

Optimal Management of Small Rectal Cancers: TAE, TEM, or TME?

Julio Garcia-Aguilar, MD, PhD*, Alicia Holt, MD

KEYWORDS

- Rectal cancer • Local excision • Transanal excision
- Transanal endoscopic microsurgery • Total mesorectal excision
- Neoadjuvant therapy

The ultimate goal of the treatment of rectal cancer is to cure the disease while preserving function and quality of life. Total mesorectal excision (TME), the surgical removal of the rectum and its mesorectal envelope, is the accepted standard approach for the treatment of rectal cancer.¹ Patients with tumors located in the middle or upper rectum often undergo an anterior or low anterior resection, preserving the anal sphincter, whereas patients with distal tumors require a complete abdominoperineal resection of the rectum, resulting in permanent colostomy. Patients with early-stage (stage I) rectal cancer who undergo this aggressive surgical approach benefit from a high cure rate, with 5-year survival rates reported between 87% to 90%.² TME, however, is a major operation that is accompanied by significant mortality (1%–6%) and considerable morbidity. Anastomotic leakage is reported in 5% to 15% of patients undergoing low rectal anastomosis, and genitourinary dysfunction occurs in up to 30% to 40% of patients. Functional disturbances, including bowel urgency, tenesmus, soiling, and fecal incontinence, are also commonly reported, as is depression, developing in 10% to 32% of patients. These sequelae often persist and have a significant impact on quality of life.^{3–6} Nonetheless, the associated morbidity and mortality of this surgical intervention are currently justified by the oncologic control provided by this approach.

Local excision (LE) has always been an accepted alternative in patients unfit for radical surgery because of advanced age or comorbid conditions. More recently, LE has been explored as an alternative to TME in selected patients with early-stage rectal cancer. It is appealing because it is less invasive, alleviates the need for a colostomy or the distressing sequelae related to low colorectal anastomosis, and results in low

Department of Surgery, City of Hope, 1500 East Duarte Road, Duarte, CA 91010, USA

* Corresponding author.

E-mail address: jgarcia-aguilar@coh.org

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morbidity and mortality. But LE alone results in higher rates of local recurrence that, albeit occasionally salvageable by TME, could ultimately compromise long-term survival.⁷ Consequently, LE as a curative surgical approach for early rectal cancer has been treated with caution and has yet to gain widespread acceptance. The conventional transanal excision (TAE) is the most widely used approach for LE, but transanal endoscopic microsurgery (TEM) is gaining popularity as a possible alternative, particularly for tumors of the upper rectum that cannot be reached by standard TAE.⁸

The oncologic benefits of neoadjuvant chemoradiation (CRT) observed in patients with locally advanced rectal cancer treated with TME has hastened interest in investigating whether or not CRT could play a role in reducing recurrence after LE in patients with early rectal cancer. Several recent studies suggest that if chemotherapy and radiation therapy are given before LE, the risk of recurrence drops to a level comparable with TME.⁹ Although still controversial, LE in combination with preoperative CRT may, therefore, have an expanding role in the treatment of early-stage rectal cancer.

The expansion of colorectal cancer screening programs is increasing the proportion of patients diagnosed with early rectal cancer. The aging of the population is increasing the proportion of high-risk elderly patients with early-stage rectal cancers who may benefit from a less-morbid surgical treatment. These changes probably explain why, in spite of the paucity of information about the advantages of LE compared with TME, the proportion of patients having LE has increased in recent years.¹⁰ The aim of this review is to analyze the current literature to try to identify rectal cancer patients who may benefit from LE.

PATIENT SELECTION CRITERIA FOR LOCAL EXCISION

The ideal candidates for LE, either by TAE or TEM, are patients with rectal cancers localized to the bowel wall, meaning tumors that do not penetrate beyond the muscularis propria and have not metastasized to the perirectal nodes. Because most of the mesorectum is left relatively undisturbed during LE, any tumor cells left in the perirectal fat or the mesorectal lymph nodes may lead to local recurrence and compromised survival. Unfortunately, preoperative clinical findings and imaging studies are not completely accurate in assessing the depth of tumor invasion of the rectal wall and the status of the mesorectal lymph nodes, and patient selection remains one of the most important barriers to the adoption of LE.

Clinical Preoperative Evaluation

Although tumor stage remains the most important criteria for patient selection for LE, several gross features, such as tumor mobility, size, morphology, and distance from the anal verge, should also be taken into consideration.^{11,12} Digital rectal examination and proctoscopy provide surgeons with useful information about the tumor and the patient, which is essential for the treatment decision making.¹¹ Patients with large and fixed tumors can be immediately excluded from consideration for LE. Although tumor size is not a good predictor of depth of invasion or nodal metastasis, patients with tumors larger than 4 cm in diameter or involving more than 40% of the circumference of the rectum are poor candidates for LE.¹²⁻¹⁵ The mobility of a tumor on digital rectal examination also provides clues about its depth of invasion.¹¹ Distinguishing tumor invasion within individual layers of the rectal wall, however, is beyond the capabilities of a clinical examination. Patients with tethered or fixed tumors, which probably invade into the perirectal fat or surrounding tissue, are poor candidates for LE. Tumor morphology and distance from the anal verge do not have independent prognostic

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