Reviewer's report

Title: Splash M-knife versus Flush Knife BT in the technical outcomes of endoscopic submucosal dissection for early gastric cancer: a propensity score matching analysis

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Reviewer: Wen-Lun Wang

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Comments to the Author

In this article, the authors reported a retrospective study to compare the hemostatic abilities of two knifes (Splash M-Knife vs. Flush Knife BT) for gastric ESD. They found Splash M-Knife achieved better hemostasis in ESD for early gastric cancer without an increase in adverse effects. This may contribute to a reduction in costs by reducing the usage of hemostatic forceps during ESD procedure. The topic of this article is interesting, but I have the following comments.

Major and specific comments:

1. The use of hemostatic forceps during ESD procedure frequently depends on the endoscopists' preference, and the presence of large vessels or not, not only the hemostasis failure by primary knife. The setting of energy, operators' experiences, injected solution etc. were all the potential confounding factors. Also, the reasons for the usage of hemostatic forcep were not clarified and mentioned, such as whether bleeding episodes occur, hemostasis failure, large vessels presence etc. Thus, a non-prospective, non-randomized study is difficult to make the conclusion.

2. In this study, the procedures seem to be performed by many endoscopists. How many doctors performed the ESD procedures? How many operators were experts? Whether all operators are familial with and used both knifes? The information should be described in the text.
3. In Table 2, the ESD-M group all achieved en bloc resection (100%). However, why the en-bloc resection rate of the ESD-M group was 95.7% after propensity score matching in Table 4? The data were not consistent.

4. The definition of procedure time should be clarified. Some cases only required extremely short procedure time (7 minutes)? In Table 1 and Table 2, the p-value for comparisons (mean and median) should be analyzed with different statistic methods.

5. Some important factors (ex. experiences etc.) were not shown after propensity score matching in Table 4.

6. In discussion section (Page 16), the authors mentioned "even with these two developments, intra-operative bleeding remains one of the challenging problems during ESD." But these references cited as 22,31,32, were using flush-knife, rather than flush knife-BT. Please see a new reference (Aliment Pharmacol Ther. 2010 Oct;32(7):908-15), that showed Flush knife-BT appears to improve haemostatic efficacy and has less bleeding points requiring haemostatic forceps (0 vs 3) compared with standard Flush knife.

7. There are several other commonly-used needle type knives, such as dual knife, hybrid knife, etc. in clinical practice. In figure 2, it shows the study institute did not use these knifes, even through, the flush-BT could not represent the all conventional needle type knife. So, the statements in the text should be modified.

8. The conclusion should be modified. The authors mentioned ESD-M achieved better hemostasis in ESD for early gastric cancer. But the bleeding rate during the procedure was not described, and the post-procedure bleeding is similar in both groups. Thus, the less use of hemostatic forceps cannot totally represent a "better hemostasis". Also, "Reducing the usage of hemostatic forceps during this procedure" cannot totally make sure the reduce in costs, because the costs of Splash M-Knife, Flush-BT, other facility were not calculated.

9. Some tables were inserted in the text, but table 1 was not. These make the reading difficult.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.
Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.
Yes

Are the conclusions drawn adequately supported by the data shown?
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No

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