Things that Make You Go Hmmmm...

Medical Case Studies

Virginia EMS Symposium 2012

Presented by

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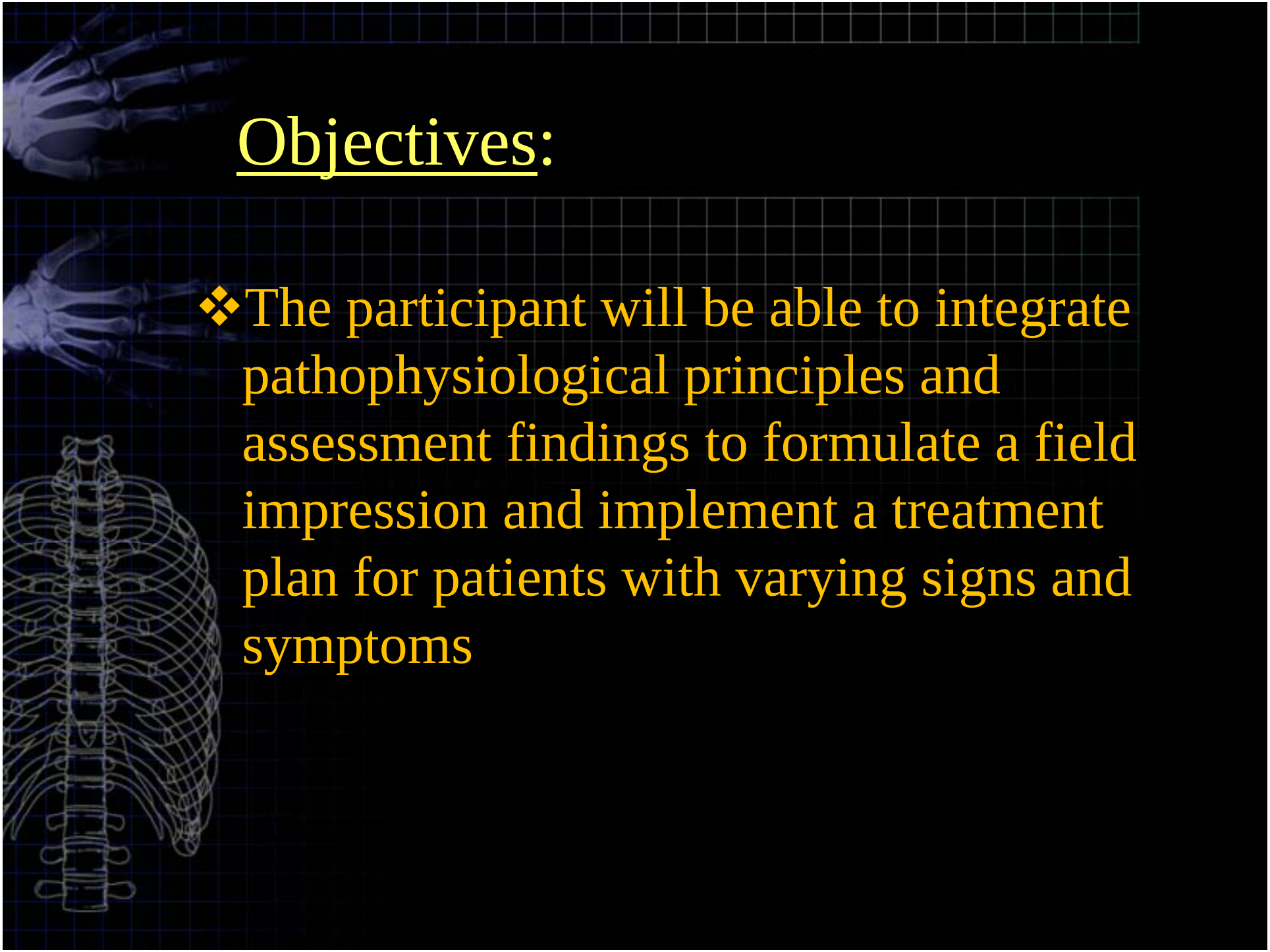
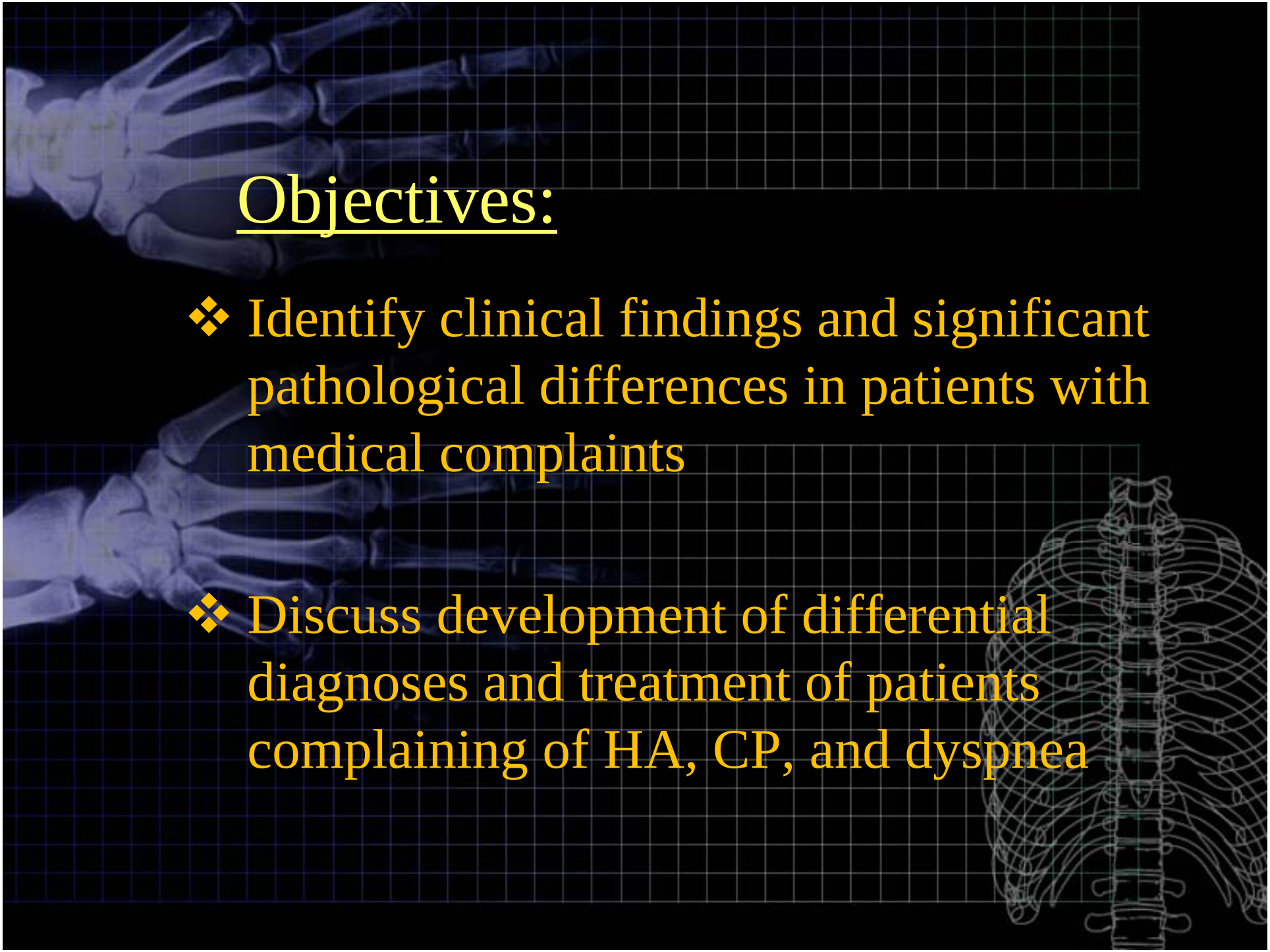


Objectives:

- The participant will be able to integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for patients with varying signs and symptoms

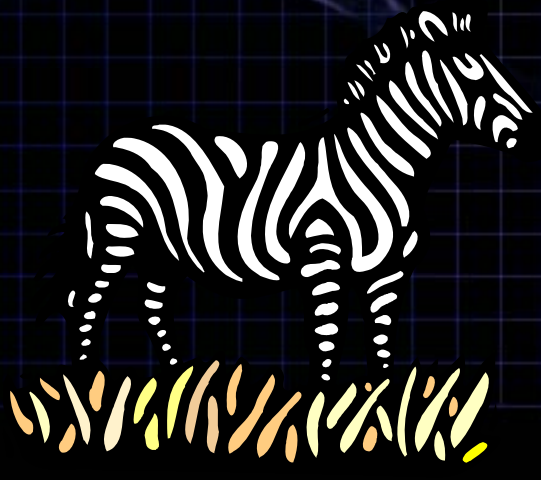


Objectives:

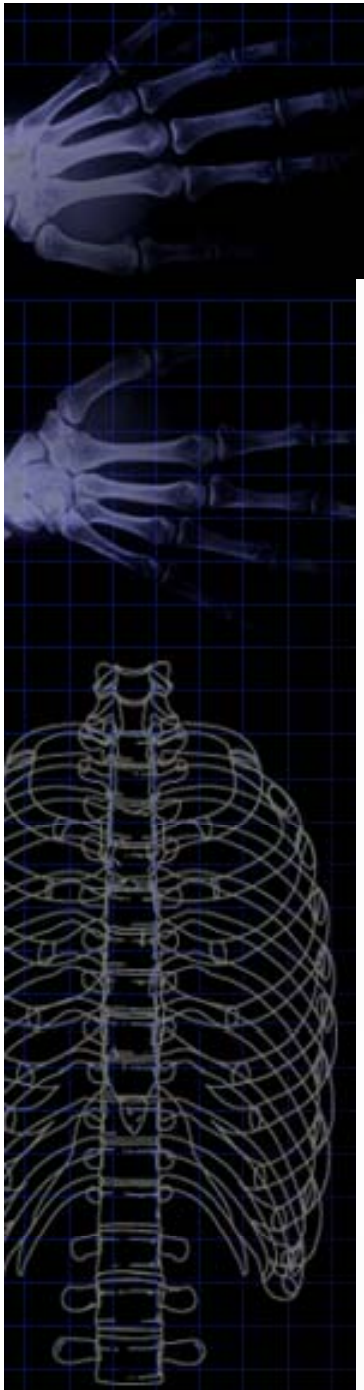
- Identify clinical findings and significant pathological differences in patients with medical complaints
- Discuss development of differential diagnoses and treatment of patients complaining of HA, CP, and dyspnea

WARNING:

Though much information will be provided for you, if there is anything additional you would LIKE TO KNOW, please don't hesitate to ask!



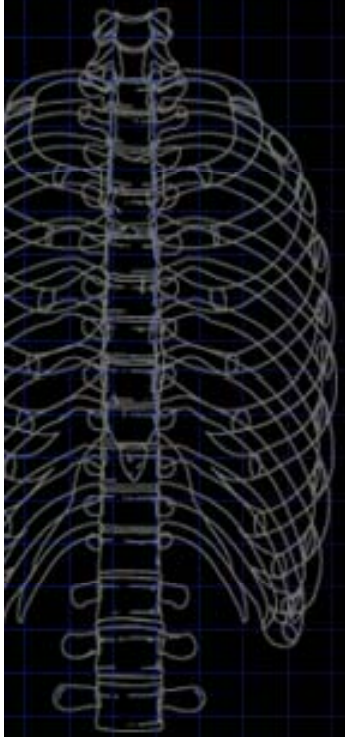
Things may not always be as they seem….



Case # 1

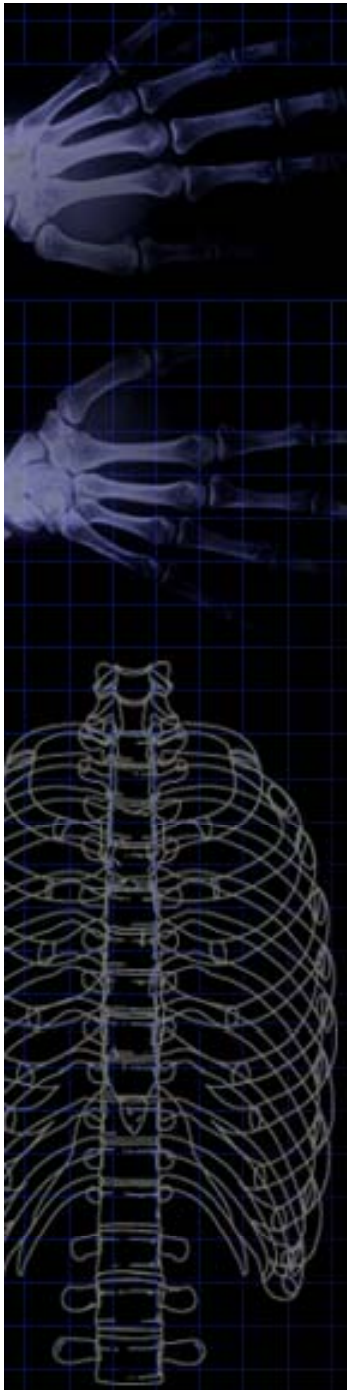
Dispatch Information:

You are dispatched to the home of a 30 year old female with chest pain



Scene Size Up:

She is found sitting on sofa on first floor with albuterol inhaler and several pill bottles next to her on the table. She looks to be in moderate distress.



Assessment:

A & O x 3

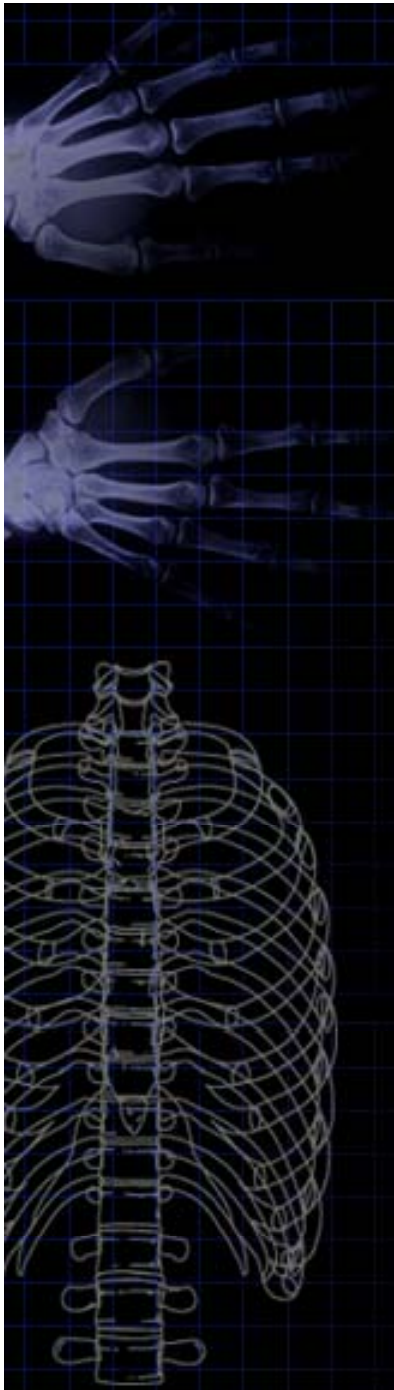
CC: Sharp chest pain with shortness of breath

Allergies: None

Medications: Albuterol MDI, Levaquin, Zithromax, Prednisone

Last Oral Intake: breakfast of toast and coffee, poor appetite

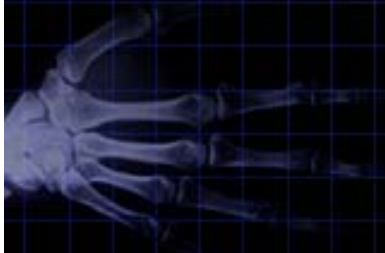
Patient has just been discharged from a community emergency department

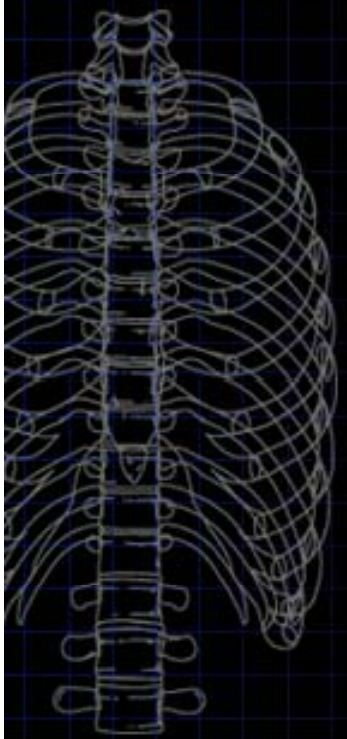


HPI:

Patient was seen in the ED for the same and was diagnosed with acute bronchitis.

She had seen primary care physician three days prior who diagnosed her with pneumonia. When the antibiotics prescribed didn't seem to be effective and symptoms began to worsen, patient decided to go to emergency room.





Take Two!

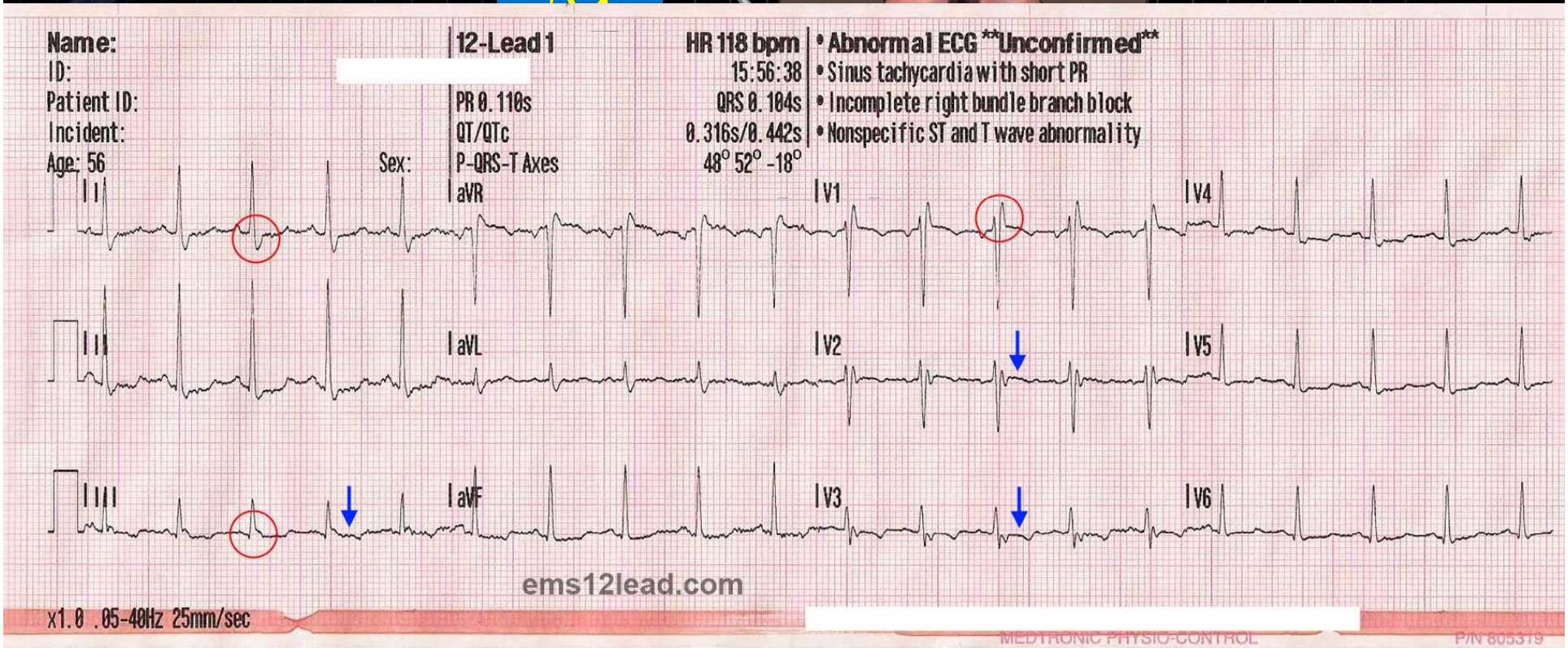
Discuss with your group:

- What your priorities will be
- What assessment findings will direct your treatment

What questions do you have?

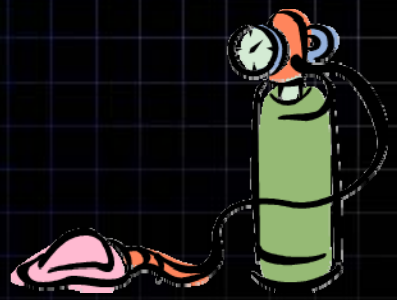
Assessment Findings:

PEARL

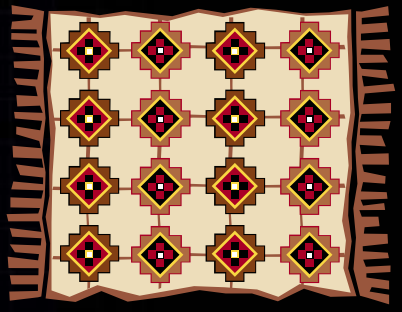


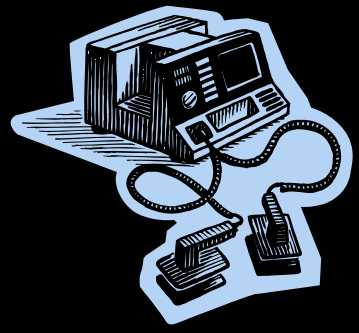
88% RA

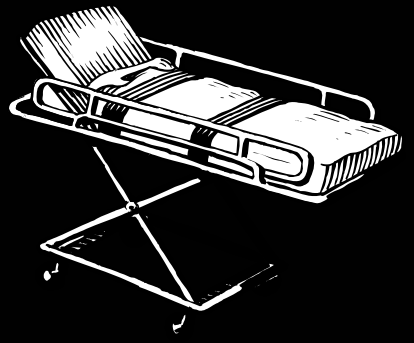
Treatment Options:

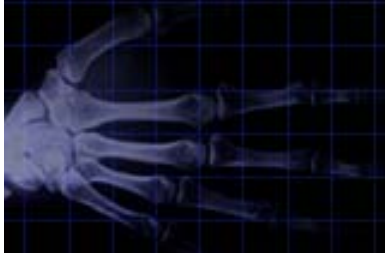


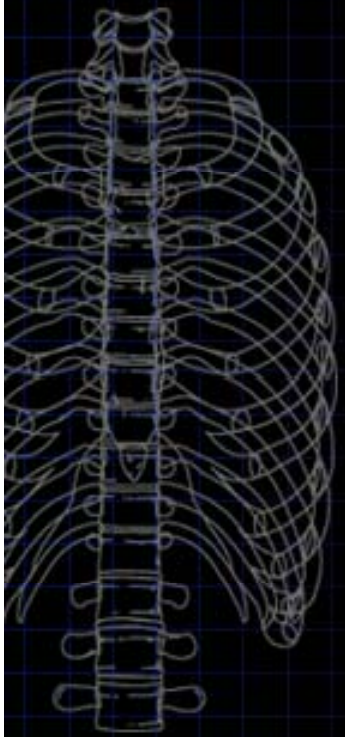
What treatment options would you like to try with this patient?











Differential Diagnosis:

What are your differential diagnoses for this patient?

List from most to least likely with your group.

1.
2.
3.
4.

Hospital

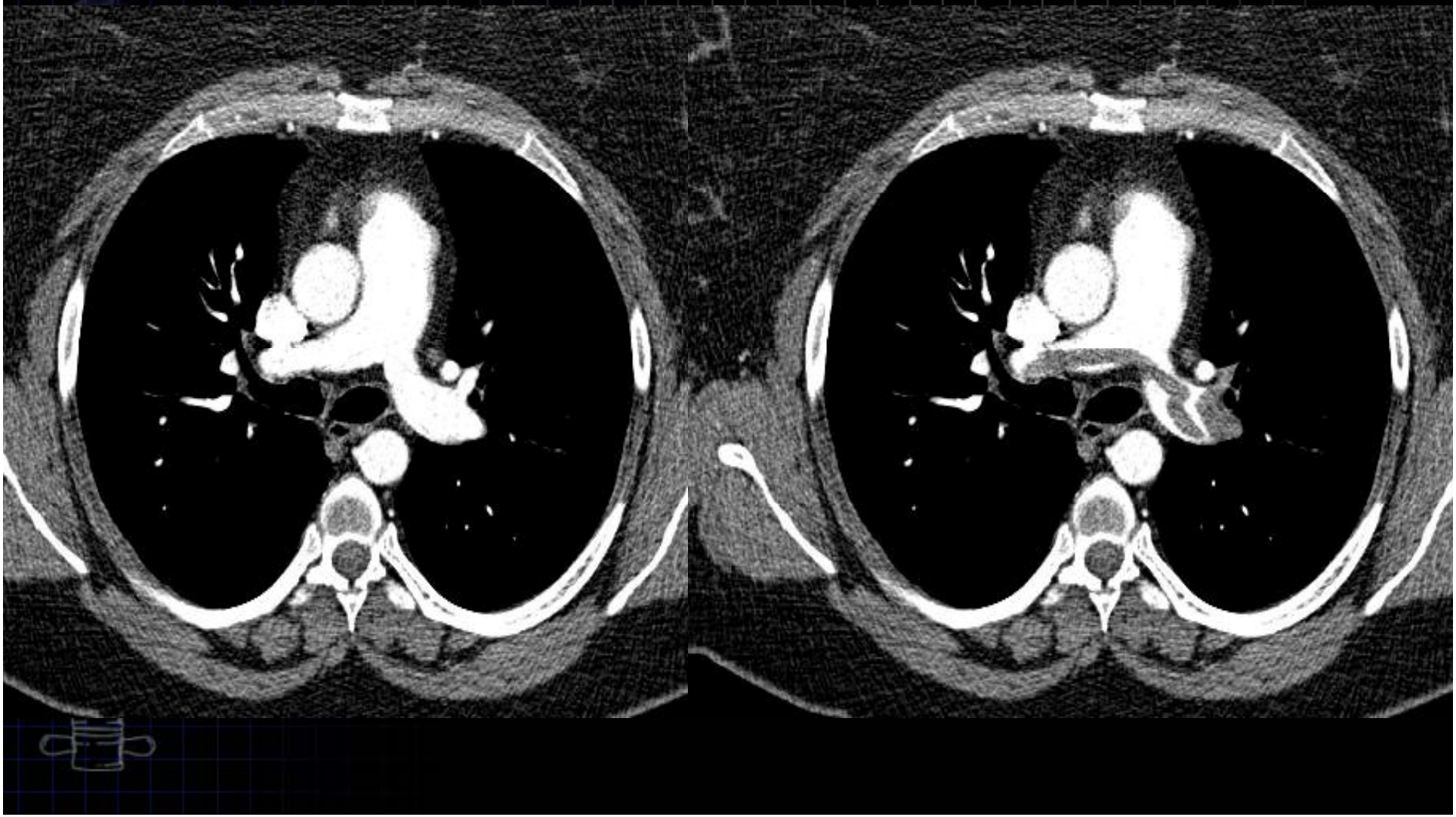
Patient was transported to Level 1 Trauma Center where the following were studied:

Labs, chest xray, chest CT

And what was discovered was…..

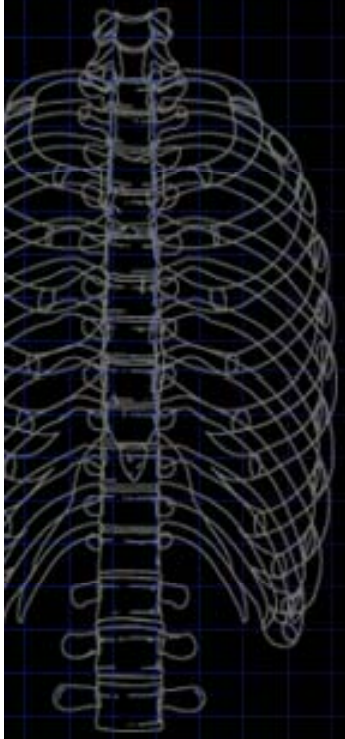
Normal CT

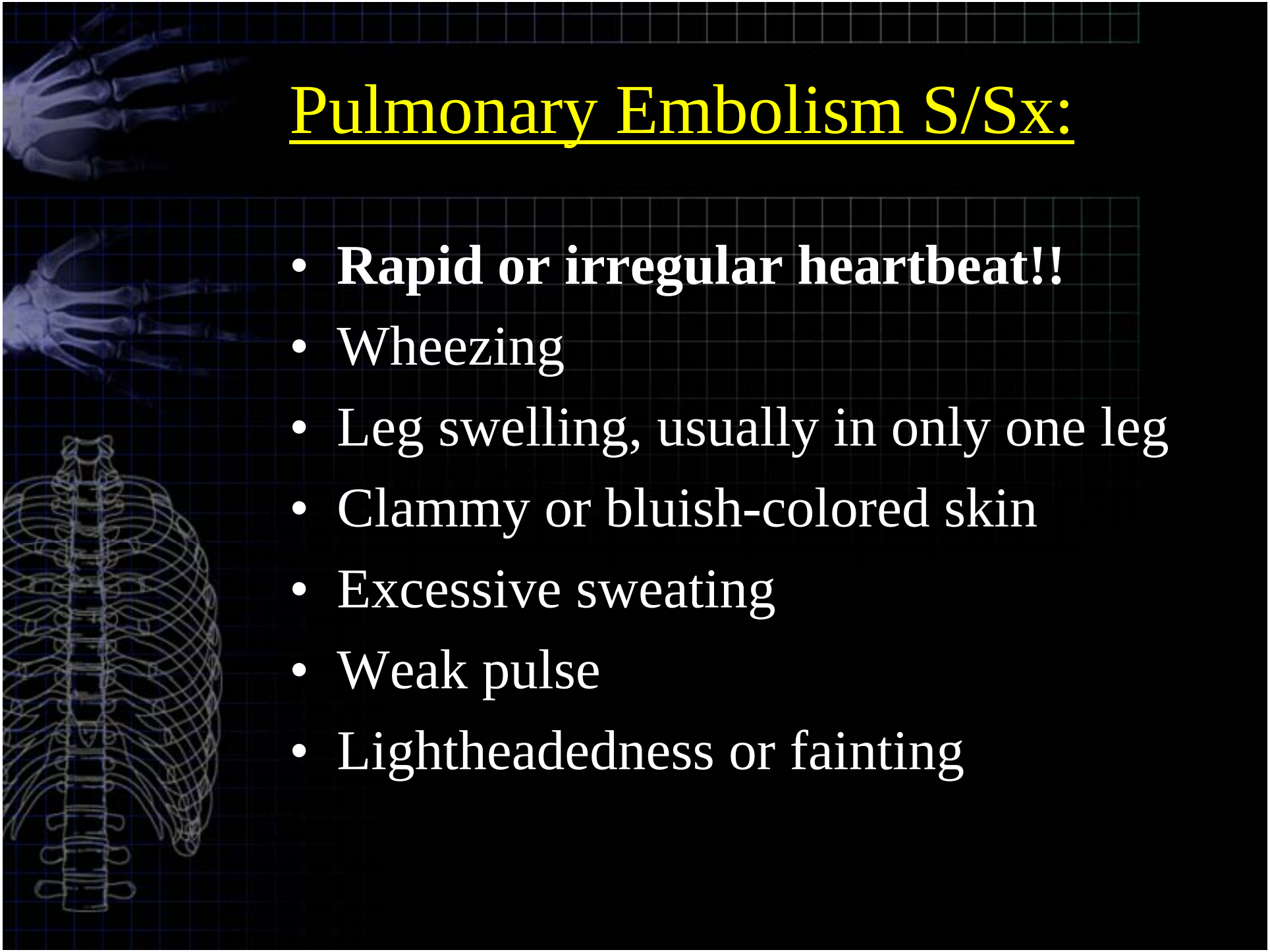
Patient's CT



Pulmonary Embolism S/Sx:

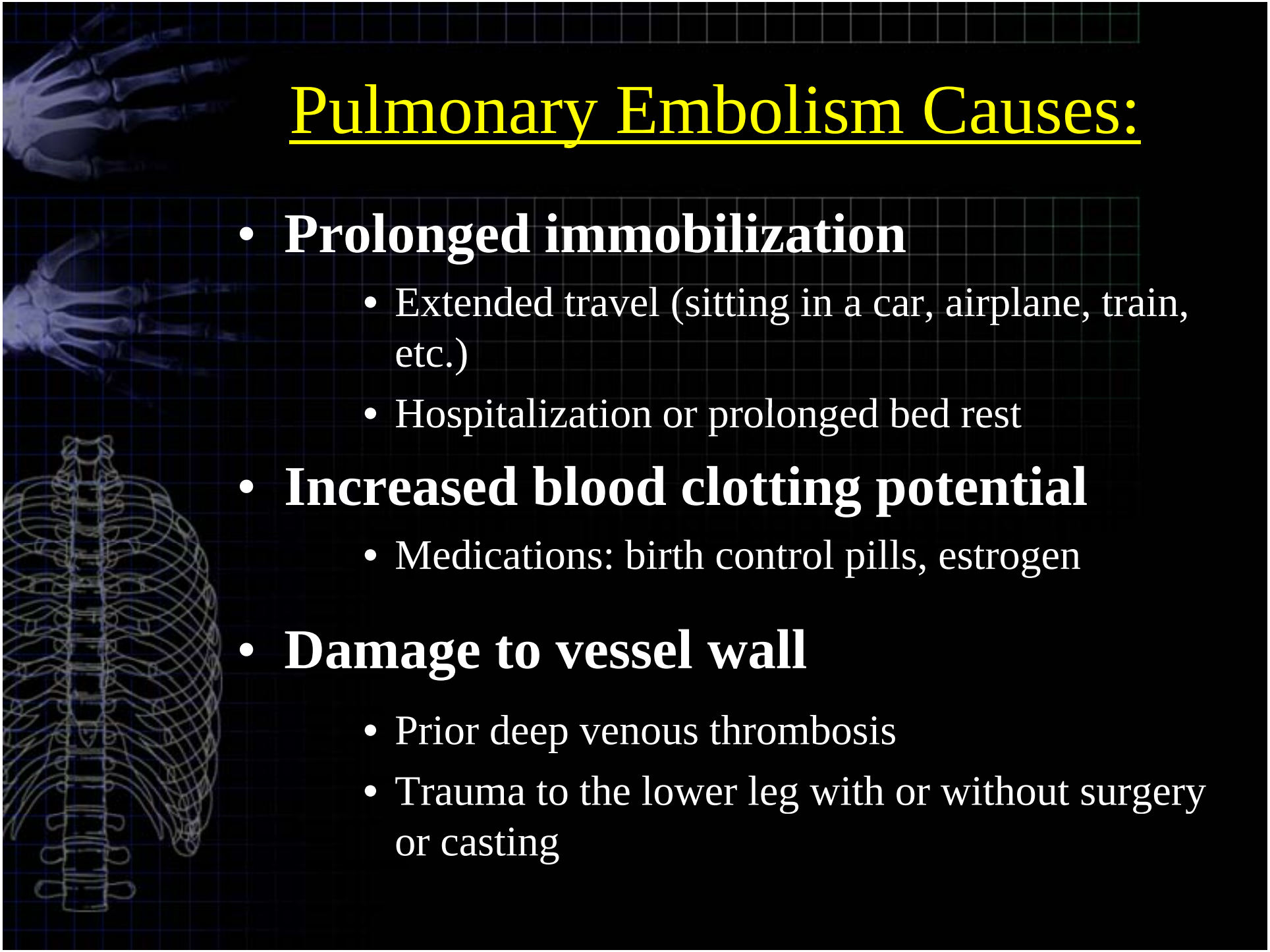
- **Shortness of breath**
  - typically appears suddenly, occurs whether you're active or at rest
- **Chest pain**
  - may feel like a heart attack
  - pain may become worse when you breathe deeply, cough, eat, bend or stoop and will get worse with exertion but won't go away when you rest.
- **Cough**
  - cough may produce bloody or blood-streaked sputum





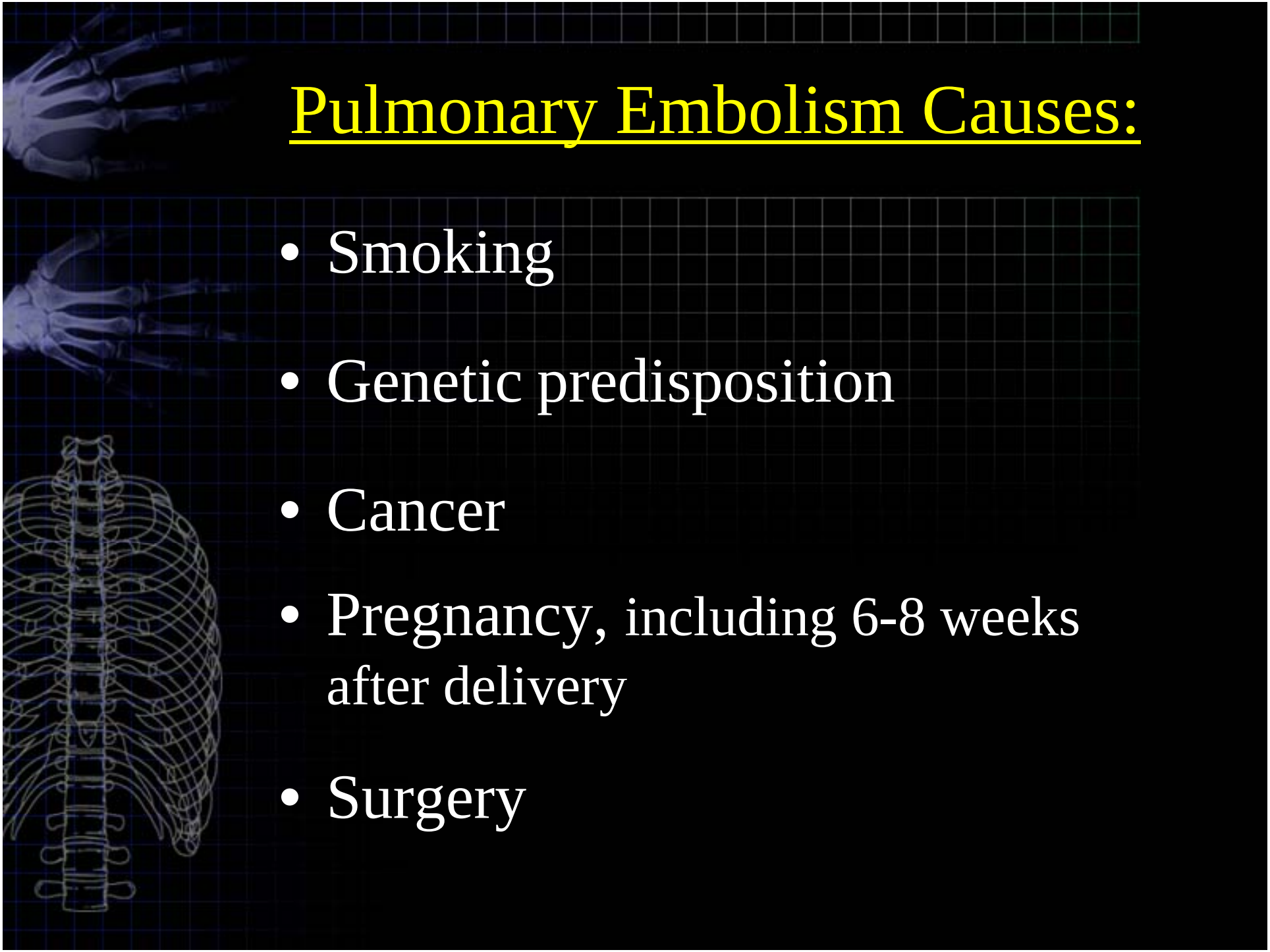
Pulmonary Embolism S/Sx:

- **Rapid or irregular heartbeat!!**
- Wheezing
- Leg swelling, usually in only one leg
- Clammy or bluish-colored skin
- Excessive sweating
- Weak pulse
- Lightheadedness or fainting



Pulmonary Embolism Causes:

- **Prolonged immobilization**
  - Extended travel (sitting in a car, airplane, train, etc.)
  - Hospitalization or prolonged bed rest
- **Increased blood clotting potential**
  - Medications: birth control pills, estrogen
- **Damage to vessel wall**
  - Prior deep venous thrombosis
  - Trauma to the lower leg with or without surgery or casting

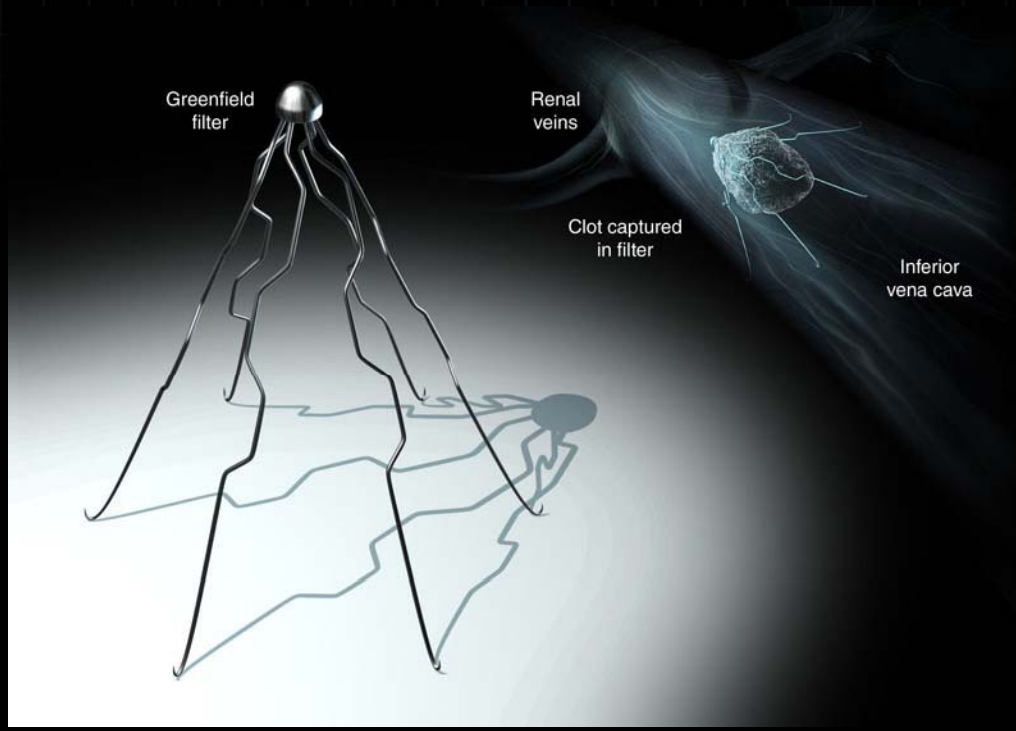


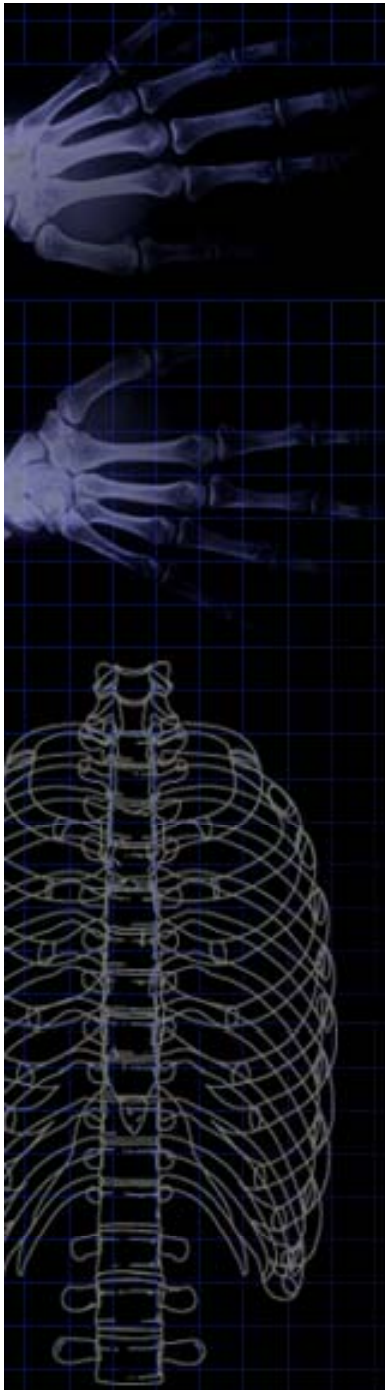
Pulmonary Embolism Causes:

- Smoking
- Genetic predisposition
- Cancer
- Pregnancy, including 6-8 weeks after delivery
- Surgery

Pulmonary Embolism Treatment:

- **Anticoagulation therapy**
- **Greenfield Filter placement**





Outcome:

Patient has since had clot dissolved with TPA, had a greenfield filter placed and will remain on anti-coagulants the remainder of her life.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Case # 2

Dispatch Information:

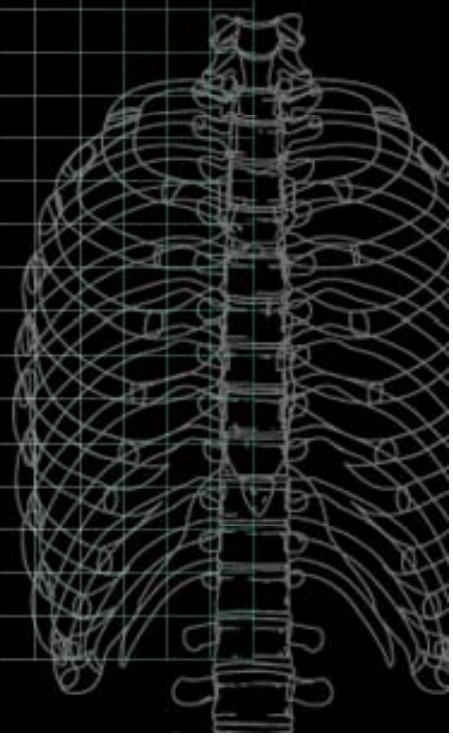
You are dispatched to the local Walmart for a 19 year old female complaining of a headache

Scene Size Up:

Upon arrival, you are met at the door by the greeter, who takes you to the electronics department where you find a female patient, approximately 20 years old sitting in a chair.

Scene Size Up (cont.):

As you approach and introduce yourself, she attempts to raise her head out of her hands and tells you she has the worst headache she can imagine.



Scene Size Up (cont.):

She is unable to open her eyes due to the lights above. You see her eyes roll back as she slumps to the left, unconscious. You notice that her shoulders, then her arms and legs are becoming more and more rigid and realize she is now seizing.

Scene Size Up (cont.):

You, your partner and the greeter quickly catch her and carefully lower her to the ground while kicking and pushing the chair, boxes and other merchandise away.

What are your treatment priorities?

What treatment options would you like to try?

Assess your patient. What do you want to know?

Assessment Findings:

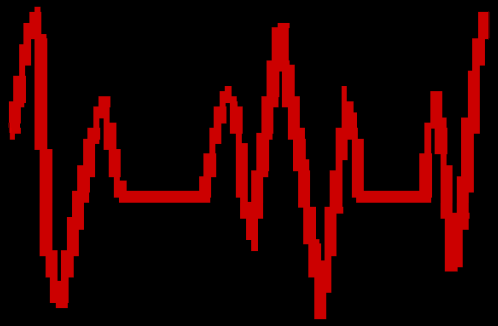
PEARL

8, clear, shallow

115

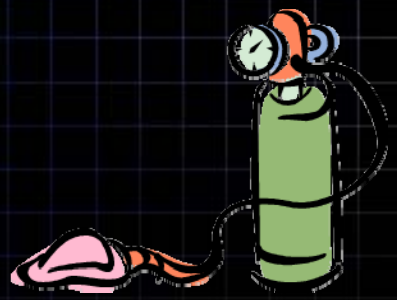
138/88

124



94% RA

Treatment Options:



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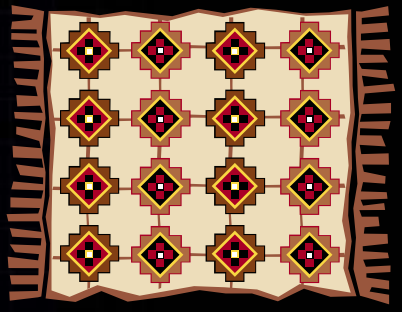

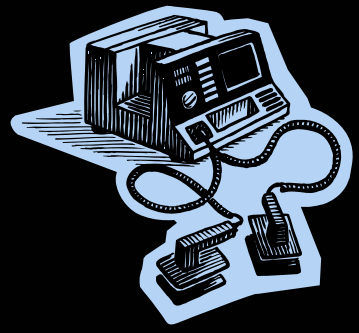

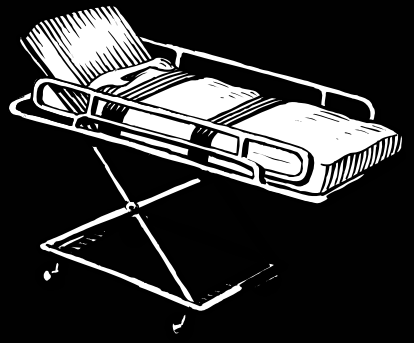

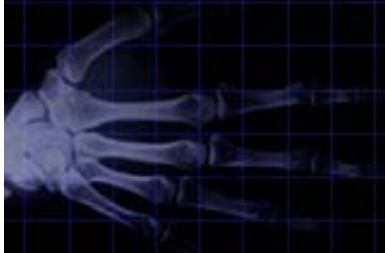

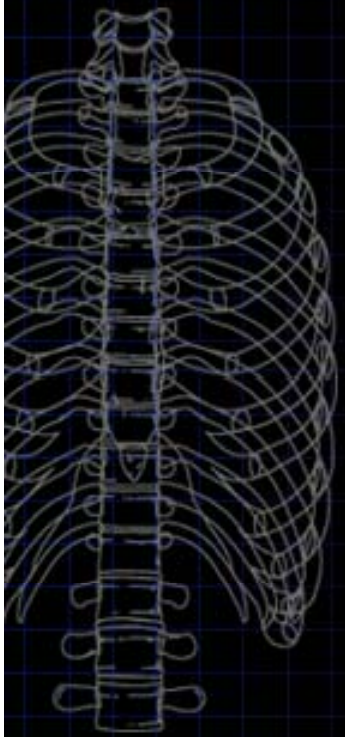

Differential Diagnosis:

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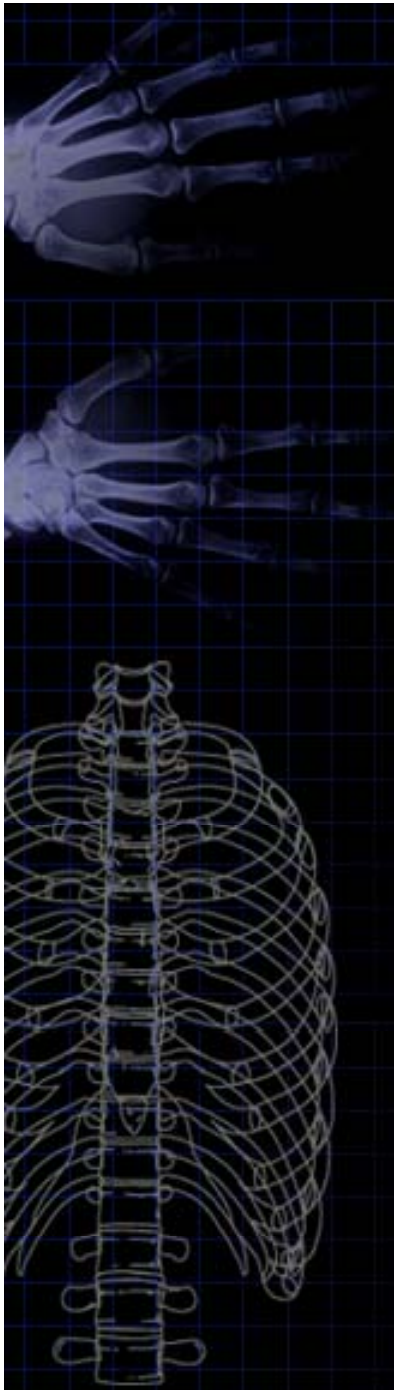
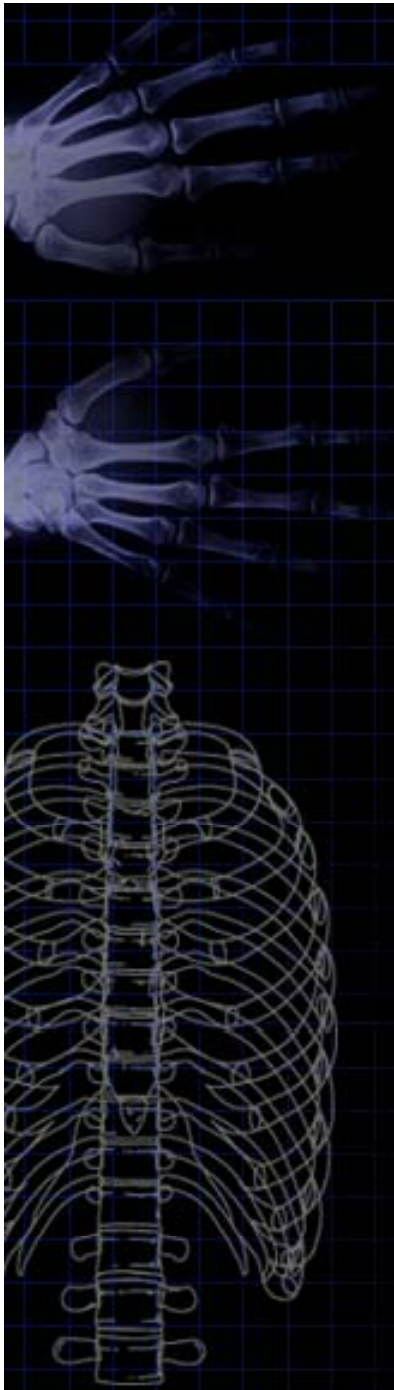


Hospital:

- Patient was transported to community hospital with OB and high risk OB/GYN consult
- Patient remained in status epilepticus throughout transport, despite Valium administration
- Shirt was noted to be damp during reassessment

And the Verdict is:

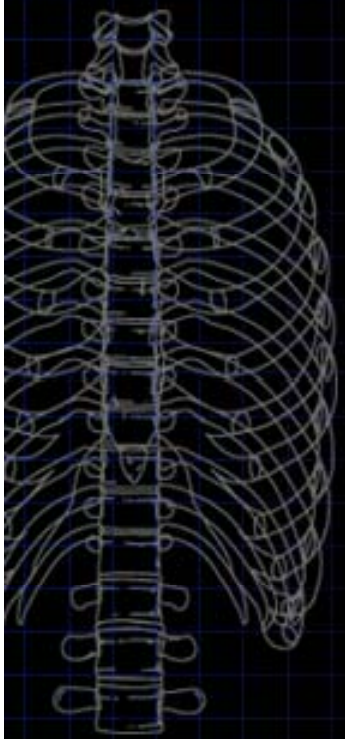
Postpartum Eclampsia:



- Also known as Toxemia
- Can present up to six weeks postpartum
- Hypertensive is considered over 140 systolic, however, is relative to patient's baseline
- Proteinuria is also a key to recognizing postpartum eclampsia, however many are not aware of darker urine indicating a possible problem

Postpartum Eclampsia Causes:

- No known risk factors other than possible family history
- More common in first pregnancies and in mother's of multiples



Treatment:

Magnesium Sulfate

– Pre-hospital, 4 – 6 grams over 10 to 15 minutes, preferably mixed with NS to dilute the effects for the patient

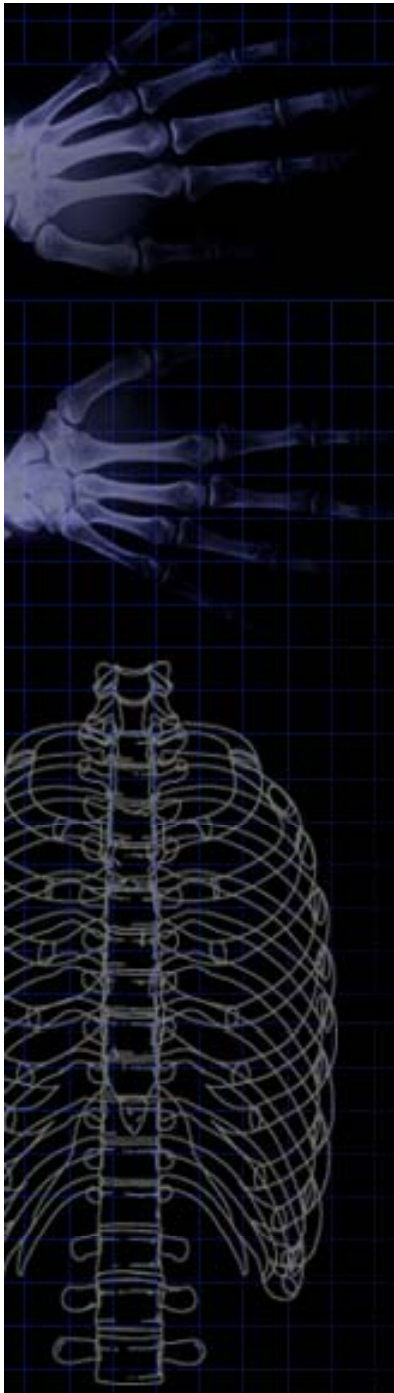
Benzodiazepines

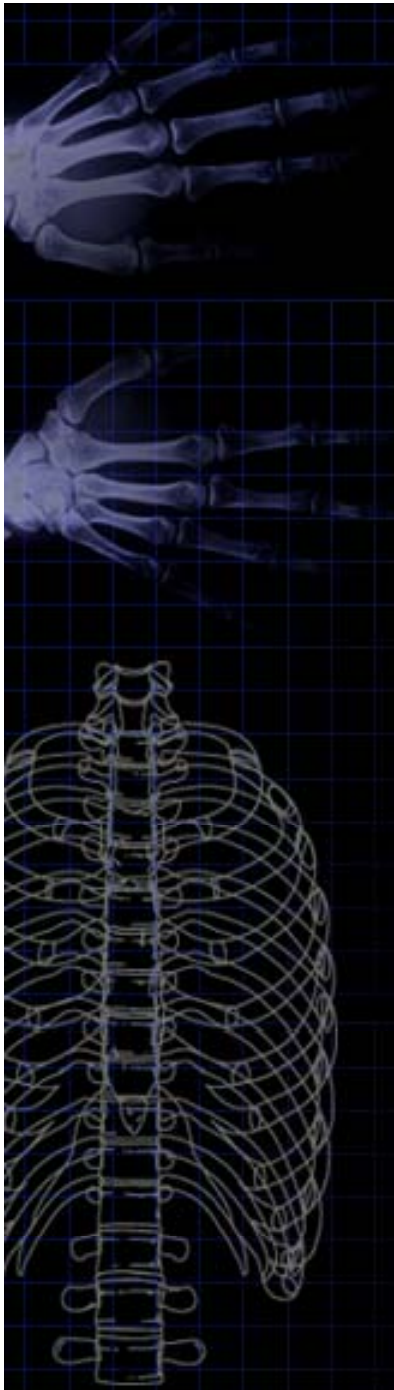
- Per protocol to stop seizures

Transport to facility with High Risk OB capabilities!!

Patient Follow Up:

- When ER staff put her in a gown, a faint linea vigra was noted on patient's abdomen
- Postictal patient denied pregnancy
- Head CT negative
- Pregnancy test negative





Patient Follow Up:

- Patient found to have three week old baby at home and had left baby with mother while she drove to store for headache relief pills
- Patient was sedated & intubated due to inability to control ongoing seizures, magnesium sulfate drip continued, sent to ICU where she was treated/monitored for 7 days

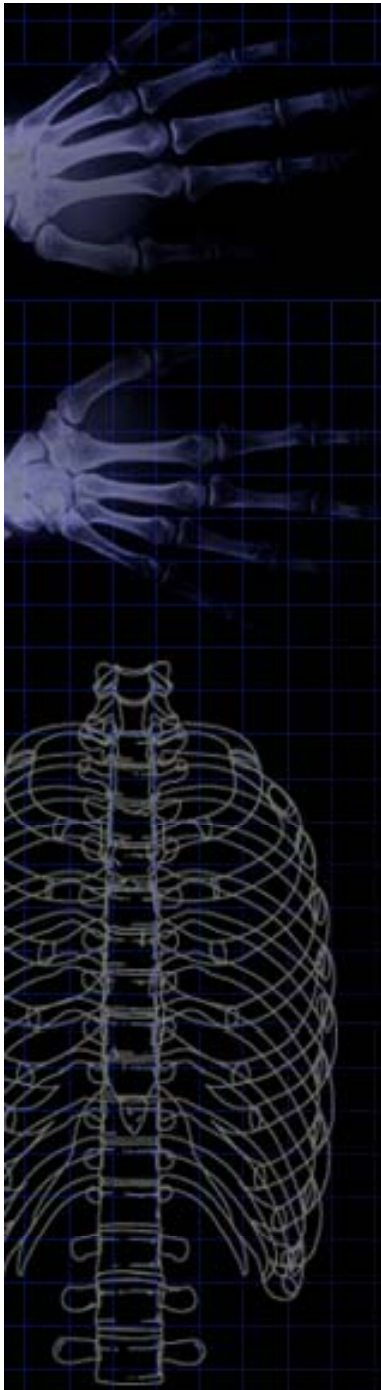
Case # 3

Dispatch Information:

You are the only medic on duty in a very rural area and are dispatched to a diary and soybean farm for a young male with chest pain

Scene Size Up:

Your patient is 6'7", approximately 65 kg, 18 year old male, has been experiencing sharp chest pain that has gradually worsening over the past few days.



Assessment:

A & O x 3

CC: Constant sharp chest pain

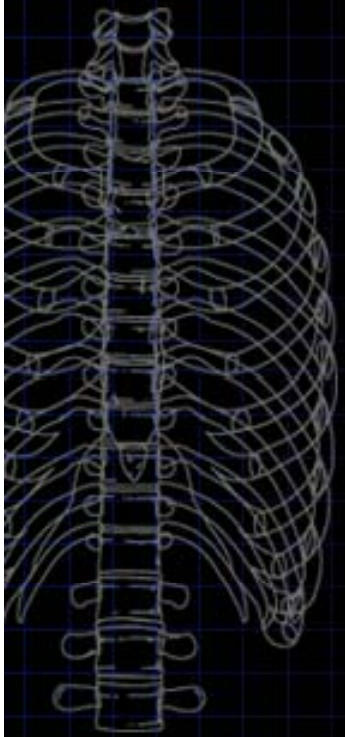
No allergies

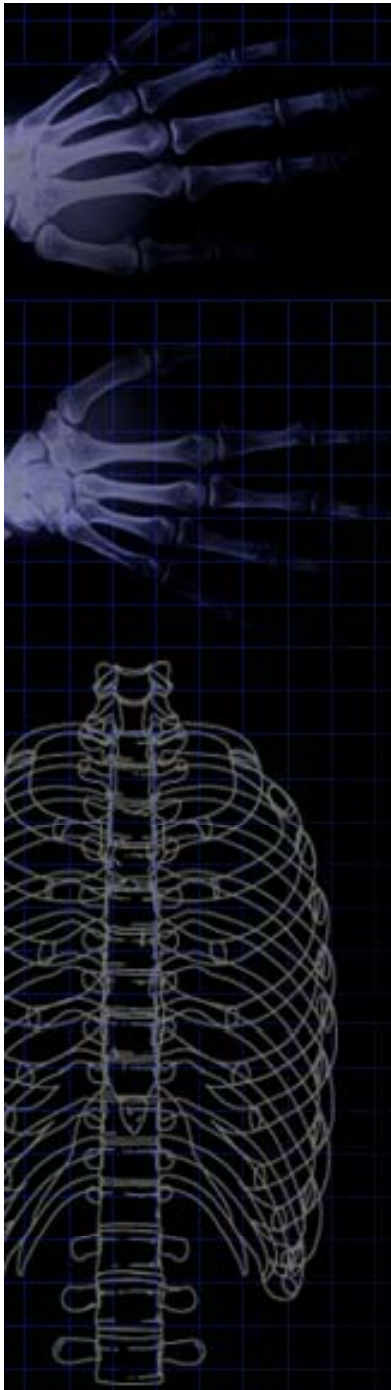
Meds: "I don't have medical problems. I don't go to the doctor. Since Dad's gone, I have to help mom on the farm."

Last Oral Intake: eggs, bacon, sausage, hashbrowns, coffee with milk

Assessment:

- Pain has been worsening for several days. Patient thinks he may have pulled his back when he jumped off the tractor.





Take Two:

Discuss with your group:

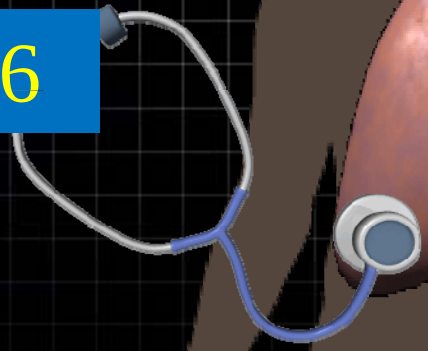
- What your priorities will be
- What assessment findings will direct your treatment?

- What questions do you have?

Assessment Findings:

PEARL

16

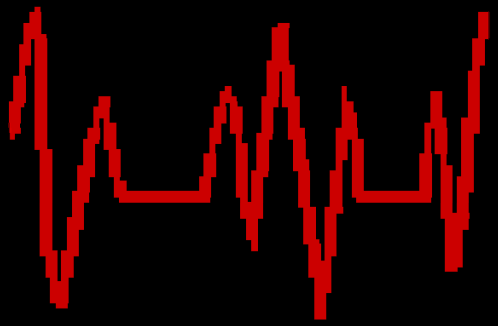


58

140/90

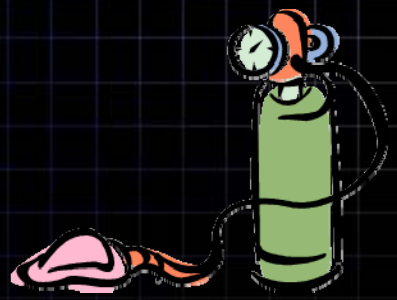
102

Skin: Cool And Pale

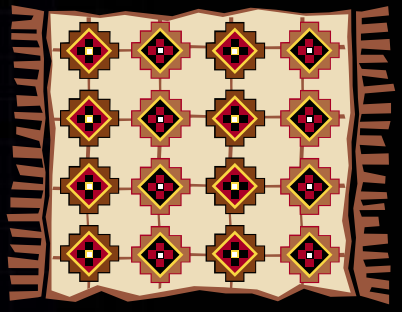


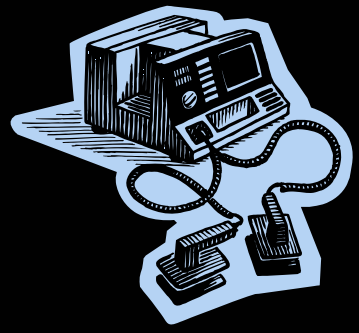
98% RA

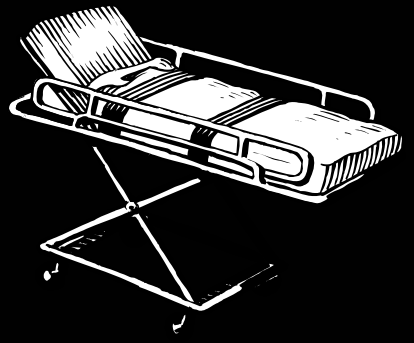
Treatment Options:

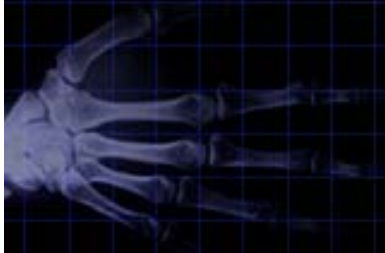


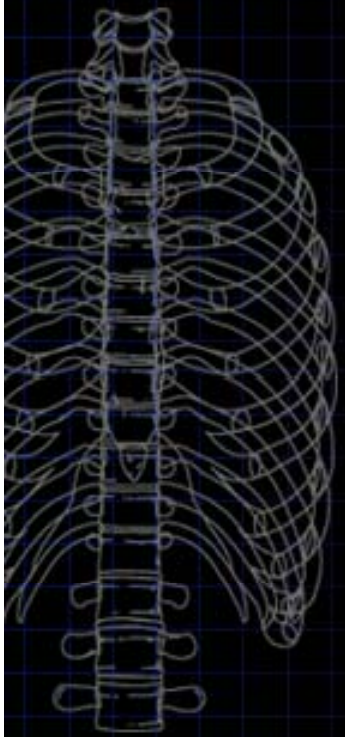
What treatment options would you like to try with this patient?











Differential Diagnosis:

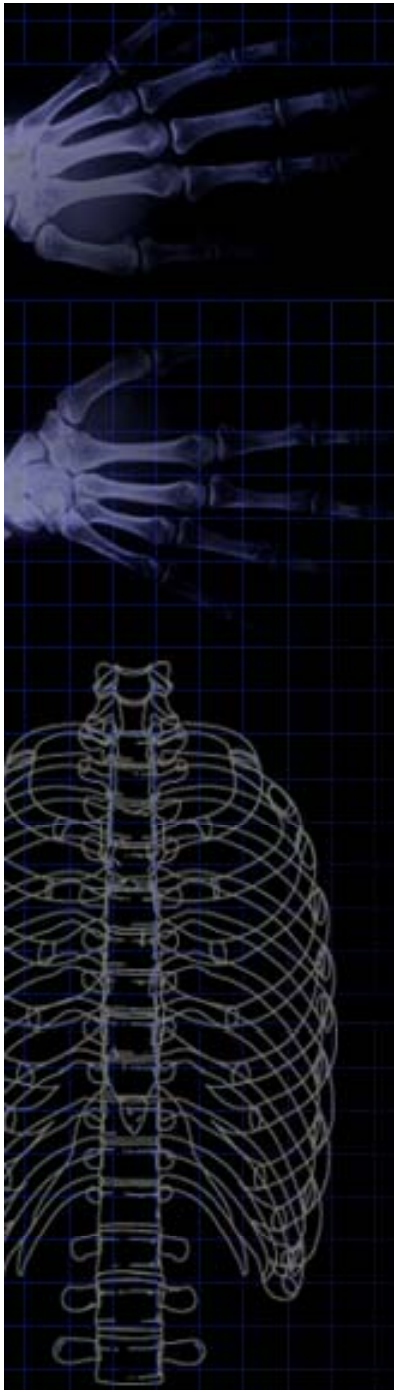
What are your differential diagnoses for this patient?

List from most to least likely with your group.

1.
2.
3.
4.

Transport:

- Patient was transported to hospital with cardiothoracic surgery capabilities.
- CT scan of chest revealed Type 1 Aortic Dissection

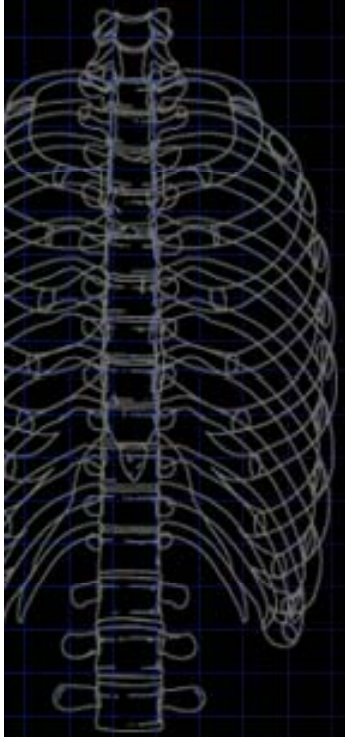


Marfan's Syndrome

- A disorder of the connective tissue that holds the body together and helps control how body grows

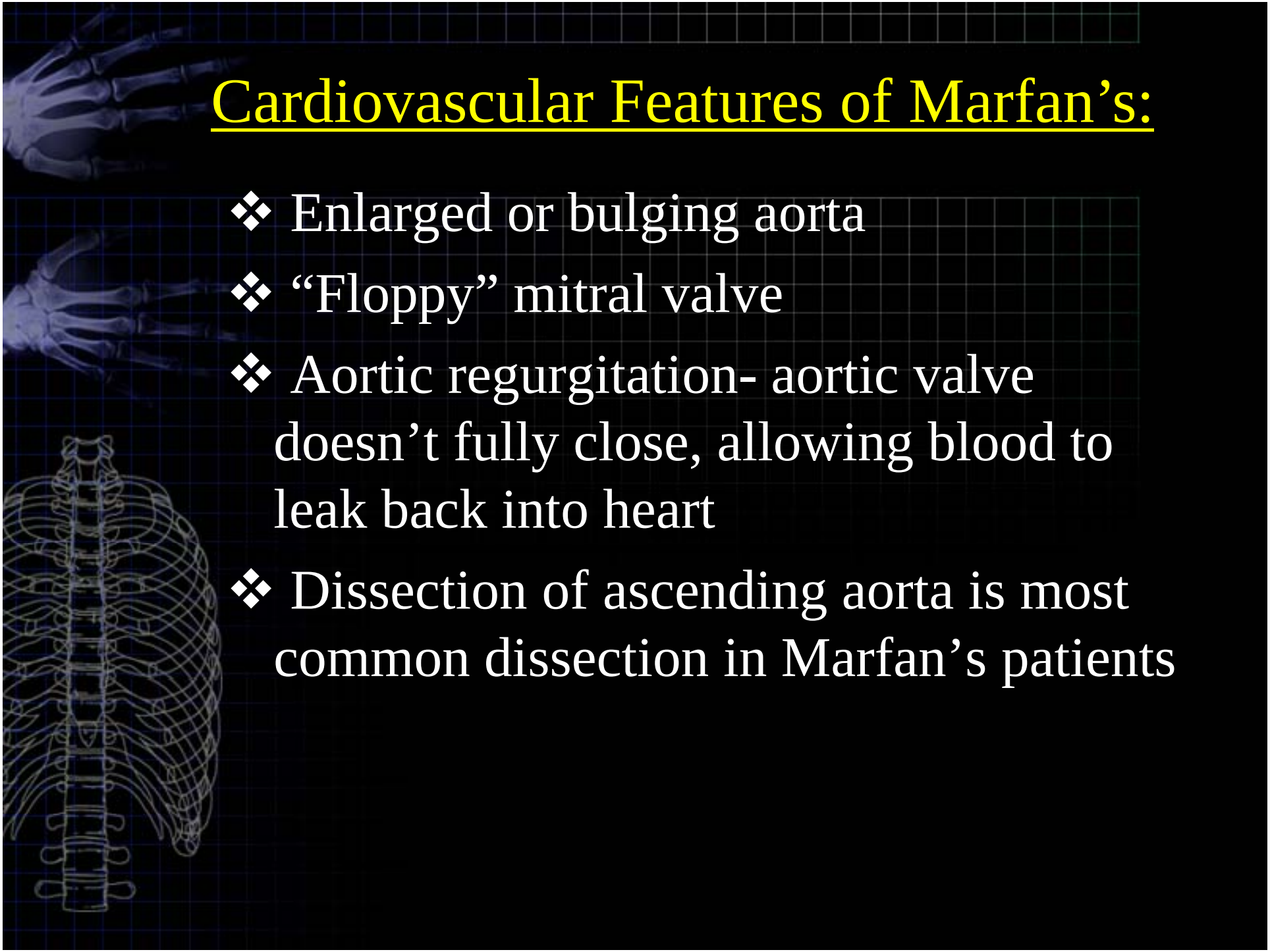
- Caused by a defect in the gene that tells the body how to make fibrillin-1 (an important protein in connective tissue)

- Affects men & women of all races and ethnic backgrounds



Marfan's Syndrome

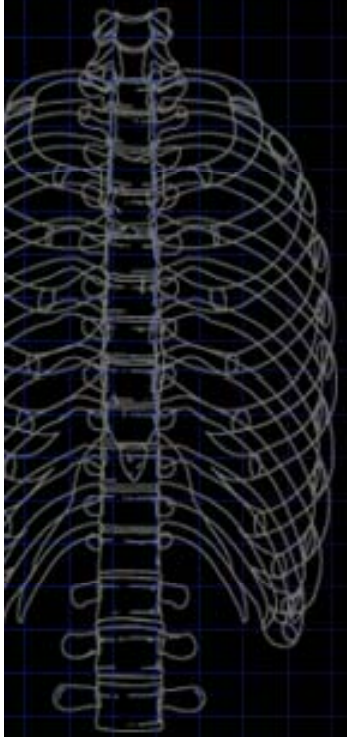
- 1 in every 5,000 people
- 3 out of every 4 people have inherited type
- 9 out of every 10 people with Marfan's have cardiovascular issues



Cardiovascular Features of Marfan's:

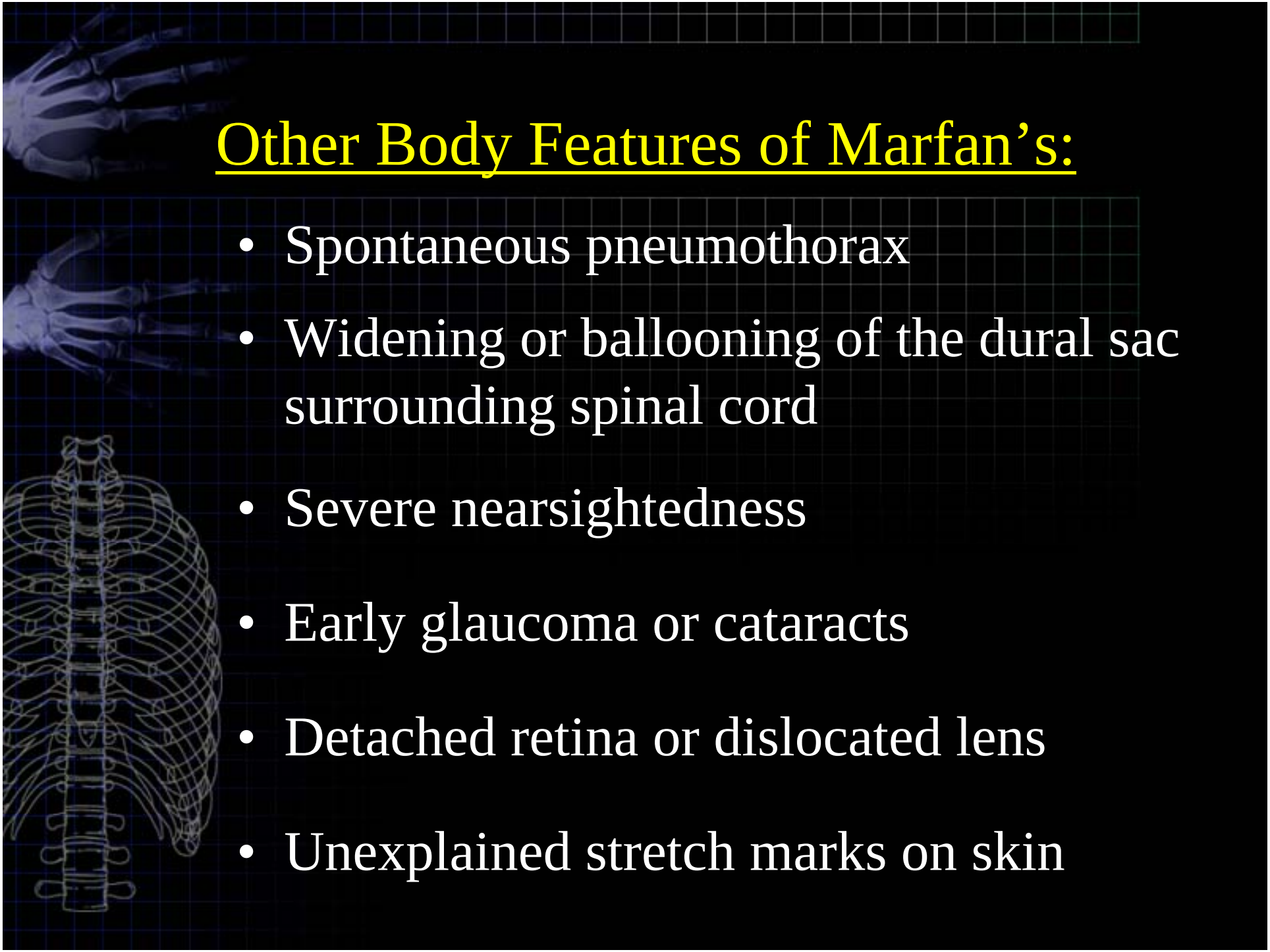
- Enlarged or bulging aorta
- "Floppy" mitral valve
- Aortic regurgitation- aortic valve doesn't fully close, allowing blood to leak back into heart
- Dissection of ascending aorta is most common dissection in Marfan's patients

Skeletal Features of Marfan's:



- Long arms and legs
- Tall and thin body type
- Curvature of the spine (scoliosis and kyphosis)
- Chest sinks in or sticks out/ "pigeon breast"
- Teeth that are too crowded

- Long, thin fingers
- Flexible joints
- Flat feet

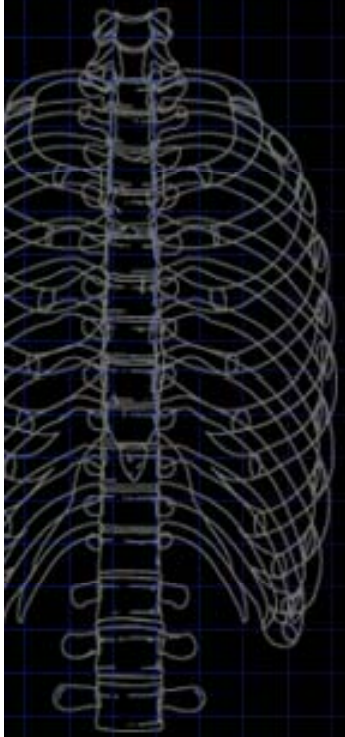


Other Body Features of Marfan's:

- Spontaneous pneumothorax
- Widening or ballooning of the dural sac surrounding spinal cord
- Severe nearsightedness
- Early glaucoma or cataracts
- Detached retina or dislocated lens
- Unexplained stretch marks on skin

Patient Follow Up:

- Cardiothoracic surgery which was successful in repairing dissection with surgical mesh
- Genetic testing revealed patient suffered from Marfan's Syndrome passed down from his father
- Post surgical repair life expectancy is greater than 70 years

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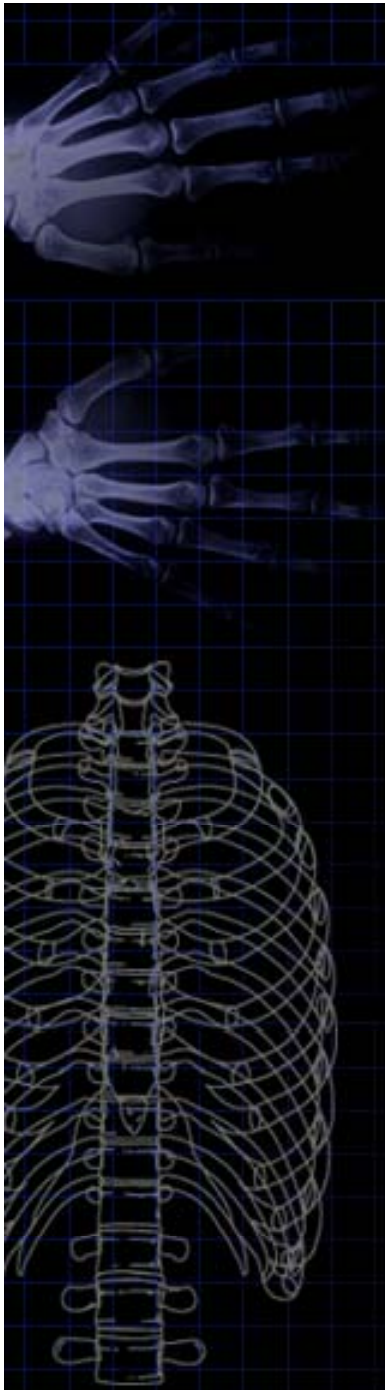
Case # 4

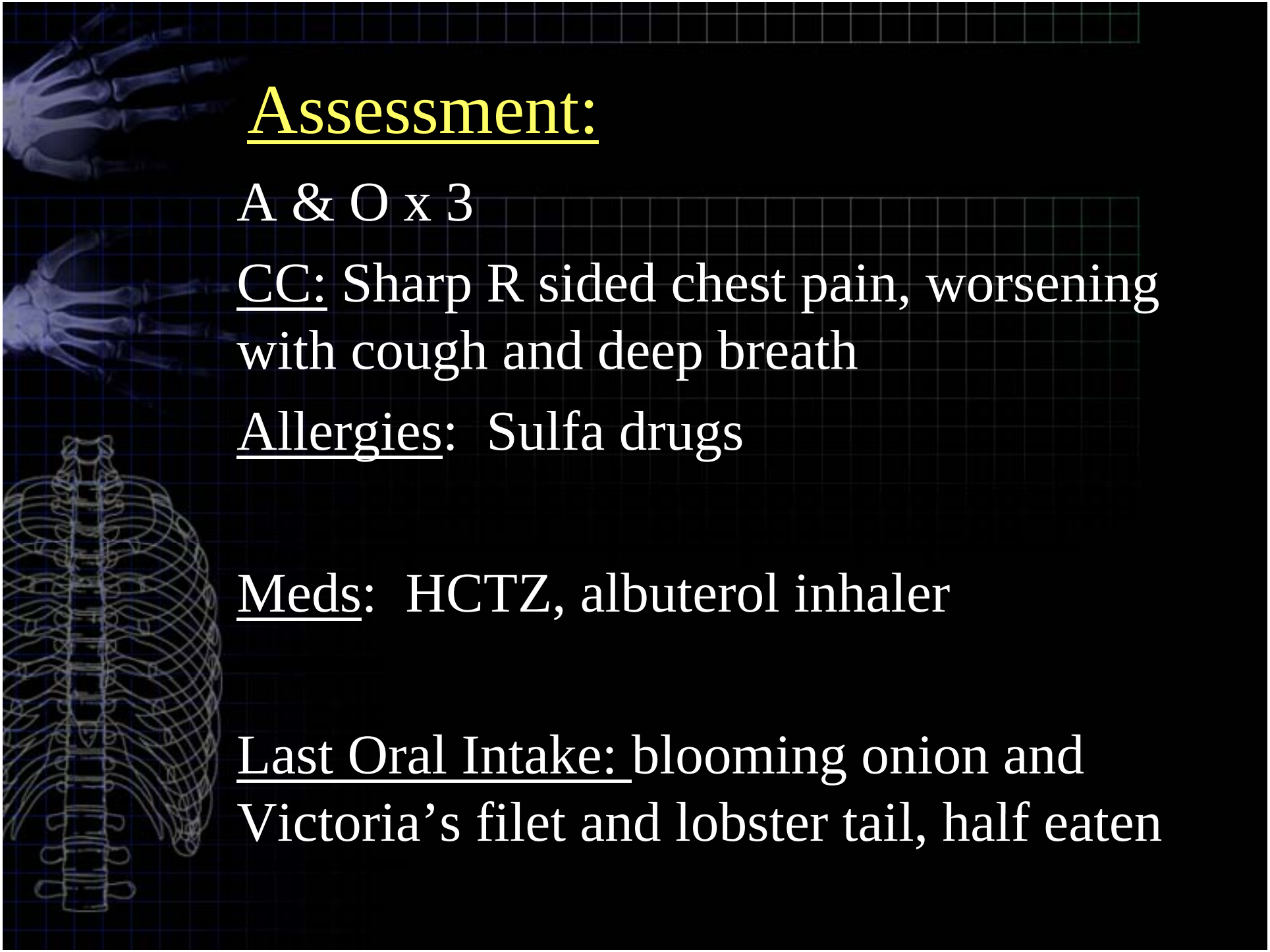


Dispatch Information:

You are called to the Outback Steakhouse for a man who's complaining of chest pain and non-productive cough.

Scene Size Up:

54 year old thin man with a dry, irritable cough sits at a booth with a half eaten meal in front of him. He appears in pain and grimaces when he coughs.



Assessment:

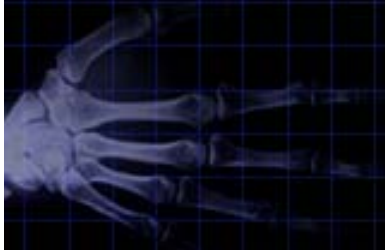
A & O x 3

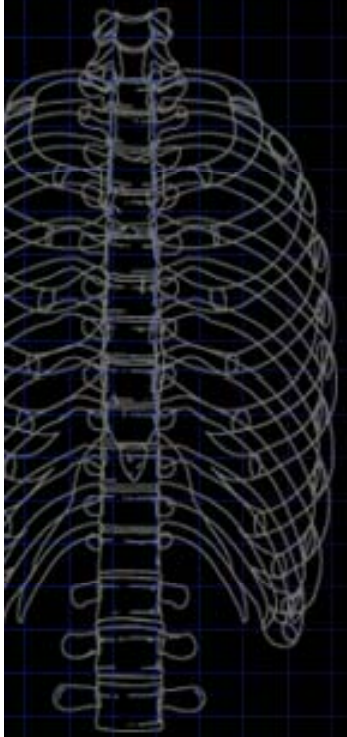
CC: Sharp R sided chest pain, worsening with cough and deep breath

Allergies: Sulfa drugs

Meds: HCTZ, albuterol inhaler

Last Oral Intake: blooming onion and Victoria's filet and lobster tail, half eaten





Take Two!

Discuss with your group:

- What your priorities will be
- What assessment findings will direct your treatment

What questions do you have?

Assessment Findings:

PEARL

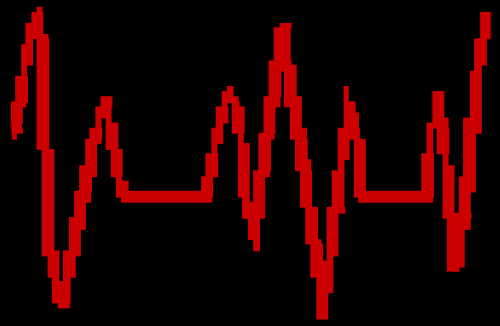
20

92

140/80

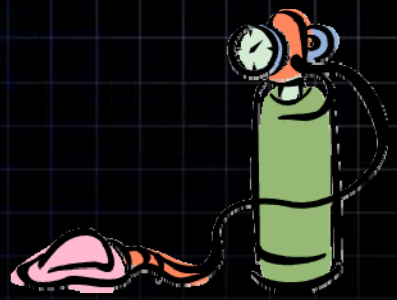
98

Skin: Warm & Dry

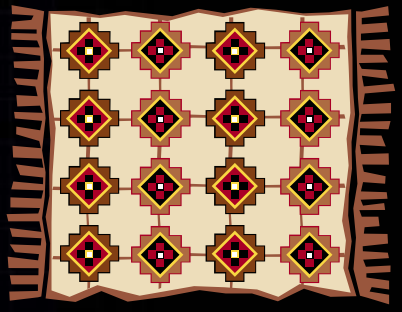


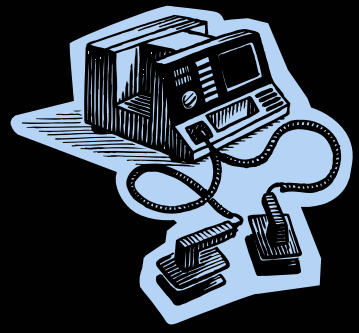
96% RA

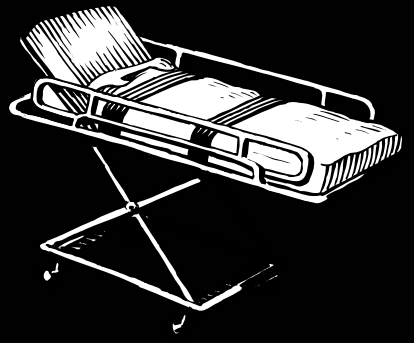
Treatment Options:

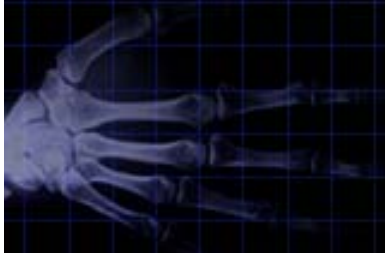


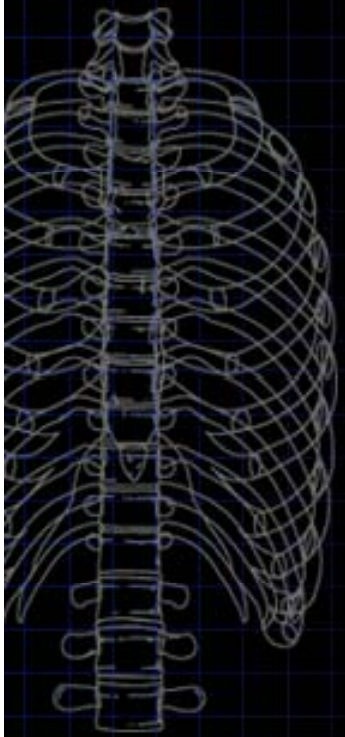
What treatment options would you like to try with this patient?









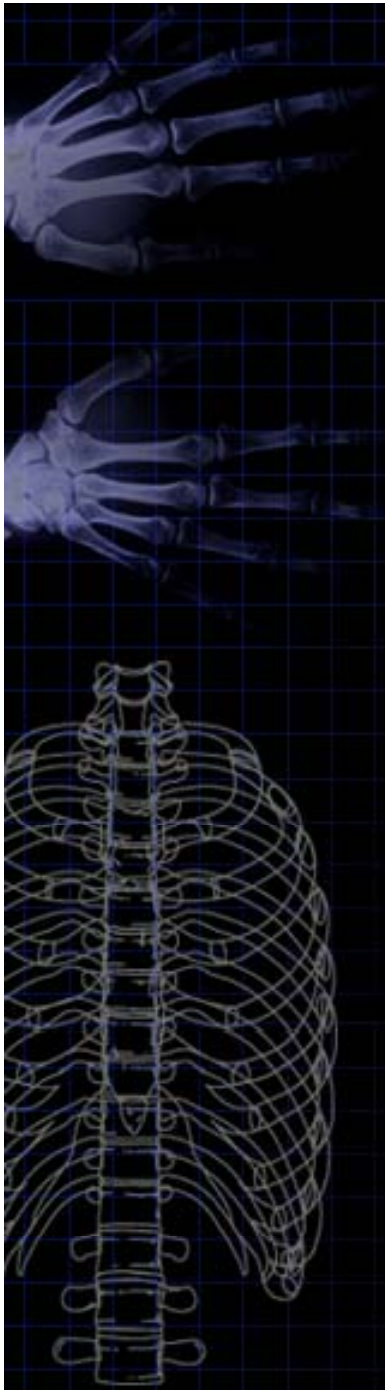


Differential Diagnosis:

What are your differential diagnoses for this patient?

List from most to least likely with your group.

1.
2.
3.
4.

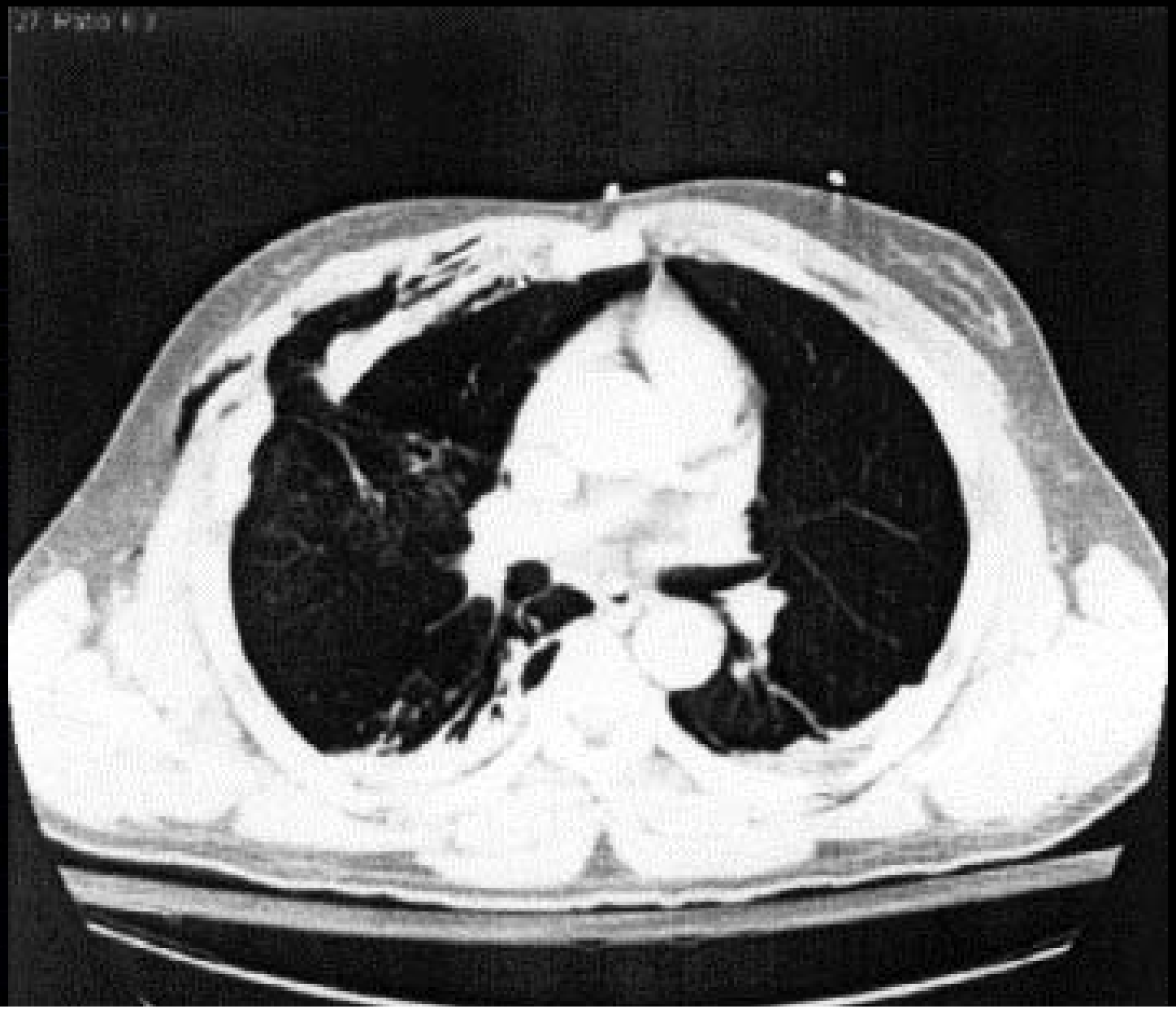


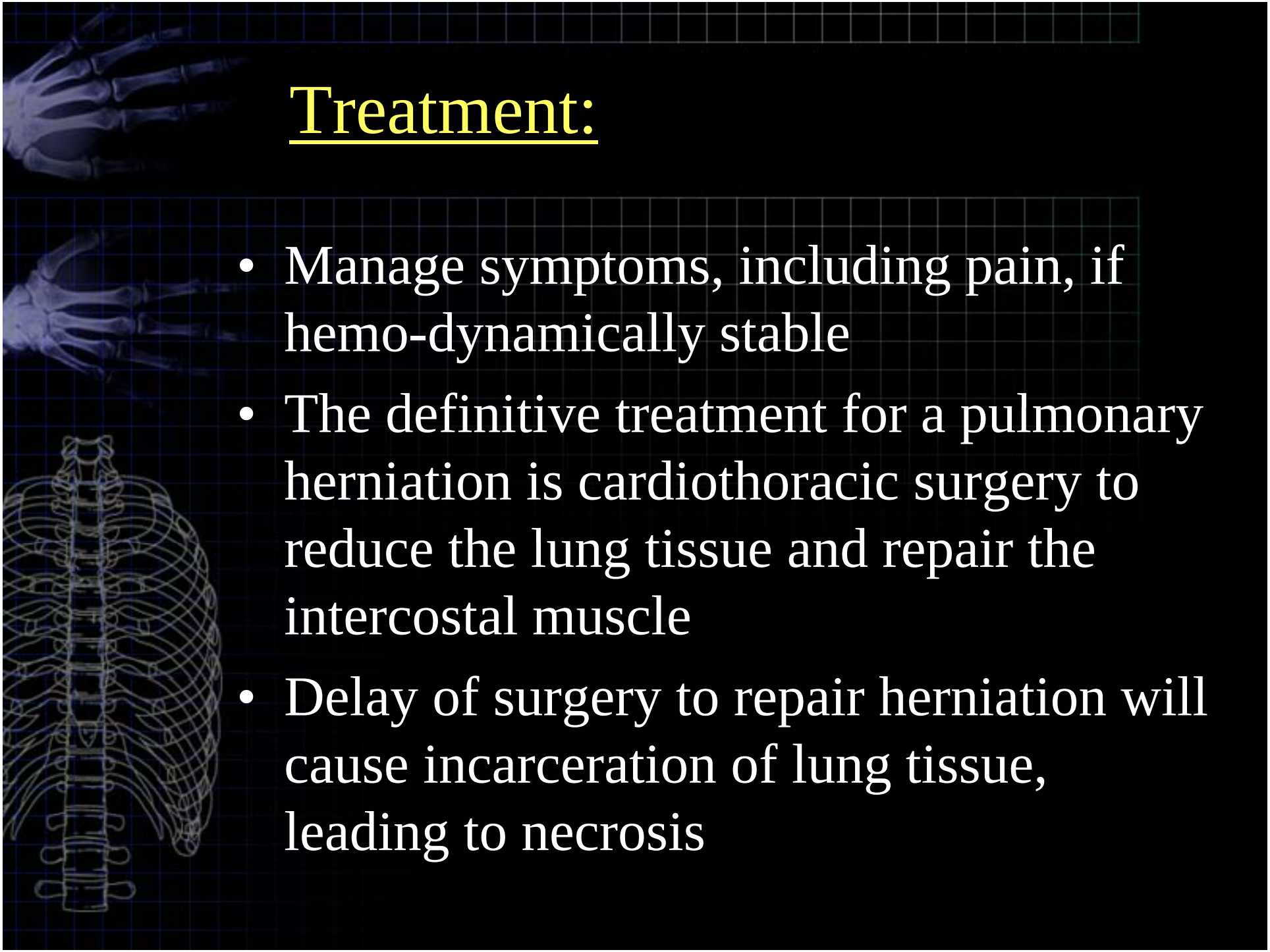
Hospital:

Chest x-ray, lab work, CT scan

Patient’s CT Scan showed….

CT Scan of Chest



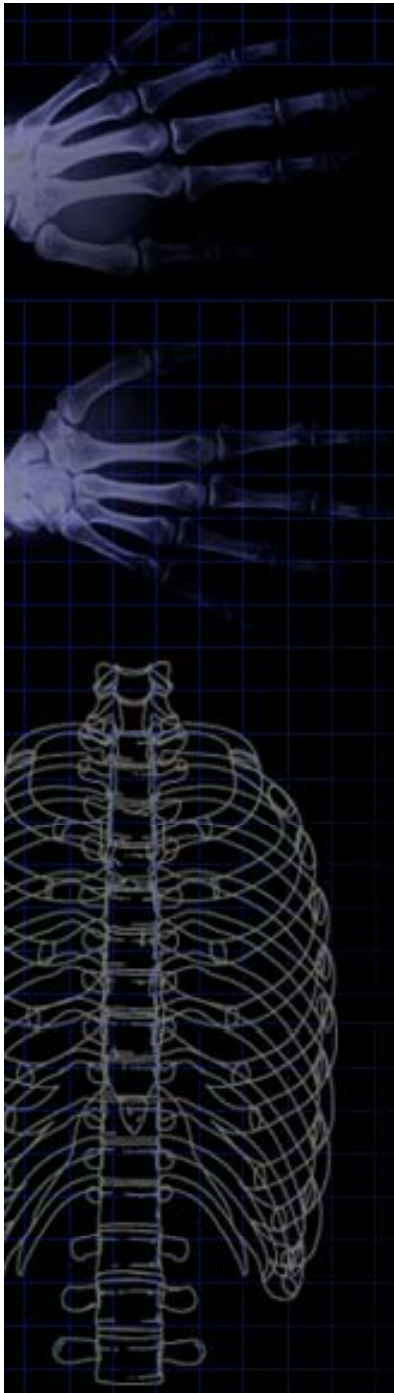


Treatment:

- Manage symptoms, including pain, if hemo-dynamically stable
- The definitive treatment for a pulmonary herniation is cardiothoracic surgery to reduce the lung tissue and repair the intercostal muscle
- Delay of surgery to repair herniation will cause incarceration of lung tissue, leading to necrosis

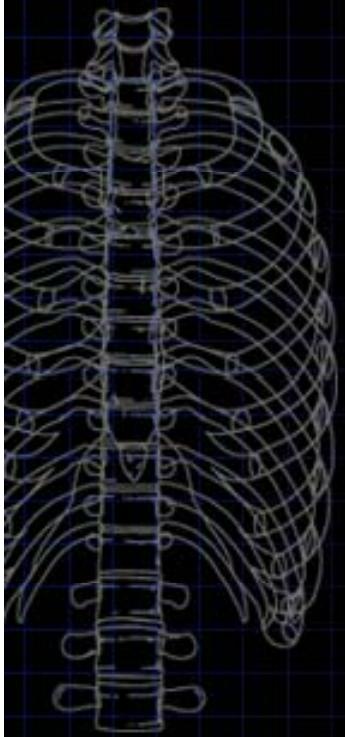
Pulmonary Hernia S/Sx:

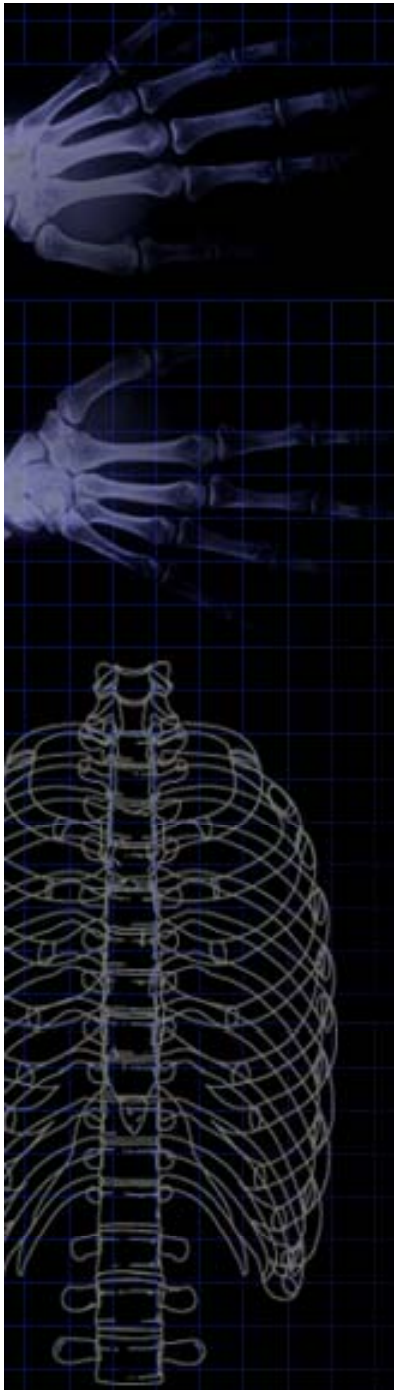
- Chest pain, worse with inspiration
- Crepitus mass between ribs
- Breath sounds will be present
- Not necessarily tachycardic, but could be due to injury



Pulmonary Hernia Causes:

- Most common in patients with:
  - History of penetrating trauma to chest
  - Past chest tube placement
  - Previous cardiothoracic surgery





Pulmonary Hernia Treatment:

- Manage ABCs
- Oxygen as needed for comfort
- Consider stabilization of mass with external pressure over site to help decrease protrusion
- Transport to hospital with emergent cardiothoracic surgical capabilities

Patient Follow Up:

- Lung herniation was surgically reduced in the OR
- Patient was in hospital for 5 nights to ensure there was no further issue with the site repair/sutures when he coughed

Conclusion:

- Not every routine call will be routine.
- Remember to use ALL you assessment skills to get a full picture of your patient.
- Don’t hesitate to think out of the box, because not all hooves are horses, some may be zebras