LONG TERM COMPLICATIONS AFTER RADICAL CYSTOPROSTATECTOMY

Thesis

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مَنْ عَمِلَ صَالِحاً مِّن ذَكَرٍ أَوْ أُنثَى وَهُوَ مُؤْمِنٌ فَلَنُحْيِيَنَّهُ حَيَاةً طَيِّبَةً وَلَنَجْزِيَنَّهُمْ أَجْرَهُم بِأَحْسَنِ مَا كَانُوا يَعْمَلُونَ

النحل (٩٧)

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ABSTRACT

Radical cystectomy is the standard treatment for patients with invasive bladder cancer and for those with superficial bladder cancer who did not respond to intravesical therapy **(Cheryl et al., 2006, Solsona et al., 2003).**

Objective: This study aims at evaluation of long-term outcomes, both functional and oncological, in patients treated with radical cystectomy and different types of diversion for invasive bladder cancer.

Patients and Methods: This is a retrospective study done in Cairo university hospitals and Students' hospital between July 2009 and December 2010 included 65 patients, 51 males and 14 females, whom underwent radical cystectomy with different types of diversions.

Results: Erectile dysfunction developed post-operatively in 41 males (80.4%) in non nerve sparing cystectomy, Nocturnal incontinence 41%, Stress incontinence 4.5%, Urge incontinence 4.5%, Total incontinence2.27% while 21 patients (47.7%) were continent day and night, Stones developed post-operatively in 2 patients (3.1%), Stomal stenosis developed in 2 patients (12.5% of stomas), Incisional hernia developed in 2 patients (3.1%), Ureteric stricture in 2 patients (3.1%), Rediversion was done in one patient (1.5%), Recurrent UTI was recorded in 19 cases (29.2%) 10 cases of orthotopic diversion, 5 cases of ureterocolic, 3 cases of ureterocutaneous and one case of ileal conduit, Uraemia & Dialysis in15.4% of cases, Metastasis was recorded as follows (Local 1.5%, Distant 18.5% and both 3.1%) and Mortality rate was 24.6%.

Conclusion: Long term follow-up for patients with radical cystectomy and urinary diversion shows high complication and high surgical re-intervention rates. Longer follow-up period for years is needed for radical cystectomy with urinary diversion techniques to verify causes and prevent complications.

Key wards: Long term – complications – follow up – radical – cystoprostatectomy – urinary diversion.

List of Abbreviations

ED : Erectile Dysfunction

EF : Erectile Function

IARC : International Agency for Research on Cancer

IIEF : International Index of Erectile Function

LRC : Laparoscopic Radical Cystectomy

NCI : National Cancer Institute

PCNL : Percutaneous nephrolithootomy

RC : Radical Cystectomy

SCC : Squamous Cell Carcinoma

TCC : Transitional Cell Carcinoma

UD : Urinary Diversion

UTI : Urinary Tract Infection

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INTRODUCTION

Urinary bladder cancer is a common disease worldwide. Urinary bladder cancer ranks ninth in the worldwide cancer incidence **(Ferlay et al., 2004).** It is the seventh most common malignancy in men and seventeenth in women. Approximately 357000 new bladder cancer cases (274000 males and 83000 females) occurred worldwide in 2002 **(Parkin, 2008).** At any point in time 2.7 million people have a history of Urinary bladder cancer **(Ploeg et al., 2009).**

Urinary bladder cancer is the second most common malignancy of all genitourinary tumors after prostate cancer and is nearly three times more common in men than in women **(Jemal et al., 2005).**

Bladder cancer is the fifth most common cancer in the United States. Incidence increased nearly 0.8% per year between 1975 and 1987 **(Rick Alter et al., 2008).**

Over 500000 individuals in the United States had urinary bladder cancer in 2004, and prevalence will likely increase as the population ages and treatment efficacy improves. Urinary bladder cancer is the fifth most expensive cancer (total costs) in the United States after breast, colorectal, lung, and prostate cancer, and consuming almost 3 billion dollars annually **(Konety et al., 2007)**.

Because of extended survival and ongoing monitoring needs, it is not surprising that urinary bladder cancer has the highest per-patient medicare costs (from diagnosis to death) of all cancers, with estimated

per-patient lifetime costs of >96000 American dollar **(Botteman et al., 2003).**

In Egypt Carcinoma of the bladder is a main oncologic problem. At the National Cancer Institute (NCI), Cairo, urinary bladder cancer constitutes 30.3% of all cancers, 40.6% of male cancers, and 14.3% of female cancers **(El-Bolkainy, 2000)**.

According to the International Agency for Research on Cancer (IARC) statistical study: Egypt ranked first among Northern African and Arabian African countries in urinary bladder cancer incidence and mortality rates in both males and females **(Ferlay et al., 2004).**

AIM OF THE WORK

This study aims at evaluation of long-term outcomes, both functional and oncological, in patients treated with radical cystectomy and different types of diversion for invasive bladder cancer.

ANATOMY OF THE URINARY BLADDER

Anatomic Relationships

When filled, the bladder has a capacity of approximately 500 mL and assumes an ovoid shape. The empty bladder is tetrahedral and is described as having a superior surface with an apex at the urachus, two inferolateral surfaces, and a posteroinferior surface or base with the bladder neck at the lowest point **(Brooks et al., 2007)**.

The urachus anchors the bladder to the anterior abdominal wall. There is a relative paucity of bladder wall muscle at the point of attachment of the urachus, predisposing to formation of diverticula. The urachus is composed of longitudinal smooth muscle bundles derived from the bladder wall. Near the umbilicus, it becomes more fibrous and usually fuses with one of the obliterated umbilical arteries. Urachal vessels run longitudinally, and the ends of the urachus must be ligated when it is divided. An epithelium-lined lumen usually persists throughout life and uncommonly gives rise to aggressive urachal adenocarcinomas **(Begg 1930)**. In rare instances, luminal continuity with the bladder serves as a bacterial reservoir or results in an umbilical urinary fistula **(Brooks et al., 2007).**

The superior surface of the bladder is covered by peritoneum. Anteriorly, the peritoneum sweeps gently onto the anterior abdominal wall. With distention, the bladder rises out of the true pelvis and separates the peritoneum from the anterior abdominal wall. It is therefore possible to perform a suprapubic cystostomy without risking entry into the

peritoneal cavity. Posteriorly, the peritoneum passes to the level of the seminal vesicles and meets the peritoneum on the anterior rectum to form the rectovesical space **(Brooks et al., 2007).**

Anteroinferiorly and laterally, the bladder is cushioned from the pelvic side wall by retropubic and perivesical fat and loose connective tissue. This potential space (of Retzius) may be entered anteriorly by dividing the transversalis fascia and provides access to the pelvic viscera as far posteriorly as the iliac vessels and ureters. The bladder base is related to the seminal vesicles, ampullae of the vas deferentia, and terminal ureter. The bladder neck, located at the internal urethral meatus, rests 3 to 4 cm behind the midpoint of the symphysis pubis. It is firmly fixed by the pelvic fasciae and by its continuity with the prostate; its position changes little with varying conditions of the bladder and rectum **(Brooks et al., 2007).**

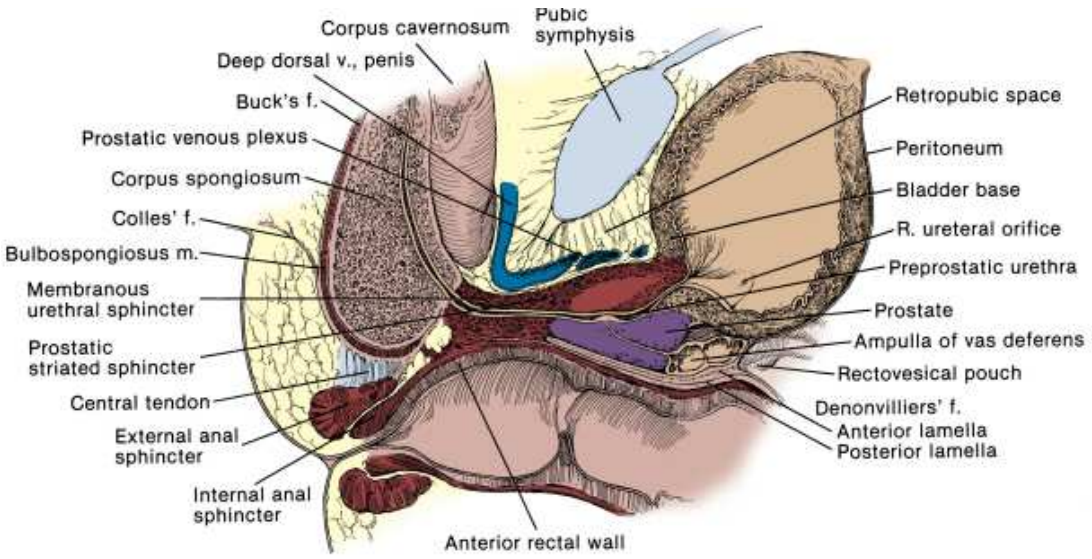

Fig (1): Sagittal section through the prostatic and membranous urethra, demonstrating the midline relations of the pelvic structures (From Hinman F Jr: Atlas of Urosurgical Anatomy. Philadelphia, WB Saunders, 1993, p 356.).