Urethrorrhagia Secondary to Traumatic Penile Pseudoaneurysm

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A B S T R A C T

Male 12-year-old patient presenting urethrorrhagia after straddle injury associated to hemodynamic instability secondary to traumatic formation of pseudoaneurysm of the pudendal artery in the bulb of the penis. Satisfactory treatment with angiographic selective and direct percutaneous embolization was performed, with resolution of the bleeding.

Introduction

Straddle injuries occurs primarily in prepuberal kids, being able to present clinically with urethrorrhagia due to blunt urethral lesions.1 The formation of pseudoaneurysms, in the other hand, it is an infrequent event and in most cases it is produced after arterial punctures for angiographic procedures more than blunt injuries.2 More infrequently yet is the presentation of urethrorrhagia due to the formation of a pseudoaneurysm instead of urethral injury. We present an infrequent case of traumatic pseudoaneurysm after a straddle injury, presented clinically by severe urethrorrhagia with secondary hemodynamic instability.

Case report

12-year-old male patient, without relevant medical-surgical backgrounds. Showed to the emergency department 10 h after suffering a straddle injury after falling from his bicycle, presenting with frank urethrorrhagia and intense pain.

He was admitted afebrile, tendency to hypotension, without tachycardia. Presented with volume growth, induration and pain to superficial palpation of the perineum, without genital pain nor hematoma.

Spontaneous micturition was maintained but with active urethrorrhagia and blood clots. In the pelvis radiography no traumatic skeletal lesions were observed and both kidneys and bladder appeared normal on urgency sonographic evaluation.

The patient was admitted to a critical care unit for monitoring, were he manifested hemodynamic instability with progressive hematocrit drop. After stabilization, conservative management was decided with tranexamic acid and compressive dressings.

Second day of hospitalization a CT angiogram was made in which a lesion suggestive of a pseudoaneurysm was observed, without contrast extravasation of the urethra (Fig. 1). Because no active bleeding was present and there was no risk for future penile dysfunction, embolization was not done. Instead, cystostomy was made which gave exit to hematic urine.

Through the following days the patient evolution was satisfactory, without any new urethral bleeding episodes until seventh day of hospitalization in which urethral bleeding reactivated. Doppler ultrasound was made showing a 1 cm penile pseudoaneurysm (Fig. 2) and interventional radiology embolization was decided.

With angiography (Fig. 3a and b) the presence of a pseudoaneurysm in the penile bulb was confirmed, dependent of pudendal artery. After helical microcoil embolization, a persistence in flow was visible from left and right (Fig. 3c), so direct percutaneous ultrasound-guided embolization with cyanoacrylate was made, after which a total absence of flow was observed on both Doppler and angiographic control.

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Figure 1. Pelvic CT Angiogram made the second day of hospitalization, evidencing a lesion suggestive of a pseudoaneurysm, without urethral extravasation.

Figure 2. Doppler ultrasound showing a 1 cm vascular lesion with Ying-Yang sign at the bulb of the penis, compatible with a pseudoaneurysm.
Asymptomatic evolution without new urethral bleeding. Doppler ultrasound control confirms absent flow in pseudoaneurysm (Fig. 4). Patient was discharged with outpatient monitoring.

**Discussion**

Straddle injuries even though frequent and less severe, can be associated with posterior urethral trauma, urethral bleeding being
one of its symptoms. Nevertheless, urethral bleeding can be determined by other causes that while less frequent, are important to keep in mind for differential diagnosis. Pseudoaneurysm formation as cause for urethral bleeding is an extremely uncommon event, with few published cases. Formation of this pseudoaneurysms in internal pudendal arteries and their branches are described for external trauma as much as traumatic catheterization, but urethrorrhagia, also present in some cases, was attributed to urethral trauma and not to pseudoaneurysm, which is only described in one previous case.

Conclusion

Urethrorrhagia secondary to pseudoaneurysm formation is a highly infrequent but extremely urgent event, with massive bleeding that can lead to hypovolemic shock. Literature about it is sparse, so management has been determined by medical experience. Its surgical resolution, either by open or endoscopic access, presents greater difficulties upon the risk of an even greater urethral trauma and incapacity of hemostasis, so treatment of choice in active bleeding is embolization, which should be evaluated on its own risks.

Conflict of interest

There is no conflict of interest.

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