



Laparoscopic bladder diverticulectomy assisted by cystoscopic transillumination

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INTRODUCTION

Acquired bladder diverticula are herniations of the bladder mucosa through detrusor muscle. Due to the ineffective emptying of the bladder diverticulum, urine accumulation may lead to urinary tract infection, stone disease, and lower urinary tract malignancy in the diverticulum (1). The symptomatic bladder diverticula may require surgical treatment. Surgical approaches include open operation via an extravesical or a transvesical approach for large diverticula or endoscopically with transurethral fulguration for small diverticula (2).

Herein, we present a video of a Laparoscopic Bladder Diverticulectomy for recurrent urinary tract infection, aided by concurrent cystoscopy.

MATERIALS AND METHODS

Female patient, 37 years old, complaining of recurrent urinary tract infection for three years. A bladder diverticulum was found on ultrasonography. Cystoscopy revealed a posterior right-side diverticulum next to the ipsilateral ureteral ostium. A laparoscopic bladder diverticulectomy with the aid of intraoperative cystoscopy was proposed.

Surgical Technique

Under general anesthesia, the patient was placed in lithotomy and Trendelenburg position. An umbilical incision was used for pneumoperi-

toneum creation and insertion of a 10mm trocar. Three other 5mm trocars were inserted at positions equidistant between the navel and the pubis, and between the umbilicus and the iliac crests bilaterally. Concomitant cystoscopy was performed for location of the diverticulum by transillumination and help to identify the diverticular neck. The diverticulum was dissected both sharply and bluntly until the whole diverticulum was freed. After completion the resection, a catheter was inserted in the right ureter near the diverticulum to assess inadvertent lesions.

The mouth of the diverticulum was closed by 2-0 double-layered absorbable running suture and a suction drain was placed through a lateral 5mm port.

RESULTS

The surgery was uneventful. The operative time was 120 minutes with minimal blood loss. There was no postoperative leakage, the drain was removed after 24 hours and the patient discharged.

The indwelling catheter was removed after 7 days and the patient progresses without voiding complaints or new infectious episodes in a follow-up of 10 months.

CONCLUSIONS

Laparoscopic diverticulectomy is technically feasible and safe. The concomitant use of

cystoscopy facilitates the identification and location of the diverticulum, thereby minimizing dissection of the bladder and decreasing operative time. Cystoscopy may also be useful in the delineation of margins in cases of neoplasia within the diverticulum.

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EDITORIAL COMMENT

Dr. Rebouças and colleagues present an elegant video demonstrating a safe and efficacious means of diverticulectomy. This technique is performed under direct visualization both laparoscopically and cystoscopically. It is exciting to see how well and confidently this surgery can be performed by using the technique herein des-

cribed. Important caveats to keep in mind are to consider the reason for the diverticulum and secondary causes should be addressed. Furthermore, any potential for malignancy should be assessed. When using this technique with the aforementioned precautions, a minimally invasive approach to addressing this problem can be performed while minimizing morbidity. Overall the authors should be congratulated for this innovative technique.

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