

Anesthesia for Total Cystoprostatectomy: (Experience at HMA Based on 30 Cases)

N. El Fassiki^{1*}, A. Belhadj¹, Y. Qamouss¹¹Military Hospital Avicenne, Caddi Ayyad University, MarrakechDOI: <https://doi.org/10.36347/sajb.2025.v13i05.008>

| Received: 07.04.2025 | Accepted: 13.05.2025 | Published: 19.05.2025

*Corresponding author: N. El Fassiki

Military Hospital Avicenne, Caddi Ayyad University, Marrakech

Abstract

Original Research Article

Radical cystoprostatectomy (CPT) is a major surgical procedure that remains associated with high morbidity and prolonged hospitalization. This retrospective study was conducted over a 2-year period, from July 2019 to July 2021, in the anesthesia and urology departments, and included 30 patients undergoing CPT. The aim was to analyze patient profiles, describe perioperative anesthetic management, and evaluate perioperative and postoperative morbidity and mortality. The mean age was 63.3 years, with smoking being the main risk factor. Macroscopic hematuria was the predominant symptom (93.3%), and all patients had an ASA score ≤ 3 . Preoperatively, 10 patients required transfusion, and two patients with chronic kidney disease underwent hemodialysis the day before surgery. Urinary diversion was performed in 76.7% of cases, enterocystoplasty in 16.7%, and cutaneous ureterostomy in 6.7%. The mean operative time was 254.47 minutes, with an average blood loss of 500 cc and a 20% intraoperative transfusion rate. No intraoperative deaths occurred. Postoperative care was managed by intensive care and urology teams. Early complications occurred in 36.7% of patients, and late complications in 20%, with three reported deaths. The average ICU stay was 2.5 days, and the mean total hospital stay was 15 days. CPT remains a complex surgical procedure, particularly challenging in the management of frail patients with multiple comorbidities.

Keywords: Total cystoprostatectomy Postoperative morbidity and mortality Perioperative anesthesia.

Copyright © 2025 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

INTRODUCTION

Total cystoprostatectomy (CPT) is a major surgical procedure commonly performed to treat bladder cancers invading the prostate. Although therapeutic, this procedure is associated with a high morbidity rate and prolonged hospitalization, making it a significant clinical challenge. The aim of this retrospective study is to analyze the profile of patients undergoing this procedure, clarify perioperative anesthetic management, and assess both perioperative and postoperative morbidity and mortality rates.

MATERIALS AND METHODS

A retrospective study was conducted over a 2-year period from July 2019 to July 2021, within the anesthesia and urology departments. Thirty patients who underwent CPT were included. Demographic, surgical, anesthetic data, length of stay, and postoperative morbidity and mortality were collected and analyzed.

RESULTS

Demographic and Clinical Profile of Patients:

The study included 30 patients who underwent total cystoprostatectomy (CPT) between July 2019 and July 2021. The mean age was 63.3 years, with a male predominance. The primary risk factor identified was smoking, found in 90% of patients. The most frequent clinical signs were macroscopic hematuria (93.3%), followed by pelvic pain (66.7%) and pollakiuria (53.3%). All patients had an ASA score ≤ 3 , indicating generally acceptable preoperative physical condition. However, 40% had significant comorbidities, including hypertension (30%), type 2 diabetes (15%), and cardiovascular history (10%).

Anesthetic Management:

Anesthetic management was adapted based on the profile of each patient. Ten patients received preoperative blood transfusions due to severe anemia. Two chronic kidney disease patients underwent hemodialysis the day before surgery. General anesthesia was combined with continuous epidural analgesia to ensure optimal postoperative pain management.

Intraoperative monitoring included invasive monitoring in high-risk cases, with rigorous fluid management and routine thromboembolic prophylaxis.

Surgical Data:

The average duration of surgery was 254.47 minutes, with an average blood loss of 500 mL. Blood transfusion was required in 20% of cases. Urinary diversion was performed in 76.7% of patients, enterocystoplasty in 16.7%, and cutaneous ureterostomy in 6.7%. No deaths were recorded during the intraoperative period. The average duration of the stay in the intensive care unit was 2.5 days, and the average hospital stay was 15 days.

Postoperative Morbidity and Mortality:

Thirty-six percent of patients experienced early complications, including urinary tract infections (13.3%), digestive disorders (10%), and respiratory complications (6.7%). Late complications were observed in 20% of patients, including urinary strictures (6.7%), abdominal hernias (6.7%), and tumor recurrences (6.7%). Three deaths were observed, resulting in a postoperative mortality rate of 10%. The causes of death were severe infectious complications (2 cases) and acute renal failure (1 case).

DISCUSSION

Total cystoprostatectomy (CPT) is the standard treatment for muscle-invasive bladder cancer in the absence of metastases. It constitutes a complex surgery due to the simultaneous excision of the bladder, prostate, seminal vesicles, and peri-vesical tissues, often associated with an extended lymphadenectomy and urinary diversion. This technical complexity exposes patients to significant morbidity, both perioperative and postoperative, even in the most experienced centers [1]. The patient's underlying condition plays a key role in the outcomes of this surgery. Bladder cancer predominantly affects elderly patients, often with multiple pathologies, and many are smokers, which compromises the function of the cardiovascular and renal systems. In our series, these risk factors were well represented, similar to cohorts described in the literature. Chronic smoking, in particular, plays a role not only in urothelial carcinogenesis through the activation of nitrosated derivatives and inhibition of DNA repair systems [2], but also in impairing wound healing and increasing postoperative thromboembolic risk [3]. Anesthetic management must address this complexity. Combined anesthesia (general + epidural) was widely used in our series, which is in line with current recommendations aimed at improving pain management, reducing opioid use, and facilitating postoperative recovery [4]. This approach is consistent with ERAS (Enhanced Recovery After Surgery) protocols, which also include perioperative fluid restriction, no routine digestive preparation, and early mobilization [5]. Many studies have shown that the strict application of ERAS protocols leads to a reduction in postoperative complications (up to

-30%) and a decrease in hospital stay duration [6]. Regarding the surgical procedure, the average duration of 254 minutes is within expected standards for a CPT with lymphadenectomy and diversion. Moderate blood loss (500 mL on average) and low transfusion rates (20%) are indirect indicators of surgical expertise, and these parameters positively influence immediate postoperative outcomes. Blood transfusion, in particular, has been identified in several studies as a factor for tumor recurrence due to the immunomodulation induced [7]. The early postoperative morbidity observed in 36.7% of patients in our series is relatively moderate. This falls within the range reported in the literature, typically between 30% and 65%, depending on the definition of complications and follow-up [8]. Digestive complications (ileus, fistulas), infectious complications (urinary sepsis, pelvic abscesses), and thromboembolic events are the most common. It is important to note that morbidity is often underestimated in retrospective studies, especially for minor or transient events. Additionally, 20% of patients developed late complications, highlighting the need for prolonged follow-up. Postoperative mortality within 30 days remains a major indicator of quality. Although our study reports no perioperative deaths, the overall 90-day mortality rate is 10%, which exceeds the thresholds reported in large centers (usually between 2% and 6%) [9]. This difference may be multifactorial: limited resources in intensive care, delayed diagnosis, underestimation of operative risk, or lack of preoperative rehabilitation. A multicenter prospective study would be necessary to analyze these factors in detail and propose targeted improvements. Finally, beyond the surgery itself, the oncological quality of care also depends on adherence to CPT indications, completeness of lymphadenectomy, and quality of urinary diversion. Most of our patients received external diversion (Bricker), adapted to their age and functional status. However, in centers with specialized teams, internal diversions (enterocystoplasty or orthotopic neobladder) are increasingly offered to young and motivated patients, with good functional and oncological results [10]. Thus, our study, though limited by its retrospective nature and small sample size, highlights the feasibility of CPT in a non-university setting with acceptable outcomes. It also underscores the importance of standardizing perioperative care, rigorously assessing operative risk, and gradually adopting ERAS protocols, which are essential for reducing morbidity and mortality in this complex surgery.

REFERENCES

1. Hautmann RE, de Petriconi RC, Volkmer BG. 25 years of experience with ileal orthotopic neobladder: lessons to be learned. *J Urol*. 2011 ;185(6) :2209–2215.
2. Freedman ND, Silverman DT, Hollenbeck AR, et al. Association between smoking and risk of bladder cancer among men and women. *JAMA*. 2011;306(7) :737–745.

3. Parsons JK, Messer K, Palazzi K, et al. Impact of tobacco smoking on perioperative outcomes after major surgery. *J Am Coll Surg*. 2010 ;210(2) :232–238.
4. Levy BF, Scott MJ, Fawcett WJ, et al. Enhanced recovery after surgery (ERAS) and opioid-free anesthesia: trends and directions. *Br J Anaesth*. 2017 ;119(Suppl 1) : i59–i72.
5. Cerantola Y, Valerio M, Persson B, et al. Guidelines for perioperative care after radical cystectomy for bladder cancer: Enhanced Recovery After Surgery (ERAS) society recommendations. *Clin Nutr*. 2013 ;32(6) :879–887.
6. Tyson MD, Chang SS. Enhanced recovery pathways versus standard care after cystectomy: a meta-analysis of the effect on perioperative outcomes. *Eur Urol*. 2016 ;70(6) :995–1003.
7. Linder BJ, Frank I, Cheville JC, et al. The impact of perioperative blood transfusion on cancer recurrence and survival following radical cystectomy. *Eur Urol*. 2013 ;63(5) :839–845.
8. Shabsigh A, Korets R, Vora KC, et al. Defining early morbidity of radical cystectomy for patients with bladder cancer using a standardized reporting methodology. *Eur Urol*. 2009 ;55(1) :164–174.
9. Hampson LA, McKiernan JM. Radical cystectomy complications and perioperative mortality. *BJU Int*. 2019;123(6):1011–1019.
10. Studer UE, Burkhard FC, Schumacher M, et al. Twenty years experience with an ileal orthotopic low-pressure bladder substitute: lessons to be learned. *J Urol*. 2006 ;176(1) :161–166.