Cardinal Presentations: Chest Pain

1. Introduction
    a. Introduce speakers
    b. Major References: Tintinalli, CDEM, Steve Carroll of EM Basic
    c. Intro CDEM cases
        i. Patient 1: Joe a 50 year old male presents to the ED by ambulance complaining the first time ever of severe chest pain that just started while running on the treadmill. He immediately called 911. Vitals: BP = 140/90, P = 80, RR = 24, T = 98.3F, O2 sat = 98%.
        ii. Patient 2: Mary a 69 year-old female presents to the emergency department via triage complaining of worsening shortness of breath, chest and epigastric pain x 24 hrs. She has nausea/vomiting, weakness, and fatigue. She "feels terrible." Vitals: BP = 140/90, P = 80, RR = 24, T = 98.3F, O2 sat = 98%.
2. Epidemiology
. Chest pain is common
a. Many outpatient practices will send CP to ED
3. Initial actions
. Check for consciousness, if no response call for help and check pulse, if no pulse begin CAB and ensure help arrives quickly to begin ACLS
a. Determine sick vs not sick
b. ABCs Primary Survey - Vital signs and intervene (Resuscitation)
4. The EKG
. Elephant in the room (or on the chest) is MI
. STEMI -> Cath lab
    1. STE > 1mm in 2 contiguous leads
    2. Reciprocal changes

i. T wave inversions, ST depressions, reciprocal changes, serial EKGs that show changes
a. PE - Tachy, S1, Q3, T3
b. Pericardial effusion - Electrical alternans
c. Bradycardia - heart blocks
d. Tachycardia - Sinus, SVT, Afib with RVR
5. Differential (PET MAC [Steve Carroll EM Basic])
. See PET MAC handout

PET MAC	**History**	**Physical Exam**	**Testing**	**Treatment**	**Disposition**
Pulmonary Embolism	Dyspnea, Pleuritic Chest Pain, lightheadedness, Syncope, Seizure, AMS, Hemoptysis	No auscultatory findings **Wells Criteria** - signs/symptoms of DVT, PE is #1 dx, HR>100, 3d immobilization/recent surgery, hx of PE/DVT, Hemoptysis, Cancer	D-dimer Troponin **CTA Chest** V/Q Scan Bedside Echo	Supportive O2 Anticoagulants - Heparin, Xa inhibitors **tPA** - SBP<90, Arrest Thrombectomy	**Stable Subsegmental** - Discharge home with Xa inhibitor **Stable large** - Admit **Unstable** - ICU vs OR

		PERC - Age>50, HR>100, O2Sat<95%, Hx of VTE, Trauma/Surgery in prev 4wks, Hemoptysis, Estrogen, Unilateral leg swelling			
Esophageal Rupture	Hx of instrumentation (scope, stent, dilatation, banding, OR) or forceful emesis. Worse with swallowing. hematemesis, Dyspnea	Acute abdomen, Hypotension, Fever, Tachycardia, Tachypnea, Neck subcutaneous emphysema	CXR - sub cu air, pneumomediastinum late Pleural fluid amylase **CT** Endoscopy	**Surgery** Endoscopy **Antibiotics**	**OR** ICU
Tension Pneumothorax	Trauma, Tall thin males, Dyspnea	Decreased breath sounds, JVD	CXR **Bedside Ultrasound** CT	Needle thoracostomy **Chest Tube**	Admit **ICU**
Myocardial Infarction	Radiation, Dyspnea on exertion, Diaphoresis, Nausea/Vomiting, syncope, palpitations	Resp distress, pale, cool skin, new systolic murmur, Vital sign abnormalities	**HEART score** History **EKG** Age Risk factors **Troponin**	**PCI** vs tPA Aspirin, Heparin, Beta-blockers (in high BP), Nitrates	**Cath Lab** Admit ICU
Aortic Dissection/Aneurysm	Sudden chest pain (Sharp or Tearing) and ... CVA or Renal Failure or Back pain or Abd pain or Flank Pain or Syncope. Hx of Cardiac/Aortic Surgery, Marfan's,	Hypertension (49%), Diastolic murmur (32%), Hypotension (~20%), Asymmetric peripheral pulses (15%), dysphagia, hoarseness, Horner syndrome, SBP difference between arms (>20mmHg?)	**CTA Chest** D-dimer TEE	**Esmolol drip** with SBP goal 100-120mmHg Type A - Vasc Surgery Type B - Medical Mgmt	ICU **OR** IR

Cardiac Tamponade	Dyspnea at rest and with exertion Trauma Cancer	**<u>Beck's Triad</u>** **Distant heart sounds** **JVD** **Hypotension** Tachycardia, Pulsus paradoxus	**Ultrasound** EKG - low voltage or alternans	IVFs **Pericardiocentesis** Surgery for pericardial window	ICU **OR**

6. Summary
a. ABCs
b. Vitals - Resuscitate
c. EKG
d. Ddx with tx and dispo

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