THE NEW MAIN SCIENTIFIC CONTRIBUTION OF THE THESIS

Name of thesis : *"**A study of Laparoscopic Surgery for the Treatment of Middle and Lower Rectal Adenocarcinoma after Long-Course Preoperative Chemoradiotherapy**"*

Speciality: Surgery Code: 9720104

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Summary of new main scientific contribution of the thesis:

The study was conducted on 168 patients with stage II–III middle and lower rectal cancer who underwent long-course preoperative chemoradiotherapy followed by laparoscopic surgery. The thesis has yielded the following principal findings:

Regarding the clinicopathological characteristics and the effectiveness of long-course preoperative chemoradiotherapy: the most common presenting symptom was bloody stool. MRI showed that cT3 invasion accounted for 71.4% of cases. Elevated CEA levels were found in 40.48% of patients, 95.24% of patients were at stage III. Long-course preoperative chemoradiotherapy was shown to be a safe treatment modality, with a treatment completion rate of 98.81% and a low rate of toxicity and adverse effects. MRI showed that mrTRG 3 46.43%, mrTRG 1 14.88%. Histopathological examination revealed a complete response rate (TRG 1) of 22.02%. Tumor downstaging was observed, with 18.5% of patients reaching stage 0 (complete response), 38.10% stage I, 29.17% stage II, and stage III decreasing to 14.29%.

Regarding the surgical outcomes:

- Intraoperative outcomes: Tumors were evenly distributed between the middle third (50.60%) and the lower third (49.40%) of the rectum. Laparoscopic surgery was demonstrated to be safe and feasible, with a high sphincter preservation rate; only 23.21% of Miles procedure. The intraoperative complication rate was low (5.36%), and only 4 cases (2.38%) required conversion to open surgery.
- Early postoperative outcomes: Laparoscopic surgery helped reduce postoperative pain and shorten hospital stay. Early postoperative complications were mainly grade I–II. Reoperation (grade IIIb) was required in 3.66% of cases. No severe complications (grade IV–V) were recorded. There was no intraoperative or postoperative mortality.
- Long-term outcomes: With a mean follow-up period of 48.8 months, laparoscopic surgery provided favorable oncological outcomes, with a local recurrence/distant metastasis rate of 17.6%. The 5-year overall survival and disease-free survival rates were encouraging, at 82.7% and 80.7%, respectively. Prognostic factors for recurrence/distant metastasis and overall survival included pathological response after chemoradiotherapy, specimen quality, and post-chemoradiotherapy CEA level. Poor pathological response according to the Mandard classification, particularly TRG 4 and TRG 5, increased the risk of recurrence, distant metastasis, and death.

The findings of the thesis provide additional scientific evidence supporting the effectiveness of long-course preoperative chemoradiotherapy combined with laparoscopic surgery in the treatment of stage II–III middle and lower rectal cancer. The study has important practical value in clinical practice, particularly in post-treatment response assessment, selection of surgical timing and surgical approach, postoperative prognostic evaluation, and long-term follow-up of patients.

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