Open or Laparoscopic Total Mesorectal Excision for Rectal Cancer: what is the Optimal Approach?

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Editorial

In recent years, laparoscopic approaches have been attempted in almost every type of operation. The laparoscopic resection of colorectal cancer was described for the first time in 1991 [1]. Within the following years laparoscopic approach was applied to more complex operations, such as total mesorectal excision (TME) for rectal cancer. In this technique the avascular plane between the presacral fascia and the fascia propria is dissected to include the entire mesorectum within the excision. Through this technique, an "en bloc-resection" of local tumor invasion, tumor deposits and micro-metastases in the mesorectum alongside with the resection of the main tumor is ensured.

Due to the different localizations, rectal cancer is a variable surgical entity. The laparoscopic resection of tumors located in rectosigmoid junction or upper rectum is technically easy to perform and the oncological outcome is similar to those of colon cancer. In contrast, the laparoscopic approach of mid and low rectum tumors is a technical challenge. Several studies demonstrated that the minimal invasive procedure is feasible and safe [2]. However, most of these trials were small case series, were based on a retrospective setting, or did not include a proper control for open groups. To date, there exist no large, prospective, randomized trials comparing the laparoscopic TME for rectal cancer with the conventional open approach regarding the oncological long-term outcome. Taking this fact in consideration, every surgeon performing rectal surgery must ask himself: What is the optimal approach for TME?

48 studies, representing 4224 patients, comparing the laparoscopic TME with the open TME were analyzed by a Cochrane review in 2006 [3]. The majority of the included studies were non-randomized trials. The authors found no significant differences in terms of disease-free survival rate, local recurrence rate, mortality, morbidity, anastomotic leakage, resection margins, or recovered lymph nodes [3]. The laparoscopic TME seems to be associated with less blood loss, a quicker return to normal diet, less pain, less narcotic use and less immune response [3]. Moreover, other short-term advantages including less fatigue, better pulmonary function, decreased disability, and shorter hospitalization, have been proven by several other studies [4-7]. On the other hand, the laparoscopic TME is associated with a longer operative time and higher costs [3]. These higher costs may be at least partially due to lower follow-up cost due to reoperations for incisional hernia, as a fivefold lower incidence is reported after laparoscopic surgery in comparison with open TME (2.4 vs. 12.9%) [8].

The skepticism regarding the minimal invasive approach is based on the fact that laparoscopic TME is technically demanding. A steep learning curve with initially prolonged operative times has also been taken into consideration in times of required economic efficiency and high workload. To achieve a worldwide standardization of laparoscopic TME and to make this difficult procedure as easy and learnable as possible an standardized laparoscopic "10 step TME procedure" was recently published [9].

In summary, the laparoscopic TME for rectal cancer is still controversially discussed. At present, there are only short-term results available suggesting no significant differences between the laparoscopic and open approaches. The main question is, whether the minimal invasive approach achieves the long-term oncological results of conventional rectal surgery. To answer this question, large prospective, randomized trials with a long follow-up time are needed to gain results of long-term functional and oncological quality. Therefore, the COLOR II trial (laparoscopic versus open resection in rectal cancer) has been conducted a few years ago [10]. The oncological long-term results are anticipated with great interest within the next months.

References


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