Radical cystectomy and orthotopic ileal bladder substitution with serous lined extramural ureteral reimplantation - report of 8 cases

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Objectives: We review the functional and oncologic outcomes of radical cystectomy and orthotopic ileal bladder substitution with serous lined extramural ureteral reimplantation. Material and methods: From 1985 to 2009 a total of 125 male patients (mean age 62.5 years, range 37 to 74) underwent orthotopic ileal bladder substitute at the urological Clinic in Belgrade. Of these, 8 patients underwent modified technique with serous lined extramural ureteral reimplantation. The median follow-up (available for 88 patients) period was 30 (2 - 72) months. Results: Perioperative lethality was nil. Modified operative technique was associated with low postoperative complication rates and without ureteral implantation site stenosis, reflux or deterioriation of renal function. All patients had satisfied day and night continence rates. Conclusion: The serous-lined extramural ureteral reimplantation is an attractive technique regarding its safety, versality and functional outcome. It is especially favorable for reimplantation to uraters of various calibers as well as dilated ureters.

Key words: radical cystectomy, urinary diversion, serous lined extramural ureteral reimplantation.

INTRODUCTION

Up to date, a numerous types of continent and incontinent urinary diversion have been described. Orthotopic neobladders are constructed in the anatomic position and anastomosed to the native urethra. The neobladders can be fashioned from ileum, ileocolonic tissue, or sigmoid colon. During dissection, special attention must be given to protect the urethra, perirethral musculature, and sphincter. The frequency distribution of urinary diversions after cystectomy for bladder cancer are the following: neobladder 47%, conduit 33%, anal diversion 10%, continent cutaneous diversion 2% and others 0.1%1. Orthotopic bladder diversions has gained much popularity during the last two decades, with continuous increasing trend. Available data have demonstrated improved results in all indicators of outcomes in patients underwent this procedure. Among variety of bowel segments for orthotopic bladder substitute creation, ileal segments are widely accepted. Several techniques for ureteral reimplantation into the orthotopic ileal bladder substitute have been described.

The serous lined extramural ureteral reimplantation technique was initially reported by Abol-Enein and Ghoneim in 1994.2

MATERIAL AND METHODS

From 1985. to 2009, a total of 125 male patients (mean age 62.5 years, range 37 to 74) underwent orthotopic ileal bladder substitute at the Institute of Urology and Nephrology in Belgrade. Of these, 8 patients underwent modified technique with serous lined extramural ureteral reimplantation. The median follow-up (available for 88 patients) period was 30 (2-72) months.

RESULTS

Perioperative lethality was nil. Modified operative technique was associated with low postoperative complication rates and without ureteral implantation site stenosis, reflux or deterioriation of renal function.

At twelve months, daytime continence rate was complete for 7 out of 8 patients (88%), while the nighttime for 6 out of 8 patients (75%).

OPERATIVE TECHNIQUE

Radical cystoprostatectomy with bilateral pelvic lymph node dissection is performed. A 45 cm segment of distal ileum, beginning 25 cm proximal to the ileocecal valve is selected and arranged in a "W shape configuration.
The segment is isolated and is then incised along its antimesenteric border and deintubulated. It is fashioned into a "W" shape form by its two adjacent legs seromuscular anastomosis using running Vicryl 4-0 sutures. The lateral ileal limbs are joined together by seromuscular continuous 3-0 Vicryl suture to create two serous lined intestinal troughs. The right ureter is brought through the posterior neobladder wall into the trough site and is then spatulated and anastomosed to the intestinal mucosa. The trough is then closed by surrounding intestinal mucosa over the re-implanted ureter, using interrupted 4-0 Vicryl sutures. The length of the trough should be 3 cm for the normal ureter. The ureteral catheter is placed and fixated to the neobladder wall by interrupted plain catgut 2-0 sutures. The left ureter is reimplanted in the same manner.

Ureteral catheters are brought out through the anterior neobladder wall. In order to create ureteroneocystostomy, a small hole is performed on the distal part of the neobladder. A 22 Ch Foley catheter is placed into a neobladder with a 10 ml in the balloon. Six sutures previously placed in the urethra are used to approximate the neobladder hole and the urethra. The neobladder anterior wall is then closed by running Vicryl 2-0 sutures. The ureteral catheters are exteriorized and fixated to the abdominal skin.

**DISCUSSION**

The criterion standard for the treatment of patients with stage T2 - T4 disease is radical cystoprostatectomy for men and anterior pelvic exenteration for women. Additionally, all patients should undergo bilateral pelvic lymphadenectomy. Over the past 20 years, orthotopic urinary reconstruction with the techniques developed at Ulm has become a widely accepted form of urinary diversion. So far, both centers together have performed more than 1,300 orthotopic bladder substitutions with an overall rate of neobladder formation in 58% of all cystectomized patients. Today, the absolute contraindications for this procedure are urinary stress incontinence, damaged phallic sphincter, severely impaired renal and liver function, severe intestinal diseases or and oncologic situation requiring ureterectomy. In patients treated for transitional cell carcinoma of the bladder, the rate of urethral recurrence in both centers was 1.5 and 5%, respectively, and the rate of upper urinary tract recurrence was 2-3%. Daytime continence at 12 months was 92%, while nighttime continence was lower, around 80%. In our series with small number of patients we had a similar results. Urinary diversions become necessary in cases of a tumor - bearing urinary bladder requiring cystectomy. In order to choose the ideal urinary diversion, long-term function as well as complication rates, quality of life issues and patient's acceptance become matters of debate. In this regard, orthotopic diversions are usually the first choice. Existing studies are unable to prove that continent reconstruction after radical cystectomy is superior to conduit diversion.

**REZIME**

**RADIKALNA CISTEK TOMIJA I ORTOSTOPSKA ILEANA ZAMENA MOKRACNE BEŠIKE SA EKSTRAMURALNOM IMPLANTACIJOM URETERA - PRIKAZ 8 SLUČAJEVA**


FIGURE 2.
DESCENDING CYSTOGRAM SHOWS NORMAL FINDING

Rezultati: Nije bilo perioperativne smrtnosti. Ova operativna tehnika udužena je sa malim brojem postoperativnih komplikacija koje se odnose na stenozu anastomoze uretera i ortotopskog ilealnog rezervora urina, a nije zabeležen ni poremećaj bubrežne funkcije. Iako je broj pacijenata mali, kod svih je konstantovana zadovoljavajuća dnevna i noćna kontinencija.

Zaključak: Ekstramuralna reimplantacija uretera u ilealnima ortotopskim urinarnim rezervarom predstavlja atraktivnu hiruršku tehniku, u odnosu na sigurnost i funkcionalne rezultate. Ona je posebno pogodna za implantaeciju uretera različitih kalibara kao i dilatirane uretere.

Ključne riječi: radijalna istekotonija, urinarno derivacije, ekstramuralna reimplantacija uretera.

REFERENCES
