

# So, you are having some pain in your chest

Plains to Peaks RETAC Conference

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WHY DO YOU ALWAYS  
GET TO WASH AND I  
ALWAYS HAVE TO DRY?

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2-13

Dog Days

I have no  
financial  
disclosures

FULL MOON

Monday



# Objectives

- Discuss causes of chest pain that aren't an MI
- Discuss recognition of heart attacks without chest pain

# Not All Chest Pain Is The Same...

- Some people have chest pain that is indicative of a heart attack
- Some people have chest pain that is cardiac related, but not a heart attack
- Some people have chest pain that isn't cardiac related
- And
- Some people have no chest pain but they are having a heart attack.
  
- How do we know the difference, what interventions do we do, and what should we encourage them to do?
- Let's talk about those questions.

# Meet the players

- **Tillie**
- **Maude**
- **Jackson**
- **Herman**
- **Tucker**
- **Jefferson**
- **Stella**
- **Josie**



# Miss Tillie

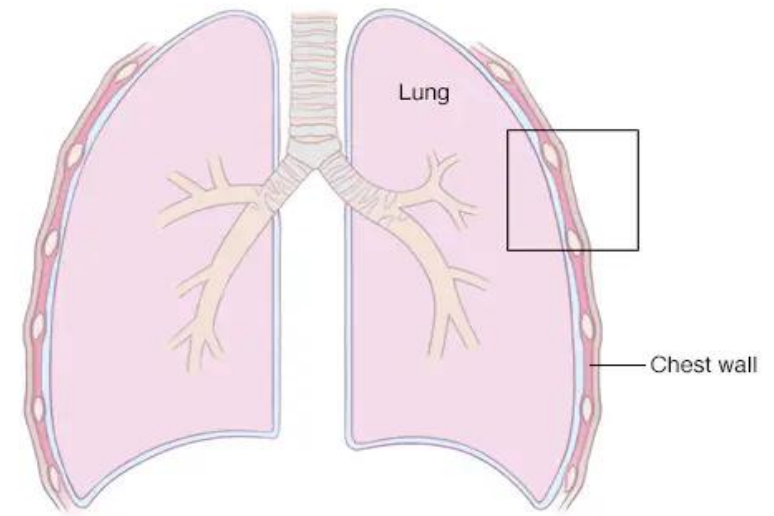
- Miss Tillie is a 50-year-old female complaining of chest pain.
- She reported that she has recently been treated for viral pneumonia and has a bad cough.
- She finished her antiviral medications and was feeling better, except for the cough that won't go away.
- Today she woke up with chest pain that hasn't gone away.

# **What is your field impression?**

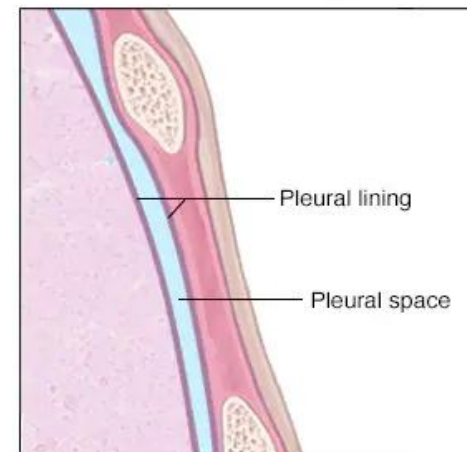
1. A Heart Attack
2. Heart palpitations
3. Pleurisy
4. Undiagnosed sinus infection
5. An acute myocardial infarction

# Pleurisy

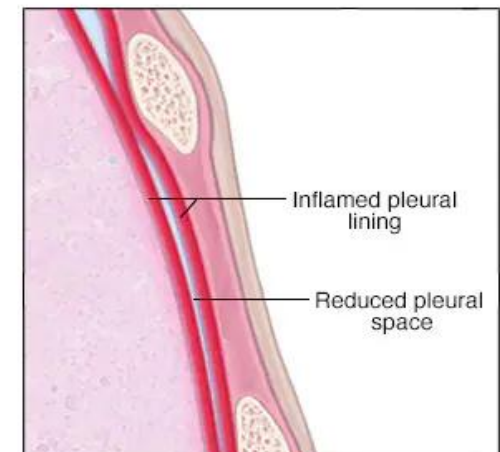
- Pleurisy is caused by an inflammation of the pleura, the lining of your lungs and chest cavity.
- The pleura keeps your lungs from rubbing up against the wall of your lungs every time you breathe.
- With pleurisy, the pleura is swollen and inflamed and rub against each other.
- Causes of pleurisy:
  - A bacteria, virus, or fungus.
  - Cancer
  - Blood clot
  - Autoimmune disease – like lupus or rheumatoid arthritis



Typical pleura



Pleurisy



# Signs & Symptoms of Pleurisy

- Chest pain – worse when you breathe
- Pain radiating to the shoulders or back
- Shortness of breath
- Cough
- Fever

# Assessment Questions and Findings

- On the OPQRST questions, the provoke question would answer that breathing and coughing would make the pain worse. The pain is reproducible
- Taking a deep breath would be nearly impossible due to pain
- It would be hard to assess breath sounds because the patient has shallow breathing.
- Ask about a recent cough
- **Treatment**
  - Depends on the cause of the inflammation.
  - Antibiotics for a bacteria infection
  - Rest, laying on the affected side
- Healing is slow because the pleura does not have great blood flow so antibodies in the blood don't get to the site very quickly.

# Ms. Maude

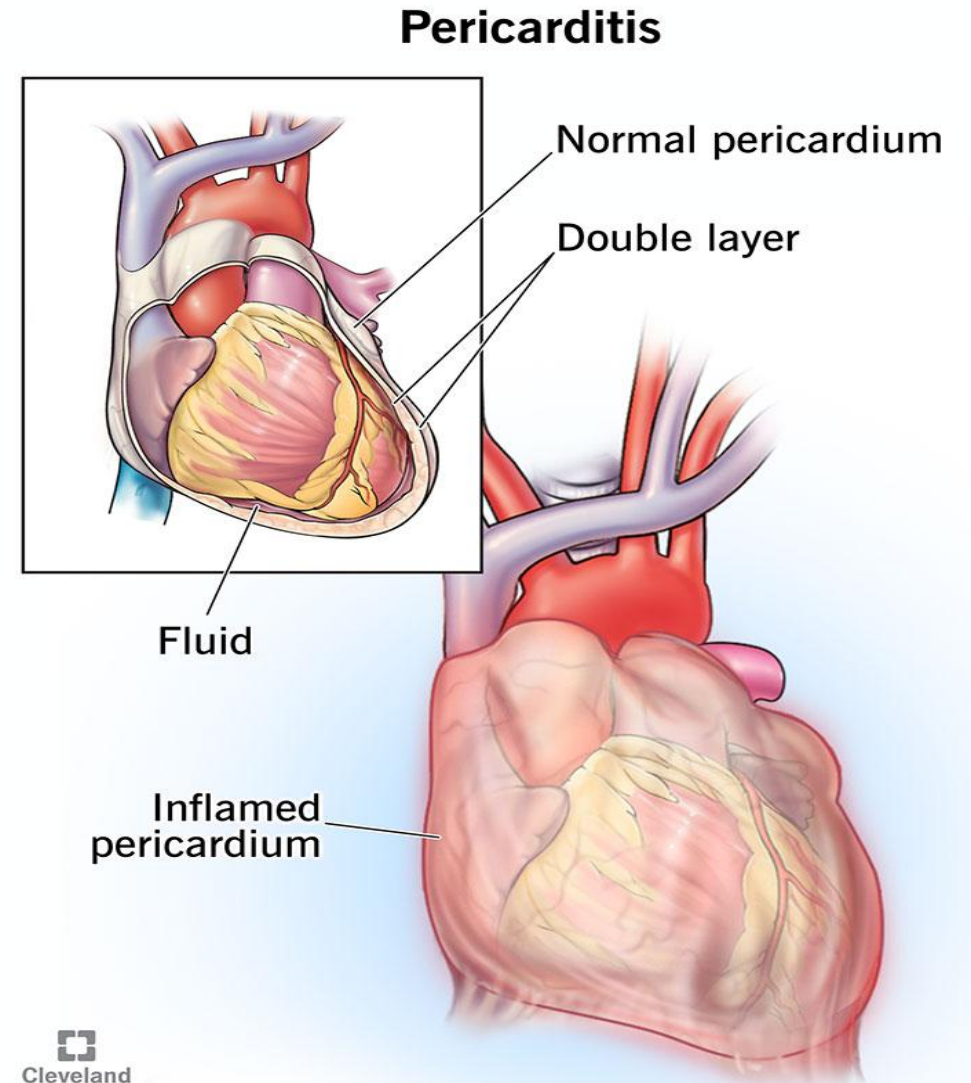
- Ms Maude is a 45-year-old female complaining of chest pain.
- She tells you the pain is so bad that she had to call 911 and she is sorry to bother you.
- It feels like someone is stabbing her with a knife in the back between the shoulder blades.
- She has been recovering from a sinus infection and tooth infection.
- She has been very congested and hasn't been eating much because her tooth hurts too much.
- She doesn't have any other medical history and says she tries to take good care of herself.

# What is your field impression?

1. A thoracic aneurysm
2. Acid reflux
3. Pleurisy
4. Undiagnosed sinus infection
5. Pericarditis

# Pericarditis

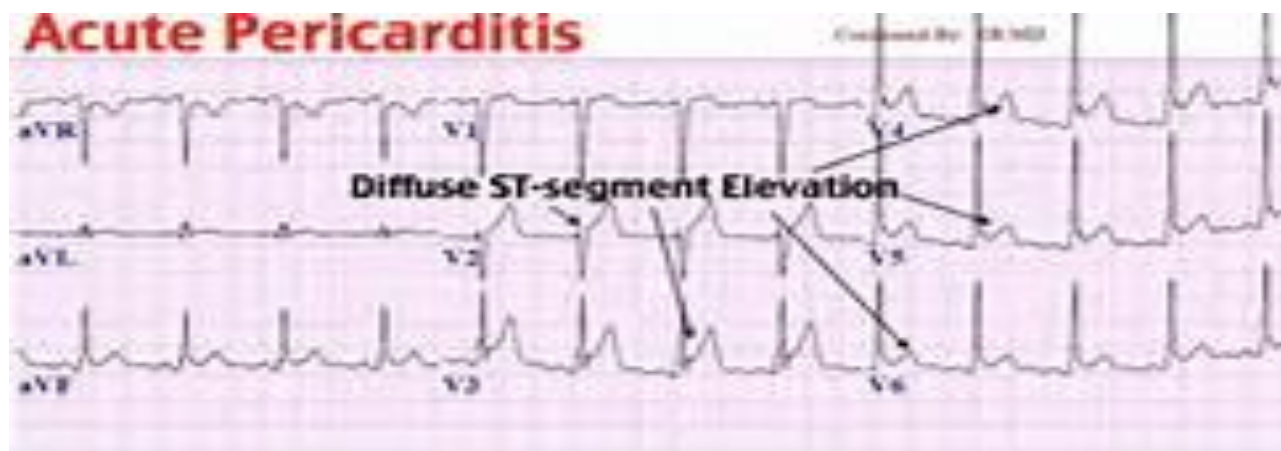
- Pericarditis is an inflammation of the pericardium, the sac around the heart.
- Chest pain is one of the primary complaints with this condition.
- The pain is described as a knife-like sharp pain.
- The pain is changed by movement, respiration, swallowing, etc.
- Pain radiates to the back of neck and shoulders.
- Often times healthcare providers in the hospital can't find the cause



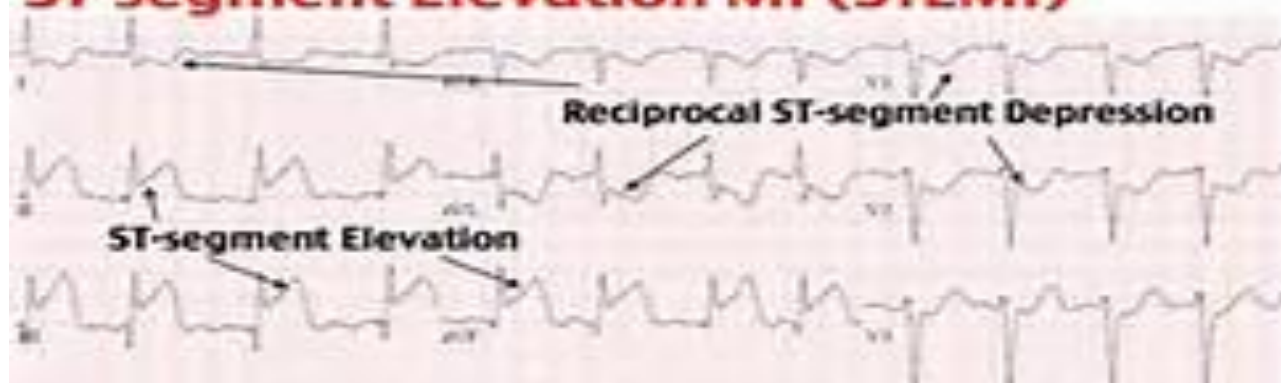
# Assessment Questions and Findings

- Ask about other infections, ie-sinus infection, tooth or ear infection
- A 12-lead would show global ST elevation with no reciprocal changes
- **Treatment**
- Supportive care and transport
- Leaning forward may help with the pain

## Acute Pericarditis



## ST-segment Elevation MI (STEMI)



# Meet Jackson Jack

- Jackson is a 39-year-old male complaining of chest pain.
- His skin is pink warm and dry and he is answering your questions appropriately.
- He is also complaining of some shortness of breath.
- After trying several times, your new EMT partner say he can't find a radial pulse and couldn't hear the blood pressure.

# What is your field impression?

1. A VAD patient
2. Anxiety
3. Pleurisy
4. A heart attack
5. Pneumonia

# Ventricular Assist Device-VAD

- Used when there is extensive damage to one ventricle or both.
- For some, the VAD is temporary while they are waiting for a new heart.
- For others, the VAD will extend their life and improve the quality of life.
- The VAD will pressurize the blood and eject it out to the body.
- The patient won't really have a palpable pulse or a blood pressure.



# Assessment Questions and Findings

- Patients may call 911 for device alarms, shortness of breath, infection, bleeding, stroke-like symptoms and sometimes chest pain.
- Use mental status and skin color for evaluation since they don't have a blood pressure or pulse
- You can listen to the heart for a high-pitched “whirring” sound.
- The MAP should be 70-90 mmHg
- **Treatment**
- Look on the VAD battery for their VAD coordinator and contact them
- If you need to cut off clothes, be careful not to cut the wire
- Be careful when giving fluid
- Remember to take their spare battery when transporting

# Herman-my man

- Herman is a 19-year-old male complaining of chest pain
- He tells you that it feels like his heart is beating very fast and skipping some beats
- Herman is a college freshman and has been studying for finals day and night for several days
- You feel his pulse and it is very fast with a few missing beats
- He tells you he doesn't have any medical history, meds, or allergies

# **What is your field impression?**

1. Sinus infection
2. Anxiety
3. Heart palpitations
4. A heart attack
5. Pulmonary embolism

# Heart Palpitations

- Herman drank multiple energy drinks, the caffeine increased his heart rate and caused some missed beats.
- Enough missed beats could lead to ventricular tachycardia
- Can be felt in the neck/throat and the chest
- Other causes of heart palpitations
  - Stress
  - Exercise
  - Medications

# Assessment Questions and Findings

- Has Herman had this feeling before?
- When asked about his last oral intake, he tells you that his buddies told him to drink some energy drinks to help stay awake while studying.
- He has never had an energy drink before
- How often is he skipping beats?
- Cardiac monitor if available
- **Treatment**
  - Does he have any other complaints? Dizziness, falls, headache
  - Don't drink anymore energy drinks, drink plenty of water, and get some sleep

# Traveling Tucker

- Tucker is a 71-year-old male complaining of chest pain.
- He describes the pain as pin-point chest pain on the left side.
- He is also complaining of difficulty breathing
- He has clear and equal breath sounds.
- His pulse ox is 84% on room air
- He just returned from Hawaii

# What is your field impression?

1. GERD
2. Anxiety
3. Asthma attack
4. Pulmonary Embolism
5. Heart attack

# Pulmonary Embolism

- Symptoms include chest pain, shortness of breath, coughing up blood, dizziness, tachycardia
- Most commonly start as a blood clot in the leg (DVT)
- Most embolisms are blood clots, but can also be part of a tumor, or a fat embolism from a broken long bone.

# Assessment Questions and Findings

- Chest pain is described as pin-point with associated shortness of breath.
- Breath sounds are clear because the problem is getting blood to the alveoli, not air to the alveoli.
- Risk factors include sitting for long period of time, smoking, oral contraception, family history, supplemental estrogen, recent changes in blood thinner medication, and past COVID-19 patients
- Ask about recent leg pain, warmth, swelling
- Check for distal pulses
- **Treatment**
- Oxygen and supportive care
- Hospital treatment-blood thinners, surgical clot removal, vein filter

# Jittery Jefferson

- Jefferson is a 30-year-old male complaining of chest pain.
- He says it feels like a pressure in his chest or like someone is squeezing his chest.
- He is tachycardic and unable to sit still. You think he is on the edge of freaking out.
- He is breathing very fast.
- He denies any recent trauma or illness, but he has a lot going on in his life.

# What is your field impression?

1. GERD
2. Anxiety
3. Pericarditis
4. A heart attack
5. Musculoskeletal pain

# Anxiety

- Anxiety is a response to the anticipation of danger. The source of the anxiety is often unknown.
- One of the main complaints is chest pain.
- Prior to a diagnosis of anxiety, patients often call for an anxiety attack thinking they are having a heart attack.
- The signs of an anxiety attack include:
  - Sweaty/cool skin
  - Rapid breathing
  - Fast pulse
  - Chest pain/tightness

# Assessment Questions and Findings

- If the patient has had an anxiety attack before, ask if this chest pain feels similar to a prior anxiety attack.
- Was the patient given any methods to help with the anxiety
  - Meditation, breathing exercises, etc
- If the patient doesn't have a history of anxiety, treat as cardiac chest pain.
- It doesn't help to tell them to calm down.
- Sometimes there is an obvious trigger and sometimes there isn't
- **Treatment**
  - Supportive care, was there a event that caused the anxiety attack, if tachypnic-coach their breathing
  - Cardiac monitor is available

# Strong Stella

- Stella is a 55-year-old female complaining of chest pain.
- She tells you that the pain is worse when she lifts her arms up.
- It feels better to hold her arm pits.
- She denies any medical history, medications, or allergies
- Vitals are in the normal range

# What is your field impression?

1. GERD
2. Anxiety
3. Pleurisy
4. A heart attack
5. Musculoskeletal pain

# Musculoskeletal pain

- Chest pain can be caused by musculoskeletal issues.
- This pain is usually made worse by palpation, deep breathing, pressure.
- It is generally reproducible.
- This kind of chest pain doesn't usually have the anxiety and the pale/cool/clammy skin that cardiac chest pain produces.

# Assessment Questions and Findings

- On the OPQRST questions, the provoke question would answer that pressure or movement would make the pain worse.
- Ask about recent strenuous activity, excessive coughing, new exercise routines.
- Do a good assessment on your patient.
- **Treatment**
  - Good assessment
  - PO Tylenol or Advil, rest, ice or heat

# Not-so-Jovial Josie

- Josie is a 68-year-old female complaining of fatigue and back pain.
- She has been tired for a couple of days, but today she can hardly stay awake.
- While on scene, she tells you she is starting to have some pressure in her chest. It feels like the back pain is moving into her chest.
- She has a history diabetes, high cholesterol, and hypertension.
- She is a little hypotensive and bradycardic

# What is your field impression?

1. A VAD patient
2. Anxiety
3. Narcolepsy
4. A heart attack
5. GERD

# And sometimes it is an MI without chest pain

- We call this a silent heart attack.
- Women are more likely to have silent heart attacks than men.
- Men have more heart attacks, but more women die of first-time heart attacks
- By the time a female develops chest pain/pressure, she has been infracting for awhile.  
The initial signs of fatigue and back pain are the not-so-obvious presenting signs

# Assessment Questions and Findings

- On the OPQRST questions, the provoke question would answer that nothing makes it better or worse.
- Ask about changes in their daily routine. Do they sit down to change clothes or take a break halfway up the stairs
- Ask about family history
- Treatment-give ASA (if no contradictions), Oxygen to a level of 94%, 2 large bore IVs, cardiac monitor if available, transport to a hospital with a cath lab.

# References

- [Pleurisy - Diagnosis and treatment - Mayo Clinic](#)
- [Pericarditis: Symptoms, Causes and Treatment](#)
- [Ventricular Assist Devices \(VAD\): Purpose and Risks](#)
- [What EMS needs to know about ventricular assist devices \(VADs\)](#)
- [Pulmonary embolism - Symptoms and causes - Mayo Clinic](#)  
[Pulmonary embolism - Symptoms and causes - Mayo Clinic](#)
- [Heart palpitations - Symptoms & causes - Mayo Clinic](#)



## Questions??

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