

Topics for discussion

- Discuss the definition of COPD
- Discuss the typical presentation of COPD
- Making the diagnosis of COPD and Treatment Plan
- . 4 cases of COPD mimickers
- . Imaging

Subtypes vs Overlap Disease States

- Chronic Bronchitis- chronic productive cough for three months in two successive years, where other causes of chronic cough have been excluded
- Emphysema- abnormal and permanent enlargement of the airspace distal to the terminal bronchioles. Emphysema can exist without airflow obstruction
- Asthma- chronic inflammatory disorder associated with airway responsiveness that leads to recurrent episodes of wheezing, breathlessness, chest tightness, and coughing, particularly at night or in the early morning

History

, Patients may report:

- , Decrease in ADLs, fatigue exertion dyspnea, chronic cough which is worsening, sputum production in the moming, wheezing
- , Comorbid diseases may include lung CA, CAD, osteoporosis, metabolic syndrome, depression, cognitive dysfunction
- Family History of COPD, chronic respiratory illness
- single most important risk factor is cigarette smoking
- , it is imperative to ascertain the number of pack years
- . In the access of genetic/environmental predisposition, smoking less than 10-15 years is unlikely to result in COPD
- , The single best variable to predict that an adult will have airflow destruction is a history of >40 pack years of smoking

Mannino DM, Gagnon RC, Petty TL, Lydick E. Obstructive Lung Disease and Low Lung Function in Adults in the United States: Data From the National Health and Nutrition Examination Survey, 1989-1994, Arch Intern Med. 2000;16(11):1683-1689, doi:10.1001/archinte.160.11.1683.

Physical Exam

- PE has high specificity (90%) but poor sensitivity for airflow obstruction
- The combination of patient reported smoking history greater than 55 pack years, wheezing on auscultation and patient self report of wheezing is a high predictor for obstruction and the absence of all 3 essential can rule out airflow obstruction

Making the Diagnosis: Spirometry UTILIZATION

- . The use of PFTs helps to measure the presence and severity of airflow obstruction
- . COPD is demonstrated if there is evidence of airflow obstruction that is not full reversible
- Guideline recommendation: There is no evidence of benefit of using spirometry to screen adults who have no respiratory symptoms (asymptomatic)
- Spirometry alone has not been shown to be independently improve smoking cessation but "lung age" on spirometry may be included to assist in smoking cessation counseling



Case # 1 HPI

HPI: 87 yo man who has a fairly benign past history presents with 4 days of SOB. Patient has a history of COPD and last smoked 1 hour before coming in. The Pt. denied fever, chills, night sweats, cough, chest pain, hemoptysis, or prior trauma. States that yesterday he had a coughing fit and had right sided shoulder pain shortly after. It has been progressively worse over last 24 hours.

Case # 1 PE and Labs

Pleasant man in NAD, pulse ox. 94 % on 4L. Afebrile.

Lungs: decreased breath sounds on the right chest. Hyperresonant bilaterally. Wheezing noted on the left.

Chest: no evidence of trauma.

CV: tachycardia

LABS: Unremarkable



Case # 1 Diagnosis and Discussion

Spontaneous pneumothorax is defined by the presence of air in the pleural cavity without history of trauma. This is a significant clinical problem.

-COPD is a common cause of pneumothorax.

-The risk of recurrence of spontaneous pneumothorax secondary to COPD is high and various studies quote rates 20-60%.

-After reviewing 248 cases of PTX- Approximately 67% had COPD.

-Most frequent presenting symptom is dyspnea

Accident chest tube placement for a large bullae disease can and will result in the development of a bronchopleural fistula

Fettal, Nadia, and Abdessamed Taleb. "Pneumothorax secondary to chronic obstructive pulmonary disease." (2012): P558.

Case # 2 HPI

Mr. T is a 40-year-old M with an 15 pack smoking history came in for significant wheezing x 3 days. PCP prescribed him an Albuterol inhaler. He states that he has been using it 14 times a day. Shortness of breath worse with exertion. He has had multiple exacerbations in the last 6 months. He states he is hospitalized frequently for 7-10 days at a time.

Case #3 PE and Labs

. PE Vitals: HR 120, BP of 128/90, RR of 30, and pulse ox of 96% on RA

AAOX3, NAD, using accessary muscles during respirations

Bilateral wheezing noted

Tachycardiac, S1,S2, RRR

PPx4, No peripheral edema noted

Pt had previous PFTs 1 month prior due to his frequent exacerbations in the past.

. Post bronchodilator FEV1/FVC: 65%

. Pre bronchodilator FEV1: 60%, Post bronchodilator FEV1 68%

, Pre bronchodilator FVC: 70%, Post bronchodilator FVC 84% (240ml change)





Case # HPI

- 78 y/o F came in 2 week history of shortness of breath which has been getting progressively worse. She states she was diagnosed with COPD while in the hospital 10 years ago. She never smoked. Reports a chronic cough which is nonproductive.
 - . She states she is normally on 2L NC. She is now requiring 6L NC O2.
 - . She has noticed change in color of her lips to a blue color.
 - . Reports a 20 point weight loss over the last 6 months.

Case # PE and Labs

- AAOx3, Using accessory muscles during inspiration
- Crackles noted on expiration, velcro like inspiratory breath sounds
- . S1, S2, RRR, clubbing noted
- Bilateral lower extremity edema
- . LABS: Unremarkable



Case # Diagnosis and Discussion

- , Acute exacerbation of Idiopathic Pulmonary Fibrosis
- , UIP pattern on CT, in absence of other underlying etiology, is accepted diagnostic for IPF
- , Treatment for COPD strongly differs from the treatment course of IPF

, Treatment for exacerbation of IPF includes:

- Ruling out acute infection, smoking cessation
- Initiating anti-inflammatory medications such as Pirfenidone, Nintedanib to slow the progression of fibrosis
- , Oxygen therapy
- , Lung Transplant
- , Pulmonary Rehab

Case #4 HPI

A 49-year-old male with a history of COPD presents to the ED with "my usual COPD exacerbation". He is given nebulized albuterol/ipratropium, IV steroids, and started on NIPPV. He continues to be dyspneic on NIPPV with nebulizers.

Case #4 PE and Labs

Vitals: heart rate of 122, BP of 165/92, RR of 31, and pulse ox of 86% on 2L NC.

AAOX3, NAD

He has decreased air movement and wheezing bilaterally on exam.

Tachycardiac, S1,S2, RRR

LLE is swollen and somewhat painful at the area of the calf

LABS: Unremarkable, WBC 14K, Troponin 0.8, otherwise unremarkable.



Case #4 Diagnosis and Discussion

- . Diagnosis: Acute Pulmonary Embolism
- COPD patients are at a high risk for PE due to a variety of factors including limited mobility, inflammation, and comorbidities, the prevalence of PE during exacerbations is uncertain.
- 30% of all exacerbations of COPD do not have a clear etiology.



Questions? . Thank you

Bibliography

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