

Answers review's comments:

Thank you for reviewing our manuscript

To reviewer 1.

I really appreciate your kind review.

To reviewer 2.

1. The authors did not describe histological criterion for the diagnosis of pancreatic cystic lesions on biopsy. They did not mention whether any immunostains or special stains used as adjunct tools or any established protocol for diagnosis because the tissue on forceps biopsy are typically very small and diagnosis is not straightforward.

We added the description how we made a diagnosis of IPMN.

2. It's a retrospective study and the authors did not mention whether all biopsies reviewed by experience pathologist(s) or just used prior pathology report. It also appears that no pathologists included in the authorship.

Because many pathologists were involved in the diagnosis, they are not included in the authorship. We just used pathology reports.

3. The authors did not described EUS features for different types of cystic lesions and did not discuss potential causes that led to different diagnosis on biopsy because the overall diagnosis for pancreatic cystic lesions requires close correlation of endoscopic findings and histology. In addition, in two cases of adenocarcinoma on biopsy, the authors did not mention whether it was cases of adenocarcinoma arising from IPMN or simply cystic adenocarcinomas which are very rare.

We think typical EUS findings of each cysts are already very well-known. So we did not mention them. Here we just focused on the feasibility of the procedure and the histopathological diagnosis of EUS-TTNB. The one adeno seemed arising from IPMN and the other seemed cystic adenocarcinoma. We added the comment about it.

4. Serous cystic adenoma (SCA) typically has classic superficial vascular network on confocal laser endomicroscopy (CLE) which is highly specific for SCA. However, the study showed four cases of SCA on biopsy that was not suspected on EUS.

We do not use CLE for pancreatic cystic lesions any more. As you point out, SCA is sometimes easy to make a diagnosis only by the EUS appearance. However, EUS findings of SCA are sometimes atypical. In fact, one of the MCN cases was diagnosed as SCA before EUS-TTNB. So, we did EUS-TTNB if the findings were not very typical.

5. Based on current guideline, side-branch IPMN is the most common type of cyst encountered clinically (31 IPMN diagnosed endoscopically and 32 IPMN on biopsy in this study). In my view, the purpose of biopsy is to confirm the diagnosis and more importantly is to find any “high-risk” or “worrisome” features such as high grade dysplasia or cancer that requires surgical intervention vs low grade IPMN that can be managed conservatively. The study did not mention any high grade dysplasia or cancer in the 32 cases of IPMN; instead, they subclassified the epithelium into different types which to me is less important. For the 9 cases of inclusive, they did not mention any immunostains used for further classification and also not quite sure how they reached the diagnosis of IPMN for the 9 cases without classic histology of IPMN.

One adenocarcinoma seemed to arise from IPMN, in which the pre-diagnosis was adenocarcinoma based on CT findings. We used immunostains for subtyping if the diagnosis was IPMN. For 9 cases without concrete subtype, the amount of specimen was not enough to do immunostain. We added the description about it.

6. The aim of the study is to show EUS biopsy is superior to traditional FNA, however, the authors did not show the comparison of EUS biopsy to FNA in the same table with statistic analysis.

We add a new table on it.

To reviewer 3.

1. There are too small number of enrolled cases and surgically proved ones as the authors pointed out.

This is the biggest single center study ever, although the number of cases with surgery is small.

2. The authors should evaluate the efficacy of EUS-TTNB in terms of the amount of biopsied materials such as the number or length of tissues etc.

This is a retrospective study, so it is difficult to measure the length. Actually, the specimen is too tiny to measure. We described the number of biopsies.

To reviewer 4.

This is not the first study of EUS-TTNB, but the biggest single center study. In addition, this is the first study to assess the feasibility of IPMN subtyping using EUS-TTNB specimen.