Laparoscopic extended total mesorectal excision for T4 rectal adenocarcinoma: A single centre experience of 35 cases.

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Introduction:

- laparoscopic rectal surgery has been proven non inferior to open surgery in various randomised trials. As more expertise is gained along with better imaging, laparoscopic surgery will be used by surgeons for B-TME (beyond total mesorectal excision) and E-TME (extended total mesorectal excision). There are no randomised controlled trials for laparoscopic E-TME, but that does not negate role of minimally invasive surgery for locally advanced rectal cancer. Here we present our experience of laparoscopic E-TME at Tata Memorial Hospital, Mumbai, India.

Material and procedures:

- We report 35 cases of locally advanced carcinoma mid and lower rectum. After local imaging and metastatic work-up all patients were discussed at multidisciplinary meeting. All patients were treated with neoadjuvant chemoradiotherapy. All perioperative and intraoperative data were collected retrospectively from prospectively maintained electronic data.

Results:

- Between February 2014 and June 2020, 35 male and female patients with rectal adenocarcinoma were operated with laparoscopic extended TME. All data was collected from electronically maintained records. All patients received neoadjuvant chemoradiotherapy. 12 patients received additional neoadjuvant chemotherapy. Mean body mass index was 21.42 (range 14.9-32). Mean blood loss was 532 ml (range100-1800 ml). Mean Duration of surgery was 327 minutes (range 200-620 minutes). Mean hospital stay was 7.97 days (range 4-25 days).12 patients underwent prostate shaving. 9 patients underwent seminal vesicle excision. 12 patients underwent posterior vaginal wall excision. 4 patients underwent presacral fascia excision. 1 patient underwent sacrospinous ligament excision. In all patients R0 resection was achieved. On histopathology circumferential resection margin and distal resection margin was negative in all patients. Overall postoperative morbidity was 49% (18/35). 30-day mortality was 0 %. During postoperative stay 7 patients developed perineal wound infection. 4 patients had urinary retention and required prolonged catheterisation. 4 patients developed stoma related complications. 1 patient developed posterior vaginal wall gaping. 1 patient developed intestinal obstruction for which exploratory laparotomy was required. Of 35 patients 20 patients have minimum follow up of 12 months (range 12 months -73 months). During this period no patient developed local recurrence. 4 patients developed lung metastases (4/20, 20%). One patient died due to systemic disease. 1-year overall survival was 95.8%- and 1-year Disease free survival was 80.3 %.

Conclusion:

- Laparoscopic E-TME is feasible and oncologically safe option compared to open E-TME. Careful selection of patient is important for good oncological clearance.

Age (mean; range)	43.66; 20-73 years
Sex (M: F)	22:13
BMI (Kg/m^2); mean; range	21.42; range 14.9-32
ASA score	
1	21/35 (60%)
2	14/35(40%)
3	0/35(0%)
4	0/35(0%)
Histology	
Adenocarcinoma	35/35(100%)
other	0/35(0%)
Grade	
Well	0/35 (0%)
Moderate	21/35(60%)
Poorly differentiated	14/35(40%)
Signet/mucinous	8/35(22.85%)
Neoadjuvant chemoradiation	35/35(100%)
Neoadjuvant chemotherapy	12/35(34.28%)
Adjacent site or organ involvement	
prostate	12/35(34.28%)
seminal vesicle	9/35(25.71%)
posterior vaginal wall	12/35(34.28%)
presacral fascia	4/35(11.42%)
sacrospinous ligament	1/35(2.85%)

Table 1: patient and tumour characteristics.

Surgical procedure	
Low anterior resection	7/35 (20%)
Abdominoperineal resection	28/35 (80%)
Resection status	
R0	35/35(100%)
R1	0/35(0%)
R2	0/35(0%)
Blood loss (ml)	532 ml (range100-1800 ml)
Duration of surgery(minutes)	327 minutes (range 200-620 minutes)
Postoperative stay (Days)	7.97 days (range 4-25 days)

Table 2: Surgical outcomes.

Postoperative morbidity	18/35(51.42%)
30-day mortality	0/35 (0%)
perineal wound infection	7/35 (20%)
urinary retention	4/35(11.42%)
stoma related complications	4/35(11.42%)
posterior vaginal wall gaping	1/35(2.85%)
intestinal obstruction	1/35(2.85%)

Table 3: operative complications

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