

Transanal Minimally Invasive Surgery (TAMIS) for Rectal Adenocarcinoma

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https://youtu.be/gcEkFVf0_kA

ABSTRACT

Transanal minimally invasive surgery (TAMIS) is an alternative approach for the local excision of benign rectal lesions and carefully selected early-stage rectal cancers. We present the case of a 54-year-old woman with multiple comorbidities and a history of neoadjuvant chemoradiotherapy for low rectal adenocarcinoma, in whom a 4-cm residual lesion was identified. Following multidisciplinary evaluation, local excision was performed using TAMIS with full-thickness resection, without intraoperative complications. Final histopathologic examination revealed ypT1 moderately differentiated adenocarcinoma with negative margins and no lymphovascular or perineural invasion. The postoperative course was uneventful, and no local or distant recurrence was observed at 12 months of follow-up. This case illustrates the role of TAMIS as a safe, organ-preserving option for patients at high risk for radical surgery.

Keywords: TAMIS; rectal cancer; local excision

INTRODUCTION

Transanal minimally invasive surgery (TAMIS) is a local excision technique for the treatment of benign rectal lesions and early-stage rectal cancers, particularly those located in the mid and distal rectum. This approach combines the principles of laparoscopic surgery with natural orifice access, enabling precise local excision with excellent visualization of the operative field while preserving sphincter function and reducing the morbidity associated with radical resection in carefully selected patients.

TAMIS has expanded the role of local excision in rectal neoplasia by providing high-quality oncologic resection with reliable margin control and a relatively low complication rate, as demonstrated in institutional series and recent systematic reviews.^{1,2} We present the case of a high-risk patient with rectal adenocarcinoma who underwent successful local excision using this approach.

CASE DESCRIPTION

A 54-year-old woman with a history of systemic lupus erythematosus, clear cell renal cell carcinoma, noncirrhotic portal hypertension with esophageal varices, and chronic hepatitis B was referred to our institution for management of low rectal adenocarcinoma. She had previously received neoadjuvant chemoradiotherapy at another institution. Documentation of the initial clinical stage (cTNM) and the rationale for neoadjuvant treatment was unavailable at the time of referral.

Pelvic magnetic resonance imaging demonstrated no residual tumor or suspicious locoregional lymph nodes. However, colonoscopy revealed a 4-cm friable polypoid lesion on the left anterolateral rectal wall, 5 cm from the anal verge. Endoscopic biopsy demonstrated a tubulovillous adenoma with high-grade dysplasia. After multidisciplinary tumor board review, local excision using TAMIS was recommended.

The procedure was performed under general anesthesia with the patient in the lithotomy position. Four absorbable polyglactin 910 (Vicryl®, size 1) traction sutures were placed at the cardinal positions of the anal verge to improve exposure. After insertion of an anal retractor and gentle digital anal dilation, a flexible multichannel transanal access platform (GelPOINT® Path; Applied Medical, Rancho Santa Margarita, CA, USA) was introduced. Pneumorectum was established using carbon dioxide insufflation at a constant pressure of 12 mmHg, providing stable and optimal exposure of the operative field. The friable, polypoid lesion measured approximately 4 cm in diameter and was located on the left anterolateral rectal wall. Circumferential marking was performed using electrocautery, maintaining a gross margin of at least 1 cm. A full-thickness excision was performed, extending through all layers of the rectal wall along the anatomical planes until the mesorectal fat was reached as the deep margin of resection.

Because the defect was extraperitoneal and hemostasis was satisfactory, the rectal wall defect was left open. Total operative time was 120 minutes, and no intraoperative complications occurred.

The postoperative course was uneventful, and the patient was discharged on postoperative day 2. Final histopathologic examination demonstrated a moderately differentiated adenocarcinoma with negative resection margins (R0) and a final pathologic stage of ypT1. No lymphovascular invasion, perineural invasion, or tumor budding was identified. Tumor regression was graded as Modified Ryan Tumor Regression Score 3.

At 6 months of follow-up, surveillance colonoscopy demonstrated a granular inflammatory-appearing lesion at the excision site.

Histopathologic examination showed inflammatory changes without evidence of recurrent disease. Surveillance computed tomography performed 12 months after surgery demonstrated no evidence of local recurrence or suspicious regional lymphadenopathy.

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CONCLUSION

In this case, local excision using TAMIS achieved complete tumor resection while avoiding radical surgery in a patient with multiple comorbidities and increased operative risk. TAMIS may represent a valuable minimally invasive option for carefully selected patients with rectal neoplasms, particularly when the anticipated morbidity of radical resection is substantial. Appropriate patient selection and multidisciplinary decision-making are essential to optimize outcomes.

Author Contributions

CF: conceptualization, methodology, research, data curation, resources, visualization, drafting. MSN: research, resources. GALS: research, resources. PSM: supervision, validation. RAB: drafting – review and editing, supervision, validation.

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