had normal erectile function one year after embolization.

Keywords: *Priapism, Embolization*

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Priapism is defined as a prolonged penile erection of more than six hours in the absence of sexual stimulation and persists despite orgasm. Traumatic high-flow priapism occurs as a result of an arterio-venous shunt at the base of the penis. The patho-physiology resembles that of compartment syndrome and is associated with a high risk of subsequent erectile dysfunction[1,2]. Until now, only two cases of priapism secondary to surgical intervention have been reported[3,4]. Treatment of high flow priapism is not an emergency because patients are at a low risk of permanent complications, even though reduced potency has been reported in patients with untreated longstanding disease[5]. Currently superselective arterial embolization is recommended for the management of high flow priapism in patients who request treatment.

Case Report

A 40-year-old patient presented with difficult urination. At a community hospital, he had received suprapubic cystostomy and was then referred to a provincial hospital. He was diagnosed as incomplete stricture at distal bulbous part of urethra. He underwent transurethral endoscopy and internal urethrotomy. One day after operation, priapism developed. Therefore, the urologist performed corporoglanular (Winter) shunt and penile irrigation. However, the penile tumescence still existed with gross hematuria. The patient was then referred to Khon Kaen Hospital.

On physical examination, there was sustained erection, turgid corpora, swelling of penis and prepuce, and tenderness at the perineum. Bleeding from meatus, ecchymosis of glans penis, grade II enlarged prostate gland was observed. Color Doppler sonogram showed venous sinusoids and the corpora were distended and the spectral pattern in the deep artery of penis was high velocity flow (Fig. 1A-C). Bilateral selective internal iliac angiograms showed a prominent left internal pudendal artery and deep penile artery terminating in an arterio-sinudoidal fistula (Fig. 2A-B). The right internal pudendal artery was normal, with no contribution to the fistula. The left internal pudendal artery was selectively entered using 5-Fr Terumo Grid catheter and 2.7-Fr Progreat Micro catheter that was maneuvered into the deep artery of penis. The fistula was embolized using Gelfoam pledgets (Fig. 3A-B).

Correspondence to:
Aphinives C, Diagnostic radiologist Faculty of Medicine, Khon Kaen University, 123 Group 16, Mittraparp Rd, Muang district, Khon Kaen province, 40002, Thailand.
Phone: 043-348-389, Fax: 043-348-389
E-mail: c_aphinives@yahoo.com

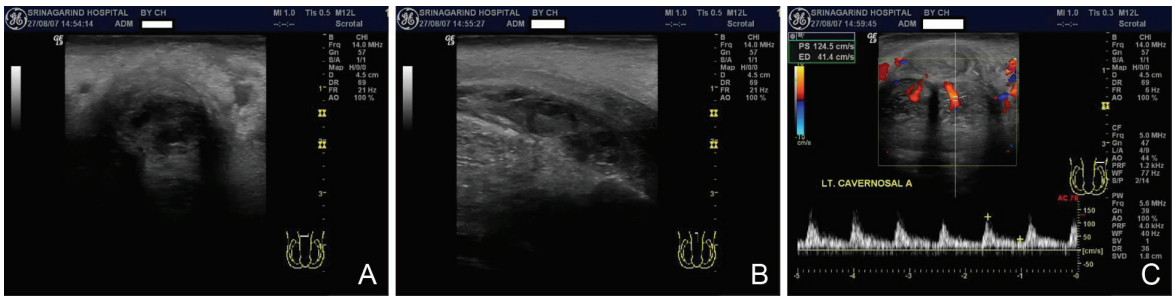

Fig. 1 Ultrasound with color Doppler sonogram finding in high flow priapism: A) transverse plane, B) longitudinal plane, US image shows enlargement and swelling of corpus cavernosum by evidence of irregular hypoechoic region within echogenic cavernous tissue, C) color Doppler sonogram shows high velocity flow in deep artery of penis

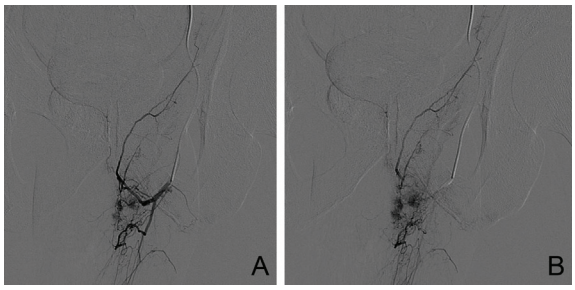

Fig. 2 (A, B) Superselective left internal pudundal arteriogram shows blood pooling resulting from arteriocavernosal fistula by injury to the cavernosal artery

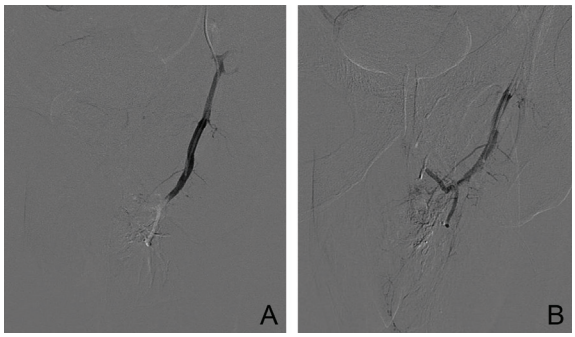

Fig. 3 (A, B) Post embolization arteriogram shows a completely embolized left pudendal artery

The priapism resolved in 24 hours after embolization, with turgidity persisting for a further two days. The patient was discharged. Two weeks later, the patient was followed up at the OPD. The urethral catheter was removed and normal urination without hematuria was observed. However, the patient had erectile dysfunction for six months. After that, the erectile dysfunction gradually improved. Finally, the patient had normal erectile function one year after embolization.

Discussion

High flow priapism is less common than low flow. It is usually less painful. In many reports, the only clinical symptom of high flow priapism following perineal or penile traumas is generally a prolonged, painless, and semi-rigid penile erection without any urogenital symptoms. High flow priapism is mainly caused by traumatic arterio-cavernous fistula. The standard therapy is a transcatheter embolization of the fistula.

The authors report a case of painful priapism, caused by ruptured artery from iatrogenic injury to the penis at the perineal area, which increased blood circulation in the penis. This fistula might occur from direct partial injury or crushing injury to the arterial wall during deep urethrotomy. The injured artery should immediately contract. However, the blood flow increased to the sinusoidal tissue, which had less pressure zone, forming the arterio-sinusoidal fistula. Thus, the symptoms of priapism presented one day afterwards. This case was treated by superselective arterial embolization with Gelfoam pledgets. The treatment was successfully carried out in one session.

Potential conflicts of interest

None.

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รายงานผู้ป่วยภาวะองคชาตแข็งตัวตลอดที่เกิดหลังการผ่าตัด และได้รับการรักษาด้วยวิธีอุดหลอดเลือดผ่านหลอดเลือดแดงด้วยเทคนิครังสีร่วมรักษา

ชลิดา อภินิเวศ, วัลลภ เหล่าไพบูลย์, เอกรินทร์ โชติกวณิชย์

รายงานผู้ป่วยภาวะองคชาตแข็งตัวตลอดร่วมกับอาการเจ็บปวด เกิดจากผนังหลอดเลือดแดงฉีกขาดระหว่างการผ่าตัดแก้ไขภาวะท่อปัสสาวะตีบ จากการตรวจร่างกายพบว่า องคชาตแข็งตัวตลอดตัวองคชาต และหนังหุ้มมีลักษณะบวม มีอาการเจ็บที่ท่อปัสสาวะ เมื่อทำการตรวจสวนหลอดเลือดแดงพบหลอดเลือดแดง internal pudendal โป่งพอง และพบ arterio-sinusoidal fistula จึงทำการรักษาโดยใช้เจลโฟมไปอุดหลอดเลือดแดง โดยเทคนิครังสีร่วมรักษา ซึ่งได้ผลเป็นอย่างดี อย่างไรก็ตามผู้ป่วยมีภาวะองคชาตไม่แข็งตัวเป็นเวลาอีก 6 เดือน หลังการรักษา ต่อมาภาวะผิดปกติดังกล่าวค่อย ๆ ดีขึ้น จนในที่สุดองคชาตของผู้ป่วยกลับมาแข็งตัวได้เป็นปกติ หลังการรักษาประมาณ 1 ปี