

2-1-2017

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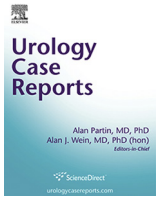
APA Citation

Pourmand, A., Abdallah, A., Shokoohi, H., Park, M., White, M., & O'Connell, F. (2017). Dysuria: An Uncommon Presentation in Emergency Department Following Bladder Neck Disruption.. *Urology Case Reports*, 11 (). <http://dx.doi.org/10.1016/j.eucr.2016.11.030>

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Oncology

Dysuria: An Uncommon Presentation in Emergency Department Following Bladder Neck Disruption



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ARTICLE INFO

Article history:

Received 18 October 2016

Received in revised form

6 November 2016

Accepted 10 November 2016

Keywords:

Prostate cancer

Emergency department

Bladder neck disruption

Robotic-Assisted Laparoscopic Prostatectomy

ABSTRACT

Prostate cancer is the most common life-threatening cancer diagnosed in men. Complications of prostatectomies vary and often include urinary incontinence, erectile dysfunction and pain, while other complications go unreported. While emergency physicians are already familiar with the more common post-operative complications presenting to their departments, including urinary retention, ileus, surgical site infections, venous thromboembolisms and urinary tract infections, they must have a high index of suspicion for rarer complications. We report a case of posterior bladder neck disruption as a complication of a robotic assisted laparoscopic prostatectomy that presented to the emergency department as dysuria and abdominal pain following urination.

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Introduction

Prostate cancer is the most common cancer diagnosed in men with approximately 190,000 new cases and 26,000 fatalities estimated in 2016.¹ It is the third most commonly diagnosed cancer representing approximately 11% of cancer cases in the United States.¹ Roughly 13.0% of the male population will develop prostate cancer at some point in their lives.¹ Robotic-Assisted Laparoscopic Prostatectomy (RALP) is commonly performed in prostate cancer patients with the goal of removing the prostate gland and surrounding tissue. RALP accounts for at least 85% of radical prostatectomies performed in the United States, superseding Laparoscopic Radical Prostatectomy (LRP) as the preferred surgical approach.² Preliminary evidence indicates that RALP has fewer post-operative complications than LRP; however, few randomized control trials exist that adequately compare the efficacies and complications of RALP and LRP. Reported complications of prostatectomies vary and commonly include urinary

incontinence, erectile dysfunction, and pain. A less common complication is bladder neck contracture, which occurs when postoperative scarring narrows the bladder neck-urethral anastomosis. We report a case of posterior bladder neck disruption that presented to the emergency department (ED) with dysuria following a RALP procedure.

Case report

A 48-year-old male presented to the emergency department (ED) with abdominal pain associated with urination. The patient was 18 days' status-post RALP. The patient's RALP procedure and initial post-operative period were uncomplicated, and he was discharged home. Two weeks later, his post-operative Foley catheter was removed and he reported normal bowel movements and voiding following catheter removal. Four days after the catheter removal, the patient presented to the ED with dysuria, lower abdominal pain during urination and urinary hesitancy. The patient denied having any other urinary symptoms including hematuria, nocturia, and frequency, as well as nausea, vomiting, fever, and chills. Initial vital signs were: Temp 97.7 °F, BP 130/81, RR 16, and HR 95. Examination of his abdomen was notable for well-healing incision sites and was soft without distension or tenderness to palpation.

Sources of funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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With recent Foley removal and urinary symptoms the preliminary plan was to perform a urinalysis to rule out a urinary tract infection. Soon after providing a urine sample, the patient complained of significant pain in his penis and suprapubic region; reexamination showed generalized abdominal rigidity and tenderness to palpation. A point-of-care bedside abdominal ultrasound (US) revealed minimal pelvic free fluid in the abdomen with a distended bladder. Of note, blood work showed: WBC 7.35, Hb 13.1, Hct 39.7, BUN 17, Creatinine 1.3. The resulted urinalysis demonstrated WBC 106, RBC > 182, negative nitrite and elevated leukocyte esterase.

A non-contrast computed tomography (CT) of the abdomen/pelvis was performed given the dynamic changes in abdominal exam and free fluid visualized on the US exam. The CT images demonstrated a small amount of free fluid of uncertain etiology in the pelvis, as well as a small amount of air in the urinary bladder, which was initially thought to be related and consistent with his recent RALP and Foley catheter insertion. The urology team was consulted, a Foley catheter was re-inserted, but without a return of urine and continuation of his symptoms, a repeat non-contrast CT was ordered. Repeat imaging revealed the Foley catheter was positioned outside of the urethra with displacement into the lower pelvic area (Fig. 1). The patient was taken to the operating room for a diagnostic cystoscopy. Under general anesthesia, a flexible cystoscope was placed into urethral meatus with the patient's anterior urethra reported as normal. His prostate was surgically absent. At the juncture of the urethra and bladder neck, an obvious posterior bladder neck disruption was noted (Fig. 2). Using the flexible cystoscope a 0.038 Sensor wire was inserted along the anterior portion of the urethra past the bladder neck disruption into the bladder. A 20-French Councilized catheter was passed over the wire into the bladder. Foley insertion was confirmed with a retrograde cystogram.

Discussion

Complications following RALP are common and usually minor with estimates ranging from 0.4 to 37.2% of cases in the literature.³ Ahmed et al analyzed the outcomes of 1000 RALPs completed over a span of 5 years using a prospectively maintained database.³ All perioperative complications were graded using the Clavien-Dindo Classification of Surgical complications, a validated and objective system used to score complications based on the therapy and/or intervention required to correct the specific complication (graded I

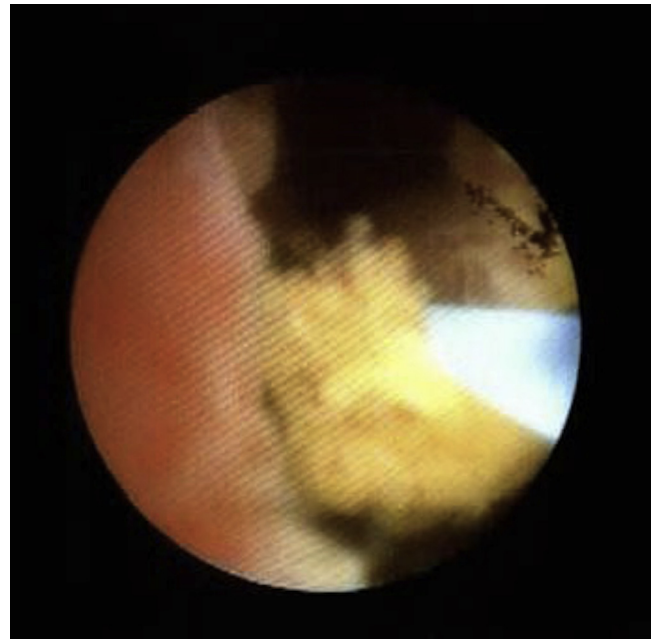


Figure 2. Flexible cystoscopy.

through V). Of those 1000 RALP procedures, 97 experienced complications (9.7%) with no deaths reported; the majority (71.6%) were Clavien grade I and II complications that required only medical and/or expectant management.³ Bladder neck contractures were noted in 0.5–1.4% of patients (all more than 30 days and up to 6 months post operation), but there were no cases of bladder neck disruption.⁴ Bladder neck contractures directly resulted in urinary retention, frequency, incontinence, and infection, but did not progress to bladder neck disruption in any of the studies.⁴

The lack of bladder neck disruption occurrence suggests that our patient experienced a rare, but serious complication that may warrant further investigation. We suspect our patient had bladder neck disruption due to increased pressure at the prostatectomy site leading to urine leakage into his abdomen. One suggestion is the patient may have benefitted from a bladder neck sling, which is indicated in patients who present with urinary incontinence. The sling uses reconstructed fascia to suspend the bladder and urethra above the pubic ramus into the abdomen, reinforces the sub-urethral tissue and provides more support to the bladder neck and urethra during moments of increased intraabdominal pressure (cough or sneeze).⁵ A bladder neck sling has been found to expedite the healing process after RALP and improve continence. Although more studies need to be conducted, there was a significant increase in continence over a 12-month period in a group of patients given a bladder neck sling when compared to the control group. This specific study was conducted on a small population, and these preliminary results can be further evaluated with larger randomized control studies.⁵ Additional studies focus on other techniques, such as a plication stitch placed where the bladder was once attached to the prostate, in order to decrease any tension or strain on the bladder neck. However, further studies are needed to analyze and observe whether such procedures can be incorporated into operations to prevent further disruptions.

Conclusions

Although emergency physicians are already familiar with the more common post-operative RALP complications



Figure 1. Noncontrast CT depicting the displaced Foley catheter within the lower pelvic region, instead of within the bladder. A. Bladder, B. Foley Catheter.

presenting to their departments, including urinary retention, ileus, surgical site infections, venous thromboembolisms, and urinary tract infections, they must have a high index of suspicion for rare complications. In the post-operative RALP patient with intractable, dynamic abdominal pain with hematuria and visualized intraabdominal fluid on US, consider urethral/bladder neck injury as potential etiology and involve a urologist early in the patient's workup.

Conflict of interest

None.

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