

Asthmatic with Respiratory Distress: Analyzing Beyond Asthma

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Disclosure of Financial Relationships

- ▶ None

History of Present Illness

- ▶ 16 year old male with respiratory distress for 4 days.
- ▶ Past medical history: obesity, obstructive sleep apnea, mild intermittent asthma, and sickle cell trait.
- ▶ Progressive respiratory distress over 4 days
- ▶ Taking albuterol about 6–8 times a day with some relief.

History of Present Illness

- ▶ No history of recent respiratory concerns.
- ▶ Patient non compliant with prescribed CPAP and mom recently started smoking indoors
- ▶ Hypoxic to 78% on room air, in his doctor's office
- ▶ Patient transported to the emergency room

Additional Questions

Physical Exam

- ▶ Temp 36.8 °C oral, HR 128, RR 38, BP 149/74 mmHg, Sat 91 % on 12 L/min via oxymask
- ▶ Wt 167 kg (368 lb) (99.9 percentile), Ht 179 cm (70.47 inches) (76.7 percentile), BMI 52.74 kg/m²
- ▶ General: appeared uncomfortable, interactive with exam, alert and awake, morbidly obese
- ▶ Resp: Equal air movement bilaterally. Clear to auscultation bilaterally with overall good air movement, but diminished in bilateral bases. No wheezing or rhonchi. Mild subcostal retractions and moderate tachypnea. Pt able to speak in full sentences. Exam limited by body habitus

ED Course

- ▶ Placed on an oxymask at 12L
- ▶ Received PEP therapy and a total of 3 hour long duonebs.
- ▶ Also received IV magnesium
- ▶ Repeat vitals: HR 124, RR 34, Sat 92 % on 12 L/min via oxymask

Initial Differential Diagnosis

Initial Differential Diagnosis

- ▶ Combination of acute on chronic atelectasis
 - secondary to long-standing non-compliance with home CPAP therapy
- ▶ With an acute asthma exacerbation
 - unknown trigger (smoke exposure)

Orders

Hospital Course

- ▶ Admitted to PICU with concern for status asthmaticus
- ▶ Treated with bronchodilators, IV magnesium, and steroids.
- ▶ Placed on additional respiratory support of CPAP
- ▶ Tolerated gradual weaning of respiratory support over the next couple days

New information/Clinical Course

- ▶ Sudden onset of shortness of breath and hypoxia with saturation of 63% on room air.
- ▶ Repeat chest x-ray was similar to prior x-rays
 - persistent patchy bibasilar and perihilar opacities.
- ▶ Case was re-examined.
- ▶ In retrospect, no significant asthma flare history and absence of wheezing on exam, did not fit with an asthma etiology
- ▶ The differential was broadened.

Diagnostic Pause

Final Diagnosis

- ▶ Lower extremity doppler obtained
 - revealed a right external iliac deep vein thrombosis.
- ▶ Chest CT revealed a saddle embolism of his pulmonary arteries
- ▶ Also demonstrated an abdominal mass
 - along with multiple pulmonary nodules and multiple liver masses.
- ▶ Emergent pulmonary embolectomy was done with nodule biopsy obtained.
- ▶ Ultimately diagnosed with renal medullary carcinoma with metastases.

Wrap Up – remainder of clinical course

- ▶ Consultation with the oncology team revealed this as a grave prognosis.
- ▶ Patient progressed to multiorgan failure including cardiogenic shock, renal failure, and worsening respiratory failure.

Wrap Up – lessons learned

- ▶ Not all respiratory distress in an asthma patient is an asthma exacerbation.
- ▶ Returning to patient's baseline may not be reassuring
- ▶ Identify the signs and symptoms of pulmonary embolism and remember not to limit the differential.

Wrap Up – Interesting and rare diagnosis: Renal medullary carcinoma

- ▶ An aggressive, rapidly destructive tumor associated with a delayed diagnosis and a poor outcome
- ▶ Neither chemotherapy nor radiation have been shown to be efficacious and the mean survival time is less than 1 year.
- ▶ Metastasis at presentation is extremely common.
- ▶ Almost always affects patients with sickle cell trait
- ▶ Median age 19–22 years old
- ▶ Male predominance
- ▶ Most common presenting signs and symptoms
 - weight loss, hematuria and abdominal or flank pain.

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References

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