

Hybrid transanal and total mesorectal excision after transanal endoscopic microsurgery for unfavourable early rectal cancer: a report of two cases

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Completion total mesorectal excision (TME) is a rare but complex procedure after transanal endoscopic microsurgery for early rectal cancer with unfavourable final histology.

Two cases are reported when completion TME was performed after upfront transanal partial mesorectal dissection. Intact non-perforated TME specimens with negative and adequate distal and circumferential margins were created. The quality of both total mesorectal excisions was complete and distal margins were sufficient.

We believe that our technique might be a way of approaching completion TME after TEM, especially in cases of low rectal cancer.

Keywords: rectal cancer, transanal endoscopic microsurgery, completion surgery, total mesorectal excision, laparoscopic surgery

INTRODUCTION

Rectal cancer treatment has undergone a lot of changes in the past several decades. The most important change related to surgical technique was the introduction of the concept of total mesorectal excision (1). However, it is still unavoidably related to considerable morbidity and mortality, and a number of postoperative urinary, sexual, and defecation disorders (2), which cannot be underestimated. Local treatment of rectal cancer was always an attractive alternative for early rectal cancer as it was related to low morbidity and mortality, a possibility of avoiding postoperative functional disturbances, and a permanent stoma in a proportion of patients with low rectal cancer. However, even in T1 node negative rectal cancer local excision does not offer oncological control comparable to radical surgery (3). Transanal endoscopic microsurgery (TEM), introduced by G. Buess in 1983 (4), or a later modification of this technique – transanal minimally invasive surgery (TAMIS) using standard laparoscopic equipment and a single-incision laparoscopic surgery port to access rectal lesions (5) – may improve some of the issues of the local excision, but the concept, when comparing it with radical surgery, remains similar. Even patients very carefully selected for local treatment may show some adverse findings on final histology, demanding immediate radical resection (6). As a result of proper TEM, local full thickness excision of the rectal tumour may adversely affect the further possibility of creating an intact total mesorectal excision (TME) specimen and avoiding an intraoperative perforation of the rectum. We present two cases when a transanal dissection combined with TME from the abdominal side allowed for the creation of an intact non-perforated specimen with adequate distant and circumferential resection margins while following correct TME dissection planes. Written informed consent regarding the use of personal data was taken from both patients.

CASE PRESENTATIONS

Case 1

A 65-year-old male complained of 4-month duration of blood in stools. On colonoscopy, a 2.5 cm flat polyp was detected 8 cm from the anal verge

on the posterior rectal wall. The biopsy revealed *carcinoma in situ*. TEM was performed. The postoperative course was uneventful, and he was discharged on the next day. T1 moderately differentiated adenocarcinoma with lymphovascular invasion was observed in the postoperative specimen; resection margins were clear. The patient was reinvestigated: a full body computed tomography (CT) scan did not detect any spread of the disease. The patient chose immediate radical surgery – TME. Salvage surgery was performed. Operation was started in a prone jack-knife position, exposing the anus with Lone-Starr retractor. A full thickness rectal incision was started 2 cm from the dentate line, and TME up to 10 cm from the anal verge (2 cm above the upper edge of the TEM incision) was performed using a standard transanal surgical technique. The cut edge of the mobilized rectum was closed with a purse string suture. The patient was put into the lithotomic position. An open completion TME was performed with a hand sewn colonic side to end anal anastomosis. Defunctioning ileostomy was performed. The patient developed bleeding during the first postoperative day; he was reoperated on, and the bleeding from the presacral veins was found and secured. In the later postoperative course, on day 10, an anastomotic leak was diagnosed, which was handled conservatively. The TME specimen was intact with free circumferential resection margin and distal resection margin from the previous TEM site (Fig. 1). No residual cancer in the rectal wall or metastases were found in any of the 22 harvested lymph nodes. The ileostomy was taken down in three months (the fistula healed completely).

Case 2

A 57-year-old female had a positive immune faecal occult blood test. She underwent a colonoscopy. A 3 cm flat polypoid lesion was found 5 cm from the anal verge on the left lateral rectal wall. The biopsy showed a T1 moderately differentiated adenocarcinoma. On a full body CT and pelvic magnetic resonance imaging (MRI), no regional or systemic spread was seen. She underwent TEM. The postoperative course was uneventful, and she was discharged from the hospital on the next day. The final histology demonstrated clear resection margins, no adverse histological features, most likely T1 cancer. However, a fragment of T2 invasion cancer was noted. A TME was recommended.

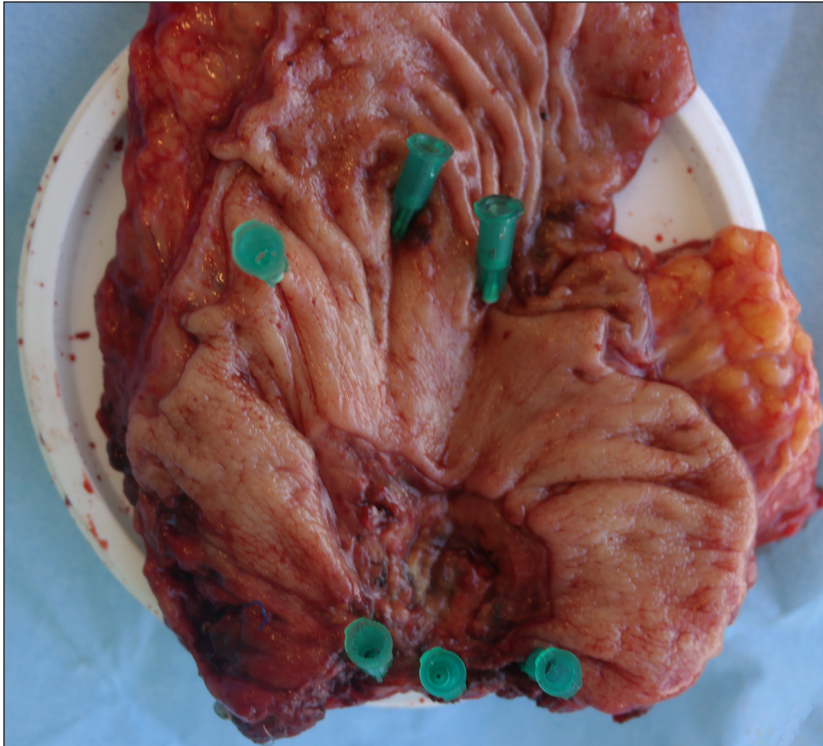


Fig. 1. A rectal wall ulcer after transanal endoscopic microsurgery is seen in the specimen

The operation was started in a prone jack-knife position, performing a partial TME from below. The anus was exposed with a Lone-Starr retractor. The rectal wall was incised starting from 1 cm from the dentate line and mobilized in a TME fashion to up to 7–8 cm from the anal verge (2 cm below the previous TEM site). The mobilized rectum and rectal stump were closed with purse-string sutures. A completion laparoscopic hand-assisted TME was performed with colonic J-pouch anal stapled

anastomosis, using a CEEA 29 circular stapler (Ethicon-Johnson & Johnson US, LLC) employing a single stapling technique. Defunctioning ileostomy was performed. An intact rectal specimen was achieved with a free circumferential resection margin and a distal resection margin from the previous TEM site (Fig. 2). The TME specimen contained no residual cancer in the rectal wall, but there was metastasis in two out of 21 harvested lymph nodes. The ileostomy was taken down in three months.

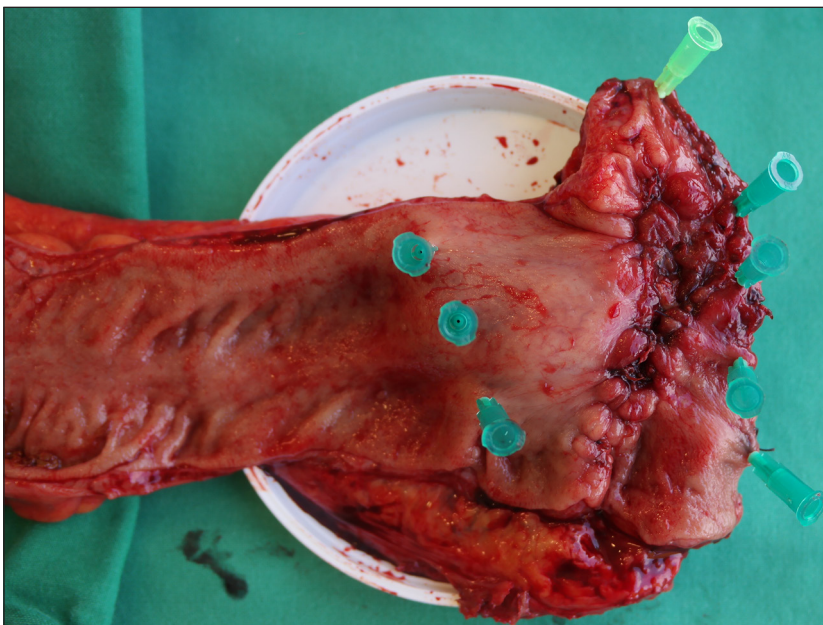


Fig. 2. A suture line after transanal endoscopic microsurgery is seen in the specimen

DISCUSSION

Several decades ago it was emphasized that an adequate distal resection margin is the key to successful rectal cancer surgery. In the TME era, we learned that the other very important resection margin is the circumferential resection margin (CRM), as it is a clear predictor of both overall survival and the risk of local recurrence (7). Intraoperative perforation adversely affects local recurrence and overall survival as well (8). Achieving a negative CRM and avoiding perforation is a challenge after a previous local excision, especially for low rectal lesions, which is usually full thickness and incorporates some of the mesorectum around the tumour. The resection locally extends very close to the TME resection plane. Our technique enabled creation of an intact TME specimen with negative CRM and distal resection margins in the cases of rectal cancer after TEM. A study by Hompes et al. (9) addresses the question regarding proper timing for TME after TEM, and the quality of the TME specimen. They conclude that both – distal lesions and the time after TEM more than seven weeks – are likely to result in an inferior TME specimen and may reduce disease-free survival. We operated our patients in less than one month after TEM. Despite a great number of studies on TEM and completion surgery for patients with high-risk rectal cancers, there are no clear recommendations on when to proceed with completion TME after TEM. Even having performed a detailed analysis of 25 completion TME after TEM with 25 case-matched primary TME, Levic et al. (10) do not address the question on when they would actually proceed with TME after TEM. However, this study clearly demonstrates that before completion TME most patients undergo full-thickness local excision for early rectal cancer, and when the rectal tumour had been primarily misdiagnosed as adenoma, a partial thickness excision. Preoperative histology and modern imaging modalities still do not allow us to select cases for local treatment with 100% certainty. In one of our cases, carcinoma *in situ* was a primary histological diagnosis, and on the final histology a T1 rectal cancer with lymphovascular invasion was detected. In the second case, a T2 cancer was mistakenly diagnosed as T1 preoperatively and resulted in offering the patient TEM as a primary procedure. Thus, completion surgery in some

cases is unavoidable. In another study, comparing primary TME with completion TME after TEM (in this study all patients received 25-Gy preoperative short course radiotherapy) (11), completion TME after TEM was associated with more colostomies and a higher local recurrence rate. Both of these findings are undoubtedly related to the technical aspects of standard TME after TEM. Morino et al. (12) confirmed a higher abdominoperineal resection rate in a group of patients undergoing completion TME after TEM, and noted that it was a challenging procedure that was also related to longer operation time. Both of our patients underwent low coloanal anastomosis and only a temporary covering ileostomy was created. A large number of articles have recently been published on transanal total mesorectal excision for rectal cancer (13, 14), stressing that this technique allows creation of a very good quality TME specimen and helps to avoid parts of laparoscopic rectal cancer surgery, which are extremely challenging. One randomized controlled trial has been published that confirmed that as an addition to laparoscopic rectal cancer surgery, perineal transanal dissection is a way of avoiding a positive circumferential resection margin in low rectal cancer (15).

This article addresses the technical aspects of a challenging completion total mesorectal excision after previous transanal endoscopic microsurgery for rectal cancer and a way of creation a low coloanal anastomosis and avoiding a permanent stoma. The authors believe that this might be a way of approaching completion TME after TEM, especially in the cases of low rectal cancer. Further studies on completion TME after TEM are needed to confirm this opinion.

Disclosure of interest: The authors report no conflicts of interest

Received 28 June 2017

Accepted 25 September 2017

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HIBRIDINĖ TRANSANALINĖ IR TOTALINĖ MEZOREKTALINĖ EKSCIZIJA PO TRANSANALINĖS ENDOSKOPINĖS MIKROCHIRURGIJOS NUSTAČIUS ANKSTYVAJĄ TIESIOSIOS ŽARNOS VĖŽĮ: DVIEJŲ ATVEJŲ PRISTATYMAS

Santrauka

Po transanalinės endoskopinės mikrochirurginės (TEM) procedūros dėl ankstyvojo tiesiosios žarnos vėžio atlikti totalinę mezorektalinę eksciziją (TME) gana sudėtinga, tačiau kartais, esant blogos prognozės tiesiosios žarnos vėžio veiksniams, tai daryti būtina.

Pristatome du atvejus, kai prieš TME atliekama dalinė transanalinė mezorektalinė disekcija. Taip užtikrinama, kad tiesiosios žarnos segmento kraštai – distalinis ir cirkuliarus – yra radikalūs. Abiem atvejais mezorektaliniai paviršiai buvo nepažeisti, o distaliniai kraštai adekvatūs.

Manome, kad mūsų technika yra tinkama atlikti mažas tiesiosios žarnos rezekcijas po TEM procedūrų.

Raktažodžiai: tiesiosios žarnos vėžys, transanalinė endoskopinė mikrochirurgija, pakartotinė operacija, totalinė mezorektalinė ekscizija, laparoskopinė chirurgija