

The use of EUS-microforceps biopsies to evaluate patients with pancreatic cystic lesions

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Pancreatic cystic lesions (PCLs) are increasingly identified because of the widespread use of abdominal cross-sectional imaging, with an estimated prevalence of 2.4%–13.5% in asymptomatic individuals.^[1] The malignant potential of specific PCLs types differs significantly, and as such, accurate cyst classification is essential to determine management options. Cross-sectional imaging studies and EUS-morphology are usually not sufficient to accurately assess the need for surgery or surveillance. ASGE guidelines promote EUS-FNA for diagnosis and treatment of PCLs. However, the guidelines also recognize that EUS-FNA alone is not precise enough to determine the potential for malignant cystic lesions.^[2] A major limitation to FNA technique results from inadequate sample cellularity. The use of cyst fluid carcinoembryonic antigen (CEA) level of 192 ng/mL was found to be the most optimal by using receiver operating characteristic curves, with a 75% sensitivity and 84% specificity for differentiating between mucinous and nonmucin producing cysts.^[3] However, recent studies have found suboptimal accuracy of CEA when compared to surgical pathology as the criterion standard,^[2] suggesting a critical need for improved risk stratification of PCLs.

Through-the-needle microforceps (Moray; US Endoscopy, Mentor, Ohio) are a recent addition to the EUS armamentarium. These microforceps are single-use miniature biopsy forcep with an outer diameter <1 mm, so the microforceps can be passed through a standard 19-gauge EUS-FNA needle. It has a jaw opening width of 4.3 mm. This allows histologic sampling of PCLs by obtaining biopsies of the cyst wall, which may improve diagnostic accuracy.

Making a specific diagnosis of pancreatic cyst can be difficult. A retrospective study of 48 patients demonstrated that micro forceps biopsy (MFB) and pancreatic cyst fluid (PCF) analysis have comparable diagnostic results in identifying mucinous cysts. However, MFB was 2.7 times superior in diagnosing specific cyst types among all cysts as compared to PCF (50% as opposed to 18.8%; $P < 0.001$),^[4] such as differentiating between mucinous cystic neoplasm and intraductal papillary mucinous neoplasm. Thus, MFB can add significant value to patient management. This study showed that MFB had high technical success rate and excellent safety profile. There were no major complications reported.

In another multicenter study, 42 patients with PCLs underwent EUS-FNA for fluid analysis/cytology

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and MFB.^[5] Diagnostic yield was evaluated at three levels: The ability to differentiate between mucinous and nonmucinous cysts, detection of high risk for malignancy, and specific cyst type diagnosis. This study concluded that EUS-FNA and MFB were comparable in distinguishing mucinous and nonmucinous cysts and detecting cysts at high risk for malignancy. However, similar to previous study, MFB was far superior to EUS-FNA for providing a specific cyst diagnosis. Only two patients had adverse events. One had mild abdominal pain. Another patient had self-limited intra-cystic bleeding.

With the increased detection of incidental PCLs, an accurate and reliable evaluation is paramount, given the potential for malignant transformation. The current diagnostic strategies, including EUS-FNA and cystic fluid analysis, have been suboptimal. Numerous studies have looked at the use of MFB to evaluate PCLs. For the most part, the sample size utilized by these studies was small and all were done retrospectively. In addition, few patients had confirmatory surgical pathology. However, these studies did show that MFB was associated with high technical success and an excellent

safety profile, and very well may serve as an adjunctive tool to improve our ability to evaluate patients with PCLs. Future prospective studies comparing MFB with other cyst evaluation strategies will be necessary to evaluate the clinical utility of this new technique.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Lee KS, Sekhar A, Rofsky NM, *et al.* Prevalence of incidental pancreatic cysts in the adult population on MR imaging. *Am J Gastroenterol* 2010;105:2079-84.
2. Jacobson BC, Baron TH, Adler DG, *et al.* ASGE guideline: The role of endoscopy in the diagnosis and the management of cystic lesions and inflammatory fluid collections of the pancreas. *Gastrointest Endosc* 2005;61:363-70.
3. Brugge WR, Lewandrowski K, Lee-Lewandrowski E, *et al.* Diagnosis of pancreatic cystic neoplasms: A report of the cooperative pancreatic cyst study. *Gastroenterology* 2004;126:1330-6.
4. Zhang ML, Arpin RN, Brugge WR, *et al.* Moray micro forceps biopsy improves the diagnosis of specific pancreatic cysts. *Cancer Cytopathol* 2018;126:414-20.
5. Basar O, Yuksel O, Yang DJ, *et al.* Feasibility and safety of microforceps biopsy in the diagnosis of pancreatic cysts. *Gastrointest Endosc* 2018;88:79-86.