

SURGICAL PERSPECTIVE OF COLORECTAL CARCINOMA IN LIGHT OF RECENT EVIDENCES

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Abstract-

Background: Colorectal cancer is listed as third most common malignant tumor all over the world. In continuum to standard treatment, new surgical modalities like transanal endoscopic surgery and robotic surgery are being developed. Recent clinical trials to elucidate the efficacy of laparoscopic versus open surgery, lateral pelvic lymph node dissection (LLND), preoperative and postoperative therapy, and a watch-and-wait approach are accumulating. Recent meta-analyses have proven comparable pathological and oncological outcomes between the two groups previously.

Conclusion: Laparoscopy can be offered to colonic malignancies and rectal cancers. This paper Aims to provide recent data about surgical aspects of colorectal carcinoma treatment. Careful reading of literature, generating new evidences and following newer practices are key for improved patient care.

Keywords: Colorectal cancer, Laparoscopic vs Open approach, Robotic Surgery.

INTRODUCTION:

Colorectal cancer is listed as third most common malignant tumor all over the world. As per Globocan 2020, there were over 1.9 million new cases. Rectal cancer shares more than one third of all colorectal cancer burden. (1) In Indian scenario Colorectal carcinoma is 6th most common cancer and 7th leading cause of cancer mortality which is responsible for 43090, (5.5%) cancer related deaths in India.(2)

In continuum to standard treatment, new surgical modalities like transanal endoscopic surgery and robotic surgery are being developed. Evidences based on recent clinical trials to elucidate the efficacy of laparoscopic versus open surgery, lateral pelvic lymph node dissection (LLND), preoperative and postoperative therapy, and a watch-and-wait approach are accumulating.

This paper Aims to provide recent data about surgical aspects of colorectal cancer treatment.

Laparoscopic versus open approach

In term of short come outcomes multiple studies have proven effectiveness of laparoscopic surgery over open surgeries(3,4), for longterm results data for colonic malignancies and rectal malignancies differ. The data from JCOG0404 compared laparoscopic versus open D3 dissection for stage II or III colon cancer in a RCT.(5)

They have shown comparable result with noninferior longterm survival, with a sufficient no. of 1057 patients in trial.

But establishment of noninferiority of laparoscopy in rectal cancer is challenged by multiple newer studies. Two large RCT and multiple meta-analyses proven comparable pathological and oncological outcomes between the two modalities previously(6-9).

In contradiction recent RCTs failed to show the non-inferiority of laparoscopic rectal resection to open rectal resection.(10,11) The ALaCaRT trial, failed to show noninferiority of laparoscopic method in term of negative CRM, also lesser no. of successful resections in laparoscopy group.

ACOSOG Z6051 RCT, has shown higher surgical success rate in the open group versus the laparoscopic group (86.9% and 81.7%, respectively, P = .41 for non-inferiority).

However a Cohort study from Japan shown no difference in positive CRM between the groups (4.53% in the laparoscopic group and 4.47% in the open group), and no significant difference

was observed in either 3-year OS or recurrence-free survival between the groups. Postoperative complications were significantly less after laparoscopic surgery than open surgery (30.3% vs 39.2%, P = .005).(12) Recent metaanalysis shown comparable results between two groups.(13)

Thus as per available data laproscopic surgery can be offered to colon malignancies. Whereas more conclusive data required for rectal tumors in term of oncologic safety.

Robotic surgery

Prete et al shown lower conversion rate in robotic surgeries but operating time was significantly longer than by laparoscopic surgery. Oncologic outcomes were similar. (14)

Huang et al reported a shorter learning curve in robotic surgery than laparoscopic surgery even after neoadjuvant CRT.(15) In abdominoperineal resection, an analysis shown robotic surgery had a significantly lower conversion rate compared with

laparoscopic surgery (5.7% vs 13.4%; $P < .01$). However, it had significantly higher total hospital costs compared with laparoscopic surgery.(16)

Allemann P et al has shown better TME quality in robotic group. (17)

An American study for cost analysis in sigmoid colectomy shown no additional benefit of robotic surgery but increase health care cost. (18)

Park et al and D'Annibale et al in there retrospective studies shown improved sexual function.

In the robotic group up to 100% , whereas 46% 43% of sexually active patients in the laparoscopic group.(19,20)

But recent RCT MRC/NIHR ROLARR didn't show any benefit in terms of sexual and urinary functions with the robot approach in comparison to laparoscopic approach. Also no significant improvement seen in other outcomes of 30-day morbidity and mortality, CRM positivity, 3-year local recurrence rates, disease-free and overall survival rates.(21)

Thus Robotics is no doubt a evolving concept but is with additional cost and is modality for selected patients.

Transanal TME

A recent innovation Transanal TME (TaTME) was first introduced by Sylla et al in 2010. Multiple studies and registries has since shown feasibility and comparable outcomes of the procedure.

Recent study by yu-ting chen et al from Taiwan with 126 patients. It included 39 TaTME, 64 laparoscopic TME, and 23 Open TME respectively. Although cases selected for TaTME were having more no. of lower rectal cancers. Results shown longer operative time in TaTME than the other two groups ($p < 0.01$). In pathological outcomes, no patients with a CRM < 1 mm were observed in the TaTME group .Patients in the TaTME and La paroscopic TME groups also had a better disease-free survival than Open TME group ($p < 0.01$). (22)

COLORIII trial is conducting a RCT for comparison of transanal TME versus laparoscopic TME for mid and low rectal cancer, results willguide further in terms of oncologic outcomes.(23)

Thus although technically demanding but feasible option is available for selected cohort of patient, soon we will have multiple evidences in term of oncologic safety.

Lateral pelvic lymph node dissection

As neoadjuvant CRT followed by TME is the procedure recommended mostly in guidelines, but there are centers in eastern countries where lateral pelvic node dissection is done as standard of care and has shown varying rate of lateral pelvic node involvement from 10% to up to 25% .

some studies have suggested that combination of two as adequate procedure where lymph nodes (greater than 7 mm) have been identified preoperatively to reduce local recurrence (24,25).

JCOG0212 trial published in 2017 has given insight regarding need of lateral pelvic node dissection. Five-year OS, and 5-year local-recurrence-free survival in the total mesorectal excision (TME) with LPND and TME-alone groups were 92.6% and 90.2%, and 87.7% and 82.4%. Local recurrence rates were 7.4% and 12.6% in the TME with LPND and TME-alone groups, respectively ($P = 0.04$). (26)

But as western protocol no neoadjuvant therapy was given in this study which shows its low credentials in term of treatment followed by west.

Yamaoka et al also reported that LLN metastasis was detected in seven out of 19 patients who underwent preoperative CRT, suggesting preoperative CRT followed by ME alone is not sufficient, especially when LLN involvement is clinically suspicious.(27)

Kusters et al reported that the lateral local recurrence rate was significantly higher in patients with LLN larger than 10 mm than in patients with smaller nodes despite the use of preoperative radiation.(28)

Thus preoperative assessment and treatment as per disease staging may be helpful for patient.

CONCLUSION

Recent developments in oncology are going which will change the treatment paradigm for the better results. Careful reading of literature, generating new evidences and following newer practices are key for improved patient care.

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