

Editor-in-Chief

World Journal of Gastrointestinal Surgery

Dear Editor:

We wish to re-submit the manuscript titled "**Transanal minimally invasive surgery using laparoscopic instruments of the rectum: a review**" The manuscript No. is 65439.

I look forward to working with you and the reviewers to move this manuscript closer to publication in the *World Journal of Gastrointestinal Surgery*.

The manuscript has been rechecked and the necessary changes have been made in accordance with the reviewers' suggestions. The responses to all comments have been prepared and attached herewith.

Sincerely,

Taek-Gu Lee, M.D.

The article represent a reasonable extensive review of TAMIS procedure that has been in the field of colorectal surgery since 2010. Highlights are ease and flexibility of use and more cost effective compared to other transanal approaches, Also with as good outcome. So Far TAMIS has been described in many studies but in small data and non randomised, with optimistic outcomes. This study summarise many of those study in one article and hence give a better evaluation of the technique, compared to other methods and add more insight to outcome, post op complications, follow up and also address the bowel function following the procedure that is usually not always get highlighted in transanal approach studies. limitation is follow up period and long term outcome, the study covers well comparing TAMIS to TEM but not much to ESD that would add more power to this review.

Ans) Thank for your comment. I am willing to reflecting your point of view, I will describe ESD for colorectal lesion. However, there is no articles about TAMIS in comparison with ESD. So I describe clinical outcomes and introduction of the ESD and EMR in outcomes session.

Correct) Endoscopic mucosal resection (EMR) using snaring for rectal mass (1.5~2cm) is most cost-effective, safe, and feasible. However, the rate of en bloc resection and R0 resection rate of rectal mass (>2cm) that require piecemeal resection is lower than in lesions (<2cm), and the recurrence rate increases by more than 20%. Endoscopic submucosal resection (ESD) was introduced to overcome the limitations of EMR and has been widely applied with the development of injectable lifting solutions, adaptive

electrosurgical generators, endoscopic knives and scissors. Oka et al. showed that ESD offers lower local recurrence rate (ESD vs EMR = 1.4% vs 6.8%), larger tumor size (ESD vs EMR = 39.6mm vs 26.7mm) and higher en bloc resection rate (ESD vs EMR = 95% vs 53.2%) than EMR. In comparison with EMR, ESD has higher en bloc resection and curative resection and lower recurrence rate in some meta-analysis and systematic reviews. However, ESD is performed selectively according to the following indications by European Society of Gastrointestinal Endoscopic (ESGE) clinical guideline; colorectal lesions with high suspicion of superficial submucosal invasion, and cannot radically remove lesion by snare-based techniques such as standard polypectomy or EMR.

To date, there is no randomized controlled trial comparing TAMIS and ESD, but Arezzo et al. reviewed TEM which similar procedure to TAMIS and ESD; for large noninvasive rectal lesions, R0 resection rate, en bloc resection rate, and recurrence rate were significantly better in TEM; 74.6%, 87.8%, and 5.2% in ESD, 88.5%, 98.7%, and 2.6% in TEM, respectively ($p < 0.001$). They concluded that TEM had advantages in terms of higher R0 resection, higher en bloc resection rate by full thickness resection, and reduced further treatment such as transanal resection and abdominal resection [36]. In patients who need radical surgery for residual or recurrent neoplasia after ESD, TAMIS could become an alternative to radical surgery. The reason that TAMIS can accurately evaluate the depth of submucosal invasion because full-thickness resection including muscular layer is possible, and it can be performed in patients with submucosal fibrosis that interferes with EMR or ESD from previous endoscopic procedure. (On page 10 line 3~25)