COMMENTARY
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Is a Cytopathologist Always Needed during Endoscopic Ultrasonography-Guided Tissue Acquisition?

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See "Rapid On-Site Evaluation by Endosonographers during Endoscopic Ultrasonography-Guided Fine-Needle Aspiration for Diagnosis of Gastrointestinal Stromal Tumors" by Takashi Tamura, Yasunobu Yamashita, Kazuki Ueda, et al., on page 372-378.

Gastrointestinal (GI) subepithelial tumors (SETs) detected during routine endoscopy demonstrate a prevalence of 0.36%, which is found to increase with age.[1] Based on a recent Korean multicenter study that included 87,578 subjects undergoing routine screening endoscopy, the incidence of SETs in the upper GI tract was noted to be 3.1% (unpublished data). GI SETs include malignant tumors (such as GI stromal tumors, neuroendocrine tumors, or lymphomas), as well as benign tumors (such as leiomyomas, lipomas, heterotopic pancreas, or cysts). Although surgical resection is the primary diagnostic and therapeutic modality used for management of SETs, particularly for symptomatic or large tumors, it might not be needed for all cases with SETs. Although endoscopic ultrasonography (EUS) is the best diagnostic modality for evaluation of SETs, it cannot be a substitute for a histopathological diagnosis. Because a histopathological diagnosis plays an important role in determining the most appropriate treatment strategy, EUS-guided tissue acquisition such as fine-needle aspiration (FNA) is attempted in many clinical settings.

EUS-FNA is a well-known and useful diagnostic modality for the management of solid pancreatic lesions. Rapid on-site evaluation (ROSE) performed by an attending cytopathologist can improve the adequacy rate of FNA specimens, resulting in a higher diagnostic yield of EUS and can reduce the number of needle passes required/performed.[2,3] ROSE can also be performed by endoscopists instead of cytopathologists. A retrospective study compared the diagnostic accuracy of EUS-FNA with ROSE performed by endoscopists and cytopathologists and found no statistically significant differences between the two groups (endoscopists and cytopathologists) with respect to the mean number of passes required (4.0±1.6 vs. 3.4±1.5, p=0.06) and specimen adequacy (97.4% vs. 97.1%, p=0.51).[4] Another recent study showed that endoscopists who participated in pathologist-guided training programs could improve the adequacy of specimens (from 75% to 98%) and diagnostic accuracy (from 61% to 82%).[5]

However, a recent, multicenter, prospective, randomized controlled trial using EUS-FNA for pancreatic lesions, showed that the diagnostic yield and proportion of inadequate specimens did not differ between EUS-FNA performed with and without ROSE.[6] A meta-analysis comprising seven studies involving 1,299 patients, compared EUS-FNA performed with and without ROSE and showed that ROSE did not significantly affect the cytological adequacy or diagnostic yield.[7] This is because, due to rapidly advancing technology, EUS-FNA has become a widely used diagnostic procedure, and endoscopists are now better equipped to target lesions and obtain samples even from very small pancreatic lesions along with maintaining proper positioning of the needle under direct visualization

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while the sample is being collected. Thus, on-site assistance from pathologists has become less relevant.[8] Additionally, recent studies using a newly developed ProCore needle (Cook Medical Inc., Bloomington, IN, USA) has shown similar results.[9,10]

Reportedly, the diagnostic accuracy of EUS-FNA for GI SETs is 50%–70% in GI mesenchymal tumors.[11-13] Immunohistochemical staining is mandatory for accurate diagnosis of GI SETs, especially GI mesenchymal tumors such as GI tumors, schwannomas, or leiomyomas. This technique necessitates acquisition of histologically optimal core samples. Thus, several new EUS-guided tissue acquisition needles, such as the ProCore or Shark Core (Beacon™ Endoscopy; Medtronic Inc., Minneapolis, MN, USA) have been developed. A recent, prospective, multicenter study investigating GI SETs showed that EUS-guided fine-needle biopsy using a ProCore needle significantly decreased the median number of needle passes required (4 vs. 2) and additionally increased the diagnostic sufficiency rate (75% vs. 20%) compared to EUS-FNA.[14]

In this issue of *Clinical Endoscopy*, Tamura et al. report that ROSE performed by endosonographers during an EUS-FNA for GI SETs resulted in a higher diagnostic accuracy and need for a fewer number of needle passes.[15] It is notable that ROSE performed by endosonographers and not by cytopathologists could improve the diagnostic yield of EUS-FNA in management of GI SETs. As stated above, newly developed needles, such as the ProCore needle can also reproduce the merits of ROSE. However, if after obtaining appropriate training, endosonographers can independently perform ROSE for evaluation of histopathological specimens, the combined use of newer instruments and ROSE would have a synergistic effect in increasing the diagnostic yield of EUS-guided tissue acquisition in management of GI SETs.

Conflicts of Interest

The authors have no financial conflicts of interest.

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