

Thoracic Surgery

Case Studies

How would you manage (investigate and treat) the following patients?

65-year-old female ex-smoker was found to have a 2cm mass in the right upper zone of the lung on a screening CT study of the chest.

57-year old male presented to the Emergency Room with acute crushing central chest pain.

67-year old male with cough and productive sputum of two weeks duration now has shortness of breath, loss of appetite, fevers a malaise.

THORACIC DISEASE

Chest Pain

Patient is an 18-year old male who had a sudden onset of right-sided chest pain two hours ago. His general health has always been good. Two hours ago he was reading when he suddenly felt pleuritic chest pain on the right side and had slight dyspnea. The pain has improved since but the dyspnea has not.

He has no history of TB exposure, fungal exposure, cough, hemoptysis, other dyspnea, or previous chest pain. He has no swelling of his legs or leg pain.

Physical Examination: Blood pressure 120/80, pulse 100 regular, respiration 25, temperature 37.0 Respirations: trachea midline, breath sound decrease on right and there is hyperresonance to percussion on the right side. There is no cyanosis.

Study Questions

1. What is the differential diagnosis?
2. What is the most likely diagnosis?
3. What single study is the most important in establishing the diagnosis?
4. Of the following options, how would you treat Freddy? Antibiotics, operation (which), chest tube (why), chest physical therapy.
5. Of the treatment you chose, how would you administer it and for how long?

THORACIC DISEASE (cont'd)

Lung Lesion

A 63-year old man has a sigmoid resection nine years ago for Dukes B adenocarcinoma. yearly follow-up since then has been normal as have been his x-rays. This year, his chest x-ray shows a new "coin" lesion in the mid left lung field, upper lobe. He has smoked one pack per day for thirty year but quit at age 50. His health is good.

Physical examination is normal except for healed abdominal scar.

Study Questions

1. What is the differential diagnosis?
2. Is the pulmonary lesion most likely benign or malignant? If the latter, is it most likely a colon metastasis or new primary tumor?
3. What tests would you order in evaluation his x-ray findings?
4. Would you order any of the following tests? If so, which? Justify ordering them (or not ordering them).

CBC

Urinalysis

EKG

Tomograms

Liver function studies

Liver scan

Hepatic angiogram

Brain scan

Carotid arteriogram

Bone scan

Pulmonary function tests

Blood gases

5. Which of the following procedures would you perform? For each, why of why not and in which order should they be performed?
 - A. Left upper lobectomy
 - B. Mediastinoscopy
 - C. Bronchoscopy
 - D. Needle biopsy of lesion
6. If you know the cell type, what would your treatment for each of the following tumors in this man be:

Squamous cell Ca

Adenocarcinoma

Oat cell Ca

THORACIC DISEASE (cont'd)

Recurrent Pneumonitis

Patient is a 59-year old housewife with presented with a mild chronic cough on top of a fifty-pack history of cigarette smoking. She had a two-week exacerbation of the cough which is non-productive and she has also has a slight right pleuritic chest pain and a low-grade fever. Physical examination is non-contributory; there are no pleural rubs. Her sputum cultures are negative. Her chest x-ray shows a small segment of pneumonitis in the posterior segment of the right upper lobe. Without treatment this resolved in about two weeks.

She now returns two months later with the same history and the same x-ray. Her examination is also the same.

Study Questions

1. What is the differential diagnosis?
2. Would you treat the pneumonitis the same way?
3. Are any other investigations in order? Why?
4. What must be considered in a patient with recurrent pneumonitis in the same location?
5. How would you evaluate this possibility?
6. Rank the following studies in decreasing order of the effectiveness in establishing a diagnosis (1-7: most effectiveness, 7 least effectiveness)

_____ Sputum Culture

_____ Mediastinoscopy

_____ Needle Biopsy

_____ Bronchoscopy

_____ Tomography

_____ Sputum Cytology
7. What is the most likely diagnosis?

THORACIC DISEASE (cont'd)

Mediastinal Mass

Patient is a 55-year old woman who has been weak for four months. This initially started with drooping of eyelids and over the past two months she has had weak jaw muscles post-prandially, with difficulty swallowing and with hoarseness. She has no other pulmonary symptoms, no GI symptoms, and no weight loss. Physical examination confirms the weakness plus some upper extremity weakness.

Her x-ray shows an anterior mediastinal mass.

Study Questions

1. What is the differential diagnosis of an anterior mediastinal mass?
2. What is the diagnosis when the anterior mediastinal mass is coupled with the symptoms mentioned above? What is the mass? What tests would confirm the neurologic diagnosis?
3. How often is the neurologic syndrome associated with a tumor?
4. How would you treat each of your diagnoses listed in Question 1?

LUNG, MEDIASTINUM AND CHEST WALL

Objectives

1. Describe pulmonary function tests and values that are predictive of severe risk of pulmonary complications following thoracic surgery.
2. Create an algorithm for the evaluation of a patient with a coin lesion on chest x-ray?
3. Identify conditions that preclude curative surgical resection for lung cancer.
4. Discuss the common risk factors and clinical symptoms of lung cancer.
5. Describe the surgical approach to lung cancer as dictated by location of the lesion.
6. List the most common sources of malignant metastases to the lungs.
7. Compare and contrast the management and prognosis of metastatic vs. primary lung malignancies.
8. Describe the most common diagnostic procedures used to evaluate pulmonary and mediastinal lesions.
9. Describe the differential diagnosis of hemoptysis and outline initial evaluation and therapy.
10. Describe the common causes of pleural effusion and distinguish between “transudate” and “exudates”.
11. Discuss the etiology and management of lung abscess and empyema
12. Describe the clinical manifestations and treatment of pneumothorax, tension pneumothorax, and massive hemothorax.
13. Describe the common tumors of the anterior, posterior and middle mediastinum.
14. Describe the common chest wall tumors.
15. Define “flail chest” and discuss appropriate management of this condition.