# The Essential EBUS Bronchoscopist

## Learning bronchoscopy in the world today



Bronchoscopy International

Septimiu Murgu MD and Henri Colt MD

# LEARNING OBJECTIVES

Readers of **The Essential EBUS Bronchoscopist©** should not consider this a test. In order to most benefit from the information contained here-in, every response should be read regardless of your answer to the question. You may find that not every question has only one "correct" answer.  This should not be viewed as a trick, but rather, as a way to help *you* think about a certain problem. Expect to devote approximately 2 hours of continuous study completing the 30 question-answer sets.

A multiple choice 10 question post-test addresses specific elements of the learning objectives The Essential EBUS Bronchoscopist©. Questions may at times, be related to other learning materials contained in instructional videos, posters, or slideshows relating to EBUS and EBUS-TBNA. While a 70% correct response is often considered a satisfactory grade, we recommend that you target a score of 100%.

**At the conclusion of this Module, the learner should be able to:**

1. Describe at least four artifacts seen during EBUS and EBUS-TBNA.
2. Describe the various differences between high and low frequency ultrasound.
3. Describe situations in which EBUS-TBNA might be associated with or replaced by EUS-FNA or other methods of mediastinal exploration.
4. Identify at least three measures that help improve quality ultrasound image acquisition.
5. Describe how inadvertent wrist movements might alter the ultrasound image and how this might affect patient safety.
6. Describe techniques of EBUS-TBNA and recognized elements of an adequate, representative cytology sample.
7. Describe at least 3 different strategies that help obtain a diagnostic sample.
8. Describe nodal sampling strategies in various cases of known or suspected malignant pulmonary lesions that help assure accurate staging.
9. Describe the roles for EBUS radial probe and convex probe various malignant and benign lung, airway, and mediastinal disorders.
10. Describe EBUS-TBNA related indications, techniques, complications, and expected outcomes using evidence from the literature.

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**Question I.4:** While performing EBUS-TBNA from a subcarinal lymph node (level 7), you obtain a bloody aspirate. This is because:

A. The inferior pulmonary vein has been penetrated.

B. The left atrium has been penetrated.

C. The right pulmonary artery has been penetrated

D. A blood vessel within the lymph node itself has been penetrated

**Answer I.4: D.**

Each of the anatomic structures listed; inferior pulmonary vein, left atrium, and right pulmonary artery could be inadvertently penetrated during EBUS-TBNA of a level 7 node. However, this would suggest that the node itself is not being visualized during needle insertion, or that the scanning plane is more anterior rather than medial (as it should be for visualizing this station). Blood vessels inside a lymph node are not uncommon and can be visualized as hypoechoic structures that are Doppler positive.