

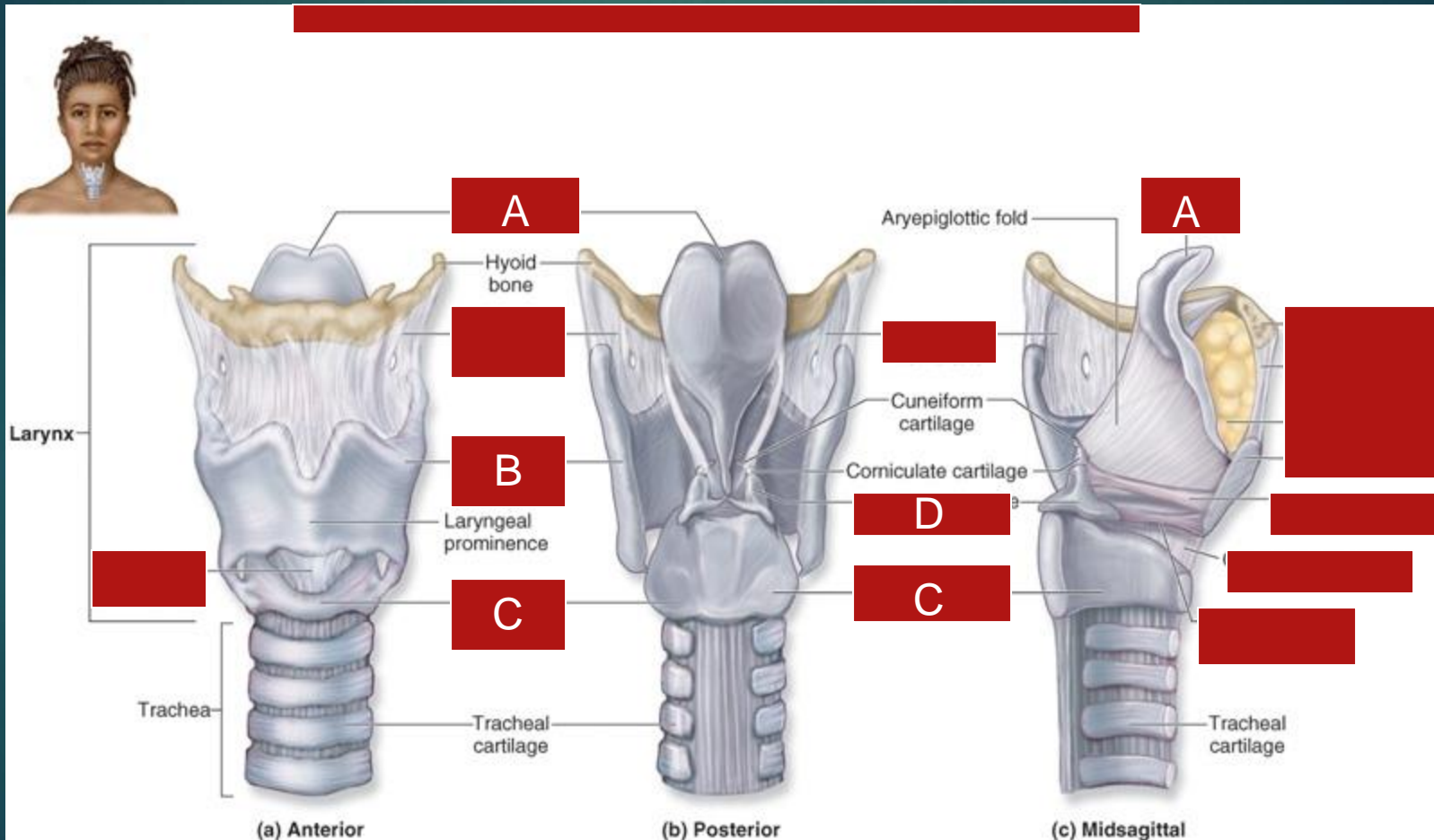


Bronchoscopy Test-ICU Fellows

1. Mark the incorrect statement

- ▶ A. Laryngeal closure occurs during Valsalva maneuvers
- ▶ B. The false vocal cords are located right below the true vocal cords
- ▶ C. Innervation of the vocal cords come from branches of the vagus nerve
- ▶ D. The vallecula is formed between the base of the tongue and the epiglottis

2. Anatomy of Larynx (Cartilages)



2. Based on previous diagram, mark the correct corresponding letter

- ▶ A. Cricoid
- ▶ B. Epiglottis
- ▶ C. Thyroid
- ▶ D. Arytenoid

3. Mark the correct statement about airway anatomy

- ▶ A. The lingula has 2 segments: medial and lateral
- ▶ B. The left lower lobe and the right lower lobe have the same amount of segments
- ▶ C. During bronchoscopy, the first visualized segment of the right lower lobe is the superior segment
- ▶ D. The left airways have 3 lobar divisions

4. Mark the correct statement about topical anesthesia during bronchoscopy

- ▶ A. Lidocaine has been frequently associated with methemoglobinemia
- ▶ B. The maximum allowed dose of lidocaine is 800mg
- ▶ C. Benzocaine should not be used as topical anesthetic for bronchoscopy
- ▶ D. Topical lidocaine inhibits cell depolarization and blocks nerve conduction

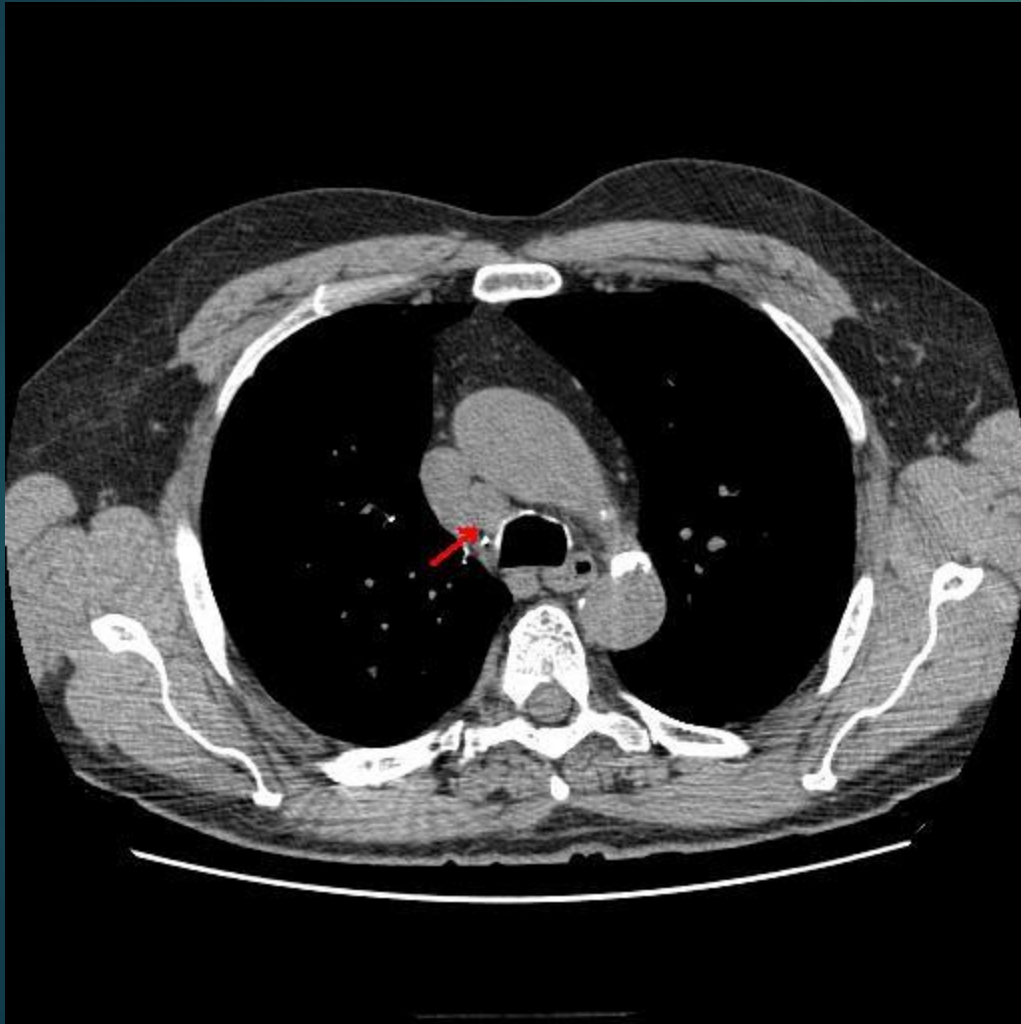
5. What is correct about Bronchoalveolar Lavage (BAL)

- ▶ A. There is predominance of neutrophils in a normal BAL
- ▶ B. BAL has the same value as bronchial wash to diagnose pulmonary infections
- ▶ C. BAL is most commonly performed with D5W
- ▶ D. All answers are false

6. Mark the correct statement about bronchoscopy and risk of bleeding

- ▶ A. The use of aspirin increases the risk of bleeding during bronchoscopy
- ▶ B. Clopidrogel (Plavix) has to be stopped only one day prior to scheduled bronchoscopy with transbronchial biopsies
- ▶ C. Low-molecular-weight heparin used as anticoagulation, has to be stopped for at least 2 doses prior to scheduled bronchoscopy with biopsies
- ▶ D. The platelet count should be $>100,000$ in order to avoid bleeding during bronchoscopic airway exam

7. Name the structure with the RED arrow



- ▶ A. Superior vena cava
- ▶ B. Esophagus
- ▶ C. Lymph node 4R
- ▶ D. Brachiocephalic artery
- ▶ E. Pulmonary artery

8. Regarding Transbronchial biopsies of lung (TBBX)

- ▶ A. Samples obtained with TBBX are around 1cm in size
- ▶ B. TBBX has high yield for the diagnosis of interstitial lung diseases
- ▶ C. TBBX increases the yield in diagnosis of PCP on HIV patients
- ▶ D. TBBX has high yield for diagnosis of sarcoidosis even in stage 1

9. Mark the correct statement

- ▶ A. HIV patients with suspected PCP must have diagnostic BAL and TBBX
- ▶ B. TBBX increases the yield for diagnosis of PCP in immunocompromised non-HIV patients
- ▶ C. BAL with bacteria up to 100,000 cfu/mL can be considered normal
- ▶ D. Immunosuppressed patients rarely need bronchoscopy for diagnosis of pulmonary infections

10. Mark the incorrect statement

- ▶ A. Radiologic exams can identify the source of hemoptysis in up to 80% of cases
- ▶ B. Most of the time, patients with hemoptysis need to have a diagnostic bronchoscopy
- ▶ C. 80% of hemoptysis come from the pulmonary vascular system
- ▶ D. Treatment options for hemoptysis include ablative therapies, endovascular management (coiling, embolization) and surgery

11. Mark the incorrect statement regarding bronchoscopy in the ICU

- ▶ A. Patients with impending respiratory failure should be intubated before bronchoscopy
- ▶ B. Intubated patients, under sedation, do not need topical anesthetics (eg. lidocaine)
- ▶ C. It is contraindicated in patients with known increased intracranial pressures
- ▶ D. B and C are incorrect

12. Mark the correct statement

- ▶ A. Therapeutic aspiration of secretions by bronchoscopy is more effective than aggressive pulmonary toileting
- ▶ B. Quantitative BAL with $>10,000$ cfu/mL of bacteria, is considered colonization in the setting of Ventilator-associated pneumonia
- ▶ C. Bronchoscopy with BAL in febrile neutropenic patients is unsafe and should be avoided
- ▶ D. None of the above are correct

13. Mark the correct statement

- ▶ A. Patients with massive hemoptysis should have a diagnostic bronchoscopy before mechanical ventilation is started
- ▶ B. Non-invasive ventilation is indicated sometimes in massive hemoptysis
- ▶ C. Only 20% of hemoptysis come from bronchial arteries
- ▶ D. None of the above are correct

14. After a difficult conventional intubation (3 attempts) in a patient with a very anterior larynx, a pneumomediastinum (with no pneumothorax) is noted in the CXR. Ventilator is showing a significant air leak. After the patient is stabilized, what would you do next:

- ▶ A. Emergent MRI of chest
- ▶ B. Perform a bronchoscopy only if a previous CT chest is abnormal
- ▶ C. Perform an emergent bronchoscopy
- ▶ D. GI consult for emergent EGD

15. 60 yo female smoker was found to have a large right mainstem endobronchial tumor by bronchoscopy. Twelve hours after EBBX of the tumor, she presents to ER with SOB and hypoxemia. CXR in ER is shown below. What would you do next? (mark the best answer)



- ▶ A. Flexible bronchoscopy with suctioning of secretions
- ▶ B. Aggressive pulmonary toileting
- ▶ C. CT scan of chest
- ▶ D. Flexible followed by rigid bronchoscopy with possible therapeutic techniques (eg. Laser)