

Radical Cystectomy in Patients with Transitional Cell Carcinoma Urinary Bladder

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ABSTRACT

Objective To find out various presentations, types of operations performed, perioperative complications, pathological staging and oncological outcome of patients with transitional cell carcinoma (TCC) urinary bladder treated with radical cystectomy.

Study design Descriptive case series.

Place & Duration of study Department of Urology Jinnah Postgraduate Medical Centre Karachi, from January 2009 to December 2014.

Methodology All patients who underwent radical cystectomy with bilateral pelvic iliac lymphadenectomy due to muscle invasive transitional cell carcinoma of bladder with or without adjuvant or neo-adjuvant chemotherapy or radiotherapy from January 2009 to December 2014 with minimum of two years follow up, were included in the study. Patients with proven metastasis were excluded. Clinical presentations, details of surgeries, post-operative complications, pathological staging and oncological outcomes were recorded.

Results Thirty-two patients were operated. Age ranged from 35 to 70 year. There were 28 males (87.5%) and 04 females (12.5%) patients. Painless hematuria was the most common clinical presentation. Most (81.2%) of the patients were diagnosed as muscle invasive transitional cell carcinoma on first trans-urethral resection of bladder growth (TURBT). Radical cystectomy with standard pelvic lymph node dissection (PLND) and ileal conduit were performed in all patients. Two (6.2%) patients died in perioperative period. Fourteen (43.8%) patients developed complications. Pathological staging revealed non-organ confined disease with positive lymph node in six (18.6%) patients. Disease free survival (DFS) was noted in 68.7% of patients. Over-all survival was 65.6%.

Conclusion Radical cystectomy in patients with potentially invasive or invasive TCC bladder helped in achieving long term survival in majority of the patients.

Key words Invasive carcinoma urinary bladder; Radical cystectomy; Transitional cell carcinoma.

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INTRODUCTION:

Bladder cancer is the second most common genitourinary malignancy. Transitional-cell carcinoma accounts for 90% of all bladder cancers.¹ Seventy-five to 80% of these are primarily non-muscle invasive bladder carcinoma (NMIBC) at initial diagnosis. Invasive bladder cancer is a lethal disease requiring aggressive therapy.² Death rates from TCC is still very high.³

Most TCCs that are or become invasive are high-grade tumors with increasing incidence of lymph node involvement with progression.^{4,5} Radical

cystectomy is the standard form of therapy for patients presenting with high-grade invasive bladder cancer. In a study nearly half of the patients who underwent radical cystectomy for high-grade invasive disease died within three years of diagnosis.⁶ The purpose of this study was to find out clinical features of patients with invasive TCC bladder, types of operations performed, complications, pathological staging and outcome following radical cystectomy.

METHODOLOGY:

This case series was conducted in the Department of Urology, Jinnah Postgraduate Medical Center Karachi. All patients who underwent radical cystectomy with bilateral pelvic iliac lymphadenectomy due to transitional cell carcinoma of bladder with or without adjuvant or neo-adjuvant chemotherapy or radiotherapy, were included in the study. Records of the patients who were managed from January 2009 to December 2014 with minimum of two years follow-up were analyzed. Patients above 70 year of age and those with proven metastases were excluded. Clinical workup and staging were performed as per standard protocol.

Radical cystectomy with standard pelvic lymph node dissection (PLND) and non-continent ileal conduit was performed in all patients. Data were analyzed using Statistical Package for the Social Sciences (SPSS, Version 20.0). For categorical variables, frequency (percentage) was used, and for continuous variables mean + SD was calculated.

RESULTS:

This series included 32 patients with 28 males (87.5%) and 04 females (12.5%). Age ranged from 35 year to 70 year with mean age of 55.50+ 10.05 year. Painless hematuria was reported in 23 patients. Other symptoms included lumbar pain (n=7), vesicocutaneous fistula after cystolithotomy (n=2).

Muscles invasive disease (T2) on TURBT or cystoscopic muscles deep biopsy report was found

in 27 (81.2%) patients, 4 (11.7%) had superficial TCC which became muscle invasive, and recurrent superficial TCC found in two (5.8%) patients (table I). The time between onset of symptoms and tissue diagnosis was from 2 months to 24 months, average 6+5.09 months. The time between tissue diagnosis and definite treatment was from 1 month to 17 months, average 4+3.09 months.

Radical cystectomy with standard pelvic lymph nodes dissection and non-continent ileal urinary diversion conduit was performed in all patients. In one patient disease involved left ureter and pelvis of kidney, so left nephro-ureterectomy was performed along with cystectomy, and right ureter was exteriorized as ureterostomy. All male patients had en-block removal of prostate and seminal vesical along with bladder (n=28). Delayed urethrectomy was performed in two male patients in whom specimen revealed positive urethral margin. Out of four female patients, three had hysterectomy with bilateral salpingo-oophorectomy along with removal of anterior wall of vagina. In a 35 year old female one ovary was left with vaginal preservation. Complications are given in table II. Two (6.2%) patients died within 30 days of operation. Death within 90 days occurred in five patients.

Associated prostatic malignancy was reported in three patients, two were incidental adenocarcinoma prostate and in 3rd prostatic parenchymal involvement by bladder growth. Average numbers of lymph nodes reported by histopathologist in specimen biopsy was 10 (range 6-18). In follow up 5-year disease free survival was noted in ten patients. Four patients are alive three year following treatment, while remaining eight more patients have survived till date, had follow up of 1-3 year. Overall survival was 65.6% as one patient had myocardial infarction and died.

DISCUSSION:

There was significant male dominance in this series which is similar to another study from Pakistan.⁷

Table I: Tumor Characteristics

Tumor Extent	No (n)	Percentage (%)
Organ- confined, lymph node negative (T1-2-N0-Mx)	13	40.6
Organ-confined, Lymph node positive (T1-2/N1/Mx)	13	40.6
Non organ confined, Lymph node positive (T3b/N1/Mx)	6	18.6
Poor pathological Prognostic Parameters		
Positive surgical margin	3	9.3
Lympho-vascular invasion	2	6.2
Papillary with squamous differentiation	2	6.2

Table II: Postoperative Complications

	Complications	No. (n)	Percentage (%)
I	Early Complications		
A	Cystectomy Related		
	Deep vein thrombosis	01	3.1%
	Wound infection	04	12.4%
	Burst abdomen	02	6.2%
B	Diversion Related		
	Fecal fistula (anastomosis leakage)	02	6.2%
	Fecal fistula (retained abdominal pack)	01	3.1%
	Prolapsed ileostomy	01	3.1%
II	Late complications		
	Pyonephrosis (Reflux)	01	3.1%
	Para –ileostomy hernia	01	3.1%
	Incisional hernia(midline)	01	3.1%
	Late fecal fistula (after 8 years)	01	3.1%

The number of patients operated in this study were lower than other studies. The reason being refusal of surgery by equal number of patients who were in older age group and were unfit for surgery. Some had given preference for radiotherapy as treatment.

Definite surgery should be performed within 3 months of tissue diagnosis, otherwise there is significantly increased frequency of extra-vesical disease (81% vs %52%).⁸ This same observation was noted in our study, that operating after more than three months delay lead to locally positive advanced disease, and increased numbers and size of regional lymph nodes which were not visible on early CT scan. A study also concluded that patients who present late for radical cystectomy, had 20% to 90% greater risk of mortality.⁹ They are also at 60% greater risk of disease progression.¹⁰

The postoperative mortality after radical cystectomy is significant even in high volume centres.¹¹ Many complications are usually under-reported.¹² The mortality is higher in low volume centers in comparison with high volume hospitals (3.1% vs 0.7%).¹³ Experienced surgeons who frequently perform cystectomy achieve better survival rate and fewer complications than surgeons who perform an occasional cystectomy.¹⁴ Ninety days mortality rates from population studies ranged from 5.1% to 8.1%.^{15,16} In an another study from a hospital in Pakistan the 30 days mortality was 4.5%.¹⁷ We had a slightly higher figure than this. Our 90 days mortality was very high than high volume hospitals studies. This may be due to poor selection of patients and

long delay between diagnosis and definite treatment. The postoperative morbidity after radical cystectomy in our series was also high. The reported 30 days morbidity after radical cystectomy in a study was 43.8% which is quite similar to ours. Incidentally detected carcinoma prostate in our study was found in three (9.3%) patients. This varies in different series.^{18,19}

CONCLUSIONS:

Radical cystectomy is considered as an optimal therapy for invasive TCC bladder. Oncological outcome of our study is comparable with other studies.

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