

# Case of the Month

## Management of Bilateral Ureteroenteric Stricture After Urinary Diversion

### Case Presentation

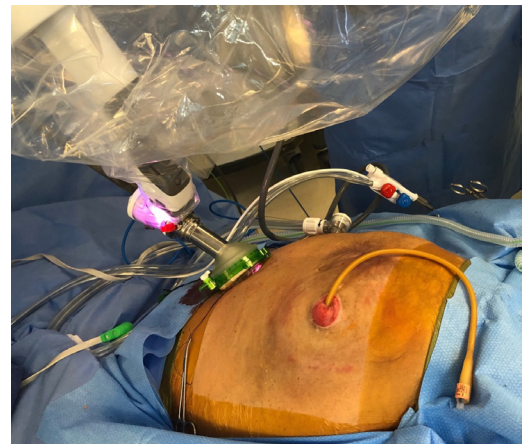
A man in his early seventies underwent open cystectomy and ileal conduit for muscle-invasive bladder cancer at an outside institution. The surgery was complicated by evisceration. After reoperation for evisceration, the patient developed an enterocutaneous fistula, which healed with conservative management. The patient also developed bilateral ureteral strictures at the ureteroenteric anastomosis that were refractory to endoscopic management. Nephroureteral stents could not be successfully placed into the conduit, and bilateral nephrostomy tubes were placed. After multiple hospitalizations for urosepsis associated with obstruction of the nephrostomy tubes, the patient presented at NYU Langone Health for a second opinion for management of bilateral ureteroenteric strictures.

### Management

Because of the recurrent obstruction of the nephrostomy tubes and the hospitalizations for urosepsis, the patient was offered reconstruction of the bilateral ureteroenteric strictures. Because of his prior history of enterocutaneous fistula, the patient had a wide lower midline incision (Figure 1). To avoid potential bowel injury, the da Vinci SP<sup>®</sup> robot was used to access the peritoneal cavity through an incision located in the left upper quadrant (Figure 2). The prior lower midline incision was not disturbed. Physical Examination



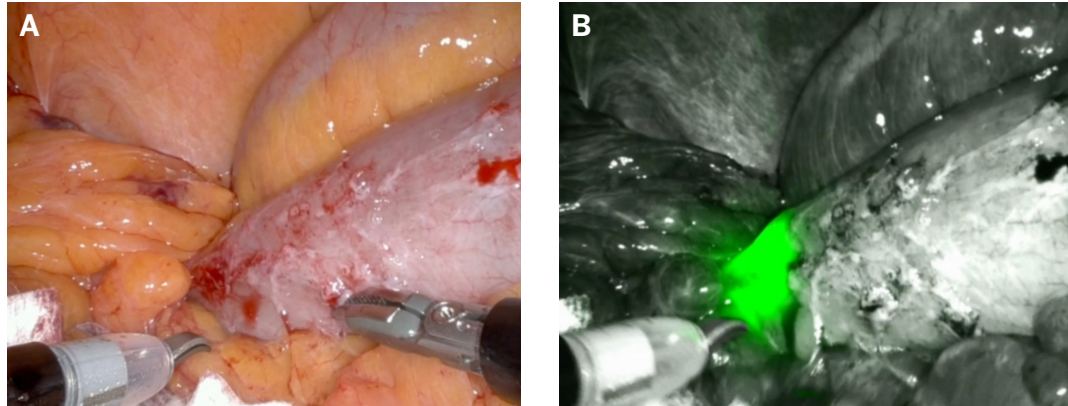
**Figure 1.** Appearance of the patient's abdomen after cystectomy and ileal conduit complicated by evisceration and enterocutaneous fistula.



**Figure 2.** The da Vinci SP<sup>®</sup> robotic platform was used to perform surgery through a high abdominal incision.

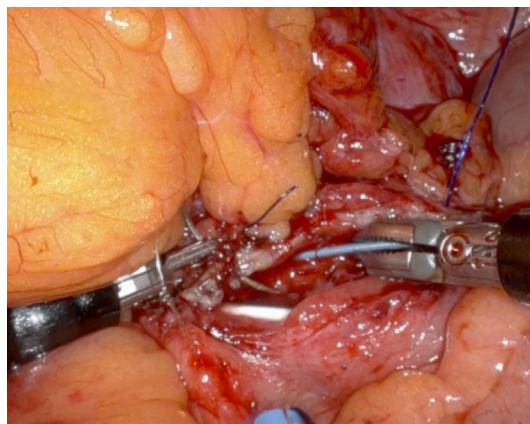
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Inside the peritoneal cavity, multiple adhesions were encountered. To identify the ileal conduit, intraoperative pouchoscopy was performed using a flexible cystoscope (Figure 3A). Firefly® fluorescence imaging was used to differentiate the ileal conduit from other segments of the bowel (Figure 3B). Thus, extensive lysis of adhesions could be avoided.



**Figure 3.** Intraoperative pouchoscopy (A) and Firefly fluorescence imaging (B) were performed to identify the ureteroenteric anastomosis.

The ureteroenteric strictures were identified at the proximal end of the ileal conduit. The 2 ureters were located closed together consistent with a prior Wallace anastomosis. The 2 ureters were sutured together, and a flap of ileal conduit was mobilized to perform the ureteral enteric stricture repair (Figure 4). Bilateral stents were placed across the anastomosis and the nephrostomy tubes were removed.



**Figure 4.** Bilateral ureteroenteric anastomotic strictures were repaired by use of a flap of bowel from the ileal conduit.

### Follow-up

The patient was discharged to home the same day, and the ureteral stents were removed after 3 weeks. Subsequent renal ultrasound demonstrated no hydronephrosis, and the patient had no recurrent episodes of urosepsis.

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## Discussion

The incidence of ureteroenteric strictures after cystectomy and urinary diversion ranges from 2.6%<sup>1</sup> to up to 20% of patients when followed for decades.<sup>2</sup> The initial management of ureteroenteric strictures often involves endoscopic treatment via dilation or endoscopic incision.<sup>3</sup> When ureteroenteric strictures are refractory to endoscopic management or the likelihood of endoscopic failure is high, reconstructive surgery should be offered. Advances in robotics, especially with improved visualization, precise suturing, and small incisions, have reduced the morbidity associated with reconstructive surgery.<sup>4</sup>

The newer single-port robot requires only a single incision, thus making access to the peritoneal cavity easier in patients who have undergone prior surgery.<sup>5</sup> Repair of the ureteroenteric stricture can be performed with primary anastomosis, flaps, or grafts. Stents through the stricture may obscure the delineation between the strictured segment and the normal ureter. Thus, prior to reconstruction at NYU Langone Health, we prefer to place a nephrostomy tube and remove the ureteral stent to allow the stricture to mature.

## Conclusion

Ureteroenteric strictures may be treated with a variety of reconstructive techniques, usually carried out via a minimally invasive robot-assisted laparoscopic approach. Recent innovations such as the single-port robot allow for surgery in a reoperative field with less morbidity than is seen with traditional open approaches.

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Our renowned [urologic specialists](#) have pioneered numerous advances in the surgical and pharmacological treatment of urologic disease.

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