Surgical Techniques of Transanal Minimally Invasive Surgery for Early Rectal Malignant Lesions

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ABSTRACT

Since 2001, we originally have been conducting a procedure derived from Transanal Endoscopic Microsurgery (TEM). Because of this stable operation, it is possible to remove and resect all layers including the muscular layer, so the probability of positive dissection margin is extremely low. However, in recent years, new concepts such as Trans Anal minimal invasive surgery (TAMIS) and Transanal Total Mesorestal Excision (taTME) have been devised, as well as surrounding devices, especially air tight platforms, even in narrow cavities. An air supply device capable of performing circulating smoke exhaust has been developed and clinically applied. In recent years, these devices were applied, and attempts were made to further enhance the versatility of the procedure. Specifically, by inserting GELPOINT Path® as a platform, it is compatible with an air tight closed space and a port site. In addition, AIRSEAL® is used as a gas supply device to quickly respond to surgical smoke caused by tissue cauterization. Moreover, by connecting a 10 mm, 30 degree oblique rigid scope to a camera system generally used for laparoscopic surgery, a stable field of view was secured.

Figure indicates that the representative case of lower rectal cancer with SM invasion successfully resected with the TEM procedure (**Case 2**). Surgical margin was secured safely, and small vessels which may cause postoperative bleeding was securely cauterized under high definition image. The mucosal and submucosal defect was covered by suturing. The postoperative histological findings also indicated that the surgical margin was clearly negative with tumor invasion.

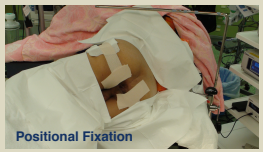
From 2001 to the present, this procedure was performed on 64 cases including 20 carcinoidoids, and the malignant cells were all exposed negative to the detached stump. In this report, at the same time as presenting the procedures performed at our hospital in recent years, we also report details of the results.

SETTINGS

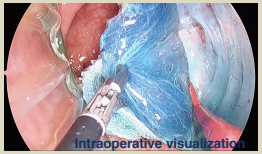
TEM using commercially available platform







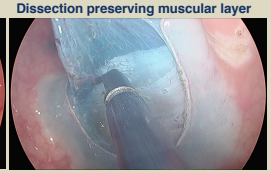


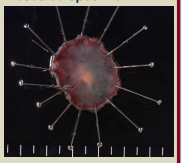


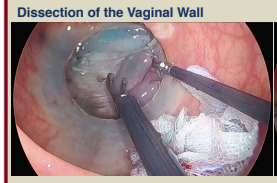
SURGICAL PROCEDURES

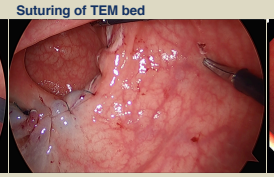
Case 1. NET (G1) post-EMR

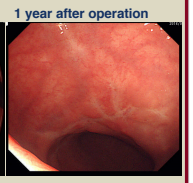






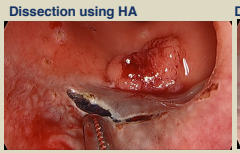


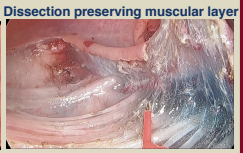




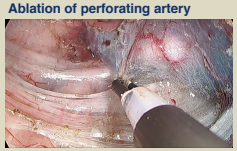
Case 2. SM adenocarcinoma of the lower rectum

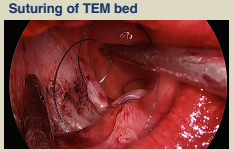












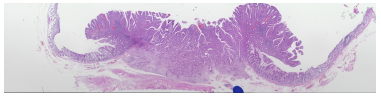
RESULTS

Table 1. Patients enrolled in this study

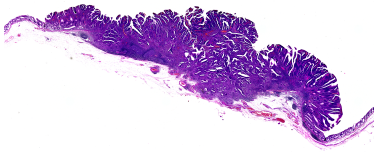
	TEM (n = 64)
Type of tumor	
adenocarcinoma	36 (56.3%)
adenoma	8 (12.5%)
others (e.g., carcinoid)	20 (31.2%)
Length from anal verge (mm), Median	50.0 [0, 120]
Tumor size (mm), Median	30.0 [0, 158]
Operative time (min), Median	120 [25, 405]
Estimated blood loss (ml), Median	0 [0, 350]
30-days morbidity-no. (%)	0 (0%)
Clavien-Dindo Clasificatin ≥ III	0 (0%)

MICROSCIPIC IMAGES

Combined resection with inner muscular layer



Case 2. SM adenocarcinoma of the lower rectum



CONCLUSIONS

Transanal endoscopic microsurgey for rectal lesions was **feasible** in short-term outcome. By using this procedure, **the rectum itself** could be **preserved** and may be associated with **better QOL**.

REFERENCES

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2) Buess G (1993) Peview: transanal endoscopic microsurgery (TEM). Journal of Royal College of Surgeons of Edinburgh 38:239-245
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