Case17 Print

Location: Outpatient Clinic.

Vital signs: Blood pressure:137/79 supine, 124/68 erect; Heart rate: 85/min, regular; Respirations: 16/min; Temperature 38.8C.

C.C: Cough.

HPI:
The patient is a 65-year-old white male with a past medical history significant for COPD with a 60-pack-year smoking history. He continues to smoke cigarettes occasionally, although he has recently cut back. He presents with a five-day history of increasing cough, increased sputum production and fever up to 38.7 for the last two days. He has dyspnea on exertion and currently has some mild dyspnea. He's had decreased appetite, poor PO intake and a ten pound weight loss over the past two months. ROS: He denies any chills, hemoptysis, chest pain, pleuritic chest pain, abdominal symptoms/pain, diarrhea, constipation, blood per rectum, or melena. He denies any neurologic symptoms. The rest of his review of systems is negative. He had a similar illness approximately seven to eight weeks ago which was treated with cefuroxime and azithromycin, and the patient reports that after that course of treatment he got better and has been well for the past three weeks until the last five days when he had return of the cough, increased sputum production and fever. FH: Nothing significant. Medications: Takes albuterol puffs as needed. Allergies: None

How to approach this case:
The patient is an elderly man with a significant history of COPD now presenting with a second pneumonia in the course of about two months. He needs an evaluation right now of his O2 saturation, physical exam, and then an exploration into the etiologies behind his recurrent pneumonia. The suspicion for malignancy is very high given his 60-pack-year smoking history, the weight loss noted in the review of systems, and the recurrence of a pneumonia, particularly if the pneumonia is in the same place as the prior one.

Orders:
Pulse oximetry

Results:
O2 saturation 90% on room air

Order:
Physical exam: HEENT/Neck, lungs, heart, abdomen, and extremities,

Results:
General: Elderly white male in no acute distress with temporal wasting. HEENT shows a clear oropharynx with upper and lower dentures. There is no neck lymphadenopathy. Temporal wasting is present. Conjunctivae are slightly pale. Cardiovascular is normal. Lungs: Decreased breath sounds throughout with rales present on the right upper lung fields posteriorly and decreased breath sounds in the right upper lung anteriorly. Increased anterior posterior distance on the chest with barrel chest habitus, and mild supraclavicular retractions. Abdomen: Slightly obese but otherwise normal. Extremities: There is bilateral tenderness of wrists, with nails more curved longitudinally and base of nail bed fluctuant in all fingers. Right index finger and middle finger show nicotine staining.

Discussion:
The patient has hypertrophic osteoarthropathy noticed on examination. It is characterized as chronic proliferative periostitis of long bones, clubbing of fingers and synovitis. It is more related with squamous and adenocarcinoma of the lungs. Symptoms of this condition may occur before the actual manifestation of lung carcinoma. As a No.1 killer Cancer in USA, it remains very important to know the different manifestations of lung carcinoma. This patient's finding of hypertrophic osteoarthropathy is significant for lung carcinoma in the context of

his recurrent pneumonia and dyspnea.

Orders:
Shift to hospital ward.
Begin supplemental oxygen therapy at 2 lpm by nasal cannula (Type oxygen inhalation)
IV access
IV fluids at 100 cc an hour with normal saline
Urine outputs, Q 4 hours
Vitals: Every 4 hours
Pulse oximetry every 4hours
Activity: Bed rest with bathroom privileges
Chest X-ray, PA and lateral, stat
Blood cultures, stat
Coughed sputum sample for gram stain, culture and cytology.
CBC with differential, stat
Basic metabolic panel, stat
Begin antibiotic therapy with Levofloxacin (Levaquin) orally or IV after cultures obtained
Albuterol and ipratropium nebulized treatments Q6 H and albuterol Q2H PRN for shortness of breath.

Results:
Chest X ray shows an infiltrate in the right upper lobe with some elevation of the transverse/minor fissure anteriorly. There are no effusions. There is evidence of hyperinflation and chronic lung changes.
Whenever Ca lung is suspected on the basis of clinical features and initial diagnostic tests, we need to perform advanced imaging procedures and other tests to establish the tissue diagnosis of lung cancer. CT scan of chest is done for mediastinal and pleural extension of the suspected lung tumor. For tissue diagnosis of the lung Ca following diagnostic modalities are available:
Sputum cytology
Biopsy of suspicious lymph nodes
Flexible fiberoptic bronchoscopy: Biopsy specimens are taken when any endobronchial lesion is noted
Pleural biopsy if pleural effusion is present
Mediastinoscopy and anterior mediastinotomy when there is suspicion of mediastinum involvement by the tumor
Transthoracic FNA biopsy under CT or fluoroscopic guidance when a peripheral pulmonary nodule is present

Order review:
Spiral CT scan of the chest
Arrange for bronchoscopy
Consult Pulmonary Medicine/cardiovascular surgery for bronchoscopy
CBC/diff with basic metabolic panel daily
Continue supplemental oxygen therapy

Results:
The patient undergoes bronchoscopic examination the following day. He tolerates the procedure well. Broncho Alveolar Lavage (BAL) samples are sent for cytology, gram stain, culture, AFB smear, and fungal culture. The patient continues to show slight improvement in his oxygen saturations and overall function with the levofloxacin therapy. His IV fluids can be discontinued. His supplemental oxygen can be weaned to room air.

Results of the bronchoscopy showed an endobronchial lesion in the takeoff of the right superior bronchus. The area was biopsied and brushed. Cytology reveals malignant cells consistent with a bronchogenic carcinoma and cytology reveals small cell carcinoma of the lung.

Order:
Pulmonary Function Tests (PFT)
Liver Function Tests (LFT)

Serum calcium , stat
CT of the abdomen and pelvis
MRI brain with and without contrast
Bone scan
Consult oncology
Consult radiation oncologist
Quit tobacco use
Supplement diet with high protein nutritional shakes
Consider changing albuterol/ipratropium nebulizer to MDI (Metered dose Inhalers)

Primary diagnosis:
Bronchogenic carcinoma presenting as obstructive pneumonia

Discussion:
Lung cancer incidence is about 3-5 per 1000 persons per year and the majority of patients are symptomatic at presentation. Local symptoms include cough (70%), hemoptysis (40%), dyspnea (40%), chest pain, hoarseness, superior vena cava obstruction, and wheezing. Systemic symptoms include weight loss, anorexia, weakness, and fever. Signs on exam include bone pain, hepatic dysfunction, lymphadenopathy, and neurological or cranial nerve involvement. Almost all patients diagnosed have constitutional symptoms, such as the case above. Lung cancers typically metastasize to bone, liver, lymphnodes, brain, and soft tissue. Unfortunately, screening with chest radiography and sputum cytology in patients at risk has not been found to decrease cancer mortality although it may detect disease at an earlier stage.

Work up of suspected cases includes bronchoscopy for cytology and visualization, as well as Spiral CT of the chest. If small cell lung cancer is found, then an MRI or CT of the brain, CT of the abdomen and pelvis, and bone scan should be performed in all patients because of the high incidence of micro/macro metastasis by the time of diagnosis. Bone marrow aspiration/biopsy is warranted in patients of SCLC (small cell carcinoma of the lungs) when there is cytopenia or increased LDH. This workup is also indicated in patients of NSCLC in whom involvement of the specific organs is suspected. PFT's with diffusion capacity, spirometry, and oxygen saturations should be obtained early on. After staging has been completed, about 30-40% of patients will have limited stage disease and 60-70% will have extensive disease.