

TEST YOUR BRONCHOSCOPIC KNOWLEDGE

By

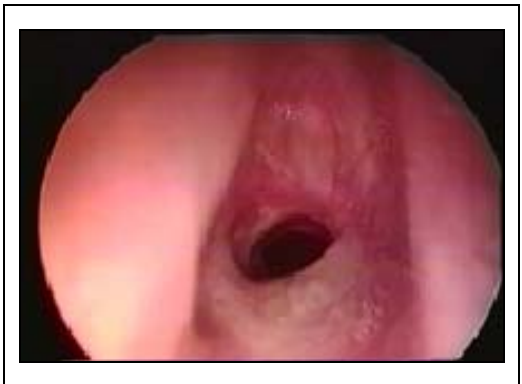
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This series of questions has been extracted from the web-based Essential Bronchoscopist (EB©)(www.bronchoscopy.org). The EB© is a series of six individual modules containing a total of 186 question-answer sets to assist with adult-self learning of basic bronchoscopy. This complementary learning tool has been officially endorsed by more than a dozen international organizations, including the Egyptian Scientific Society for Bronchology. The ten questions selected for this issue of the Journal, have been validated during prior examinations and have shown satisfactory reliability. Please select what you believe to be the single BEST answer. The reader is encouraged to discuss answers to these questions, which are given at the end of the article, with colleagues and bronchoscopy instructors.

Question 1: A 29-year-old woman with Wegener's Granulomatosis and increasing shortness of breath undergoes flexible bronchoscopy. Based on the finding shown below you should.

- A. Attempt to pass the bronchoscope beyond the subglottic stricture in order to measure its length.
- B. Request an angioplasty balloon in order to dilate the stricture immediately.
- C. Request and endotracheal tube at the bedside, then attempt to push the bronchoscope beyond the stricture in order to determine whether it is simple or complex.
- D. Stop the examination, remove the bronchoscope. Keep the patient under observation, and notify otolaryngology, thoracic surgery and an interventional bronchoscopist of the finding.



Question 2: According to American Thoracic Society guidelines, which of the following is an absolute contraindication to flexible bronchoscopy?

- A. Patient with unstable asthma or status asthmaticus.
- B. Patient with refractory hypoxemia or inadequate oxygenation during the procedure.
- C. Recent or unstable angina or recent myocardial infarction.
- D. Severe hypercarbia and significantly reduced forced expiratory volume in one second.
- E. Superior vena cava obstruction.

Question 3: Which of the following should be classified as stage T2 nonsmall cell lung cancer?

- A. A tumor involving the carina and proximal 1 cm of the medial wall of the right main bronchus.
- B. A tumor in the main bronchus within 2 cm of the carina, but not involving the carina.
- C. A tumor involving the main bronchus 2 or more cm distal to the carina.
- D. A parenchymal tumor less than 3 cm in size with extension into the right upper lobe bronchus but not extending into the main bronchus.

Question 4: All of the following should be routinely obtained prior to performing flexible bronchoscopy except

- A. Chest radiograph
- B. Platelet count
- C. Physical examination with special attention to heart and lung examination
- D. Allergy history and history of procedure-related adverse events
- E. Review of potential risk factors.

Question 5: A 76-year-old patient with chronic cough, difficulty swallowing and new onset hoarseness is referred for bronchoscopic evaluation. 1 mg of Midazolam is injected intravenously and abundant topical anesthetic is applied to the oropharynx and larynx. The vocal cords move normally, but a firm lesion resembling adenoid cystic carcinoma obstructing 20 percent of the subglottis is seen. Because of the lesion's proximity to the vocal cords, no biopsies are obtained. About one hour after the procedure the patient develops a bluish discoloration of the lips. Arterial oxygen saturation decreases from 98 percent to 88 percent despite administration of supplemental oxygen. The patient has become anxious and combative in the recovery area. Resting heart rate increases to from 110 to 150. The most likely cause for this patient's symptoms is.

- A. Cetacaine spray induced methemoglobinemia.
- B. Procedure-induced laryngospasm.
- C. Tetracaine toxicity.
- D. Myocardial infarction from prolonged. Hypoxemia.
- E. Lidocaine toxicity.

Question 6: Bronchoscopy is performed in a patient with cough and partial unilateral atelectasis. Based on the findings shown below, bronchoscopic examination should proceed with

- A. Examination of the left bronchial tree, then inspection and biopsy of the lesion on the right.
- B. Inspection and biopsy of the lesion on the right, then examination of the left bronchial tree.
- C. Examination of the right bronchial tree, then inspection and biopsy of the lesion on the left.
- D. Inspection and biopsy of the lesion on the left, then examination of the right bronchial tree.



Question 7: Where are the right paratracheal lymph nodes (ATS station 4R) in relation to the trachea?

- A. Posterior-lateral.
- B. Anterior-lateral.
- C. Lateral.
- D. Posterior.

Question 8: Mechanical and chemical irritation of laryngeal mucosa, such as that which occurs during flexible bronchoscopy, elicits cough and bronchoconstriction. Which of the other normal responses to upper airway stimuli could be considered most dangerous for patients undergoing flexible bronchoscopy?

- A. Hypertension from sympathetic stimuli.
- B. Bronchodilatation from nasal and epipharyngeal irritation.
- C. Cardiac arrhythmia and even cardiac arrest most likely resulting from irritation of the superior laryngeal nerve.
- D. Increased mucous secretions that prompt cough and prevent penetration of extraneous materials.

Question 9: All of the following can be done to increase fluid return during bronchoalveolar lavage except:

- A. Wedging the flexible bronchoscope deep within the bronchus.
- B. Asking the patient to take a deep breath and hold it while instilling fluid and during suctioning.
- C. Instilling aliquots of 20-50 cc only, very slowly. Intermittent or partial suction rather than continuous suction should be applied.
- D. Hang the lavage fluid, and allow gravity to assist with the fluid instillation rather than rapid and forceful instillation with a syringe.
- E. Increase suction to its maximum on the wall outlet control.

Question 10: A 58-year old man smoker has noted voice change and increased coughing during and after meals. Flexible laryngoscopic examination reveals the findings shown in the figure below. Which of the following is most likely to be expected on chest radiograph?

- A. Subglottic narrowing.
- B. Left lower lobe atelectasis.
- C. Left perihilar mass with obliteration of the aortopulmonary window.
- D. Normal radiograph



Answer Key at next page.

Answer Key: Q1 (D), Q2 (B), Q3 (C), Q4 (B), Q5 (A), Q6 (A), Q7 (B), Q8(C), Q9 (E), Q10 (C).