



ThinkAskLearn
Health Professional Education

Chest Pain Management: More than you thought...

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Not all what it seems

- 38 year old male
- Presents at 0300hrs with "Rt sided chest pain, non radiating, with associated L leg numbness, Nil SOB with same"
- Onset 2 hrs ago, Finished work at 2300hrs
- Nil previous Hx
- "dull ache in his chest and epigastrium and RUQ
- Also noticed that his left leg felt weak and tingling" med notes...


What Triage Category would you give this man?




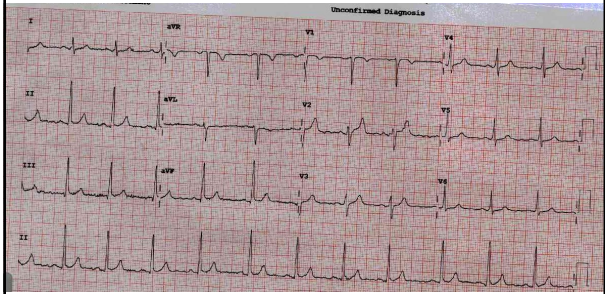
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Triage Category

- P 80, BP 130/76, RR 18, T 36.4 Sats 98% RA, GCS 15,
- ATS 3
- Given Panadiene Forte, Ketoralac IM,
- ECG undertaken
- Placed in WR




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Seen By ED Medic


- Waited in WR for 6+ hrs SB DR 0900hrs,
- Social Hx
 - Non smoker
 - Denies Etoh
 - Denies illicit drugs
 - Works in fast food restaurant
 - Usually fit and well



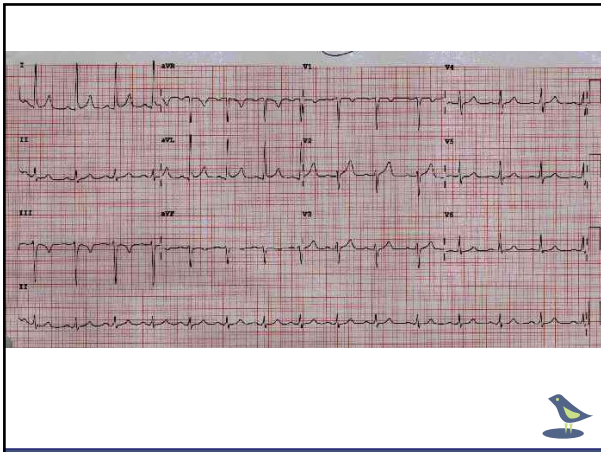
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Clinical Assessment

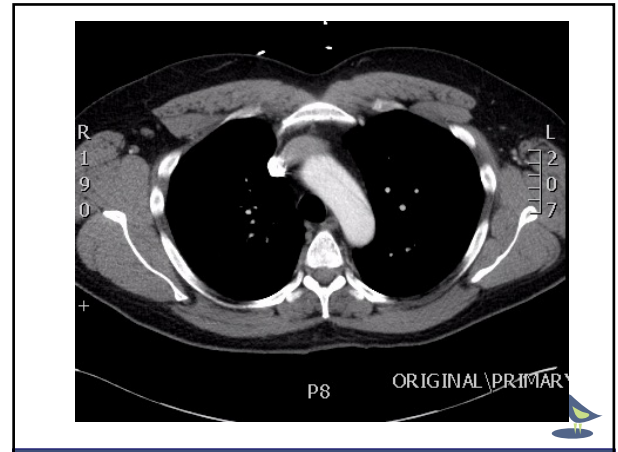
- Neuro:
 - Left leg 4/5 power
 - Right leg 5/5 power
 - Sensation of lower limb intact
- CVS:
 - Cap refill < 2 seconds
 - Dual heart tones - diastolic murmur
 - Poor right pulse radial compared to bounding left radial pulse
- BP right arm 80/50, left arm 133/80



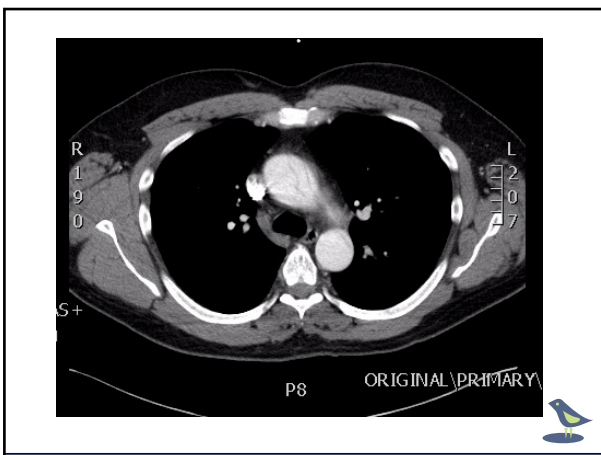
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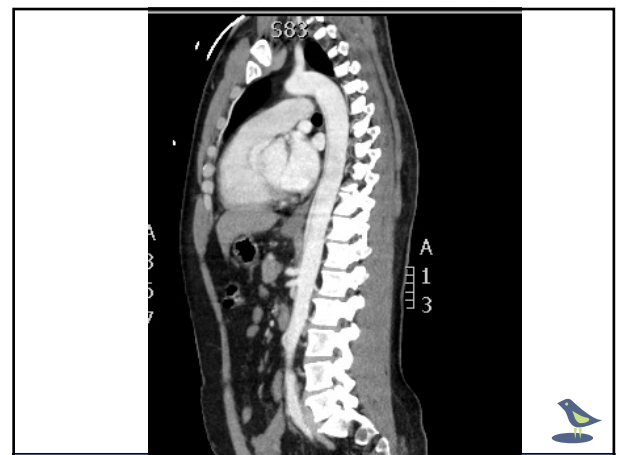
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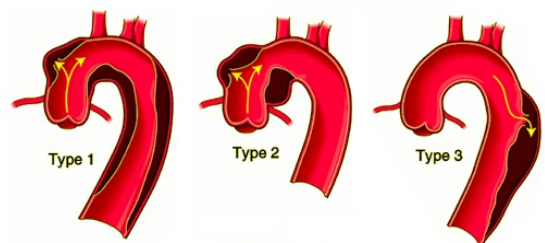
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Aortic dissection

- Estimated 3 per 100 000 patients per year
- Many die before presentation
- About 40% are missed on initial presentation
- Tearing type pain suggestive
- Systemic Hypertension + age > 70 yrs
- Tear in the inner layer of the aortic wall allowing blood to track between the intima (inner layer) and media (middle layer)

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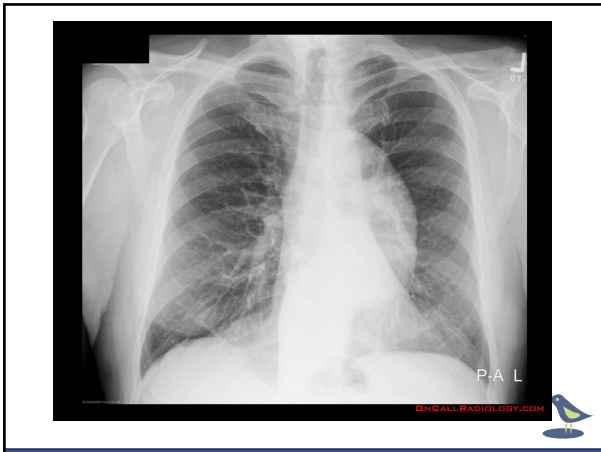
Rt Subclavian = BP difference



Aortic Dissection

Less than 50% of patients survive if aorta ruptures

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How old are you to have a thoracic dissection repaired

- Technique developed by DeBakey in 1955.
- Death sentence to treatable disorder
- Dr. DeBakey developed aortic dissection at age 97,
- At age 98 became the oldest patient to survive the surgical procedure he pioneered

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Otherwise well lady

- 56 year old lady walks into ED @2215hrs
- Referred by well known 'Home GP'
- No letter
- Collapse at home, hypotensive with GP
- Feels generally unwell
- At triage BP 108/74, P 94, Sats 95% RR 18
- What triage Category?
- Secondary triage undertakes an ECG

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Secondary Triage/CIN

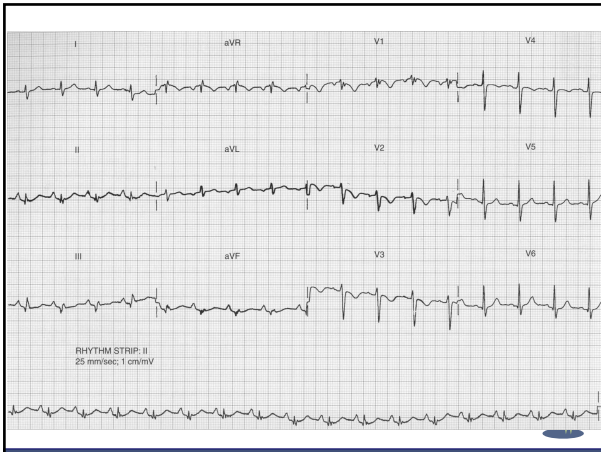
- Notes Patient looks pale, mottled skin
- Does lying and standing BP – No change
 - Probably should abandon this test for hypovolaemia
- Records pulse now at 121bpm, RR 18
- Does full set of bloods/cannula
 - ELFT, U/E, INR, Ddimer, CRP
- Is placed on bed in ED

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And then she lived happily ever after...

- Obs done hourly 12mn, 0100, 0200hrs
 - Remains tachycardic, lowish BP, pale
- 0235hrs – Sudden Cardiac Arrest
- Immediate high quality CPR, Adrenaline, BVM ventilation + intubation
- PEA rhythm – No output
- CPR ceased at 0249hrs

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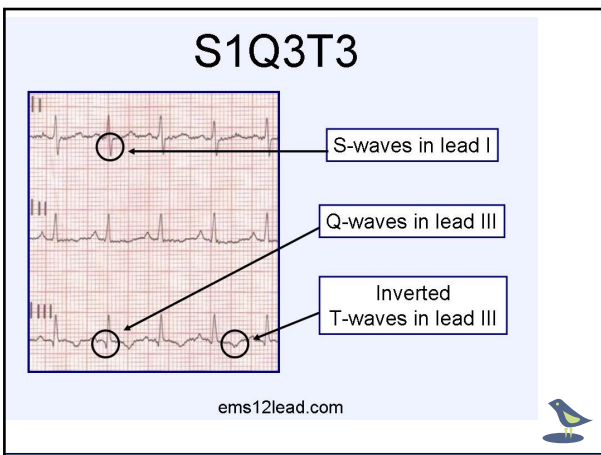
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Pulmonary embolism

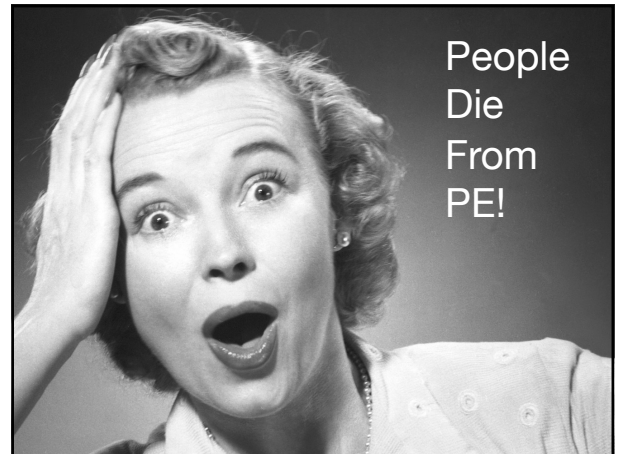
- 1 in 1000 patients per year
- Dislodged venous clot migrates through the right side of the heart
- Becomes lodged at the branch point of the pulmonary arteries (saddle embolus) or more distally
- Chest pain, SOB
- ECG classic signs are a large S wave in lead I, a large Q wave in lead III and an inverted T wave in Lead III – (Up to 20% of large PE's)



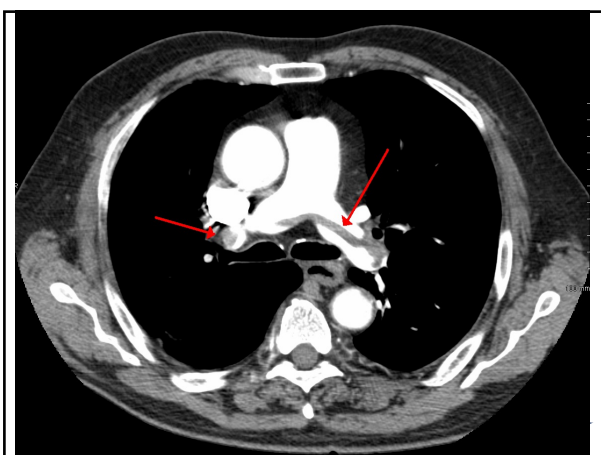
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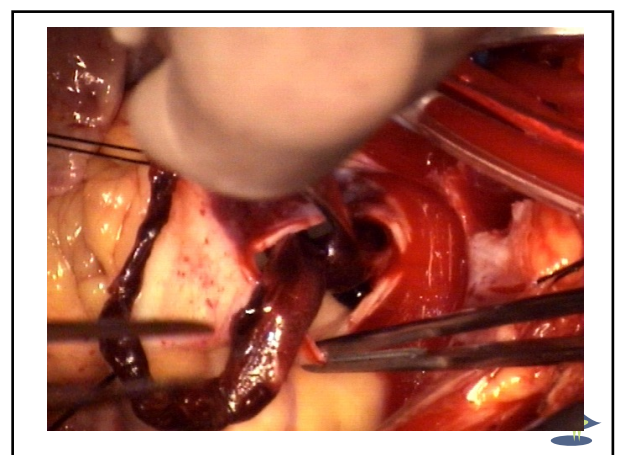
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PERC rule out criteria

- Age greater than or equal to 50 years
- Heart rate greater than or equal to 100 bpm
- Arterial oxygen saturation less than 95% RA
- Venous thromboembolism
- Recent (<28 days) trauma or surgery
- Unilateral leg swelling
- Haemoptysis
- Oral hormone use



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PERC Rule out

- If no positive items and low pre test probability then no further test required



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PE Scoring System

- Pulmonary Embolism Severity Index (PESI)
- Pulmonary Embolism Wells Score
- Modified Wells Scoring System
- Pulmonary Embolism Risk by Pisa Study (with chest x-ray)
- Pulmonary Embolism Risk by Pisa Study (without chest x-ray)
- Revised Geneva Scoring System



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Clinical Characteristic	Score
• Previous PE OR DVT	+ 1.5
• Heart rate >100	+ 1.5
• Recent surgery or immobilization (within the last 30 d)	+ 1.5
• Clinical signs of DVT	+ 3
• Alternative diagnosis less likely than pulmonary embolism	+ 3
• Hemoptysis	+ 1
• Cancer (treated within the last 6 mo)	+ 1

Modified Wells Scoring System



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CLINICAL PROBABILITY OF PE

	Score
• Low	0-1
• Intermediate	2-6
• High	>6

Modified Wells Scoring System



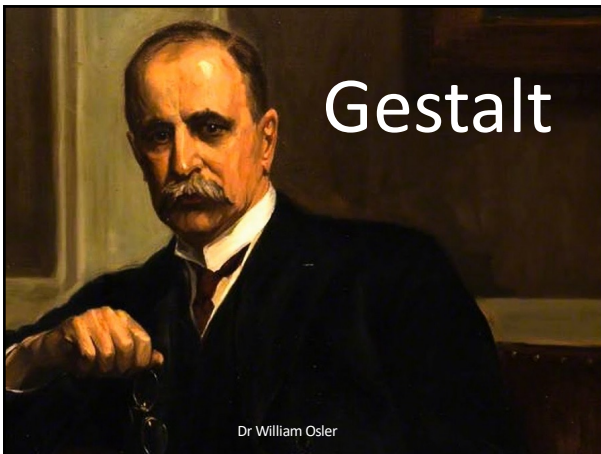
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D Dimer - To hell and back

- Good test but often misused
- Wells Criteria (Wells et al 2003)
- High pre test probability – No really required
- Moderate pre test probability - Negative can rule out PE, Positive – maybe PE
- Low Probability - ?Why do test
- Probability scoring before test



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Another quick case....

- A 45 year old male,
- Drinking heavily, with wife at friends party
- Wife noticed him to be missing
- Found ALOC on front lawn
- Ambulance found hypoxic, vomiting, initially GCS 3 – woken to GCS 13



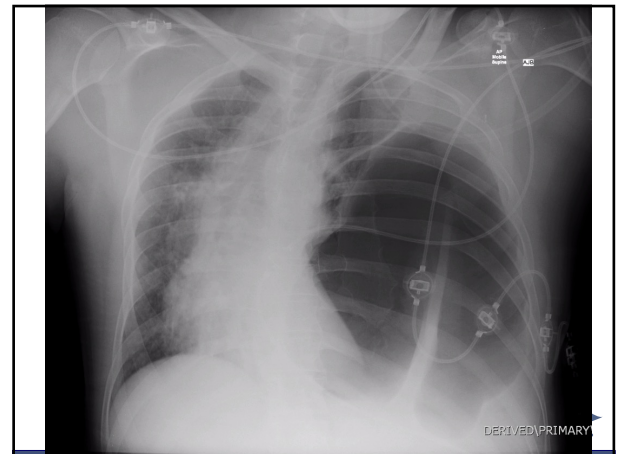
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IN ED

- GCS 13 at best,
- P 96, BP 115/76 Sats 95% Rm air
- 'Decreased air entry Lt side, lying on side'
- Slightly Combative
- Thought to be intoxicated, wake and review and probably home.
- Get CXR to rule aspiration....



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Tension Pneumothorax Clinical Signs

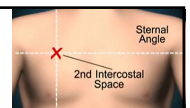
- Deviation of the trachea
- Hyper-expanded chest
- Increased percussion note
- Decreased Airway movement
- Central venous pressure is usually raised
- More commonly tachycardia, tachypnoea, and hypoxic



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Needle Decompression

- To Xray or Not - Clinical diagnosis
- Complications of Needle decompression
 - Lung damage, ineffective, air embolism, kinked,
- It should not be used lightly.
- It should never be used just because we don't hear breath sounds on one side. BUT
- In clear cut cases: shock with distended neck veins, reduced breath sounds, deviated trachea, it could be life saving.



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Take away messages

- Not all chest pain is cardiac in nature
- Be suspicious of all chest pain
- Changing parameters for cardiac care

