An Approach to Acute Chest Pain

Diagnostic Framework

Cardiovascular	Pulmonary	GI	MSK	Miscellaneous
Pericardium Pericarditis Myocardium Myocarditis Heart failure exacerbation Hypertrophic cardiomyopathy Takotsubo cardiomyopathy Valves Aortic stenosis Conduction system Tachyarrhythmias Vessels Acute coronary syndrome Aortic dissection Hypertensive emergency Coronary vasospasm	Pleuritis (a.k.a. pleurisy) Pneumothorax Airways Asthma exacerbation Alveoli Pneumonia Vessels Pulmonary embolism Pulmonary hypertension Lung cancer	Esophagus GERD Esophagitis Esophageal spasm Stomach Gastritis Peptic ulcer disease	Rib fractures Costochondritis	Herpes zoster (a.k.a. shingles) Acute intoxication with cocaine or amphetamines Acute chest syndrome in sickle cell anemia Psychiatric Panic attack Somatization

Diagnostic Algorithm for Hemodynamically Unstable Patients

Take a very focused "chest pain" history:

Acuity of onset? Location? Radiation? Exertional? Pleuritic? Qualitative description?

Assessment of PMH/SH for risk factors

Focused physical exam:

Vitals, cardiac & pulmonary auscultation, look at JVP, look for signs of DVT

Portable CXR

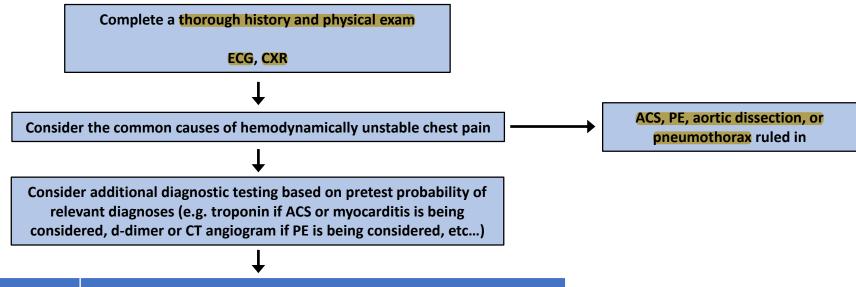
ECG

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	ACS	PE	Aortic Dissection	Pneumothorax
HPI	Onset over mins Substernal / midline Radiation down either arm or to jaw Exertional Non-pleuritic "Pressure", "tightness"	Onset over secs-mins Lateralizes to one side No specific radiation Non-exertional Pleuritic "Sharp"	Onset over secs-mins Substernal/midline Radiation to back Non-exertional Non-pleuritic "Tearing"	Onset over secs Lateralizes to one side No specific radiation Non-exertional Pleuritic "Sharp"
Major risk factors	Smoking, DM, HTN, hyperlipidemia	Recent hospitalization or immobilization Malignancy	Hypertension Smoking	COPD Cystic fibrosis
Exam	Often normal, but may have S3, high JVP, and crackles if HF has developed	May have evidence of a DVT Right sided S3 or RV heave if massive PE	Usually unremarkable aside from vitals, but brachial blood pressures may be unequal	Unilateral diminished/absent breath sounds Unilateral hyperresonance
CXR	Usually normal	Usually normal	Widened mediastinum	Pneumothorax
ECG	May have dynamic ST/T changes, or be surprisingly unremarkable	Classic S1Q3T3 pattern is much less common than plain sinus tachycardia	No specific findings	No specific findings

Diagnostic Algorithm for Hemodynamically Stable Patients



Diagnosis	Common distinguishing features
Pericarditis	Pleuritic pain that is relieved by sitting up and leaning forward. Pericardial friction rub is uncommonly present on exam Diffuse ST elevations on ECG
Myocarditis	Mild to moderate troponin elevation Non-exertional pain, lasting hours to days
Pleuritis	Pain lateralizes to affected side, and is pleuritic Pleural friction rub is uncommonly present on exam CXR usually reveals an associated pleural effusion
GERD	Pain is associated with eating, or onset within minutes to a few hours after lying down
MSK	Focal chest wall tenderness on exam
Zoster	Pain described as "burning" and limited to a single dermatome