CASE REPORT

Laparoscopic Radical Cystectomy Combined with Bilateral Nephroureterectomy and Specimen Extraction Through the Vagina

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Radical cystectomy is the gold standard for muscle-invasive urothelial carcinoma of the bladder because this operation provides excellent local cancer control. Laparoscopic radical cystectomy with different urinary diversions has been reported since 1992 and proposed as an alternative to open radical cystectomy. However, the reconstruction part of the operation is time-consuming and challenging. For a patient already under dialysis, concomitant radical cystectomy with bilateral nephroureterectomy could obviate the need to create urinary diversion and treat upper urinary tract tumors at the same time. Generally the specimen has to be removed through a mini-laparotomy. But for female patients, specimen extraction through the vagina has been reported to be safe and efficient. Thus, patients with multiple comorbidities can benefit from the avoidance of mini-laparotomy. Herein, we present a 65-year-old female with invasive urothelial carcinoma of the urinary bladder and end-stage renal disease who underwent laparoscopic radical cystectomy combined with bilateral nephroureterectomy, where the specimen was extracted transvaginally. [*J Chin Med Assoc* 2007;70(6):260–261]

Key Words: laparoscopy, nephroureterectomy, radical cystectomy

Introduction

Radical cystectomy and bilateral pelvic lymph node dissection (BPLND) is the standard and effective treatment for invasive and high-grade urothelial carcinoma of the urinary bladder, but the operation has non-negligible morbidity.[1] Cases of laparoscopic radical cystectomy with different urinary diversions have been reported since 1992.[2,3] Recent studies have shown its feasibility and comparable short-term oncologic outcome when compared with open surgery.[4] However, the reconstructive part is time-consuming and technique-demanding. Radical cystectomy, BPLND and bilateral nephroureterectomy (BNU) have been reported for those with end-stage renal disease (ESRD).[5] For ESRD patients, concomitant BNU could obviate the need to create urinary diversions. Laparoscopic radical cystectomy with the specimen extracted transvaginally has been suggested for female patients who have multiple comorbidities.[6] This method would avoid the side effects of mini-laparotomy (e.g. postoperative pain, wound infection, wound dehiscence, etc). Herein, we present a 65-year-old female with ESRD who underwent laparoscopic radical cystectomy combined with BNU for bladder and upper urinary tract tumors, and her specimen was extracted through the vagina.

Case Report

A 65-year-old woman had suffered from dialysis-dependent ESRD owing to Chinese herbs since 2001. Intermittent painless gross hematuria had occurred since October 2004. She visited our clinic for evaluation. Cystoscopy found a bladder tumor, and the biopsy result was urothelial carcinoma. In addition, bilateral retrograde pyelography revealed filling defects in bilateral lower third ureters. Bilateral flushing cytology examinations showed both with transitional cell carcinoma. There was no evidence of extravesical invasion, local lymphadenopathy or distant metastasis on computed tomography scan and bone scan. Laparoscopic anterior

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Figure 1. Specimen of radical cystectomy and bilateral nephroureterectomy.

pelvic exenteration with BNU and BPLND were performed because of the patient's Chinese herbal nephropathy history. The specimen (Figure 1) was extracted *en bloc* through the vagina, as described previously.[3,7] The total operation time was 640 minutes. Estimated blood loss was 550 mL. There were no intraoperative complications. The patient received 4 units of packed red blood cell transfusion perioperatively due to her low hemoglobin level. The postoperative course was uneventful. She was discharged home on postoperative day 8. The final pathology report was pT1 invasive high-grade urothelial carcinoma of the bladder and low- to high-grade papillary urothelial carcinoma of bilateral renal pelvis and ureters. After 3 months of follow-up, there was no local recurrence and no port sites or distant metastases.

Discussion

Radical cystectomy is the gold standard for muscle-invasive urothelial carcinoma of the bladder because it provides excellent local cancer control. Laparoscopic radical cystectomy, compared with open surgery, has been shown to have many advantages, such as decreased blood loss, less postoperative pain, shorter hospital stay, and earlier return to full activity. It also provides comparable short-term oncologic outcome when compared with open surgery. However, the learning curve is steep, and the surgical creation of urinary diversions is time-consuming and challenging. Patients with dialysis-dependent ESRD, especially Chinese herb-related, have a greater risk of developing upper urinary tract urothelial carcinoma.[8] Prophylactic BNU is recommended because the prevalence of urothelial carcinoma among these patients may be up to 40%.[9,10] Simultaneous radical cystectomy, combined with BPLND and BNU, whether by open surgery or laparoscopically, are challenging to urologists.

These patients often have multiple comorbidities and are high-risk surgical candidates. Anemia and coagulopathy resulting from long-term dialysis could make the surgery more complicated and the patient's convalescence longer. Laparoscopic radical cystectomy with specimen extraction through the vagina has been reported to be safe and efficient, especially for female patients with multiple comorbidities.

Specimen extraction through the vagina can avoid mini-laparotomy and its accompanying side effects, such as postoperative pain, wound infection and even wound dehiscence. Further experience with this approach should reduce the operation time. It is an alternative approach for female patients who need to undergo open radical cystectomy.

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