

# EUS-B-FNA: Pulmonologist's viewpoint Whose tube is it anyway?

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Convex probe – endobronchial ultrasound (CP-EBUS) scope is easily the best thing that has happened to pulmonologists in recent times. Apart from the “regular” indications for which there is abundant evidence, its versatility is becoming evident by the increasing reports of novel procedures like diagnosing pulmonary embolism,<sup>[1]</sup> pulmonary artery sarcoma,<sup>[2]</sup> bronchogenic cyst,<sup>[3]</sup> puncture of tumor emboli<sup>[4]</sup> and transvascular TBNA. As a logical extension, people have started to slip the scope into esophagus to sample nodes that are either difficult (small station 4L) or inaccessible from the bronchial side (Para-esophageal or lung mass close to esophagus). It could also be useful in patients with excessive cough or poor lung function precluding escalation of sedation.<sup>[5,6]</sup> Controversy begins here as our gastroenterology (GI) colleagues are armed with a scope that is dedicated for the use via esophagus, with a more robust channel and bigger needles to go with it. So the question from the purists and the GI specialists is whether a pulmonologist justified in putting the EBUS scope into esophagus?

Deconstructing their concerns, primary issue is that of training and credentialing. It would be practically impossible to expect a pulmonologist to undergo training in the GI procedures as our system simply would not allow it. Lets also look at the feasibility of combined sonologic evaluation of the mediastinum by the respective scopes done by the appropriate specialists. This would necessitate either two procedures at different time points or get both specialists in the same suite for planning one after another! One can imagine the difficulty that this kind of arrangement would pose, added to that the economic viability in a resource limited setting like ours. So if only one scope should go into both these tubes then it has to be the EBUS, despite all its attended disadvantages. Once the question of the scope is answered, the choice of the person doing it is simple as a gastroenterologist cannot be expected to perform other bronchoscopic procedures, which several of these patients need along with EBUS.

While there have been complications arising out of upper GI endoscopy and the EUS examination, it has been predominantly in a situation where the esophagus have been abnormal or interventions at the level of pancreas or biliary tree. In a setting of a normal esophagus, damage

to the organ would be unlikely, especially since the EBUS scope is very thin in comparison. No one debates regarding appropriateness of cardiologists in doing transesophageal echocardiogram, that too with a bulkier scope with no endoscopic vision. Our residents perform orogastric and nasogastric tubes insertion on a regular basis without any visual guide. During early days of bronchoscopic training, most of us inadvertently enter esophagus while aiming for the cords! Hence intentional intubation of the esophagus with the EBUS scope should not be too difficult.

Esophagus, being a hollow organ is bereft of anatomic landmarks and hence in endoscopy distance from the mouth is important and in the EUS examination, vascular anatomy is vital. Pulmonologist performing EBUS-TBNA regularly are the ones who are likely to attempt EUS-B-FNA, it is reasonable to assume that they can do a safe assessment of the mediastinal structures as they are looking at the same structures but from a different angle. The TBNA part from the esophageal side is easier than EBUS-TBNA because of lack of cartilaginous rings. However, certain points need consideration.

As the esophagus is a floppy tube, the endoscopic image becomes difficult especially as EBUS is a thin scope lacking dedicated channel for air insufflation unlike the endoscope. This poses a peculiar problem as inability to see the needle hub can lead to either damage to the scope if the needle is advanced inside the channel or the puncture is imprecise if the hub is too far out. Pre measuring and prefixing the hub at desired length before the scope is inserted into the patient can circumvent this. The needle is taken out of the channel and scope introduced into the esophagus, when the needle is reinserted the hub is safely out and already locked in place. Lack of endovision ceases to be a problem and puncture can be safely performed. The GI-EUS scope has an elevator, which can alter the angle of the needle, which is not available in the EBUS scope. One must also realize that the esophagus being a pliable structure, one should not ante-flex too much to get better apposition as this leads to change in angle and can lead to a parallel entry of the needle rather than the ideal angle. The scanning range of ultrasound probe is narrow in EBUS scope in comparison to the CP-EUS scope and the depth of penetration of the needle is also limited to 4 cms. One has to be done with work from the bronchial side before

slipping the scope into the esophagus and it is not advisable to put the EBUS again into the trachea after a EUS-B-FNA. Most importantly, cytologists need to be informed about the esophageal route as squamous lining cells seen in EUS-B-FNA are not seen in the tracheobronchial route and could lead to confusion if cytologists are unaware that the poke has come from esophagus.

A hybrid scope combining the capabilities and length of EUS scope with the size of EBUS scope is the need of the hour to address all the lacunae of EUS-B-FNA. Awaiting that, EUS-B-FNA is a very valuable extension of the indications of the CP-EBUS scope.

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