



## Transitional cell carcinoma in orthotopic ileal neobladder 12 years after radical cystectomy

### Karcinom prelaznog epitela ortotopske ilealne neobeške 12 godina posle potpune cistektomije

Jovan Hadži-Djokić\*, Tomislav Pejčić†, Vladan Andrejević‡, Ljubomir Djurašić‡

\*Serbian Academy of Sciences and Arts, Belgrade, Serbia; †Urological Clinic, ‡Institute of Physical Medicine and Rehabilitation, Clinical Center of Serbia, Belgrade, Serbia

#### Abstract

**Introduction.** Some cases of secondary adenocarcinoma developing in the replaced bowel segment of urinary diversions have been reported so far. Secondary adenocarcinoma develops 20 years after surgery in about 0.5% of those in whom an ileal segment is used. There have been several reports in the literature describing extensions of transitional cell carcinoma (TCC) from the distal urether into an ileal conduit. Histology of loop tumor in 50% was TCC. The site of tumors in the majority of cases is the area at the urethral orifices or the stoma. **Case report.** We presented a rare case of transitional cell carcinoma in an orthotopic ileal neobladder 12 years after radical cystoprostatectomy and ileal neobladder with the substitution by the procedure Camey II. A 65-year-old man with high-grade urothelial carcinoma of neobladder underwent partial resection of neobladder and right nephroureterectomy. Pathological analysis revealed high-grade urothelial carcinoma to the ileal neobladder (G II, Stage T2b). The patient died of laryngeal cancer a year after the surgery. **Conclusion.** Surgery of tumors in orthotopic neobladders is possible if diagnosed in time. In the presented case surgery resulted only in a decrease in the capacity of the neobladder without having an effect on the continence itself.

#### Key words:

urinary bladder, neoplasms; cystectomy; ileum; colonic pouches; recurrence.

#### Apstrakt

**Uvod.** Opisani su pojedinačni slučajevi sekundarnih adenokarcinoma koji su se javili u crevnom segmentu kod urinarnih derivacija. Sekundarni adenokarcinom razvio se 20 godina posle kod oko 0.5% bolesnika kod kojih se koristi segment ileuma. Takođe, u literaturi su opisani pojedinačni slučajevi propagacije tumora iz distalnog dela uretera u ilealni conduit. Histološki, ovi tumori su kod 50% bolesnika karcinomi prelaznog epitela. Kod najvećeg broja bolesnika lokalizacija tumora je u blizini novoformiranog orificijuma. **Prikaz bolesnika.** Prikazali smo redak slučaj pojave karcinoma prelaznog epitela u ortotopskoj ilealnoj neobešici 12 godina nakon radikalne cistoprostatektomije. Formiranje ilealne neobeške je učinjeno primenom postupka Camey II. Bolesniku, starom 65 godina, sa karcinomom u ilealnoj neobešici, učinjena je desnostrana nefroureterektomija i parcijalna resekcija ortotopske ilealne neobeške. Patohistološkom analizom utvrđeno je da se radi o urotelnom karcinomu ilealne neobeške visokog gradusa (G II, stadijum T2b). Bolesnik je umro od laringalnog karcinoma godinu dana nakon operacije. **Zaključak.** Hirurške resekcije tumora ortotopske ilealne neobeške moguće su ukoliko se tumori dijagnostikuju na vreme. Kod prikazanog bolesnika resekcija je dovela samo do sniženja kapaciteta ortotopske ilealne neobeške, bez uticaja na kontinenciju.

#### Ključne reči:

mokraćna bešika, neoplazme; cistektomija; crevo, tanko; creva, rezervoari; recidiv.

#### Introduction

Continent urinary reservoirs represent the state of the art in urinary diversions. A low incidence of tumors in continent urinary diversions is very encouraging. The surgeons who perform continent urinary reservoirs are urged to insti-

tute provisions for careful long-term follow-up in these patients<sup>1,2</sup>.

Patients found to have muscle-invasive disease of the urinary bladder commonly undergo radical cystectomy and urinary diversion. The decision about which urinary diversion will be best suited to the individual patient is complex

and depends of multiple factors relating to the patient and the tumor as well, as a clear understanding about the risks and benefits of each diversion<sup>3,4</sup>. Orthotopic neobladders can be constructed in the anatomic position and anastomized with the native urethra. Volitional voiding is achieved by increasing the abdominal pressure and relaxing of the external sphincter. Neobladders can be fashioned from ileum, colonic tissue or sigmoid colon. During dissection special attention must be payed to protect the urethra, periurethral muscles and the sphincter. Numerous variations of the orthotopic neobladder have been introduced, but the Studer's type pouch, because of its versatility, is currently most often used. Other neobladders include the Camey, a 60 cm segment of ileum fashioned into a U-shape; the Hauptmann, which is similar to other neobladders but W-shaped to increase capacity; and the Mainz, Le Bag, and UCLA pouches which all use an ileocecal segment. Enterocystoplasty is the procedure which is reserved for patients with long life expectancy and good functional results. Those patients are under 70, not obese, not diabetic, have no cardiopulmonary or neurological diseases, and should be highly motivated, informed and cooperative. It is very important that muscle invasive tumor is away from the bladder neck and the urethra is with no strictures. The upper urinary tract should be evaluated and performing urethral biopsy is mandatory<sup>5</sup>.

Neobladder forming using the procedure Camey II involves detubularising the distal ileum bowel segment and creating an orthotopic urinary reservoir of low intraluminal pressure. Ureters are implanted in the newly formed neobladder using the antireflux Camey-Le Duc technique creating a "le lit ureterale". Detubularisation cancels out the rise of intraluminal pressure in a reservoir created by bowel movement resulting in better continence in patients during the day and night time which is the main advantage of this technique over the procedure Camey I (were the bowel segment isn't detubularised, increasing the quality of life in these patients). Leandri et al.<sup>5</sup> compared the results of Camey I orthotopic neobladder replacement in 275 patients with Camey II procedure in 36 patients and concluded that the continence in detubularised orthotopic neobladder – Camey II was 100% during the day and 70% at night. These patients void every 3–4 hours and the voiding routine is stabilized after three months.

Cases of urothelial carcinoma developing in urinary diversions using the ileum have been infrequently reported<sup>2</sup> and it underlines the importance of regular follow-up of patients with orthotopic neobladder replacement after radical cystectomy.

Some cases of secondary adenocarcinoma developing in a replaced bowel segment of urinary diversions have been reported. Secondary adenocarcinoma developed 20 years after surgery in about 0.5% of those in whom an ileal segment was used.

There have been several reports in the literature describing extensions of transitional cell carcinoma (TCC) from the distal urethra into an ileal conduit. Histology of loop tumor in 50% was TCC<sup>2</sup>. The site of tumors in the majority of cases was the area at the urethral orifices or the stoma<sup>1,2</sup>.

## Case report

We presented 65-year-old man, smoker, with urothelial carcinoma in orthotopic neobladder 12 years after radical cystoprostatectomy for bladder cancer and orthotopic ileal neobladder, the procedure Camey II.

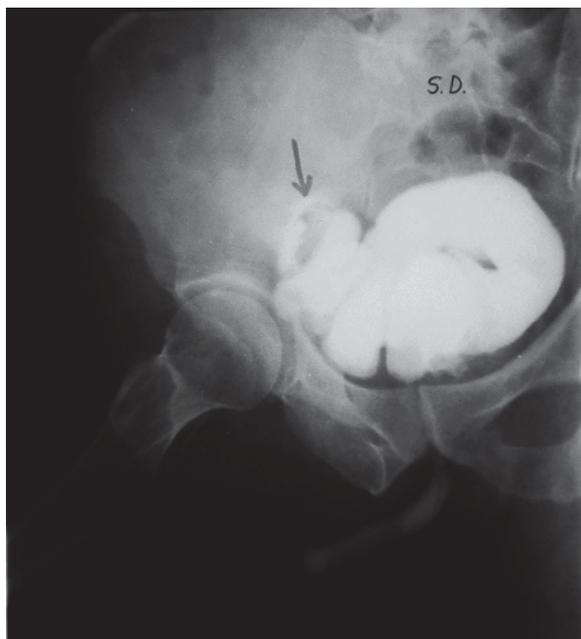
Radical cystoprostatectomy with orthotopic neobladder, Camey II procedure, was performed in 1985 as a method of choice in treating muscle invasive bladder tumor. After initial surgery the patient was fully continent during the day and at night after a 3-month period. Hystopathological examination after radical cystoprostatectomy revealed urothelial carcinoma, grade 2, Stage T2NoMo. The patient underwent regular follow-up, which included urethropouchoscopy every 6 months following the first two years after the surgery. Later on urethropouchoscopy and intravenous pyelogram examination were performed yearly. Blood and urine analyses were also performed, levels of electrolytes, urea and creatinine were monitored every 3 months and there were no clinical signs of recurrence of the primary disease.

The patient was admitted for diagnostic examinations 12 years after the surgery for complains of gross hematuria. The diagnosis of the tumor in the orthotopic neobladder was established by intravenous pyelography (Figure 1), showing



**Fig. 1 – Intravenous pyelography of the right kidney.**

ureterohydronephrosis on the right side and echosonography confirming the ureterohydronephrosis on the right side and also revealing 20 × 10 mm size tumor on the right wall of neobladder. Computed tomography was not used as standard procedure in that period. Urethropouchography showed filling defect of the right wall of the neobladder (Figure 2),



**Fig. 2 – Urethrapouchography shows filling defect of the right wall of the neobladder.**

where papillary tumor was disclosed by urethrapouchoscopy examination and the biopsy of the tumor was performed. Hystopathological examination revealed urothelial carcinoma TCC, grade 2. Blood analysis was normal, urine analysis was positive for red blood cells.

Right nephroureterectomy with partial resection of the neobladder were performed by the midline transperitoneal approach. The tumor was localised on the newly formed urethral orifice of the right kidney. Since ureterohydronephrosis was early diagnosed with the decrease in the renal parenchyma it was decided that right nephroureterectomy to be performed. During the 3-hour surgery blood loss was minimal and the patient received one dose of transfusion and administration of antibiotics was intraoperatively performed according to the urinoculture. His immediate postoperative course was uneventful with 2 days of fever. Urethral catheter was removed 14th day after the surgery and the patient was fully continent. Surgery resulted in the decreased capacity of

the orthotopic urinary reservoir, the patient urinated more frequently than before, but had no effect on day and night urinary continence. Hystopathological finding revealed urothelial carcinoma, grade 2, Stage T2b. Tumor probably developed in a bowel segment from the distal part of the right urether.

The patient died of laryngeal carcinoma a year after the described surgery.

### Discussion

Principles of low pressure orthotopic ileal neobladder reconstruction are well-known and the urologists interested and experienced in reconstructive surgery should be encouraged to perform reconstructive orthotopic ileal neobladder surgery after radical cystectomy in younger and motivated patients<sup>4</sup>.

Careful follow-up is important for patients with continent urinary reservoirs. It is important to regularly follow-up these patients due to possible complications when forming orthotopic neobladder which include strictures of uretherointestinal anastomosis, kidney damage and tumors in newly formed neobladder. Intravenous pyelography with descendent pouchography, ehotomography and urethrapouchoscopy should be performed regularly. Urine cytology and endoscopy are being used in addition to standard radiographic procedures to follow-up those patients for potential tumor development<sup>6-8</sup>. Several institutions decrease their surveillance to once a year after the first 5 years of follow-up. Tumors in isolated bowel segments tend to be much less frequent in those bowel segments that have contact with both urine and feces. The site of tumor in the most number of cases was the area at the ureteral orifices or the stoma<sup>3,4</sup>. Intraluminal tumor cell seeding appears to be an important mechanism of transitional cell carcinoma recurrence in the ileal mucosa of a neobladder<sup>1,8</sup>.

### Conclusion

Surgery of tumors in orthotopic neobladders is possible if diagnosed in time. In the presented case surgery resulted only in a decrease in the capacity of the neobladder without having an effect on the continence itself.

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