Endoscopic ultrasound-guided fine-needle aspiration: A safe bridge to accurate diagnosis

Endoscopic ultrasound (EUS) is a good adjunctive tool for evaluating lesions of the gastrointestinal (GI) tract and surrounding organs. Besides imaging assessment, EUS has become a popular method for procuring diagnostic tissue by fine-needle aspiration (FNA). EUS-FNA involves passing a 19- to 25-gauge (most commonly a 22-gauge) aspiration needle through the working channel of a curvilinear echoendoscope under real-time guidance into an EUS-visualized lesion. Although EUS-FNA plays only a limited role in submucosal tumor tissue acquisition with a modest diagnostic yield of 70–84% [1], it can offer a highly sensitive and specific cytological diagnosis at rates of 85% and 98% in pancreatic cancer patients, respectively, with estimates suggesting corresponding rates of 90% and 100% in most other patients [2,3]. At present, EUS-FNA is frequently incorporated into the algorithms for assessment and management of patients with mediastinal and abdominal tumors [4]. In National Comprehensive Cancer Network clinical practice guidelines, EUS-FNA is the preferred tissue sampling method in pancreatic cancer patients for both borderline resectable pancreatic tumors before planned neoadjuvant therapy and locally advanced unresectable pancreatic tumors before treatment, and an important diagnostic tool in patients with non-small cell lung cancer for pathologic mediastinal lymph node evaluation [5,6]. In addition to alteration of patient management after a definite cytopathologic diagnosis or tumor staging, EUS-FNA also has an impact on facilitating medical decision making of both patients and physicians [4]. The role of EUS-FNA is getting increasingly important in our daily clinical practice.

On performing EUS-FNA, a minimally invasive procedure, there are still some inherent adverse events. The most common complications after EUS-FNA are hemorrhage, pancreatitis, and infection at rates of 1–4%, 1–2%, and 0.4–1%, respectively. Most patients with complications can recover with conservative therapy [7]. In comparison with percutaneous approach guided by computerized tomography, EUS-FNA has several advantages on safety issues, including adopting real-time ultrasound for monitoring needle location during the whole procedure to avoid mispuncture-related complications, utilizing Doppler ultrasound to reduce the possibility of developing traumatic vascular puncture, and providing a shorter puncturing route with a potentially lower risk of needle-tract seeding [8].

In this issue, Yang and colleagues [11] present a single-center experience on EUS-FNA for solid tumors during a study period of 8 years. They have performed EUS-FNA for patients with submucosal, mediastinal, pancreatic, and other abdominal tumors, and focal transmural thickening of the GI tract. Excluding submucosal tumors, they report that the overall diagnostic accuracy for malignancy to be 82.9%. Similar to previous studies, a lower diagnostic yield of 61% was reported for the submucosal tumors. Three cases (1.3%, 3/233) with complications occurred and recovered uneventfully in this study. They concluded that EUS-FNA was a safe and effective method for diagnosis of mediastinal and abdominal solid tumors.

For further improving EUS-FNA diagnostic accuracy, adequate mentored training and accumulated experience are necessary for this highly operator-dependent procedure [9]. Operator factor plays a pivotal role in accurate diagnosis of EUS-FNA despite current advances in instruments and refinements in techniques. Besides, an experienced cytopathologist is also an important element in the successful diagnostic teamwork. Rapid on-site cytopathology evaluation, which was not available in Yang et al’s study, may improve diagnostic yield and lower rates of insufficient aspirates and repeat procedures [10].

In summary, EUS-FNA can offer a safe bridge to make an accurate cytopathologic diagnosis of both subepithelial and extraluminal lesions along the GI tract. EUS-FNA is a good tool helpful for decision making and future management planning after a definite diagnosis.

Conflicts of interest

The author declares no conflicts of interest.
References


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