



PERIOPERATIVE, ONCOLOGICAL AND SURVIVAL OUTCOMES OF ROBOTIC RADICAL CYSTECTOMY WITH URINARY DIVERSION IN FEMALES.

Urology

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ABSTRACT

Introduction: Robot assisted radical cystectomy (RARC) is a preferred approach for surgical management of bladder cancer. Currently, majority of the literature on RARC involves men in view of higher incidence of bladder cancer in them. We hereby document peri-operative variables, oncological and survival outcomes in 41 women who underwent RARC, by single surgeon at a tertiary health care centre. **Materials & Methods:** Out of 225 RARC and urinary diversion procedures performed from 2012 to 2020, a retrospective analysis of 41 women was performed. Baseline demographic and peri-operative details, oncological data and survival were recorded and analysed. Kaplan-Meier analysis was done for survival outcomes and prognostic factors were assessed by Log Rank test. **Results:** Thirty-eight patients underwent intra-corporeal urinary diversion while three underwent extracorporeal diversion. One patient underwent organ preserving cystectomy. Clavien Dindo 30- day postoperative complications were Grade I in 8 (19.5%), Grade II in 4 (9.8%) and grade IIIa in 3 (7.3%) patients without any mortality. During median follow up of 34 months (Range- 6-87months), 7 patients died of disease recurrences. Five-Year survival was 74% (95% CI- 59-82) and 35% (95% CI, 10-91) in transitional cell carcinoma (TCC) and non-TCC group respectively with p value of 0.04. There was no mortality in Stage 0 and 1. Five-year survival was 78% in stage 2 and 41% in stage 3 and 4. **Conclusion:** Our study highlights safety, feasibility and acceptable clinical, peri-operative and oncological outcomes of robotic radical cystectomy in females which should be incorporated in the mainstream approach.

KEYWORDS

Radical cystectomy, urinary diversion, bladder cancer, robotic.

INTRODUCTION:

Urinary diversion (UD) after Robotic Assisted Radical Cystectomy (RARC) is performed extracorporeally primarily because intracorporeal diversion is complex. We report our initial experience and compare outcomes of robotic intracorporeal urinary diversion (ICUD) to extracorporeal urinary diversion (ECUD) techniques done in our institute.

MATERIALS AND METHODS

- RETROSPECTIVE SINGLE CENTRE OBSERVATIONAL STUDY at a tertiary care centre in the western part of India.
- Time period-From June 2012 to Jan 2020

Inclusion Criteria:

All female patients with age > 18 years with either muscle invasive bladder cancer or high grade recurrent non muscle invasive bladder cancer in spite of intravesical therapy.

Exclusion Criteria:

- Metastatic bladder cancer,
- Patients not willing for surgery,
- Patients not fit for surgery,
- Patients not given consent to participate.

Factors Assessed:

- Age
- Smoking/tobacco status.
- ASA classification.
- Receipt of neoadjuvant chemotherapy.
- Type of urinary diversion.
- Estimated blood loss.
- Pathologic TNM staging according to AJCC 8th edition, and lymph node status were obtained through patient charts.
- Pre-cystectomy staging investigations included (CT), transurethral resection of bladder tumour biopsy and positron emission tomography (PET) CT.
- Selective components of ERAS protocol were followed peri-operatively like no bowel preparation, early liquids within 24 hours, early Ryle's tube removal, deep vein thrombosis (DVT) prophylaxis, and early feeds.
- All patients' baseline demographic details, peri-operative details, postoperative complications, postoperative mortality, pathological information, and oncological data were recorded and analyzed retrospectively.
- Follow up was done at regular intervals which included clinical examination, routine blood tests, urine cytology, kidney function tests, chest x ray and ultrasonography or computerized

tomography of abdomen and pelvis and PET CT in some patients.

- Institutional ethics and review committee (IEC-A CODE 032/2020) approval was obtained for retrospective analysis of bladder cancer data from our institute, and standard consent for the surgery was taken during the treatment.

Outcomes assessed:

- Complications rate and their severity.
- Recurrence rate
- Five-year survival rate
- Seven-year survival Rate
- Cancer specific survival rate.

RESULTS:

Table 1: Baseline demographic and pre-operative findings in female patients treated with robot-assisted radical cystectomy and urinary diversion. IQR= Inter-quartile range, BMI=Body mass index, ECOG=Eastern Cooperative Oncology Group score, ASA=American Society of Anesthesiologists grade, n= number of patients.

Total patients	41
Median age, years (IQR)	62 (53-70)
Median BMI, kg/m ² (IQR)	25.71 (23.64-25.71)
Smoking/Tobacco chewing, n (%)	5 (12.19)
Neoadjuvant chemotherapy, n (%)	8 (19.51)
Interval between diagnosis and surgery	
<6 weeks	21
>6 weeks	12
Previous abdominal surgery	13
Clinical Stage	
1	4
2	19
3	8
ECOG score	
0	9
1	27
2	5
ASA grade	
1	26
2	13
3	2
Type of urinary diversion	
Intra corporeal	38
Extra corporeal	3
Genital organ preserving cystectomy	1




Table No.2 - Peri-operative findings, post-operative complications and oncological outcomes in female patients treated with robot-assisted radical cystectomy and urinary diversion. IQR – inter-quartile range, mL=millilitre, n= number of patients.

Median Console time n, (IQR)	290 (251-324.5)
Average cystectomy time, n(IQR)	100 (82-120)
Average lymph node dissection time, minutes (IQR)	55 (45-75)
Average urinary diversion time, minutes (IQR)	130 (101-153)
Median Blood Loss, ml (IQR)	170 (140 - 200)
Median Time to Oral feeds, hours (IQR)	72 (43-92)
TPN and prolonged ileus	3
Median Hospital stay, n (IQR)	8 (7 - 11)
Median lymph node yield, n (IQR)	20 (16-29)
Pathological final staging	
pT0	3
pT1	3
pT2	16
pT3	16
pT4a	3
pN1	5
Clavien Dindo Complications, no (%)	
Grade I	8 (19.5%)
Grade II	4 (9.8%)
Grade IIIa	3 (7.3%)
Recurrence	7
5-year survival, %	
Stage 2	78
Stage 3	41
Stage 4	41
7-year survival, %	70.2
Cancer specific survival, %	63.8
5-year survival, %(IQR)	
TCC	74% (59-82)
Non TCC	35% (10-91)

DISCUSSION:

COMPARISON WITH OPEN SURGERY STUDIES:

	 Rossanese et al.	 Stein et al.	 Patidar et al.	 Gupta et al.	Our study
	1	2	3	4	
Number of patients	710	1054	212	502	41
Overall complication rate (%)	32.8	28	64	25.7	36.58
Major complication rate (%)	10	-	28	-	7.3
30 day mortality rate (%)	1.6	2.5	3.7	6.9	0

	 Rossanese et al.	 Stein et al.	 Gupta et al.	Our study
	1	2	4	
Number of patients	710	1054	502	41
Recurrence	31.2		28.8	17
5 year Survival rate	88 63 43	89 70 50	62	Stage 2: 78 Stage 3: 41 Stage 4: 41

CONCLUSION:

Our study highlights safety, feasibility and acceptable clinical, peri-operative and oncological outcomes of robotic radical cystectomy in females which should be incorporated in the mainstream approach.

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