Chest Pain

History: Location, Onset, type worsening/alleviating factors), length of time, intermittent, or constant, similar to previous episodes, travel, Surgery, Coagulation disorders
Physical Exam: check VITAL SIGNS. Full cardio/ resp exam and often MSK exam of upper extremities and chest wall, make sure to check for calf swelling/tenderness.

Myocardial Infarction

History:

Onset ,Description, Location, diaphoresis, SOB, radiation,

Does this feel like your last MI?

Physical Exam:

Over all Appearance, Vital Signs * Bilateral BP

Cardio/Resp exam: often normal check for elevated JVP

Abdo exam: check for AAA

Myocardial infarction

Investigations:

ECG- ST elevation/ depression, Arrhythmias, Q Waves

Blood work -Troponin, CK, CBC, BUN, Cr, lytes, d-dimer if clinically indicated. Repeat troponin at 3 and 8 hour mark if initially negative and clinically suspicious

CXR- Check for widened mediastinum, indications of congestive heart failure. Pneumonia can precipitate an MI especially in the elderly.

Treatment:

MONA - Morphine, Oxygen, Nitro (if BP will tolerate) ASA160mg

STEMI- door to PCI in 90 minutes or door to TNKase in 30 minutes if in remote site

NSTEMI- admit, referral for angiography, Beta blockers, ACE inhibitors, clopidogrel, and a statin. Urgent cardiology referral if unstable, CHF or valvular disease

Pulmonary Embolus

History:

Pleuritic type chest pain (pain with deep breaths) Shortness of breath. Risk factors: surgery, immobilization, CA, long flights or drives, Hormone replacement therapy, or contraceptive medications, coagulation disorders. Unilateral leg swelling, calf tenderness,

Physical Exam:

Vitals: Tachycardia is the # 1 symptom of PE, decreased oxygen saturation, increased Respiratory rate

Cardio Resp: occasionally decreased A/E, swollen, tender reddened calf (DVT) .

Pulmonary Embolus

Investigations:

BW: CBC, BUN, CR, LYTES, D-Dimer

CXR- atelectasis, wedge shaped infiltrate, hemidiaphragm, often normal

Gold standard is spiral chest CT- will show a filling defect

Treatment:

Stable: oral anticoagulants: NOAC's or warfarin, sc heparin if necessary. IVC filter if complete contraindications to anticoagulants

Unstable: Admit, oxygen supplementation, start anticoagulants

Massive PE: IV Thrombotic therapy, or interventional thrombolytic therapy provided by interventional radiology(preferred, safer, less contraindications)

Aortic Dissection

History:

EXTREME pain, tearing sensation, sudden onset, in chest, back or abdomen, most severe on onset, unlike MI which gets worse.

atherosclerosis, marfan's syndrome, congenital defects, trauma.

Physical Exam:

syncope

BP differential (greater than 20mmHG between arms), pulse differential

Aortic murmur

Cardiac tamponade(hypotension, narrow pulse pressure, quiet heart sounds)

CVA signs

Aortic Dissection Classification

Stanford:
- Type A: involves ascending aorta and aortic arch. Requires immediate surgery
- Type B: only involves distal aorta (below subclavian artery) and can be managed medically unless complications from dissection are present

DeBakey
- Type I - both ascending and descending
- Type II - ascending aorta only
- Type IIIa - descending thoracic aorta only
- Type IIIb - descending thoracic aorta and abdominal aorta

Aortic Dissection

Investigations:

- ECG: LVH, Myocardial ischemia/infarction
- CXR: not indicated but will show mediastinal widening
- Imaging: Aortic angiography is gold standard, if not available CT angiography (100% sensitive and 98% specific)

Treatment:

- Lower BP and Heart Rate
- Immediate referral to thoracic surgery

Pneumothorax

Pneumothorax: the presence of air or gas in the cavity between the lung and the chest wall causing the lung to collapse
History: SOB, sudden onset chest pain, can be asymptomatic if small
Physical Exam: decrease air entry at apices or throughout, increased resonance on percussion
Investigations: CXR will show pneumothorax which will show an absence of lung markings
Treatment:
  small- resolve spontaneously
  large - chest tube placement

Types of Pneumothorax

Spontaneous	Open	Tension	Hemothorax
Tall, thin male, age 10-30 Secondary- due to lung disease (COPD, TB, Cystic Fibrosis, AIDS, pneumonia, bronchitis)	penetrating trauma to chest	can occur after spontaneous,or open pneumothorax life threatening requires immediate needle decompression	can come from blunt or penetrating chest trauma