Prospective Comparative Study to Determine Best Methods of Obtaining Specimen During EUS Guided FNA

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Background: Determining best methods to obtain and prepare EUS-guided FNA are important to make correct a diagnosis of peripancreatic mass especially without on-site pathologist. To collect specimen, suction can be applied or not. Usually specimen is expelled from a needle with pushing stylet into the needle. Injecting air was not recommended to concern about air artifact. However, there is no firm evidence which one is the best, suction or no suction and stylet or injecting air until now.

Objectives: The aim of this study was to compare the diagnostic yield and feasibility of EUS-guided FNA between suction and no suction, pushing the stylet and injecting air to obtaining and preparing aspirates in patients undergoing EUS-FNA.

Methods: EUS-FNA in patients with peripancreatic masses were prospectively studied from July 2010 to September 2010 at the Samsung Medical Center. One patient underwent at least four puncture during EUS-FNA. The sequence of EUS-guided FNA with first four methods were randomly selected: (1) negative pressure suction with 10 mL syringe and pushing the needle stylet; (2) negative pressure suction with 10 mL syringe and injecting air; (3) without negative pressure suction and pushing the needle stylet; (4) without negative pressure suction and injecting air. The specimens were read by same pathologist.

Results: FNA was performed in 23 patients with 88 individual specimen available for analysis. Diagnostic accuracy for stylet, injecting air was 63.6%, 65.9% (p=1.0) and with suction, without suction was 68.2%, 65.9% (p=1.0), respectively. These differences were not significant. Air artifact was not reported.

Conclusion: This is the first prospective comparative study to determine the best method of obtaining and preparing EUS-FNA aspirates without on-site pathologist. Overall diagnostic accuracy of expelling specimen by injecting air is equal to pushing the needle stylet. Also, differences were not significant between suction or no suction.

Key Words: Endoscopic ultrasound, Fine needle aspiration, Diagnosis, Pancreas