



Radical cystectomy in elderly

Radikalna cistektomija kod bolesnika u odmaklom životnom dobu

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Abstract

Background/Aim. Radical cystectomy is the method of choice for the treatment of muscle invasive bladder cancer. This major surgery is associated with many complications, especially in older patients. The aim of this study was to analyze preoperative comorbidity, and intraoperative and postoperative complications in patients older than 75 years. **Methods.** This clinical, retrospective study included 46 patients over 75 years, who underwent radical cystectomy. Indications for surgery, and complications during and after the surgery were followed up. **Results.** Preoperatively, anemia caused by hematuria was registered in 76% of the patients. In 52% of the patients urine derivation was performed by ileal conduit, in 35% by ureterocutaneostomy and in 13% orthotopic ileal neobladder was created. The average duration of surgery was 190 (120–300) min. A total of 76% of the patients were treated by blood substitution intraoperatively, average 630 (310–1230) mL. Concerning pathological stage of transitional cell carcinoma of urinary bladder, 26% of the patients had T2, 4% T3a, 52% T3b, and 14% T4a stage. In one case, planocellular carcinoma was diagnosed by patohistological examination, and in 2 cases prostate carcinoma was incidentally found. The average duration of hospitalization was 16 (8–35) days. **Conclusion.** The main reason for cystectomy in patients over 70 and 80 years was gross hematuria caused by bladder cancer, with consecutive anemia which could not be solved using endoscopic treatment or blood substitution. As expected, a prolonged stay in hospital after cystectomy, and a higher rate of complications were recorded in this population.

Key words:
urinary bladder neoplasms; cyctectomy; aged;
hematuria; comorbidity; postoperative complications.

Apstrakt

Uvod/Cilj. Radikalna cistektomija je metoda izbora za lečenje mišicnoinvasivnog karcinoma mokraćne bešike. Spada u grupu najvećih operacija u urologiji i povezana je sa brojnim komplikacijama, naročito kod starijih. Cilj ove studije bila je analiza preoperativnog komorbiditeta kao i intraoperativnih i postoperativnih komplikacija kod bolesnika starijih od 75 godina. **Metode.** U kliničku, retrospektivnu studiju bilo je uključeno 46 bolesnika starijih od 75 godina kojima je učinjena radikalna cistektomija. Praćene su indikacije za operaciju, kao i komplikacije tokom i nakon operacije. **Rezultati.** Preoperativno, 76% bolesnika imalo je anemiju uzrokovanu hematurijom. Kod 52% operisanih derivacija urina izvedena je ilealnim konduktom, kod 35% ureterokutaneostomijom, a kod 13% bolesnika kreirana je ortotopna ilealna neobešika. Prosečno vreme trajanja operacije iznosilo je 190 (120–300) min. Intraoperativno, 76% bolesnika primalo je transfuziju krvi, prosečno 630 (310–1230) mL. Kod 26% operisanih ustanovljen je tranzicioni ćelijski karcinom (TCC) mokraćne bešike u stadijumu T2, kod 4% u stadijumu T3a, kod 52% u stadijumu T3b, a 14% u stadijumu T4a. Kod jednog bolesnika radilo se o planocelularnom karcinomu, a kod dva bolesnika karcinom prostate dijagnostikovao je incidentalno. Prosečna dužina hospitalizacije nakon operacije iznosila je 16 (8–35) dana. **Zaključak.** Glavni razlog za cistektomiju kod bolesnika u osmoj i devetoj deceniji života bila je masivna hematurija uzrokovana TCC-om sa posledičnom anemijom, koji nisu mogli biti rešeni endoskopskim putem i transfuzijama krvi. U ovoj populaciji zabeležen je očekivano produžen boravak u bolnici nakon cistektomije, kao i veća stopa komplikacija.

Ključne reči:
mokraćna bešika, neoplazme; cistektomija; stare osobe; hematurija; komorbiditet; postoperativne komplikacije.

Introduction

Even today, radical cystectomy (RC) represents one of the most complex procedures in urologic surgery, connected with numerous complications. The most common indication for performing RC is muscle invasive transitional cell carcinoma (TCC) of the urinary bladder¹. Extension of life duration carries out the question of indications for RC in the population over 75 years, since this population is characterized by a number of comorbid conditions, and increased number of complications during extensive surgical procedures².

Methods

This clinical, retrospective study included 46 patients older than 75 years submitted to radical cystectomy in the Clinic of Urology, Military Medical Academy, Belgrade, during the period of 2003–2012. Indications for operation, comorbidity, the kind of applied urinary diversion, duration of surgical procedure, the need for blood substitution before, during and after the surgery, postoperative duration of hospitalization, intraoperative and early postoperative complications, histopathological findings obtained after RC and kind of postoperative additional therapy were followed up. Criteria for blood substitution were hematocrit below 27% or hemoglobin below 75 g/dL.

Results

A total of 26 (57%) male patients and 20 (43%) female underwent RC. The average age of patients was 78 (75–85) years. Pre-radical cystectomy treatment procedures are shown in Table 1.

tients who underwent blood substitution, and all the operated patients were given on average 512 (0–1230) mL.

The average duration of surgery was 190 (120–300) min. The type of applied urinary diversion are shown in Figure 1.

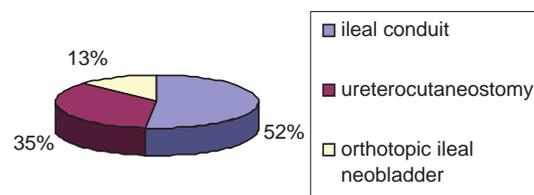


Fig. 1 – Type of the applied urinary diversion after radical cystectomy.

In 26% of the patients T2 stage of TCC of the urinary bladder was found, in 4% T3a stage, in 50% T3b stage and in 14% T4a stage. In one (2%) patients planocellular carcinoma was diagnosed and in 2 (4%) cases prostate carcinoma was incidentally found (Table 2).

Table 2
Histopathological findings obtained after radical cystectomy

Histopathological finding	Patients (%)
TCC stage	
T2	26
T3a	4
T3b	52
T4a	14
Planocellular carcinoma	2
Incidental prostate cancer	4
Metastases in the iliac and obturator lymph nodes	32

TCC – transitional cell carcinoma.

Table 1

Pre-radical cystectomy treatment procedures

PRC treatment procedure	Indication	Patients (%)	Time prior RC (years)
Neoadjuvant radiotherapy	Muscle invasive bladder TCC	9	5.1
Nephroureterectomy	TCC of pyelon	9	2.7
Partial cystectomy	Solitary. muscle invasive bladder TCC	7	2.4
Hysterectomy with bilateral adnexectomy	CaPVU	4	N/A
Hemicolectomy	Colon tumor	2	4.5
Neoadjuvant chemotherapy: gemcitabin + cisplatin	Metastatic TCC	2	0.4

RC – radical cystectomy; TCC – transitional cell carcinoma; CaPVU – carcinoma of *portio vaginalis uteri*.

Preoperatively, 22% of the patients had distant metastatic disease, the most common lung involvement, in 90%.

The average American Society of Anesthesiologists (ASA) score for physical status classification was 2.46.

The average number of transurethral bladder tumor resections (TURBT) before RC was 2.9 (1–5), and the first TURBT was performed on the average in 11 months (1–96) before RC. Preoperatively, anemia, caused by hematuria, which needed blood substitution, was registered in 76% of the patients. They were treated by blood substitution intraoperatively, averagely 630 (310–1230) mL concerning the pa-

The average duration of hospitalization after RC was 16 (8–35) days. Two (2%) patients were on intensive care more than 24 hours. Postoperatively, 3 (7%) patients were febrile, 3 (7%) developed wound infection and dehiscence of which in 2 (4%) patients secondary suture was performed. Diarrheal syndrome was found in 2 (4%) patients postoperatively after RC. Two (4%) patients died in the early postoperative period, and one (2%) patient had a transient ischemic attack (TIA). Four (9%) patients were treated by chemotherapy according to the protocol gemcitabine + cisplatin during postoperative period.

Discussion

The risk of the occurrence of urothelial bladder cancer increases with age. However, the prolongation of life, but also the emergence of a number of comorbid conditions at the advanced age impose the question whether the performance of major surgery is indicated in elderly³. These patients are not only due to malignant disease, but also because of the general state of health in a significantly greater risk from anesthesiological complications and the intraoperative, as well as early and late postoperative complications⁴. Large studies show that cystectomy is still the method of choice in the treatment of muscle invasive bladder cancer, even in elderly, and especially if it causes anemic syndrome, the need for frequent blood transfusion or inability to control and stop active bleeding from bladder tumor⁵. In our study, even 76% of the patients who underwent cystectomy had anemia caused by hematuria, which required blood transfusion before surgery. It is an indicator of a poor general condition of patients, and significant comorbidity factor. Hematuria can occur suddenly, massively and cause a quick drop in the red blood elements and poor general condition of the patients. It, also, can be gradual, long-term, and patients for a long-time compensate chronic loss of red blood cells, slowly getting used to it. Their general condition was not so dramatic, although laboratory proof of a significant bleeding is present. In this second case, chronic and slow blood loss is present, not only because of the presence of a large tumor in the bladder, but also as a result of postirradiation cystitis, years after radiation. In our study, 4 patients had massive hematuria due to postirradiation cystitis with recurrence in urinary bladder. Although some authors present the experience with conservative ways of controlling massive hematuria by oral or intravenous use of conjugated estrogen using pentosan polysulfate or WF10⁶, in our series we had no experience with the use of these types of drugs. In our series, cystectomy was done only when even endoscopic procedures were not suitable to control bleeding from the bladder and threatened to lead to hemodynamic instability of the patient. Some authors state that regardless of the advanced age and the fact of a higher rate of complications and a small percentage of continent patients, in the selected cases, in those over 80, it is possible to perform orthotopic derivation of the urine with satisfactory results⁷. In reference to other studies, elderly patients often underwent ileal conduit diversion, while there are studies which report high percentage of patients who underwent ureterocutaneostomy, over 45%⁸. Here, as in our series, referring to patients with advanced disease, poor general state of health, with a short life expectancy the option was the simplest form of urinary diversion and maximum shortening the duration of surgery in 35% of the patients operated on. In the aforementioned study⁸, the authors decided rarest for orthotopic derivation, although it was performed in 6.2% of operated patients. Our belief was reinforced by personal experience and the literature suggests that it is possible to do orthotopic derivation of the urine in selected cases in elderly patients ap-

preciating their "biological" value rather than physical age, so we decided to create a neobladder in 13% of the treated patients. Chang et al.⁹, in a series of over 300 middle-aged patients, came to the conclusion that 45% of patients had preoperative anemia. This percentage in our series is significantly higher, almost 76%, which in probably a consequence of several times unsuccessfully attempted endoscopic hemostasis. In younger patients, in better general condition, a large surgical intervention is more frequently chosen. Another reason is, that patients, often delay radical surgery until it can become life threatening, then there is certainly higher degree of anemia syndrome. This is illustrated by the average of 3 TURBT prior to cystectomy, while in younger patients after first TURBT, if there is present any of invasion of the muscular layer, we perform cystectomy¹. In our series, the average volume of blood used for transfusion was higher than in the aforementioned series (600 : 630 mL), due to a larger number of patients with the signs of anemia preoperatively, but also because of the spreading of malignant disease in the pelvis. Bladder malignancy was confirmed by the fact 52% of the patients in the stage pT3b, and 14% in the stage pT4a, along with the fact that 32% of the operated on patients had the disease that spread to regional lymph nodes, and 22% had distant metastases at the time of surgery. Although it is known that positive lymph nodes and distant metastases are signs of poor prognosis for patients¹⁰, in our series cystectomy was done not to improve "disease free" or "disease stable" condition, but because of the vital indication at the time of decision making regarding operation. In this group of patients ureterocutaneostomy was most often created. In 7% of the patients before cystectomy, partial cystectomy was done, and in 9% radiation was conducted. These were patients in whom cystectomy was particularly difficult, due to these interventions. Considering that radiation was conducted on the average 5 years ago, and partial cystectomy on the average 2.7 years ago, maybe we should have been more rigorous before making decision to use these types of therapy, because during the years patients become significantly older, and the cystectomy significantly more difficult on the secondary field work. A Canadian study shows that patients with advanced age are at increased risk of developing neurovascular disease, but in the study a statistically significant difference in the mortality rate between younger patients and the elderly was not observed, which amounted to 0.9% and 2.3%, respectively¹¹. In our study, perioperative mortality was 4%.

Four patients who had positive lymph nodes after the surgery, and who were in good general state and without significant comorbidities received postoperative chemotherapy according to the protocol gemcitabine + cisplatin.

Conclusion

The main reason for cystectomy in patients over 70 and 80 was hematuria caused by bladder cancer, with consecutive anemia which cannot be solved using endoscopic treatment or blood substitution. As expected, a longer stay in

hospital after cystectomy, and a higher rate of complications was recorded in this population than in younger patients. We observed a significantly higher need for blood transfusion during surgery, and a higher rate of perioperative mortality. Most patients underwent urinary diversion with ileal conduit,

and a significant number of patients, due to poor general condition or local findings, underwent ureterocutaneostomy. In the selected cases, the patients in good general condition underwent orthotopic diversion and a small number of patients received chemotherapy after surgery.

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Received on December 2, 2013.

Accepted on February 20, 2014.