

# RADICAL CYSTECTOMY WITH URINARY DIVERSION IN THE FORM OF ILEAL CONDUIT : OUTCOME ANALYSIS IN 15 CASES DONE BY SINGLE SURGEON.

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## Abstract:

**Objective:** To analyse the outcome of 15 cases of radical cystectomy with urinary diversion in the form of ileal conduit done by single surgeon.

**Methods:** This retrospective study included 15 cases of radical cystectomy with urinary diversion in the form of ileal conduit between 2014 and 2018 done by single surgeon in different hospitals. Follow up of these patients continued up to June 2018. Data were collected through follow up visits at every 3 months interval in the first year, and then for every 6 months from the second year.

**Results:** In this study, the mean age was 67.67 years. Early complications like wound dehiscence, wound infection, bowel obstruction and GIT bleeding occurred in 47% patients and maximum were wound dehiscence (20%) and wound infection (13.3%). High incidence of early complications in this study may have multiple reasons like preoperative co-morbidity, small sample size study and lastly surgeons learning curve because in early phase, complications occurred in 63% cases but only 29% cases in late phase.

Seven patients (46.7%) developed ED postoperatively. Recurrent UTI was recorded in 33.3% cases. During mean 2.4 years follow up time, there was no local recurrence.

**Conclusions:** Radical cystectomy for the muscle invasive urothelial bladder cancer is the elective treatment and urinary diversion in the form of ileal conduit is a safe and convenient option with less post operative complications and with good oncological outcome. But for better evaluation of post operative outcomes, large sample size and long term follow up are recommended.

**Key words:** Radical cystectomy, Urinary diversion, Ileal conduit.

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## Introduction:

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 female[1].

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Despite recent impressive achievements in radiochemotherapy related approaches and molecular-based therapies, radical cystectomy remains the elective treatment for both muscle invasive bladder cancer and selective non-muscle invasive bladder cancers[2].

There are so many retrospective studies unquestionably support radical cystectomy with excellent oncological outcomes and satisfactory postoperative quality of life at long term follow up. Recent improvements in surgical techniques have contributed to favor the patient's acceptance of this major surgery. Technical improvements concerning

lowering operative time, sexual sparing procedures and reconstructive time management with novel surgical solutions to divert urine, have consistently improved the patient's post operative quality of life[3].

This issue of the European Urology Update Series is devoted to the important question of urinary diversion in patients who have had to undergo radical cystectomy. The various options that have been developed over the past decades and classified into three groups: 1- diversion by an intestinal conduit (usually ileal), 2- orthotopic neobladders, and 3- catheterisable pouches. These three basic approaches have some variations, varying technical difficulties with the surgery involved, and have different consequences for the patient affecting patient's quality of life. These three major approaches to urinary diversion are described and evaluated in three manuscripts that have been prepared by groups of authors with a lot of experience in urinary diversion and specially in these specific techniques[4].

Although authors considered continent diversion with orthotopic neobladder or some pouches that most patients should undergo or at least be offered, because quality of life has become a topic of increasing interest; but the ileal conduit, the simplest and oldest form of standerized urinary diversion, remains the most commonly used diversion after radical cystectomy worldwide, including in many European countries. In United States, only 14-19% of all patients underwent some form of ciontinent diversion[5,6].

In this study, we considered 15 cases of radical cystectomy with urinary diversion in the form of ileal conduit done by single surgeon. We analyzed both oncological and general outcomes.

#### Materials and Methods:

This is a retrospective study and it included 15 cases of radical cystectomy with urinary diversion in the form of ileal conduit who had complete records between 2014 and 2018 done by single surgeon in different hospitals. Follow up of these patients continued up to June 2018.

Data were collected through follow up visits at every 3 months interval in the first year, and then for every 6 months from the second year.

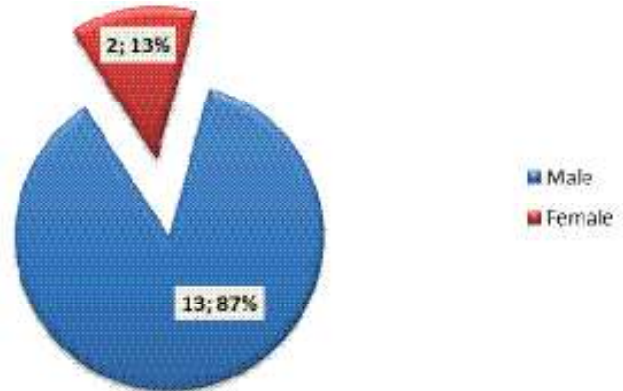


Fig.-1: The sex distribution.

Every patient was evaluated by the following:

#### History:

Age and risk factors like smoking, diabetes mellitus, hypertension, ischaemic heart disease; operative details; post-operative pathological analysis (staging & pathological subtypes) and post-operative adjuvant treatment (radiotherapy or chemotherapy) were recorded.

#### Physical Examination:

General examination for pallor and cachexia; abdominal examination for masses, nodules, scars of previous operation and per rectal examination for tenderness, masses and nodules.

#### Imaging Study:

Abdominal and pelvic ultrasonography, CT scan of abdomen and pelvis and bone scan when needed.

#### Laboratory Study:

Serum creatinine, complete blood count, serum electrolytes & bicarbonate, urine analysis with culture & sensitivity and blood pH when indicated.

#### Statistical Analysis:

The data were analyzed with the SPSS for Windows (IBM SPSS Statistics for Windows, version 22.0, Armonk, NY: IBM Corp.) software. Continuous variables were described as means and standard deviation; categorical variables were given as percentages. Continuous variables were compared by independent samples t-test.; p values <0.05 were considered significant.

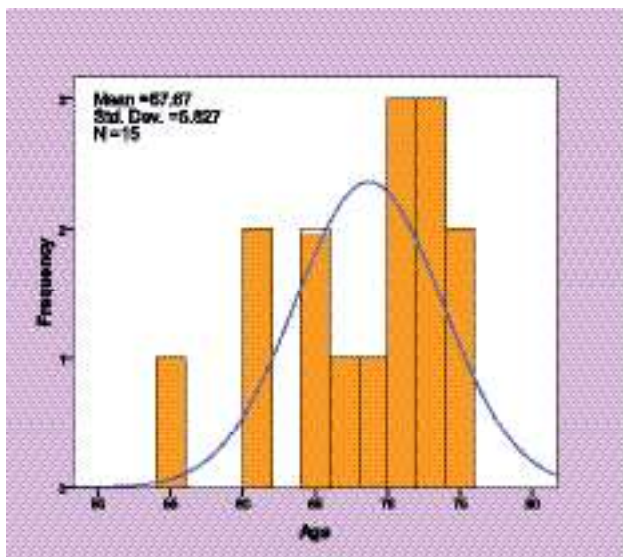


Fig.-2 Age distribution

**Results**

The study included 13 male patients and 2 female patients who underwent radical cystectomy with urinary diversion in the form of ileal conduit for invasive bladder cancer.

The mean age was 67.67 years ( range 55-75 years ).

**Table-I**  
Stage and pathological type.

Stage	Frequency	Percent
T2a	5	33.33
T2b	6	40.0
T3a	2	13.3
T3b	2	13.3
Total	15	100
Histopathological type	Frequency	Percent
TCC	15	100

**Table-II**  
Early complications.

Early complications	N	Percent
No early complications	8	53.3
Wound dehiscence	3	20.0
Bowl obstruction	1	6.7
Wound infection	2	13.3
GIT bleeding	1	6.7
Total	15	100.0

**Table-III**  
Late complications.

Late complications	N	Percent	% of Cases
UTI	5	20.8	33.3
ED	7	29.2	46.7
Ureteric stricture	1	4.2	6.7
Acute pyelonephritis	1	4.2	6.7
Renal failure deterioration	2	8.3	13.3
Renal stone	1	4.2	6.7
Stomal stenosis	2	8.3	13.3
No complication	5	20.8	33.3
Total	24	100.0	160.0

Preoperatively 9 (60%) patients were smokers, 4 (26.7%) were diabetic, 3 (20%) had hypertension and 5 patients (33.3%) had no known co-morbidity.

The table I shows the postoperative staging and pathological type. Postoperative analysis revealed 15 cases (100%) were transitional cell carcinoma (TCC), 5 cases (33.3%) had T2a stage, 6 cases (40%) had T2b stage, 2 cases (13.3%) had T3a stage and 2 cases (13.3%) had T3b stage.

Eleven patients (73.3%) did not receive adjuvant chemotherapy or radiotherapy but 3 patients (20%) received chemotherapy and 1 (6.7%) received chemo-radiotherapy.

Table -II and table -III show early and late complications. Three patients (20%) had wound dehiscence, 1 (6.7%) had bowel obstruction, 2 (13.3%) had wound infection, 1 (6.7%) had GIT bleeding, 5 (33.3%) UTI, 7 (46.7%) had ED, 1 (6.7%) had ureteric stricture, 1 (6.7%) had acute pyelonephritis, 2 (13.3%) had renal failure deterioration, 1 (6.7%) had renal stone and 2 (13.3%) had stomal stenosis.

Table-IV shows time required for operation and units of blood transfusion needed per-operatively. First 8 cases required mean time 4.125 hours and mean blood transfusion 2.13 units. Next 7 cases required mean time 3.571 hours and mean blood transfusion 1.29 units.

**Table-IV**

*Time and units of blood required between first half and second half.*

T-Test

Variables	Group	N	Mean	Std. Deviation	p-value
Time required for operation (hr)	First half	8	4.125	0.5825	0.127 (NS)
	Second half	7	3.571	0.7319	
Units of blood transfusion needed	First half	8	2.13	1.126	0.119 (NS)
	Second half	7	1.29	0.756	

First half= SI 1-8; Second half- SI. 9-15; NS= Not significant

Table-V and Table-VI show analysis of early and late complications between initial 8 cases and next 7 cases. Among initial 8 cases, 5 cases (62.5%) had early complications and 7 cases (87.5%) had late complications. Among next 7 cases, 2 cases

(28.57%) had early complications and 3 cases (42.85%) had late complications.

One patient died after 28 days due to septicemia. The mean follow up time was 2.393 years.

**Table-V**

*Early complications between first and second half.*

Early complications	Group		Total
	First half	Second half	
No early complications	3 (37.5)	5 (71.4)	8 (53.3)
Wound dehiscence	3 (37.5)	0 (0.0)	3 (20.0)
Bowl obstruction	1(12.5)	0(0.0)	1 (6.7)
Wound infection	1(12.5)	1 (14.3)	2 (13.3)
GIT bleeding	0 (.0)	1 (14.3)	1 (6.7)
Total	8 (100.0)	7 (100.0)	15 (100.0)

**Table-VI**

*Late complications between first and second half.*

Late complications	Group		Total
	First half	Second half	
No late complications	1 (12.5)	4 (57.1)	5(33.3)
UTI	3 (37.5)	2 (28.6)	5 (33.3)
ED	5 (62.5)	2 (28.6)	7 (46.7)
Renal failure deterioration	1 (12.5)	1 (14.3)	2 (13.4)
Ureteric stricture	1 (12.5)	0 (0)	1 (6.7)
Acute pyelonephritis	0 (.0)	1 (14.3)	1 (6.7)
Renal stone	1 (12.5)	0 (.0)	1 (6.7)
Stomal stenosis	1 (12.5)	0 (.0)	1 (6.7)

### Discussion:

Radical cystectomy with pelvic lymph node dissection provides the best cancer specific survival for muscle invasive urothelial cancer[7,8] and is the standard treatment with 10 year recurrence free survival rates of 50-59% and overall rates of around 45%[7,9]. Radical cystectomy with urinary diversion is a procedure in which reduction of morbidity, rapid postoperative rehabilitation, limited length of hospital stay, and cost effectiveness are difficult to achieve. The primary goals in selection of a urinary diversion are to provide the patient with diversion that results in the best local cancer control, the lowest potential for complications both short term and long term and the best quality of life while still allowing the timely completion of chemotherapy and therapeutic goals[10].

In our study, the mean age was 67.67 years and it is similar to the universe.

In our study, early complications like wound dehiscence, wound infection, bowel obstruction and GIT bleeding occurred in 47% patients and maximum were wound dehiscence (20%) and wound infection (13.3%). But in one reported series, it was 21% (Matsuura et al. 1991). High incidence of early complications in this study may have multiple reasons like preoperative co-morbidity, small sample size study and lastly surgeons learning curve because in early phase, complications occurred in 63% cases but only 29% cases in late phase.

In our study, 7 patients (46.7%) developed ED postoperatively. Hundred percent of them were smokers, 13% were diabetic and 13% had hypertension. In addition, no patient underwent nerve sparing procedure. All of these may explain the high rate of ED in our study. In the other studies, nerve-sparing cystectomy has better results, where 78.8% were potent[11].

In our study, recurrent UTI was recorded in 33.3% cases. In other studies recurrent UTI was recorded by Thrsten son et al. in 32.8% and by El-Sayed[12] in 23.7%.

In our study, all cases had histopathological type TCC, but universe is 90%. Possibly it is due to small sample size study.

In this study, 4 patients had T3 disease. Among them 3 patients got adjuvant chemotherapy and 1 patient got

chemo-radiation. During mean 2.4 years follow up time, there was no local recurrence.

### Conclusion:

Radical cystectomy for the muscle invasive urothelial bladder cancer is the elective treatment and urinary diversion in the form of ileal conduit is a safe and convenient option with less post operative complications and with good oncological outcome. But for better evaluation of post operative outcomes, large sample size and long term follow up are recommended.

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