CLINICAL CASE

Urinary diversion postoperative complication management


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Abstract  Bladder cancer is the fourth most common malignant tumor in the developed countries. The treatment of choice for high grade muscle-invading and non-muscle-invading tumors that do not respond to intravesical BCG application continues to be radical cystoprostatectomy in men and anterior pelvic exenteration in women, both associated with extended pelvic lymphadenectomy. Before 1990, case series reported a mortality rate close to 15%; however, in the last 10 years that rate has been reduced to 0%-3%. We present herein a special case of radical cystectomy (RC) due to bladder cancer with multiple complications, describing some of their management alternatives.

PALABRAS CLAVE
Cáncer; Vejiga; Complicaciones; Tratamiento; México.

Manejo de las complicaciones postoperatorias en las derivaciones urinarias

Resumen  El cáncer de vejiga es el cuarto tumor maligno más común a nivel mundial, en países desarrollados. El tratamiento de elección para los tumores músculo invasores y no músculo invasores de alto grado que no responden al manejo con aplicación intravesical de BCG, continúa siendo la cistoprostatectomía radical en los hombres y la exenteración pélvica anterior en las mujeres, ambas asociadas a linfadenectomía pélvica extendida. Antes de 1990, las series reportaban una mortalidad cercana al 15%, sin embargo en los últimos 10 años se ha logrado reducir la mortalidad al 0%-3%. Se presenta un caso especial de cistectomía radical (CR) por cáncer de vejiga con múltiples complicaciones; se pretende dar a conocer las alternativas de manejo de las mismas.
Introduction

Bladder cancer is the fourth most common malignant tumor in the developed countries and the ninth on a worldwide level. In Mexico, it is in fourth place among the urogenital tumors, with 1,136 cases reported from 2007 to 2009, according to the latest regional statistics update.1-3

The treatment of choice for muscle-invading and non-muscle-invading high grade tumors that do not respond to management with intravesical BCG application continues to be radical cystoprostatectomy in men and anterior pelvic exenteration in women, both associated with extended pelvic lymphadenectomy. Radical cystectomy (RC) provides the best cancer-specific survival rate for muscle-invading urothelial cancer4, with recurrence-free survival rates at 10 years of up to 60% and a total survival rate of 45%.5,6

RC with urinary diversion is a procedure that attempts to reduce morbidity, provide rapid postoperative rehabilitation, reduce hospital stay, and finally, reduce costs. These are the goals towards which modern surgery aims, but they have been very difficult to achieve.

Before 1990, case series reported a mortality rate close to 15%, but in the last 10 years it has been reduced to 0%-3%;7,8 nevertheless, morbidity continues to be elevated, reaching up to 68% in the large case series.9 Late complications are from 19% to 58%. The important reduction in perioperative morbidity reflects both the current effort of multidisciplinary teams in managing the surgeries and the recognition and adequate treatment of early complications.

Case presentation

A 56-year-old man from Mendoza, Argentina, residing in Mexico City, has a past medical history of intense smoking from the age of 20 years to the present, smoking 15 cigarettes a day with a smoking index of 15. He also has a 10-year progression of high blood pressure that is treated with losartan. His present illness began in December 2011 with total gross hematuria, the presence of amorphous coagulates, but with no other added symptomatology. The hematuria lasted 15 days and then remitted spontaneously.

Physical examination revealed a normal head and neck, well-ventilated pulmonary fields with no abnormal sounds, rhythmic heart sounds of adequate intensity and frequency, a distended abdomen due to the adipose panniculus that was soft, depressible, non-painful, and with no peritoneal irritation data. There were no palpable tumors or enlarged organs. His superior and inferior extremities had no alterations in their form, strength, function, or neurovascular status. Upon digital rectal examination, palpation of the anal sphincter showed a normal tone and a non-suspicious grade 1 adenomatous prostate.

Hematuria protocol was begun (table 1) ordering laboratory tests. A urotomography (UroCAT) scan identified a bladder tumor that was dependent on the left lateral wall. Cystoscopy with transurethral resection of the bladder (TURB) was performed, finding a 3 cm bladder tumor on the left lateral wall; it had a papillary aspect and was completely resected (16/01/2012) (fig. 1). The histopathologic report stated high grade urothelial papillary carcinoma with detrusor muscle invasion. Biopsies of the bladder neck and prostate were carried out later and were negative for malignancy (24/02/12). The patient was programmed for radical cystoprostatectomy with urinary diversion through a Studer orthotopic neobladder (12/03/12) and it was performed with no perioperative complications (fig. 2). On the third postoperative day, serohematic matter began to come out through the surgical wound; it was managed as a seroma, with drainage and wound dressings. The patient began to eat food on the sixth postoperative day and tolerated it well: he presented with fever of 38.5°C without leukocytosis. On 22/03/12 there was evidence of dehiscence of the aponeurosis, and exploratory laparotomy (ex-lap) revealed the dehiscence and purulent matter in the abdominal cavity that was managed with an open abdomen and Bogotá bag (fig. 3). Once again, on 27/03/12, serohematic matter came out of the Bogotá bag. An x-ray study showed a contrast medium leak through the urethrostomie anastomosis and so the patient underwent surgery performing a surgical

Figure 1 Urotomography scan.

Figure 2 Studer-type neobladder.
lavage, abdominal wall closure, transurethral catheter relocation, and neocystostomy. A frozen abdomen and minimal dehiscence of the anastomosis was found. On 28/03/12 there was output of serohematic matter from the surgical wound; a Bogotá bag was placed once again and surgical lavage was done. Due to the presence of Zulke IV intra-abdominal adherences, the patient was managed with a change of the Bogotá bag every 2 days and surgical lavages, getting the neocystourethral anastomosis wound to behave like a controlled neocystocutaneous fistula. On 24/04/12 bilateral percutaneous nephrostomies were placed without complications, resulting in a reduction of the output through the surgical wound. On 25/04/12 a vacuum-assisted closure (VAC) system was placed in an attempt to close the anastomosis and the surgical wound (fig. 4). Replacement of the VAC system every 2 days was begun. On 12/05/12 the patient was released from the Service and continued the VAC therapy as an outpatient, with re-admittance once a week for system replacement. This management resulted in 80% closure of the surgical wound, however the exit of urine persisted through the inferior third of the wound because the urethrointestinal anastomosis dehiscence persisted. On 27/06/12 ex-lap was performed and the Studer neobladder was dismantled, the urinary diversion was reconstructed with an ileal conduit using the Bricker technique, and the abdominal wall was closed. The patient had good postoperative progression with no complications and adequate functioning of the ileal conduit with no intestinal or urinary complications. He was released on the fifth postoperative day. In the outpatient follow-up he remained free of complications derived from the urinary diversion.

**Discussion**

In the whole of the case series reviewed, 64% of all cystectomies have some kind of complication and 13% of the patients present with a high-grade complication. The mean
hospital stay is 9 days for radical cystoprostatectomy, with grade 2-3 complications. Twenty-six percent of patients require re-admittance and 34% have emergency consultations once they have been released. Five percent of the patients require admittance to the Intensive Care Unit, 2% require a second surgery during their first hospitalization, and only 1% require re-intervention within the first 90 after being released.10 Hospital mortality is 0.7% and rises to 2.7% within the first 90 days; cardiopulmonary events are the principal cause of death. Among the complications, the most common were gastrointestinal (40%), infectious (39%) and bleeding (16%).11 Opportune detection of a complication in the postoperative period and its early intervention determine the patient outcome. Adequate diversion of the urinary tract, fistula management, and control with the VAC system are an alternative for the management of an open abdomen in patients with abdominal complications resulting from RC. To reduce the number of complications derived from highly complex procedures such as RC, it is necessary to establish multidisciplinary teams that perform a high number of surgeries.

Conflict of interest
The authors declare there is no conflict of interest.

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References