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COMPLICATIONS IN RADICAL CYSTECTOMY PERFORMED AT A TEACHING HOSPITAL

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ABSTRACT

Objectives: Radical cystectomy with urinary diversion has been the standard treatment to infiltrative bladder neoplasms. We have analyzed a series of radical cystectomies performed by residents at a school hospital and compared the rates of complications in this series with those reported in literature.

Materials and Methods: During the period of December 1996 to December 2000, 59 surgeries were performed by 8 residents in our department, always oversaw by the same assistant. We have analyzed age, gender, pathological staging, type of diversion used, surgical time, need for blood transfusion and blood volume used during surgery, immediate complications (1 to 30 days), late complications, and follow-up time.

Results: There were 51 men and 8 women. Mean age was 61.3 years (28 to 89), and the majority of the group was over 60 years (60%). Mean follow-up time was 8.5 months (3 to 36). Camey II ileal neobladder was used in 36 (62%) cases, ureterosigmoidostomy in 8 (13.8%), Bricker in 12 (20.7%), and Mainz-Pouch II diversion in 2 (3.5%) cases. Blood transfusion was required in 25 (42%) cases. Immediate complications were observed in 19% of the patients, and late complications in 19% as well.

Conclusion: When oversaw by an experienced surgeon, a resident gathers the conditions to perform a radical cystectomy, without significant increase in complication rates.

Key words: bladder; bladder neoplasms; cystectomy; morbidity; postoperative complications Int Braz J Urol. 2002; 28: 522-5

INTRODUCTION

Bladder cancer is the second most frequent genitourinary neoplasia, and transitional cell carcinoma responds for approximately 90% of the cases. Although the majority of patients has an initial diagnosis of superficial bladder cancer, 20 to 40% present infiltrative disease. Radical cystectomy with urinary diversion has been the standard treatment to invasive bladder neoplasms. Recent innovations of its surgical techniques, primarily related to the confection of orthotopic intestinal reservoirs and preservation of cavernous neurovascular bundles, with the technique described by Schlegel & Walsh (1), rendered the procedure more attractive to the patient, and much improved quality of life rates. The aim of this review is to analyze a series of radical cystectomies performed by residents in a school hospital, and to compare morbidity and mortality rates of this series to other presented in the literature.

MATERIALS AND METHODS

Design: Retrospective study made by a review of charts of patients submitted to radical cystectomy in the period of December 1996 to December 2000.

Participants: Fifty-nine surgeries were performed in this period by 8 residents in our department, always oversaw by the same assistant (LJN).

Surgical treatment: All patients underwent radical cystectomy, bilateral iliac lymphadenectomy, according to the technique previously published (2). Orthotopic ileal neobladder was the diversion of choice for all patients for which urethral preservation was possible and with normal renal function. For patients with tumoral invasion of the urethra, we have performed a Leadbetter or Mainz II ureterosigmoidostomy, and for patients with renal function impairment the diversion chosen was cutaneous ureteroileostomy (Bricker).

Evaluation criteria: We have analyzed age, gender, pathological staging, type of diversion used, surgical time, need for blood transfusion and blood volume used during surgery, immediate complications (1 to 30 days), late complications, and followup time.

RESULTS

There were 51 men and 8 women in the group analyzed. Mean age was 61.3 years (28 to 89), with the majority of the group over 60 years (60%). Mean follow-up time was 8.5 months (3 to 36).

Histological types observed were: transitional cell carcinoma in 52 (88.1%) patients, adenocarcinoma due to invasion of colorectal tumors in 2 (3.4%), squamous cell carcinoma in 2 (3.4%), and 3 (5%) sarcoma. There was squamous differentiation in 2 cases of transitional cell carcinoma. The combination with carcinoma in situ occurred in 5 (9.6%) cases and with prostate adenocarcinoma in 3 (5.7%) cases. Pathological staging disclosed T0, Tis, and T1 in 8 (15.4%) cases, T2 in 21 (40.4%) cases, T3 in 18 (34.6%) cases, and T4 in 5 (9.6%) cases. The remainder includes adenocarcinomas, squamous cell carcinomas, and sarcomas.

Camey II ileal neobladder was used in 36 (62%) cases, ureterosigmoidostomy in 8 (13.8%), Bricker in 12 (20.7%) and Mainz-Pouch II diversion

in 2 (3.5%) cases. There was an intra-operative decease due to acute myocardial infarction, and urinary diversion was not performed. Mean surgical time was 326 minutes (255 to 420). Blood transfusion was required in 25 (42.4%) cases, with a mean volume of blood used of 785mL (500 to 1,200mL).

Immediate and late complications were observed in 19% of the patients. Complications considered immediate included: metabolic acidosis in 3 patients, acute renal failure in 1, surgical wound infection in 1, pyelonephritis in 2, and abdominal wall dehiscence in 4 patients. Late complications observed included unilateral hydronephrosis in 6 and bilateral in 2 patients, pneumonia in 2 cases, and anterior wall necrosis of the ileal neobladder in 1 patient, due to its incarceration in an incisional hernia. Four (6.7%) deaths occurred during early post-operative period, i.e., in the first 30 days after the surgical procedure. One patient presented acute myocardial infarction, and 3 presented septicemia.

DISCUSSION

Our results demonstrate that radical cystectomies performed by resident doctors, under the supervision of an experienced surgeon, do not present higher post-operative morbidity and mortality rates compared to the rates reported in literature (3-9).

Improvement and systematization of surgical techniques for radical cystectomy, enhancement of post-operative intensive care, and increased antibiotic efficiency, have all contributed to the drop in mortality reported in literature. This decreased from 29 to 54% in the twenties, to 9 to 20% in the sixties, and to 1 to 8% in the eighties and nineties. Mortality observed in this review was 6.7%, similar to other radical cystectomies series (Table-1).

Aucamp & Heyns (6) analyzed 112 cases operated in faculty departments, and reported that mean blood transfusion volume requirement was 1.200mL of packed red cells. Rosário et al. (8) reported that more than half of the patients received more than 4 units of packed red cells. When we compare this to our results, we observe that the maximum volume of packed red cells transfused was 3

Author	Ν	Post-Operative Mortality (%)
Skinner et al., 1980	165	2.4
Thomas et al., 1982	100	15
Giuliani et al., 1985	202	24
Aucamp et al., 1995	112	11
Cancrini et al., 1996	096	6.2
Rosario et al., 2000	101	2
Stein et al., 2001	1,054	2.5
Meller et al., 2001	59	6.7

Table 1 – Radical cystectomy – post-operative mortality.

units (1,200mL); mean transfused volume was 785mL in 25 patients (42.4%), and 57.6% of the patients did not require transfusion. We consider the systematization of the cystectomy technique (2) an important factor to control per-operative bleeding.

Main post-operative morbidity observed in this series was abdominal wall dehiscence in four patients, probably due to their impaired nutritional status. Resuture of the abdominal wall was required for these patients, and other immediate post-operative complications observed were clinically treated. When we compare to immediate complications related in the literature, we observe that they happened in 8 to 28% of the patients (Table-2), showing no

Table 2 – Radical cystectomy – immediate and late complications.

Author	Ν	Immediate (%)	Late (%)
Skinner et al., 1980	165	16	32
Thomas et al., 1982	100	24	31
Aucamp et al., 1995	112	17	59
Cancrini et al., 1996	96	11.5	23.9
Rosario et al., 2000	101	8	NR
Stein et al., 2001	1,054	28	NR
Meller et al., 2001	59	19	19

NR = not reported

morbidity increase in major surgeries performed by training surgeons under the supervision of a surgeon already familiar to the procedure. We did not observe any difference in immediate morbidity incidence, neither in per-operative bleeding between the different types of diversion used. Despite our patients' follow-up being shorter than that of other series, the incidence of late complications is also similar to those reported in the literature.

CONCLUSION

We have concluded that, when oversaw by an experienced surgeon, a resident gathers the conditions to perform major procedures, such as radical cystectomy, without a significant increase in complications rates.

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