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Scrotal Cystocele Managed With Trans-scrotal Neocystostomy Tube

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ABSTRACT

Inguinal herniation of the bladder is relatively common, reported in as many as 4% of inguinal hernias. In the majority of those cases, it is a sliding hernia that is noted at time of herniorrhaphy. Complete herniation of the bladder or "scrotal cystocele" is very rare and normally managed with herniorrhaphy. This case report presents a case of massive inguinal scrotal herniation of the urinary bladder successfully managed with trans-scrotal drainage via neocystostomy tube.

Introduction

The incidence of inguinal hernias involving the bladder is as high as 4%.[1] These are typically small direct herniations and do not pose any special barriers to management provided the bladder is recognized. The proposed management is surgical repositioning of the bladder followed by herniorrhaphy.[2] A very rare subset of these hernias include the entire bladder, referred to as "Scrotal Cystocele" or "Massive Inguinal Scrotal Bladder Herniation." This set of patients present in acute urinary retention and often have recurrent urinary tract infections. We present the case of urosepsis from scrotal cystocele managed with trans scrotal drainage via neocystotomy.

Case presentation

A 59 year old unhealthy male presented to the emergency department with 12 hour history of generalized weakness, chest pain, dyspnea, and back pain. He has a significant history of chronic obstructive pulmonary disease requiring 3 L nasal cannula oxygen at baseline, coronary artery disease with history of bypass surgery, insulin dependent diabetes mellitus, obstructive sleep apnea, morbid obesity with BMI 46.3, and urinary retention managed for several years with indwelling urinary catheter by a provider outside of our group. He wished to have a Do Not Resuscitate order in his chart. Imaging from a prior hospitalization was available that revealed a scrotal cystocele decompressed by an indwelling urethral catheter and mild hydronephrosis with ureters inserting into the bladder cephalad to the symphysis pubis, still within the confines of the boney pelvis (Fig. 1).

He initially presented to our service with tachycardia, hypertensive, and increasing oxygen requirements. Complete blood count and metabolic panel obtained revealed a significant leukocytosis and acute renal insufficiency but were otherwise normal. CT obtained revealed a distended bladder within the right hemiscrotum. Compared to prior CT, the bladder trigone had migrated outside of the pelvis and the ureters were now coursing anterior and distal to the pubic symphysis (Fig. 2). The catheter was removed in order to obtain a sterile urinalysis but could not be replaced.

He subsequently became hypotensive and was transferred to the intensive care unit. There we preformed a bedside ultrasound to locate the bladder. Using local anesthetic, we placed two holding sutures into the anterior scrotum. Tenting the bladder anteriorly, we placed a 14fr catheter using a Cook One Step Suprapubic Catheter Introducer (Fig. 3). He was stabilized in the ICU and discharged without incident 5 days later. Follow up cystoscopy was preformed without any focal findings of ischemia. Catheter exchanges have been preformed monthly for the past 6 months through his neocystotomy tube. He has had no symptomatic infections either.

Discussion

Inguinal hernias involving a small potion of bladder are relatively common. The direct herniation of the bladder and ureters is a rare event but has been described in the literature. The associated co-morbidities seen in such cases of a scrotal cystocele are typically advanced age, bladder outlet obstruction from BPH, loss of bladder tone, and loss of pelvic support seen in morbid obesity.[1]

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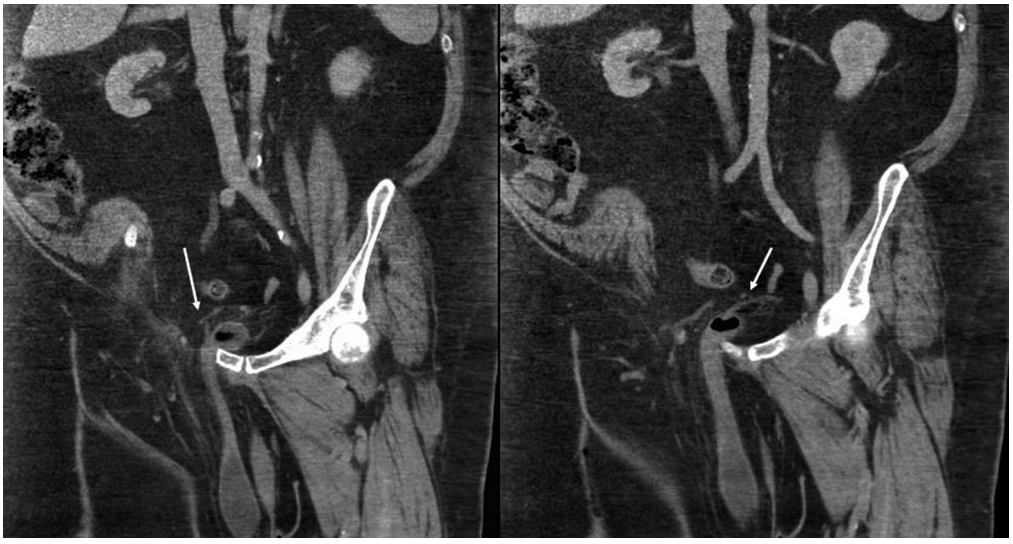

Figure 1. CT Scan from 1 year prior to presentation. Left and right ureters noted inserting into the bladder inside the boney pelvis (arrows).

The predominate symptom associated with scrotal cystocele is 2 stage voiding, or voiding followed by manual reduction of inguinal hernia. The original description of scrotal cystoceles described three types: paraperitoneal (associated with abdominal contents), intraperitoneal (surrounded by abdominal contents), or extraperitoneal (no abdominal contents).[2] Diagnosis of the different types of scrotal cystocele requires imaging, with computed tomography providing the best anatomic description.

The prior authors suggested all scrotal cystoceles be managed by either open reduction of bladder and herniorrhaphy or partial cystectomy followed by herniorrhaphy.[2] The reasoning for reduction of the bladder is for fear of bladder infarction[3] although bladder infarction has never been described without concomitant small bowel infarction and need for small bowel resection. The presentation of a strangulated small bowel hernia is dramatically different from that of an extraperitoneal scrotal cystocele and would direct attention to emergent management of small bowel pathology. Herniation of the bladder into the scrotum without small bowel contents has been described as an extraperitoneal scrotal cystocele[2] and the management of an extraperitoneal scrotal cystocele has not been delineated from an intraperitoneal scrotal cystocele.

In our case, the individual had adequate anatomic imaging and a completely extraperitoneal scrotal cystocele. We recognized that the small bowel was not associated with his scrotal cystocele and we could safely create a novel approach to his urinary drainage. In addition, he required urgent drainage as he was hemodynamically unstable and due to compromised overall health as well as his DNR request, he was a poor candidate for general anesthesia. Since original presentation, his catheter continues to drain without bladder ischemia or symptomatic infection (8 months post hospitalization).

Conclusion

Inguinal hernias rarely have only the urinary bladder as their principle contents. The rare cases of scrotal cystoceles have previously been managed with herniorrphaphy. We have successfully managed a scrotal cystocele with a trans scrotal neocystotomy tube. To our knowledge this is the first description of this novel management. Our approach can only safely be preformed in a patient that has had proper anatomic imaging. Knowledge of anatomy and careful assessment of an acute presentation of urinary retention

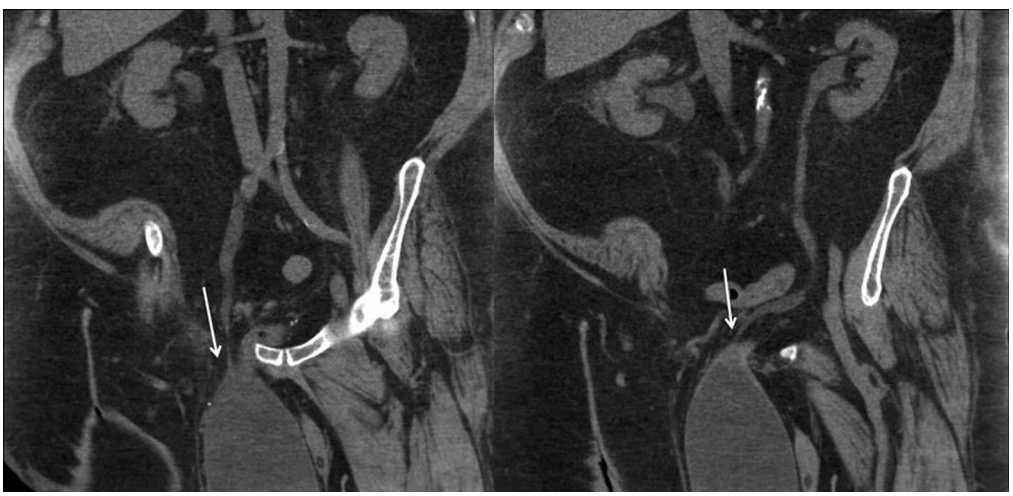

Figure 2. CT scan at time of presentation. Both ureters now with hydronephrosis and inserting into the bladder anterior to the pubic symphysis (arrows).

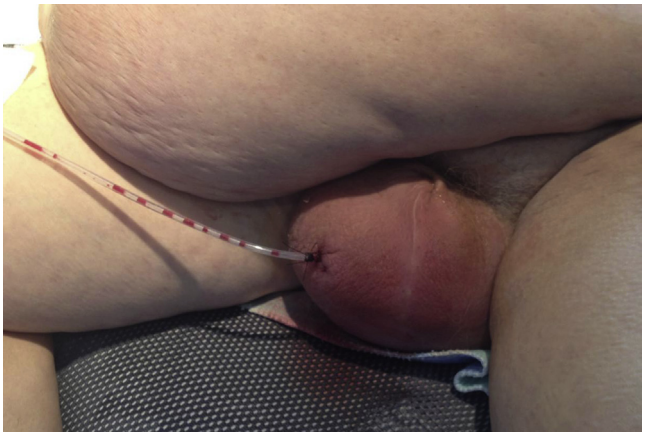

Figure 3. Patient with urinary catheter draining bladder through the scrotum.

due to scrotal cystocele are paramount to successful urinary diversion.

Conflict of interest

None.

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