Author's response to reviews

Title: Type V pit pattern: Impact of clinical experience and magnifying chromoendoscopy

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Author's response to reviews: see over
Point-by-Point Response to the comments from the Reviewers:

Reviewer #1:
This article accesses diagnostic value of magnifying endoscopy for the experienced and non-experienced endoscopist. This article is well written and informative, and I cannot find the vital problems for publication. Please consider minor revision as below.

#Figure 2 is difficult to figure out; therefore the authors should avoid using abbreviation or add more information on figure legend (CCS? MCE? ).

Response:
As suggested by the reviewer, I have added the abbreviations CCS and MCE to the figure legends.

Reviewer #2:
The authors presented the reliability of type V pit pattern for early colorectal cancer to diagnose invasion depth of SM 1000µm. The collected experience is interesting. However, there are some problems with the current study that need to be addressed. My suggestions are as follows:

Major comments

1 This study design has a bias of conventional image to diagnose the invasion depth using magnifying chromoendoscopy image, especially in the experienced endoscopists. To assess the reliability of type V pit pattern, it is better to evaluate by magnifying chromoendoscopy image alone.

Response:
To avoid such bias, the interpretation test was conducted separately for the conventional colonoscopy and magnifying chromoendoscopy series. Moreover, the order of the images presented in the first assessment was shuffled in the second assessment to minimize the possibility of identifying or recognizing the
lesion observed in the first assessment. This has already been mentioned in the Methods (Selection of participants) section.

2 In the selected lesions, are there any LST lesions? Especially, LST-NG pseudodepressed type (0-IIa+IIc) with type VI pit pattern (mild irregular) has a possibility of SM deep invasion. The authors should describe this point.

Response:

As described in Table 1, the mean lesion size was 27 ± 10 mm, with the majority of lesions being >10 mm in size. Laterally spreading tumors (LSTs) are generally defined as superficial lesions of >10 mm in size. Hence, the 0-IIa type lesions used in our study were considered to be LSTs. Considering the sub-classification of LSTs, 0-IIa corresponds to the LST-NG flat elevated and LST-G homogeneous types, 0-I is+IIa to the LST-granular, nodular mixed type, and 0-IIa+IIc to the LST-NG pseudodepressed type. As suggested by the reviewer, I have added the names of the LSTs to Table 1.

3. In this study, did the endoscopists regard type VI pit pattern (severe irregular) as the confirmation of SM deep invasion in all cases? It is important how to evaluate the lesions with type VI pit pattern (severe irregular), because they have SM scanty invasion or intramucosal cancer in some cases.

Response:

Patterns with type VI pit (severe irregular) and VN pit have been recognized as crucial findings indicating submucosal deep invasion (1,000 µm). Accordingly, such lesions, as commented by the reviewer, should not be considered a theorem: there must be exceptions. In this interpretation test, all participants identified type VI pit (severe irregular) and VN pit.

4. The kappa value for intra-observer agreement of type VI pit pattern subclassification was relatively low. The authors discuss the reason more in the Discussion.
Response:

In this study, the kappa value (interobserver agreement) was calculated for categorization of 50 subjects by more than 10–12 raters into the following groups as follows: each subject was assigned to one of the 5 categories (III or IV, VI mild, VI severe, VN, or unevaluated) by 10–12 raters. As a result, we did not evaluate its the absolute kappa value, and but we only intended to compare the kappa value based on differences in endoscopists' experiences, and the interpretation of this value was different for each group using the relative difference among groups. This result is considered significant from the perspective of the aim of this study. Of course, the value (0.48) obtained with experienced endoscopists seems lower than expected, but this low value is mainly attributed to the statistical method used. Thus, we believe that the reason behind the low kappa value need not be mentioned in the Discussion section.

5. How about the kappa value for intra-observer agreement of type Vn pit pattern? The authors should mention the results about this point.

Response:

As mentioned above, the kappa value for the VN pit is difficult to calculate using statistical methods.

6. How was the mean value of the SM invasion depth in the lesions deeper than 1,000 µm? The interpretation is greatly different in the lesions that exceed 1000 µm a little or a lot.

Response:

The mean measured value for the SM invasion in SM-d cases was 1,900 µm.
7. The only 1 moderately differentiated adenocarcinoma should be excluded in this study, because the pit pattern of the moderately differentiated adenocarcinoma often looks worse compared with that of well differentiated adenocarcinoma.

Response:

As suggested by the reviewer, moderately differentiated adenocarcinoma commonly showed a VI severe pit pattern. Lesions with pit patterns that could not be classified into existing pattern types were excluded, whereas those that could be classified into existing pattern types were included.

8. In the Table 3, what is a concrete numerical value of the SM depth in the SM-d lesions?

Response:

As suggested in the reviewer’s comment, I have added concrete numerical values of SM depth in Table 3.

9. In the Figure1, I recommend that the authors should change a more typical picture of Vn pit pattern, because the distinction between non-structure and mucus is difficult in this case.

Response:

As suggested by the reviewer, I have replaced some of the images.

10. The number of references about the clinical usefulness of pit pattern diagnosis for the colorectal lesions is relatively small. I recommended that more references should be cited.

Response:
As suggested by the reviewer, I have added some references.

11. The authors had better confirm the statistical method. Mann-Whitney U test seem to be unsuitable to analyze between 3 groups.

Response:

To compare the number of correct interpretations, I have compared the data from Group III with those from Groups I and II because Group III endoscopists were highly experienced with colonoscopy and magnifying chromoendoscopy. Hence, Group III should be set as the reference for diagnostic ability. Therefore, data comparison was performed using the Mann-Whitney U test in this study. I have added this clarification to the Methods (Data analysis) section.

Minor comment 1. P6 line 5. subcategeories # subcategories 2. P6 line 7. colorectal cancers # early colorectal cancers 3. Figure2. Please describe the group (I, II or III) clearly in the figure

Response:
I have described the groups according to the reviewer’s suggestion.