Radical prostatectomy represents an optimal therapeutic method in the treatment of the localized prostatic carcinoma. It may be performed using retropubic, perineal, transcoccygeal or laparoscopic approach. In a multicentric study, the authors have analyzed 127 patients surgically treated in the period 1992 – 2003. All the patients were preoperatively diagnosed with the localized prostatic carcinoma. The patients were operated at the Clinic of Urology in Belgrade (92 patients) and other departments of urology in Serbia (35 patients). The youngest patient was 49 while the oldest one was 75 (mean age 64 years). The surgical procedure duration ranged between 60 and 120 minutes. Over the last five years, the need for blood transfusion was below 50%. All the patients underwent retropubic radical prostatectomy.

Key words: localized prostatic carcinoma, surgical treatment, radical retropubic prostatectomy, complications.

INTRODUCTION

Hampton Hugh Young1 was the first one to apply radical prostatic surgery in 1904 in order to remove completely the carcinoma. Ever since, numerous surgeons have attempted to improve the technique developed by Young. Belt et al.2 continued to improve the technique advocating anatomic approach to perineal prostatectomy. Retropubic prostatectomy was initially described by Van Stockum (1908), Millin3 was the one who has subsequently popularized the method and described in collaboration with Memmler (1949) radical retropubic prostatectomy in management of the prostatic carcinoma. Fifteen years later, the method was improved by Walsh4 who pointed out the anatomic innervation of the cavernous body and venous drainage of the penile cavernous bodies at the level of prostate. Surgeon’s familiarity with the prostatic and pelvic floor anatomy is of the utmost importance for radical prostatectomy. Walsh and Donker5 have introduced, respecting the anatomic approach to the prostate and taking into the account patient’s quality of life after the surgery, nerve-sparing technique, in order to preserve neurovascular bundles and potency of patients. In such cases, the oncological principle, i.e., radicality of the procedure must be given the absolute priority. The advantage of the retropubic approach lies in the bilateral pelvic lymphadenectomy. This may enable detection of the secondary deposits in the pelvic lymph nodes, which are found in 5% of cases with the localized diseases. The complications associated with retropubic prostatectomy may be intraoperative, early or late. The most important complications include bleeding, rectal injuries, infection, contracture of the urinary bladder neck, incontinence and erectile dysfunction. Mortality rate associated with this surgical intervention ranges between 0.2 and 0.7%.6 At the time being, radical retropubic prostatectomy is a safe surgical procedure in patients below 75 years of age. Indeed, thorough preoperative clinical assessment at all the levels is mandatory in order to make correct selection of candidates for the surgical procedure. The anatomical radical retropubic prostatectomy is effective method for long-term control of the carcinoma. Currently, in the era of the anatomical surgery of the prostate, blood loss is reduced, as well as the complications while control of the disease may be excellent. Some authors8,9 reported cancer-specific survival rate after this type of surgery of 85-90% over the 10-years period, and 82% over the 15-year period. The survival may be even more favorable in patients with lower Gleason scores. Based on the experience gained so far it may be concluded that radical retropubic prostatectomy is an excellent therapeutic option in case of the localized prostatic carcinoma, while selection of patients is a crucial factor for true success of therapy based on this method.
MATERIAL AND METHOD

The study was multicentric and included the results obtained in 5 urological institutions from Serbia. Over the period 1992-2003 the total of 251 patients were surgically treated for the prostatic carcinomas. Radical retropubic prostatectomy was applied in all the cases. The initial surgery was performed on April 20th, 1992 at the Clinic of Urology in Belgrade (J. Hadzi-Djokic). The total of 127 patients was followed-up. The most of the surgeries were performed in 2003 (98). A series of 92 patients operated at the Clinic of Urology in Belgrade and 35 operated in other departments of urology in Serbia (Leskovac, Smederevo, Pirot, Cacak, Vranje, Bezenjijska kosa, HC Zvezdara) were evaluated. The youngest patient was 49 while the oldest one was 75 years of age (mean age 64). Localized disease was evidenced preoperatively in all the patients. All the necessary diagnostic procedures were performed over the preoperative period, such as: complete biochemistry of the blood and urine, PSA serum level, digital rectal examination, abdominal echotomography, TRUS, prostatic biopsy, urography and scintigraphy of the skeletal system. Computerized tomography of the small pelvis or magnetic resonance imaging were performed in a small number of patients for the diagnostic purposes. PSA serum level in these patients ranged between 5.6 and 12.2 ng/ml (mean value 8.1 ng/ml). Pathohistological findings obtained in all the patients were suggestive of adenocarcinoma. As for the tumor malignancy degree, the distribution was the following: grade 1 (71 patients), grade 2 (30 patients) and grade 3 (26 patients). Mean follow-up period was 54 months while 97% were operated in general anesthesia.

ESSENTIAL ELEMENTS OF THE SURGICAL TECHNIQUE

Essential elements of the surgical technique include oncological approach, i.e., radical surgery with removal of the prostate and seminal vesicles taking care of the resection line. Moreover, bilateral pelvic lymphadenectomy is mandatory. Functional principle must be met by preservation of the membranous urethral sphincter and either one or both neurovascular bundles. The former enables preservation of the continence and erectile function. Control of the urethral openings is necessary during the surgical procedure in order to prevent their injuries. Additionally, the approach to rectum must be cautious, however in case of its injuring, two-layer suture and prolonged stay of the urethral catheter in place will suffice. Over the postoperative course, placement of the rectal tube is mandatory. Urinary bladder neck is shaped as tennis racket with eversion of the mucosa in order to prevent onset of stenosis of the urethrovesical anastomosis. Control of the margins toward the resection line is advisable at the time of surgery, if possible. Nerve sparing procedure should not be performed at the expense of its radicality.

RESULTS

The average duration of the surgery was 95 minutes (ranging from 62 to 125 minutes). Mean time of patients’ recovery in hospital after the procedure was 14 days (range 11-21 days), while average blood loss was 720 ml (range 300-1300 ml). Blood transfusion demands were reduced by 50% over the last 5 years. There was no preoperative mortality. It is important to mention that 97% of the patients were operated in general anesthesia. As for the complications, 2 cases of intraoperative rectal injuries (1.2%) were recorded, which were resolved by two-layer sutures. Postoperatively, the catheters remained in place for three weeks, while rectal tubes were removed on the postoperative day 10. Ureteral injury was recorded in one of the patients (<1%), which resulted in urinary fistula. The complication was resolved by re-operation and direct ureterocystoneoanastomosis. As for our series of patients, wound infection was evidenced in 4% of cases, which were successfully treated using antibiotics and would smears control. In one of the patients, urethral catheter dislocation was evidenced in the early postoperative course due to the dysfunctional balloon, however the complication was successfully resolved by repeated placement of the catheter. Contracture of the urethral bladder neck was diagnosed in 4 patients (2.3%), which resulted in stenosis of the urethrovesical anastomosis. Three patients are successfully treated by application of the temporary urethral dilatation. One of the patients underwent internal urethrotomy treatment, which resulted in incontinence. Teflon paste installation into the urinary bladder neck was unsuccessful in this patient. Nerve-sparing surgery was performed in 45 patients, bilateral in 19 patients and unilateral in 26. All the patients were below 65 years of age while local findings enabled application of this type of surgery. In 37 patients the erectile function was completely preserved and they were absolutely content with this respect. The remaining 8 patients were also content, however with application of certain drugs, and their erectile function improved over the time.

DISCUSSION

Radical prostatectomy is a surgical method of choice for treatment of the localized prostatic carcinomas in patients below 75 years of age. In our series of 127 surgically treated patients the retropubic approach was applied. The follow-up period of all out patients was 54 months. The complications evidenced in this group may be intraoperative, early and long-term. Mean intraoperative blood loss reported in large series varied from 570 ml to over 2 l. The loss depends on the surgical technique, duration of surgery and surgeon’s experience. In our series, intraoperative blood loss ranged between 300 and 1,300 ml, while the need for blood transfusion was below 50% over the last five years. The former is most probably associated with the greater surgical experience gained over the time. Rectal injury as a complication, is described in 1% to 3.65 of cases. In our series, this complication was evidenced in 2 patients (1.2%). Both cases were successfully...
resolved by 2-layer suture and placement of the urethral catheter for 3 weeks. Urateral injury, as an exceptionally rare complication was found in one patient, and it resulted in urinary fistula. The injury was managed by re-operation and re-insertion of the ureter into the urinary bladder. Wound infection develops in 1-3% of the cases, while in our series the complication was evidenced in 4% of patients. No cases of pulmonary embolism and deep venous thrombosis were evidenced in our series, although these complications may develop in 3-3.1% of the cases. In case of application of bilateral nerve-sparing procedures, the erectile function was preserved in 63-68% of the cases. In case of unilateral preservation of a nerve bundle, the erectile function was preserved in 41-50% of the patients. Other authors reported less favorable results ranging between 11 and 30%.

As for our series, 45 patients underwent nerve-sparing surgery, and erectile function was preserved in 70% of cases. Over the postoperative period, it is of the utmost importance for the patients to be content, and total continence was described in 80-95% of patients, while one of the patient developed incontinence after internal urethrotomy. Urinary bladder neck contracture develops as a late complication in 0.5 – 17.5% of cases. In our series of patients, the complication developed in 4 patients (3.3%). Eversion of the urinary bladder neck mucosa was performed in all the cases in order to prevent the complication. Three patients from our series with this complication are successfully treated by application of periodic urethral dilatation.

REZUME

RADIKALNA RETROPUBLIČNA PROSTATEKTOMIJA - REZULTATI NA 127 OPERISANIH BOLESNIKA


Ostali prispevku nekaj dodatnih podatkov.

Ključne reči: lokalizovani karcinom prostate, hiurisko lečenje, radikalna retropubicna prostatektomija, komplikacije

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