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# INTERMITTENT PROJECTILE URETHRAGGIA: *an unusual sequela of a skateboarding accident in an adolescent male*

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## Abstract

Our patient suffered a perineal straddle injury, resulting in right cavernosal artery pseudoaneurysm in combination with a cavernosal-urethral fistula. The urethra failed to heal after several weeks and the patient presented with severe intermittent urethral bleeding. The pseudoaneurysm was successfully treated by coil embolization, with resolution of the bleeding. The patient recovered completely, with normal erectile and voiding function. This type of injury is very rare in literature: traumatic cavernosal arterial pseudoaneurysm is known to cause high flow priapism, but in this case additional cavernosal-urethral fistula resulted in a severe urethraggia. This is the only case, to our knowledge, of delayed urethral bleeding from cavernosal artery pseudoaneurysm in combination with a cavernosal-urethral fistula.

## Case Report

The patient was a 14-year old healthy male patient who presented to the Emergency Department after sustaining a straddle injury during a skateboarding accident. There was blood at the urethral meatus and he was not able void. A Retrograde Urethrogram (RUG)

revealed a bulbar defect with contrast extravasation (Figure 1). Under fluoroscopic guidance, a urethral catheter was placed successfully for primary realignment.

Repeat RUG at three weeks post injury revealed persistent extravasation. At week five post-injury, the patient was taken to the operating room where cystoscopy was performed to evaluate the area of extravasation and help plan for delayed repair. At that time a suprapubic tube was also placed and urethral catheter removed to allow for urethral rest prior to the definitive repair. The linear open defect was very apparent with no evidence of healing at that time (Figure 2).

The patient tolerated the procedure well and had an uneventful course until three days post-suprapubic tube placement day (POD #3), when he presented to the emergency department with a chief complaint of a sudden, massive bleed from his penis overnight. The bleeding had stopped prior to his presentation to the emergency department. At evaluation in the emergency department, his vital signs were normal, his hematocrit was 40, and the urine from the suprapubic tube was light pink with no active bleeding. He was admitted for observation. There were no bleeding events on POD#4, and plan was for discharge on POD#5 (hospital day #2). However, the nursing staff witnessed “projectile bleeding” from the patient’s penis in the early AM on POD#5. The patient’s vital signs remained stable, but his hematocrit (HCT) dropped to 31 at that time. A urethral catheter was placed to tamponade the bleeding, which was successful.

There were no bleeding episodes until POD #7 (hospital day#4), when overnight the patient had acute bleeding around the catheter. He became hypotensive, tachycardic and his HCT dropped to 21. He was transferred to the intensive care unit and received a transfusion of two units of packed red blood cells (PRBC).

Given the delayed and intermittent nature of the bleeds, there was suspicion for pseudoaneurysm. The Interventional Radiology service was consulted and the patient was taken for angiogram. This revealed a right cavernosal artery pseudoaneurysm which was successfully coiled, controlling the hemorrhage (Figure 3).

The patient's vitals rapidly normalized and he received two more units of PRBC. He was discharged home two days later with a stable HCT of 31. He was discharged with a Foley catheter in place, capped, and a suprapubic tube to gravity.

At two weeks follow-up, patient had had no further bleeds and was having normal erections. A voiding cystourethrogram (VCUG) revealed resolution of the extravasation; the catheter was removed. At four week follow up, the patient was voiding normally, and the suprapubic tube was removed. On subsequent follow-up, he has continued to void well and his erections are normal.

## **Discussion**

Our patient in this report suffered from a delayed right cavernosal artery pseudoaneurysm in combination with a cavernosal-urethral fistula, which was successfully treated by coil embolization. This is very rare in literature, as cavernosal arterial pseudoaneurysm most commonly results in a high flow priapism (1,2). There must also be a cavernosal-urethral fistula, as in this case, for there to be urethral bleeding.

To our knowledge, there are few reported cases similar to our own. One such case described was a traumatic urethral pseudoaneurysm that resulted in urethral pseudodiverticulum (3). Chen et al described a case where there was urethral bleeding from bilateral pudendal artery injuries from a severe hip fracture (4). José e al reported a case most to ours, where a 12-year-old patient presented with urethrorrhagia immediately following a straddle injury (5). Our case is unique, however for several reasons. First, the presentation was delayed by several weeks. Second, the bleeding was intermittent. Third, the severe bleeding was from a terminal branch of the pudendal artery. Fourth, the cavernosal artery pseudoaneurysm in combination with a cavernosal-urethral fistula resulted in urethraggia (as opposed to high flow priapism).

Literature review revealed that the presentation of priapism or bleed from these injuries is of usually of immediate onset or at most within one week of the initial trauma (1-6).

Embolization was effective in all these cases, as it was in our case. Furthermore, as we found in our case, there is evidence that this type of intervention is effective and safe in adolescent patients (7).

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Figure 1: Initial retrograde urethrogram after injury with bulbar extravasation



Figure 2: Persistent bulbar defect noted on cystoscopy during suprapubic tube placement



Figure 3: Penile angiogram revealing a right cavernosal artery pseudoaneurysm (a) and successful coil embolization (b)

a.)



b.)

