ORIGINAL ARTICLE

Morbimortality associated with radical cystectomy: experience at the *IMSS UMAE No. 25*

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ABSTRACT

Radical cystectomy with urinary diversion is considered to be the treatment criterion standard for muscle-invasive bladder cancer. It is also indicated for stage T1 recurrent disease and carcinoma *in situ* that does not respond to chemotherapy or intravesical immunotherapy.

Objective: To determine radical cystectomy morbidity and mortality in a representative sample of the population of northeastern Mexico.

Methods: A retrospective study was carried out on 33 patients that underwent radical cystectomy during the time frame of September 2004 to July 2009. Surgical mortality or mortality secondary to the procedure as well as intraoperative morbidity and complication rate associated with surgical procedure were analyzed.

Results: Postoperative mortality rate was 0.06% in the first 60 days. Postoperative complication frequency was 33% and the most frequent complications were intestinal or urothelial anastomosis dehiscence (6% each one) and thromboembolic events (6%). The most frequent prior associated comorbidities were cardiovascular (18%), metabolic (15%) and respiratory (12%).

Discussion: Overall mortality rate after radical cystectomy is around 0.03% in different series. However,

RESUMEN

La cistectomía radical con derivación urinaria es considerada como el tratamiento estándar para el cáncer de vejiga músculo-invasivo, también está indicada en etapa T1 recurrente y en el carcinoma in situ que no responde a quimioterapia o a inmunoterapia intravesical.

Objetivo: Determinar la morbilidad y la mortalidad de la cistectomía radical en una muestra representativa de la población del noreste de México.

Método: Se realizó un estudio retrospectivo con 33 pacientes que fueron sometidos a cistectomía radical entre el periodo comprendido de septiembre de 2004 a julio de 2009, en el que se analizó la mortalidad quirúrgica o secundaria al procedimiento, así como la morbilidad perioperatoria y la tasa de complicaciones asociadas al procedimiento quirúrgico.

Resultados: La tasa de mortalidad posoperatoria fue de 0.06% en los primeros 60 días. La frecuencia de complicaciones posoperatorias fue de 33%, siendo las más frecuentes la dehiscencia de la anastomosis intestinal o ureteroileal (6% cada una), así como eventos tromboembólicos (6%). Las comorbilidades previas asociadas más frecuentes fueron cardiovasculares (18%), metabólicas (15%) y respiratorias (12%).

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complication frequency after radical cystectomy varies from 25-35%. The results of the present study were similar to those published in different reports.

Conclusions: Given that bladder cancer in the muscle-invasive stage is a potentially lethal condition and that radical cystectomy has been associated with low mortality and acceptable morbidity rates, this procedure should be offered to all patients diagnosed with this condition who do not present with contraindications.

Key words: Radical cystectomy, morbidity, mortality, Mexico.

Discusión: La tasa de mortalidad después de la cistectomía radical se encuentra de manera global alrededor de 0.03% en las diferentes series. Sin embargo la frecuencia de complicaciones después de la cistectomía radical oscila entre 25% a 35%. En nuestra serie observamos resultados similares a los publicados en los distintos reportes.

Conclusiones: Dado que el cáncer de vejiga en etapa músculo invasiva es una condición potencialmente letal y puesto que la cistectomía radical se ha asociado con tasas de mortalidad baja y morbilidad aceptable, ésta se debe ofrecer a todos los pacientes con este diagnóstico que no tengan alguna condición que la contraindique.

Palabras clave: Cistectomía radical, morbilidad, mortalidad, México.

BACKGROUND

In Mexico there were 2170 new cases of bladder cancer registered in 2001. It presents more frequently in men at a proportion of 3:1. It is fifth place as cause of malignant neoplasia from the ages of 45-64 years and is third place in men over 65 years of age.[1]

Ninety to ninety-five percent of malignant bladder tumors are urothelial carcinomas. The remaining 5-10% are made up of mesenchymatous neoplasias and different types of epithelial tumors.[2]

The clinical spectrum of bladder cancer can be divided into three categories with differing prognosis and treatment. The first consists of non-invasive tumors, the second of invasive lesions, and the third of metastatic lesions.[3] Radical cystectomy continues to be the most effective local therapy for bladder cancer with muscle-layer invasion.[3]

Appropriate surgical procedure includes cystoprostatectomy in men and cystectomy plus hysterectomy in women, followed by urinary diversion formation with drainage toward the abdominal wall or the urethra. [3] Pelvic lymph node dissection is an integral part of bladder cancer surgical management. [3]

Radical cystectomy with urinary diversion is standard treatment for muscle-invasive bladder cancer. It is also indicated in stage T1 recurrent cancer and in carcinoma *in situ* that does not respond to chemotherapy or intravesical immunotherapy.[4,5]

The adequate time to carry out radical cystectomy after bladder cancer diagnosis has been analyzed in different retrospective studies concluding that patients treated within the first three months present with a longer disease or recurrence-free period as well as greater overall survival rate.[6]

OBJECTIVE

The objective of the present study was to determine morbidity and mortality in radical cystectomy in a representative northeast Mexican population.

METHODS

A descriptive, retrospective study of patients diagnosed with bladder cancer and treated with radical cystectomy and urinary diversion at the Department of Urology of the *UMAE N° 25* of the *Instituto Mexicano del Seguro Social (IMSS)* was carried out. This hospital provides medical attention to insured patients in northeastern Mexico. The study covered the time frame from September 2004 to July 2009. Case records of 33 patients (29 men and 4 women) were analyzed, evaluating surgical mortality or mortality secondary to procedure as well as perioperative morbidity and frequency of complications associated with surgical procedure within the first 60 postoperative days. Seven case records were excluded from the study due to incomplete clinical data.

The clinical variables analyzed were age, clinical stage, intraoperative complications, days of hospital stay, previous radiotherapy background, type of diversion, histopathological report of neoplasia, and presence of previous comorbidities.

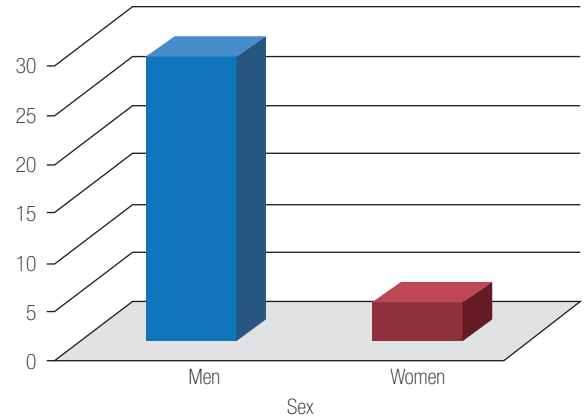

Image 1. Sex of patients studied.

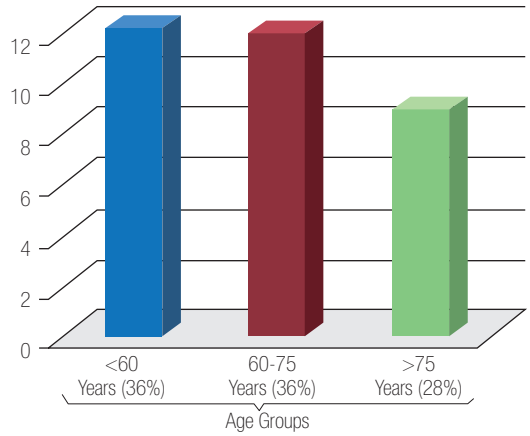

Image 2. Age groups.

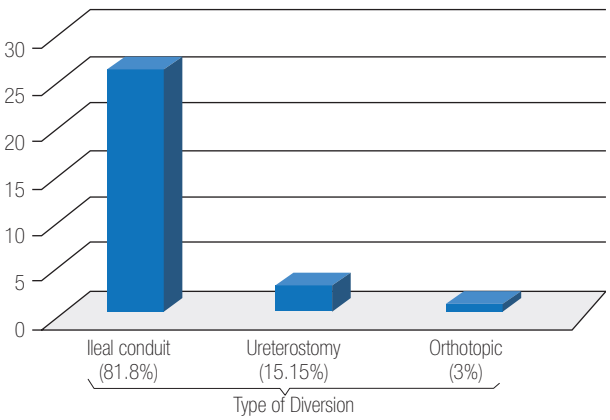

Image 3. Type of diversion.

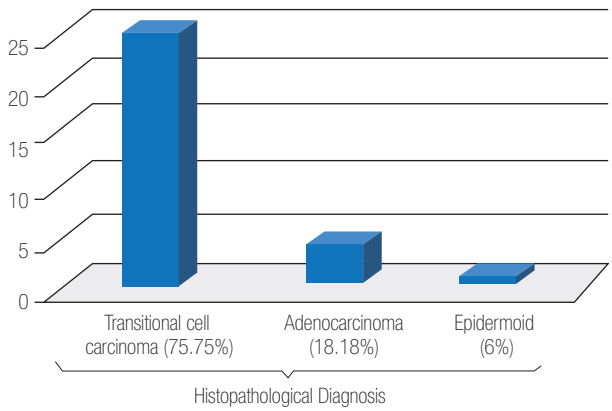

Image 4. Histopathological diagnosis.

RESULTS

Thirty-three case records were analyzed, 29 of which corresponded to men and 4 to women (**Image 1**). Mean age was 63 years with a 30-82 year range (**Image 2**). Mean hospital stay was 16 days with a range of 8-42 days. Seven patients (21%) had a history of previous radiotherapy. The most common type of urinary diversion was ileal conduit in 27 patients (81.8%), ureterostomy in 5 patients (15.15%), and orthotopic diversion in 1 patient (3%) (**Image 3**). Histopathological report was transitional cell carcinoma in 25 patients (75.75%), adenocarcinoma in 6 patients (18.18%) and squamous cell carcinoma in 2 patients (6%) (**Image 4**).

The most frequently associated previous comorbidities were cardiovascular (18%), metabolic (15%) and respiratory (12%) (**Image 5**). Absolute postoperative complication frequency was an overall 33%, intestinal and ureteroileal anastomosis dehiscence was 6% each, prolonged intestinal paresis presented in 2 patients, wound infection in 1 patient, wound dehiscence in 1 patient, thromboembolic events in 2 patients and postoperative bleeding in 1 patient (**Image 6**). Postoperative mortality rate in the first 60 days was 0.06/100, (2 patients) and was caused by sepsis in both cases. Four patients required parenteral nutrition due to prolonged fasting and 5 patients required some type of repeat surgery.

DISCUSSION

Previous studies have demonstrated that radical cystectomy can be carried out safely in selected patients

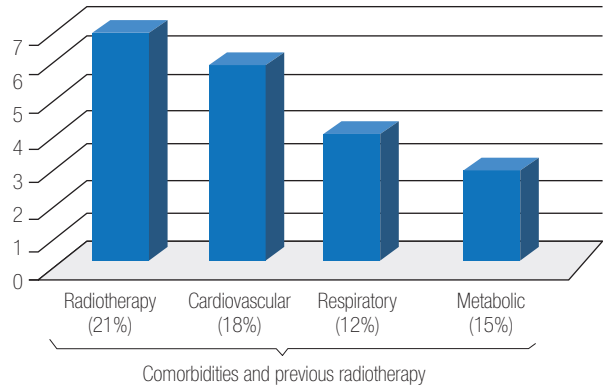

Image 5. Comorbidities and previous radiotherapy.

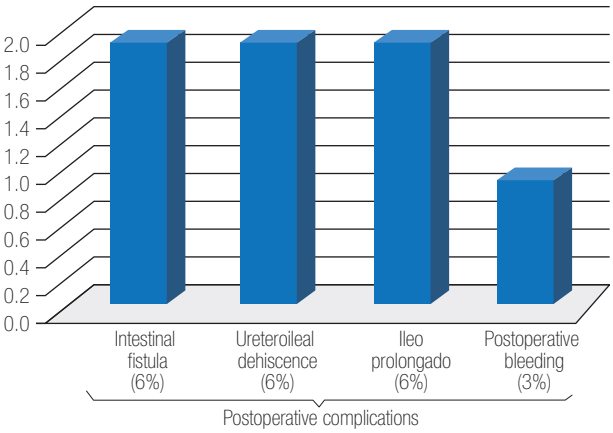

Image 6. Postoperative complications.

75-years-old and older with an acceptable perioperative morbidity rate and with long-term benefits in the presence of comorbidites.[7] Ileal conduit has been the usual urinary diversion of choice especially in older patients but there are no studies that compare orthotopic diversion with ileal conduit in terms of morbidity and quality of life in patients above 75 years of age.[7] In their series, Rosario et al[8] reported postoperative mortality of 2% and perioperative adverse effect frequency of 22%. In addition, a deleterious effect in complication incidence was associated in patients with a history of previous radiotherapy. Sogni et al[7] evaluated perioperative morbidity in 105 patients above 75 years of age treated with radical cystectomy and urinary diversion. They presented with complication frequency of 25% and a 3.8% mortality rate. Konety et al[4] analyzed a total of 6577 patients diagnosed with bladder cancer from 1057 hospitals who were treated with radical cystectomy. There was complication frequency of 28.4% and a 2.57% mortality rate. Hospitals were categorized by mean number of cystectomies performed per year. More than 3 cystectomies per year was considered high category, 1.5 per year was considered moderate, and fewer than 1.5 per year was considered low. Primary complication frequency was estimated to be lower in high category hospital centers. Global mortality rate after radical cystectomy was 3% in different series. However, complication frequency after radical cystectomy varied 25-35%.[5]

The present series produced similar results to those published in different reports.

CONCLUSIONS

Muscle-invasive bladder cancer is a potentially fatal condition. Radical cystectomy has been associated with low mortality and morbidity rates and therefore should be offered as a therapeutic option to all patients that do not present with any major surgery contraindication, regardless of their age.

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