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EXPANDING THE LIMITS OF MINIMALLY INVASIVE RECTAL CANCER SURGERY: A PROSPECTIVE EVALUATION OF TRANSANAL TOTAL MESORECTAL EXCISION

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Background

Total mesorectal excision (TME) remains the standard for rectal cancer surgery. Laparoscopic TME may be technically challenging in narrow pelvises or distal tumors. Transanal TME (taTME) provides direct distal access to the rectum and mesorectum, potentially improving visualization, sphincter preservation, and oncological precision.

Methods

Prospective evaluation of 78 taTME procedures performed between 2019–2025.

Inclusion criteria: tumors ≤12 cm from the anal verge.

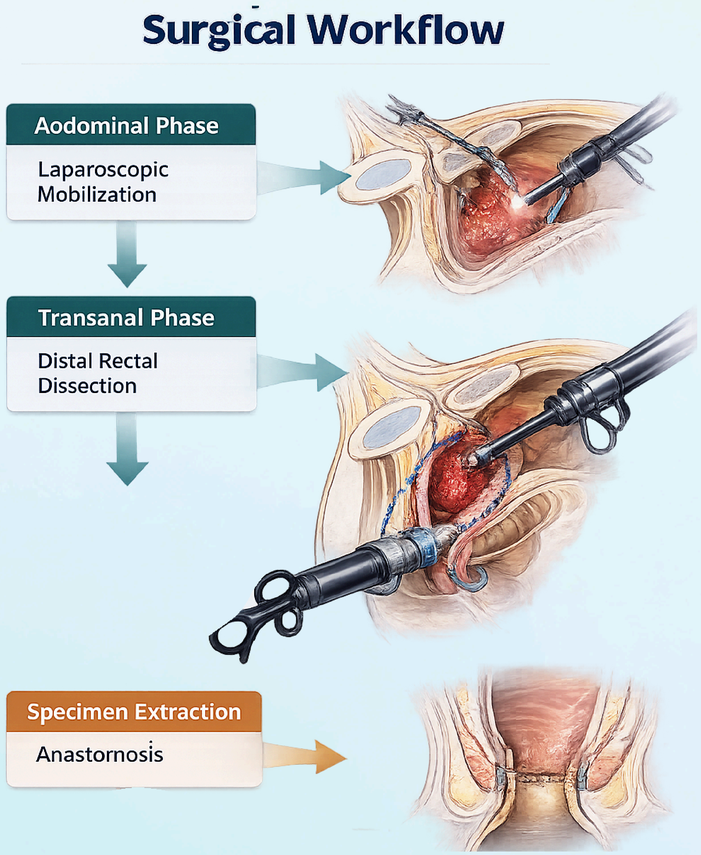
Preoperative staging included MRI, CT and endorectal ultrasound.

Neoadjuvant therapy followed multidisciplinary guidelines for cT3–T4 or node-positive disease.

Outcomes assessed:

- operative time
- conversion rate
- specimen quality
- postoperative morbidity
- oncologic outcomes

Data were compared with a laparoscopic TME cohort (n=197, 2015–2019).



Results

78 patients underwent taTME.

- Mean operative time: 125 min
- Conversion rate: 3.5%
- Complete mesorectal excision: 97%
- CRM positivity: 3.2%
- Postoperative morbidity: 5%
- Major complications: 1%
- Anastomotic leak: 5%

At 22-month median follow-up:

- Local recurrence: 3.2%
- 3-year disease-free survival: 78%

Results were comparable to laparoscopic TME outcomes.

Conclusion

taTME represents a safe and effective minimally invasive alternative for distal rectal cancer surgery. The technique provides excellent specimen quality, low morbidity, and encouraging oncologic outcomes, particularly in patients with challenging pelvic anatomy.

Key Refrences: Heald RJ et al. Br J Surg. 1982.; Penna M et al. Ann Surg. 2017.; Penna M et al. Ann Surg. 2020.; Deijen CL et al. JAMA Surg. 2016.; Ma B et al. Lancet Gastroenterol Hepatol. 2019.; Roodbeen SX et al. Ann Surg. 2021.