Background:
EUS-guided FNA (EUS-FNA) is an established efficient technique for sampling pancreatic mass lesions. However, EUS-FNA has some limitations. The sensitivity for diagnosing malignancy by EUS/FNA is low in the setting of associated chronic pancreatitis and as well as for certain neoplasms (i.e. stromal cell tumors and lymphomas), for which it may be difficult to diagnose without histologic samples. To overcome limitations of cytology, biopsy needles have been developed to procure histologic samples during EUS. The objective of our retrospective study was to compare the diagnostic yield of the 22G FNA and 22G FNB devices for EUS-guided sampling of solid pancreatic mass lesions.

Methods:
This retrospective study compared 22-gauge (G) FNA and 22G biopsy needles (FNB) for EUS-guided sampling of solid pancreatic masses over a two year period at a single tertiary referral center. All patients had sampling of their pancreatic mass by using 22G FNA and 22G FNB devices. Outcome measures included the median number of passes, complication rates, diagnostic sufficiency and use of cytopathologic analysis in diagnosis. Datasets were compiled by using Microsoft Excel, and all statistical analyses were performed using Microsoft Excel (Microsoft Corp., Redmond, Wash).

Results:
A total of 40 patients had FNA and FNB performed. Our results show that there is no significant difference in the rates of diagnostic yield between FNA and FNB needles (92.5% versus 100%; P=0.083); however, in 7.5% (3/40) of cases, FNA was indeterminate whereas the core biopsy was diagnostic. Specimens procured by using the FNB device were suitable for cytopathologic analysis. Immunophenotyping was performed in 20% (8/40) of FNB samples and was crucial for diagnosis of diffuse large B-cell lymphoma in one case. Final diagnosis was consistent with pancreatic adenocarcinoma in 75% (30/40) of cases, benign 6/40, metastatic renal carcinoma 2/40, neuroendocrine tumor 1/40 and B cell lymphoma 1/40.

Discussion:
This study demonstrates that the diagnostic sufficiency of the 22-gauge FNA and FNB needles for EUS-guided sampling of pancreatic mass lesions are comparable. The safety profile of the 22G FNA and FNB device are also comparable, with no complications encountered in the entire cohort. Our results are in agreement with previous literature; in a randomized trial comparing the 22-gauge aspiration and 22-gauge biopsy needles for EUS-guided sampling of solid pancreatic mass lesions, Bang et al. (2012) found that the diagnostic sufficiency, technical performance, and safety profiles of the FNA and FNB needles are comparable.

However, FNB offers additional benefits such as immunophenotyping which is crucial for accurate diagnosis and sub-typing of tumors. FNB can be used when histology may be more useful than cytology to reach a definitive diagnosis.

Conclusion:
Diagnostic sufficiency of FNA and FNB needles for EUS-guided sampling of pancreatic mass lesions are comparable. FNB offers additional benefits such as immunophenotyping which is crucial for accurate diagnosis and sub-typing of tumors. FNB can be used when histology may be more useful than cytology to reach a definitive diagnosis.

Disclosures:
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