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H&P 3
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H&P 3 - Emergency Medicine

Chief Complaint: “My chest hurts and I’m having trouble breathing” x 2 days.

History of Present Illness:

K.D. is a 53 year old male with a past medical history of hypertension, hyperlipidemia, hx of Type A & B aortic dissection s/p aortic arch repair (3/2023), hx of dissecting aortic aneurysm, and heart valve transplant who presents to the emergency room with chest pain and shortness of breath that began 2 days ago. The symptoms began while he was cleaning his house, when he suddenly developed shortness of breath while vacuuming. Later that day, he began experiencing chest pain localized to the center of his chest, described as a pressure-like sensation that is non-radiating and currently rated 7/10 in severity. The chest pain and shortness of breath worsens with exertion and is slightly relieved with rest. He reports that symptoms persisted throughout the day and caused difficulty sleeping at night. Today, he states both symptoms have worsened. He reports taking Tylenol with minimal relief. He denies fevers, chills, weight loss, syncope, headache, abdominal pain, nausea, vomiting, diarrhea, urinary sx's, back pain, recent illness, recent travels, or prior similar episodes.

Past Medical History

Hypertension x present - managed with medication
Hyperlipidemia x present - managed with medication
Type A & B aortic dissection - managed with surgery
Dissecting aortic aneurysm - managed with surgery

Immunization: Up to date on all immunizations.

Past Surgical History

Aortic arch repair - QHC, March 2023
Heart valve transplant

Medications

Amlodipine 5 mg, QD daily, last dose today (2/28/26)
Aspirin 81 mg, QD daily, last dose today (2/28/26)
Atorvastatin 40 mg, QD daily, last dose today (2/28/26)
Clonidine 0.1 mg, QD daily, last dose today (2/28/26)
Patient is compliant with the above medications.

Allergies:

NKDA

No food or seasonal allergies.

Family History

Mother, deceased at 85, PMHx of HTN

Father, deceased at 81, PMHx of HTN and DM

Social History

Habits: Former smoker (Quit 4 years ago). Denies alcohol consumption or usage of illicit drugs.

Travel: Denies any recent travels out of state or country.

Marital History: Married to wife.

Occupational history: Currently employed as a data analyst.

Home situation: Lives with wife and son.

Exercise: Ambulatory, patient denies actively exercising.

Review of Systems:

General: Denies recent weight loss or weight gain, loss of appetite, generalized weakness/fatigue, fever, chills, or night sweats.

Skin, hair, nails: Denies excessive dryness or sweating, changes in skin texture, discoloration, pigmentations, moles/rashes, pruritis, or changes in hair distribution.

HEENT: Denies headache, or trauma, vision disturbances, pain or redness. Denies ear pain, deafness, nasal congestion, discharge, or sore throat.

Pulmonary System: Admits to dyspnea. Denies cough or wheezing.

Cardiovascular System: Admits to hx of HTN and chest pain. Denies edema/swelling of ankles or feet, palpitations, or syncope.

Gastrointestinal System: Denies diarrhea, nausea, vomiting, abdominal pain, constipation, jaundice, change in bowel habits, hemorrhoids, rectal bleeding, or blood in stool.

Genitourinary System: Denies frequency, nocturia, urgency, dysuria, hematuria, or flank pain.

Nervous System: Denies headache, weakness, numbness, loss of strength, or change in cognition/mental status/memory.

Musculoskeletal System: Denies muscle/joint pain, deformity, or swelling and redness.

Peripheral Vascular System: Denies peripheral edema, coldness, or trophic changes.

Hematologic System: Denies anemia, easy bruising or bleeding, or lymph node enlargement.

Endocrine System: Denies heat or cold intolerance, excessive sweating, thirst, or urination.

Physical Exam

General: 53 y/o male, appears uncomfortable and tachypneic, in mild distress. Patient was found lying down on hospital bed, A&O x 3.

Vital Signs:

BP:	143/94 mm/Hg
RR:	22 breaths/min, unlabored
P:	97 beats/min, regular
T:	98.2 °F, oral
SpO2	96% room air
Ht: 5'8"	Wt: 88.9 kg

Skin: Warm & moist, good turgor. No rashes or ecchymosis.

HEENT: Noncephalic, sclera non-icteric, oropharynx well hydrated, moist, non-erythematous, neck is supple with no lymphadenopathy.

Lungs: Clear to auscultation bilaterally, no wheezing, rhonchi, or rales. **Increased respiratory effort noted.**

Heart: Regular rate and rhythm (RRR). S1 and S2 are distinct with no murmurs, gallops, or friction rubs.

Abdomen: Abdomen is soft, protuberant, and symmetric, non-tender, non-distended.

Extremities: No peripheral edema, distal pulses 2+ and symmetric.

Problem List:

- Hypertension
- Hyperlipidemia
- Hx of Type A & B aortic dissection
- Hx of dissection aortic aneurysm
- Hx of heart valve transplant

Assessment: 53 year old male with past medical history of hypertension, hyperlipidemia, hx of Type A & B aortic dissection s/p aortic arch repair (3/2023), dissecting aortic aneurysm, and heart valve transplant presents to ED with chest pain and shortness of breath that began 2 days ago. Patient is hemodynamically stable, but on exam appears tachypneic, and in mild distress. There is also increased respiratory effort noted. Currently most concerned for cardiac/pulmonary pathology. Will obtain EKG, labs, POCUS, CT angiography chest/abdomen/pelvis, and place patient on cardiac monitor, treat sx's, and will observe patient closely.

Differential Diagnoses:

1. Recurring aortic dissection

Given the patient's extensive hx of aortic disease, including Type A and B dissections, prior aortic arch repair, and a known dissecting aneurysm, he is at an increased risk of recurrent dissection or progression of the existing aneurysm. He reports sudden onset of sx's of chest pain and SOB during physical activity, which could have triggered a potential new dissection. Due to his high risk vascular hx and life threatening nature of this condition, it is important to rule out dissection.

2. Acute coronary syndrome

The patient's symptoms of pressure like chest pain that worsens with exertion and improves slightly with rest makes myocardial ischemia a likely diagnosis. Additionally, the patient has several cardiovascular risk factors, increasing the likelihood of coronary artery disease. The progressive nature of sx's over the past 2 days with no complete resolution of sx's raises concern for unstable angina or a NSTEMI/STEMI.

3. Pulmonary embolism

This is another important diagnosis to consider in pts presenting with chest pain and SOB. This patient is noted to be tachypneic with increased work of breathing, which may indicate impaired pulmonary circulation. Chest pain may be pleuritic or non-specific with shortness of breath being the predominant symptom. Less likely, however, considering he does not exhibit classic risk factors, such as recent travel, surgery or immobilization.

4. Tension pneumothorax

Tension pneumothorax should be considered in patients presenting with acute chest pain, SOB, and respiratory distress, as it is a life-threatening pulmonary

emergency. Less likely considering that the patient does not exhibit findings of absent breath sounds, tracheal deviation, or hypotension.

5. Heart failure

Given the patient's prior cardiac surgery and heart valve transplantation, this may predispose him to structural heart disease or heart failure. However, less likely since patient is not complaining of fluid overload sx's, such as lower extremity edema, orthopnea, or weight gain.

Workup/Plan:

- Labs
 - CBC w/ diff. → r/o infection, inflammation, anemia
 - BMP → to assess dehydration, renal function, electrolyte abnormalities
 - Troponin → r/o myocardial injury or ischemia
 - BNP → to assess cardiac wall stress or ventricular dysfunction
 - aPTT → establish baseline coagulation status
 - PT/INR → assess bleeding risk
 - VBG w/ lactate → to assess tissue perfusion, ventilation and metabolic compensation
 - POC glucose → evaluate for hypoglycemia or hyperglycemia
- Imaging
 - EKG → normal sinus rhythm, no ST-T changes, no acute ischemia
 - POCUS heart & lungs → normal cardiac activity observed, bilateral lung sliding present
 - CT angiography chest/abdomen/pelvis → large descending thoracic aortic aneurysm measuring 9 cm AP x 8 cm transverse. Evidence of rupture of descending thoracic aortic aneurysm with active extravasation into left pleural space.
- Management
 - Place pt on cardiac monitor
 - Establish IV access
 - Give 3 L O₂ via nasal cannula

ACLS

- Pt experienced cardiopulmonary arrest after coming from CT angiography.
- ACLS immediately initiated, patient was intubated and underwent 45 minutes of CPR where he received 12 doses of epinephrine, sodium bicarbonate 8.4%, and CaCl 10%.
- Outcome/ED Course
 - Despite maximal resuscitative efforts, patient was pronounced dead in the ED.