



## Transanal Completion TME as Early Salvage Surgery after TEM in Rectal Cancer – A Short Report

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### Abstract

Transanal TME (TaTME) is worldwide gaining acceptance due to obvious advantages: Better visualization of surgical planes, better preservation of anal anatomy and urogenital function. From 2013 and until now we performed 40 TaTME and in 3 cases TaTME was performed as completion surgery after Transanal local surgery, TEM/TEO. With this Short Report we present the 3 patients with regard to perioperative data and short term outcome.

All data were collected prospectively and analysed retrospectively, collecting data from hospital files. Three patients underwent TaTME after TEM due to positive resection margins. All three patients had only a temporary ileostomy, and none suffered from severe complications. Pathological report confirmed in all three cases correct surgical mesorectal planes.

We demonstrate that salvation TaTME after TEM is possible but patient sample is very small and we should hesitate to recommend the procedure in all similar cases until further investigations on this field is published.

**Keywords:** Rectal cancer; Completion proctectomy; TEM; Salvage surgery; Transanal total mesorectal excision

### Introduction

Total mesorectal excision (TME) is the gold standard in treatment of rectal cancer [1].

It is, however, associated with considerable morbidity and mortality [2,3].

Due to procedure-related morbidity and mortality associated with TME, Transanal Endoscopic Microsurgery (TEM) has become a more frequent choice of procedure for treatment in selected patients with early rectal cancer. Still, its role in cancer surgery has been debated. The major problem with TEM in treatment of rectal cancer is non-radical resection in up to 24% and local recurrence in up to 29% for T2 cancers [4,5]. Therefore, salvage surgery in form of TME is considered amendable after failed local excision with TEM, where the patient presents with unfavorable histology and/or non-radical resection, and is required in 4% to 23% of patients [6,7].

Salvage surgery after TEM seems to be oncologically safe with no difference in outcome when compared to patients undergoing primary TME. Comparative studies indicated that there is no significant difference in oncological or surgical outcome between patients who underwent immediate salvage TME and patients with primary TME. Others oppose that salvage surgery after local resection is indeed associated with higher risk of APR due to destruction of the correct planes, leaving the patient with a higher risk of stoma [8-11].

Recently, one innovative form of single-port surgery was introduced as Transanal Total Mesorectal Excision (TaTME) to facilitate difficult pelvic dissections in the surgical treatment of rectal cancer. Pelvic dissection with transanal approach has gained growing acceptance by providing better visualization and more accurate distal TME dissection. There have been reported increasing case series showing encouraging results in terms of safety and efficacy of TaTME approach since 2010 [12]. However, to the best of our knowledge, there has been no report of salvage completion TaTME following TEM.

The aim of the current study is to report our experience of three initial cases with short-term outcomes.

### Case Presentation

From August 2013 to September 2016, forty TaTME were performed in our institution. Three

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**Table 1:** Patient demographics and outcomes.

Pt. no	Gender	Age	Distance from anal verge (cm)	Pathological Report after TEM	Time from TEM to salvage surgery (days)	Hospital stay after salvage surgery (days)	Neoadjuvant Therapy	Final pathological Assessment	Follow up (Months)
1	M	62	8	T1sm3	100	9	+	T0V0N0 0/12 lymph nodes	16
2	F	80	6	T2	22	15	-	T0N0V0 0/12 lymph nodes	4
3	F	70	5	T3V1	27	5	-	Residual tumor 3 mm T3V1N2 10/24 lymph nodes	10

of these patients underwent early TaTME as radical surgery after the TEM-procedure due to non-radical resection or more advanced cancer stage than anticipated. All patients had been discussed at MDT (Multidisciplinary Team) conference before offered early salvage surgery.

The three patients were suspected for adenoma before the initial TEM-procedure and assessed by digital examination, rigid rectoscopy, flexible colonoscopy and biopsy. MRI and CT scan was conducted prior to TaTME surgery.

Residual disease was defined as histopathologically confirmed adenocarcinoma, at or near the site of previous TEM resection. Distal metastasis was defined as recurrent disease outside the pelvis.

Data was registered prospectively and analysed retrospectively, collecting data from patient hospital files, including patient characteristics as well as perioperative data.

Transanal endoscopic procedure in spinal anaesthesia was conducted using the TEO system (Karl Storz, Germany) in 2 patients and TEM (Wolf, Germany) in 1 patient. In every way the 2 systems are comparable. During the procedure an operating rectoscope, providing 4 ports (incl. camera) is placed in the rectum and pneumorectum at 12 mmHg to 16 mmHg is kept during the procedure by endoflation.

Abdominal phase of TaTME was performed using 4 port laparoscopic surgeries. Splenic flexures were mobilized in all three patients. Mesocolic dissection and inferior mesenteric pedicle isolation was achieved with medial approach and the inferior mesenteric artery was ligated close to its origin with clips. The left ureter was recognized and the mesorectal plane dissected preserving the hypogastric nerves. Anterior dissection was continued down to the seminal vesicles in males and the level of the pouch of Douglas in female. Posterior dissection was terminated at the level of pelvic floor in both genders.

Perineal phase was initiated using flexible transanal access platform in all cases. A rectal purse-string suture was placed before full rectotomy in the 2 cases. The scarring tissue was very close to dentate line in one patient and therefore purse-string suture was first placed after initial full thickness rectal wall dissection. Perineal dissection *via* transanal route was terminated, when entered abdominal cavity after completing distal rectal mobilization. In all cases, stapled side-to-end colorectal anastomosis using a 31 mm circular stapler was performed.

A protective loop ileostomy was created in all 3 patients. Intestinal continuity was re-established 3 months later or after completion of postoperative adjuvant therapy.

## Results

Patient demographics and outcomes are summarized in Table 1.

In all 3 cases negative resection margin was not obtained during TEM surgery.

One patient (no. 1), who had a mid rectal tumor, was referred neoadjuvant treatment prior to salvage surgery based on the initial MRI-staging that showed T3N0 with CRM=1 mm to 2 mm.

None of the three patients underwent APR. There were no intraoperative complications. Patient no. 1 developed anastomotic stenosis requiring endoscopic dilation and he was also admitted twice within 30 days after discharge due to subileus, treated conservatively both times. Patient no. 2 suffered from anastomotic leakage, managed successfully by transanal drainage.

No complications were registered following reversal of protective ileostomy.

In 2 cases no residual tumor was found after completion TaTME (T0N0V0) and in one patient, circumferential resection margin <1 mm due to a tumor deposit located close to mesorectal fasciae at level of vascular pedicle and this patient there for received adjuvant therapy after final surgery. According to the pathology report all 3 patients were operated in correct mesorectal plane. Follow up ranges from 4 months to 16 months. By December 2016 all 3 patients have had complication free stoma reversal whereby they are ending surgical treatment and the patients are entering routine controls consisting of annual CT scan until 3 years after surgery and colonoscopy every 5 years.

## Discussion

Local excision or TEM of early rectal cancers has a reduced morbidity and better outcome. The patients with low-risk T1 cancers should be considered as candidates for local surgery without further treatment. Salvage Completion TME (SCTME) is associated with an acceptable oncological outcome and should be considered the standard treatment after TEM in high-risk pT1 and pT2 rectal cancers. The application of transanal approach in TME could result in lower complication rates due to better visualization and dissection on lower pelvis, particularly high risk patients namely in obese/male patients. Promising is TaTME when it comes to better preservation of anal sphincter and urogenital function while maintaining an acceptable oncological outcome [13,14]. The adequate margins can be obtained under direct visualization and colorectal anastomosis may be directly performed by avoiding the use of abdominal staplers. Initial results of the international TaTME registry shows that this approach is effective for distal rectal dissection and can be obtained good specimen quality [12].

However, SCTME after local resection with TEM with possible anatomical disruption of the correct surgical planes, may leave a high risk of non-radical resection, perforation and anastomotic leakage due to prior surgery in the area and care must be taken to avoid postoperative complications such as anastomotic leakage in which case the patient almost certainly ends up with a permanent stoma. Some reports describe that patients undergoing SCTME following TEM require frequently an abdominoperineal resection

[8]. In our small series of three patients, none of the patients underwent abdominoperineal resection. Only one of three patients had a circumferential resection margin <1 mm due to a tumor deposit located close to mesorectal fasciae at level of vascular pedicle, although the pathological report in this case confirms correct mesorectal surgical plane. This part of the procedure was performed during the abdominal laparoscopy and therefore transanal approach had no impact on it.

Although the sample is small with only 3 patients we found that SCTME with transanal approach after TEM is a safe procedure and none of the three patients suffered from severe complications.

Our series with a few numbers of patients with a short follow-up limit a reasonable conclusion. Caution should be exercised when using TaTME following TEM in cases with a high-risk of residual tumor, especially in patients with probable advanced T staging.

In our opinion, SCTME with TaTME approach seems to be a feasible surgical option. However, the suitability of this new technique following TEM needs further investigations [15-17].

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