



Organ preservation for early rectal cancer using preoperative chemoradiotherapy

Gyung Mo Son

Department of Surgery, Pusan National University Yangsan Hospital, Pusan National University School of Medicine, Yangsan, Korea

See article on pages 250–9

The primary conventional treatment for early rectal cancer is total mesorectal excision (TME) surgery, which aims to remove the tumor along with surrounding lymph nodes and mesorectal tissue. However, there are situations where the risk of surgery is high due to factors such as advanced age or poor overall health, or when the patient prefers to preserve the rectum [1]. In these cases, local excision techniques can be considered as an alternative to radical surgery. Local excision methods include transanal endoscopic microsurgery or transanal minimally invasive surgery. After local excision, the excised specimen is sent for pathological evaluation to determine the extent of tumor invasion and identify high-risk features. If the pathology report reveals a pT1 or pT2 tumor with high-risk features, such as positive margins, lymphovascular invasion, poorly differentiated tumor, or deep submucosal invasion, additional treatment may be necessary [2].

If high-risk features are identified after local excision, further radical surgery with TME may be recommended to ensure the complete removal of the tumor and minimize the risk of recurrence. In cases where residual cancer remains following chemoradiotherapy and presents a high risk of recurrence, radical resection and adjuvant chemotherapy can be considered. Common chemotherapy regimens for rectal cancer include FOLFOX (5-fluorouracil, leucovorin, and oxaliplatin) or CAPEOX (capecitabine and oxaliplatin) [3].

Over the years, rectal cancer treatment strategies have evolved,

and organ preservation approaches have received considerable attention in recent research [4, 5]. The “watch-and-wait” strategy, also known as watchful waiting or non-operative management, involves postponing surgery for select rectal cancer patients after chemoradiotherapy. Treatment response is assessed using imaging techniques like magnetic resonance imaging (MRI), and if complete remission is achieved, surgery may be deferred with the goal of preserving the rectum and its associated functions. This approach is primarily considered for patients with stage III rectal cancer who experience complete remission following neoadjuvant chemoradiotherapy [5]. It is crucial to note that this strategy is not suitable for all patients and necessitates careful patient selection based on specific criteria, such as tumor response on MRI, patient preference, and close monitoring by a multidisciplinary team.

This study explored the feasibility and outcomes of organ preservation using preoperative chemoradiotherapy and local excision in early distal rectal cancer (cT2N0) [6]. The results from this study demonstrated promising outcomes, with high rates of pathologic complete response (45.7%) and rectal sparing (52.2%), as well as no significant differences in 3- and 5-year overall survival and recurrence-free survival, regardless of preoperative chemoradiotherapy or surgical procedures. However, 50% of the patients who underwent local excision received adjuvant chemotherapy and radiotherapy, and a local recurrence rate of 22% was observed. This indicates that despite additional treatment, there is still a risk of local recurrence after local excision. Similarly, studies on the watch-and-wait strategy for stage III patients have reported local recurrence rates of around 20%. These findings underscore the importance of careful consideration and close monitoring when selecting organ preservation strategies. It should be noted that the number of patients in this study was small, and the difference in local recurrence rates between the local excision group and the TME group did not reach statistical significance. Larger studies are generally required to draw more definitive conclusions and determine statistically significant differences between treatment approaches.

The approximately 5% local recurrence rate in patients who underwent TME surgery emphasizes the reduced risk of local recurrence associated with this approach. Nevertheless, it is crucial to

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Correspondence to: Gyung Mo Son, MD, PhD, FACS

Department of Surgery, Pusan National University Yangsan Hospital, Pusan National University School of Medicine, 20 Geumo-ro, Mulgeum-eup, Yangsan 50612, Korea

Email: skm1711@pusan.ac.kr

ORCID: <https://orcid.org/0000-0002-8861-6293>

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take into account that TME is a more comprehensive procedure than local excision and may entail greater risks and potential complications, such as anastomotic leakage and permanent stoma (colostomy or ileostomy) [7].

There are potential benefits to organ preservation in early rectal cancer. Indeed, preserving the rectum through local excision may offer advantages by avoiding radical resection and its associated long-term effects, such as low anterior resection syndrome (LARS) [8]. LARS can manifest as various symptoms, including bowel dysfunction, urgency, frequency, incontinence, and altered bowel habits, all of which can significantly impact a patient's quality of life [9]. By performing local excision and preserving the rectum, the potential negative effects of LARS can be minimized or avoided. This can result in improved bowel function and better preservation of continence, ultimately leading to a positive impact on the patient's overall quality of life.

However, there is some concern regarding the risk of systemic recurrence in patients who undergo organ preservation strategies for rectal cancer. While local recurrence rates may be similar between organ preservation and radical resection, systemic recurrence remains a potential challenge for patients with organ preservation. Thus, it is crucial to strike a balance between the potential benefits of organ preservation, such as preserving quality of life, and the risks of systemic recurrence [10]. Identifying patients who are suitable candidates for organ preservation approaches requires thorough assessment by a multidisciplinary team.

The development of radical surgical concepts, such as TME, adjuvant and neoadjuvant chemotherapy, radiation therapy, and minimally invasive surgery, has significantly improved oncologic outcomes for patients with rectal cancer over the past 20 years. However, the relatively unfavorable quality of life due to LARS after radical surgery, or the loss of self-esteem and discomfort associated with maintaining a stoma, remain serious unresolved issues. As an alternative to radical surgery, the recently proposed organ preservation treatment strategy can maintain quality of life while achieving a similar level of oncological cure rate as patients who undergo radical resection, particularly for those with unfavorable health conditions that make radical surgery challenging [11]. Of course, the watch-and-wait strategy is still an area of active research, and further studies are needed to establish its long-term efficacy and safety compared to standard surgical approaches. Nevertheless, the organ preservation strategy may be considered a promising alternative treatment to radical surgery for carefully selected patients.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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ORCID

Gyung Mo Son, <https://orcid.org/0000-0002-8861-6293>

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