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CARDIOVASCULAR SEQUENCE

The Evaluation of Chest Pain

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THE EVALUATION OF CHEST PAIN

Key Words: Angina pectoris, pericarditis, aortic dissection, differential diagnosis

Objectives:

1. To learn the differential diagnosis of chest pain.
2. To learn the key life threatening causes of chest pain.
3. To diagnose aortic dissection.
4. To become familiar with Bayes Theorem.

Causes Of Recurrent Chest Pain

- Cardiac
- Gastrointestinal
- Musculoskeletal
- Aortic
- Pulmonary
- Psychologic

CARDIAC CHEST PAIN

- Angina Pectoris
- Retrosternal tightness
- Radiates to neck, jaw , shoulder or arms (L > R)
- Brought on by:
  - Exertion
  - Emotion
- Lasts minutes (1 - 10 min)
- Relieved by NTG or rest
- EKG: Transient STE or ST depression

CARDIAC CHEST PAIN

- Pericarditis
- Sharp pleuritic chest pain
- Worse lying; better sitting
- Friction rub heard on auscultation
- Lasts hours to days
- EKG: Typically PR depression and ST elevation

GASTROINTESTINAL CHEST PAIN

Gastroesophageal Reflux: (GERD)

- Retrosternal burning
- Precipitated by foods or supine position (night-time)
- Relieved by antacids, not NTG

GASTROINTESTINAL CHEST PAIN

Peptic Ulcer Disease:

- Epigastric ache or burning
- After meals, not exertional
- Gnawing pain at night
- Relieved by antacids, not NTG

GASTROINTESTINAL CHEST PAIN

Esophageal Spasm:

- Retrosternal pain and dysphagia
- Precipitated by meals
- Not exertional
- May be relieved by NTG

GASTROINTESTINAL CHEST PAIN

Biliary Colic:

- Constant deep RUQ pain
- Brought on by fatty foods, not exertion
- Not relieved by antacids or NTG

MUSCULOSKELETAL CHEST PAIN

Costrochondritis:

- Sternal pain worsened by chest movement
- Costrochondral junctions sensitive to palpitation
- Worse on left side
- Relieved by antiinflammatory agent or steroid injection

MUSCULOSKELETAL CHEST PAIN

Cervical Radiculitis:

- Constant pain or shooting pains
- May be in dermatomal distribution
- Worsened by neck motion

Aortic Chest Pain

Aortic Dissection:

- Sudden and severe at inception
- May be chest and/or back pain
- Pulse deficits or aortic valve insufficiency

Aortic Chest Pain

Aortic Aneurysm:

- Deep steady pain located at site of pressure on musculoskeletal system
- May have cough, dysphagia, or other sx from local compression

Pulmonary Chest Pain

Pleurisy:

- Sharp pleuritic chest pain
- Worse lying; better sitting
- Pleural rub on exam
- Lasts hours or days
- Often with cough, respiratory infection

PULMONARY CHEST PAIN

Pulmonary Embolus:

- Sudden severe pain with SOB
- Pleuritic in nature
- Predisposition to venous clotting
- Hypoxia and tachycardia

PSYCHOLOGIC CHEST PAIN

Panic Disorder:

- Dull constricting ache with SOB
- Circumoral numbness or lightheadedness
- Recent unusual stress
- Recurrent episodes in healthy people

Diagnostic Tests In Patients With Chest Pain

Test	Target Diagnosis
EKG	• Myocardial ischemia • Pericarditis
CXR	• Aortic dissection or aneurysm
Upper GI series or endoscopy	• GERD • Ulcer

Diagnostic Tests In Patients With Chest Pain

Test	Target Diagnosis
Abdomen ultra sound	• Gall stones
Chest CT or MRI	• Aortic disease • Pulmonary embolus
Esophageal motility	• Esophageal spasm
VQ scan/CT Angio	• Pulmonary embolus
Stress test/CT Angio	• Angina

Diagnostic Tests In Patients With Chest Pain

2 - D Echo	• Pericardial fluid • Aortic dissection
Transesophageal echo	• Aortic dissection

APPLICATION OF DIAGNOSTIC TESTS

BAYE'S THEOREM

Probability Of Major CAD In Patients With Chest Pain

	No Sx		Atypical Angina		Typical Angina	
Age	M	F	M	F	M	F
35 - 44	1.9	0.3	21.8	4.2	69.7	25.8
45 - 54	5.5	1.0	46.1	13.3	87.3	55.2
55 - 64	9.7	3.2	58.9	32.4	92.0	79.4
> 65	12.3	7.5	67.1	54.4	94.3	90.6

- All numbers reflect percentages
- NEJM 1979; 300; 1350-1358