

Pediatrics

High-flow priapism and urinary retention

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Introduction

Priapism, considered a medical emergency, is a relatively uncommon condition.¹ Patients presenting with priapism require immediate intervention in an attempt to relieve those with ischemic priapism as promptly as possible.

High flow priapism, the outcome of an exaggerated arterial flow into the cavernous artery, is not always an emergency and it can be at first treated only by observation.^{1,2} Both types of priapism can be distinguished by gas determination of the blood drawn from the cavernous bodies.³ We report on the case of a child with arterial priapism presenting with urinary retention, which led us to intervene by applying superselective arterial embolization.

Material and methods

Case report

A 9-year old child, hospitalized on 7/31/2017 with a history of falling onto a bicycle crossbar, legs apart, 4 days earlier. At the time he was seen in an Emergency Service and was given only symptomatic medication. When seen in our Service the child had extreme voiding difficulty. At examination the child had a priapism that appeared the day after the incident and that persisted by the time of the care, in addition to bruising in the perineal region. No pain in the penis that was erect, however still feeling much pain in the location of the injury. When trying to void he presented a staccato flow, however with no hematuria and no urine leakage into the perineum. An ultrasound

examination showed a hematoma involving the entire subcutaneous tissue of the perineal region, with no signs of urethral ruptures. He had no blood disease and all lab exams were normal. Because of the priapism we decided not to perform an urethrography. Blood gas determination of the cavernous bodies showed: pH = 7,46; pCO₂ = 31 mmHg; HCO₃ = 22 mmol/L; Sat O₂ = 99%. Due to the intense difficulty to void we chose to apply an arterial embolization with a certain urgency and on the Aug/1st//2017 we performed a procedure using “Gelfoam” that was injected into the two internal left and right pudendal arteries and into the cavernous fistula (Figs. 1 and 2). A microcatheter Progreat 2.7 – Terumo was used. Following the embolization there was no further contrast enhancement (Fig. 3), the priapism disappeared, and the child started voiding with a continuous stream of good caliber. Currently he is well, his penis has a normal aspect, seven months after the procedure.

Comment

High flow priapism is a rare condition in which there is an abnormally elevated arterial flow into the cavernous arteria.¹ There are cases in which the erection disappears spontaneously following a few days of observation; however, there are cases in which the erection is indefinitely prolonged. Compression and “ultrasound-guided” compression of the fistula have been proposed as minimally invasive management alternatives to be performed in children. The “ultrasound-guided” percutaneous thrombin injection showed to be effective in an 8-year old child, with post-trauma priapism like our patient.⁴ The American Urological Association recommends an initial period of observation;

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Fig. 1. Pelvic arteriography evidencing contrast extravasation through the right and left branches of the pudendal arteries (arrows).

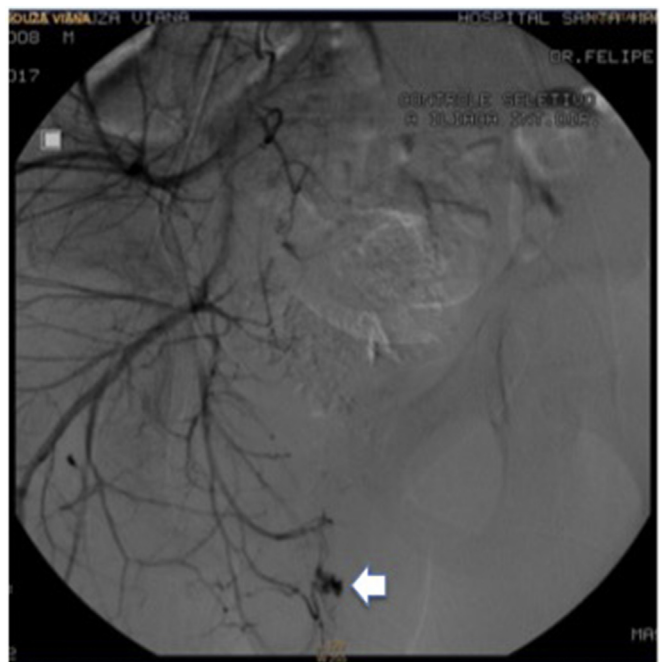


Fig. 2. Arteriography with superselective catheterization of the left and right internal pudendal arteries with microcatheter Progreast 2.7 – Terumo (arrow).

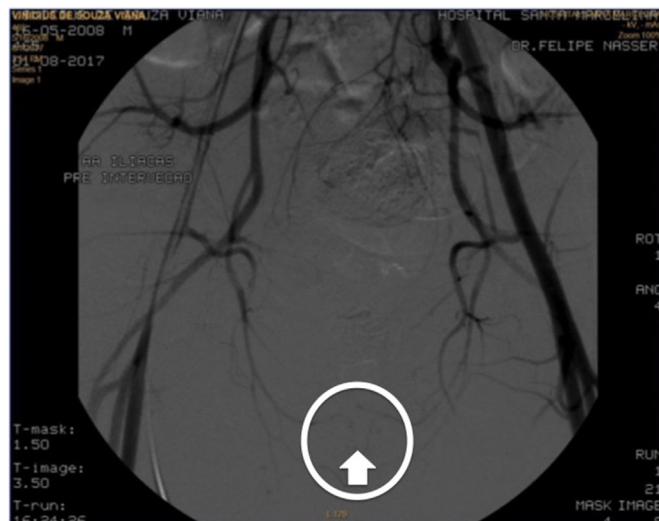


Fig. 3. Angiographic control following embolization showing complete occlusion of the “shunts” (arrow).

should the penile intumescence persist, an arteriography should be performed and, if possible, embolization of the arterial shunt, and, as last resource, surgical intervention for ligation of the fistula.¹

Our patient had an unusual difficulty to void which at first led us to think of a partial injury to the urethra; an ultrasound examination, however, ruled out the existence of any urethral injury, showing only an infiltrative perineal injury possibly caused by the arterial injury that, associated with the excessive intumescence of the penis, were most likely the causes of the severe voiding difficulty.

The angiographic management used enabled embolization of the “shunts” of communication with the cavernous artery (Figs. 1–3) and proved to be effective in the treatment of both the priapism and the urinary symptoms.

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