Case Study: Chest Pain

Clinical Dashboard - Pertinent History and Physical

Paragraph Summary of Case:

- Paragraph Summary: The patient is a 54-year-old male who presents to the emergency department with acute-onset, severe chest pain radiating to the left arm. He reports the pain started suddenly while he was resting at home. The pain is crushing in nature and accompanied by shortness of breath and diaphoresis. He has a history of hypertension and high cholesterol.

Patient Approach:

- Education Level: High school graduate
- Emotional Response: Anxious and concerned
- Communication Style: Direct and cooperative

History of Present Illness (HPI):

- Onset: Sudden
- Location: Chest
- Duration: 2 hours
- Character: Crushing, tight
- Aggravating/Alleviating Factors: Worse with exertion, no relief with rest
- Radiation: Left arm

Case Study: Chest Pain

- Timing: Constant
- Severity: 8/10
- Additional Details: Associated with shortness of breath and diaphoresis

Past Medical History (PMHx):

- Active Problems: Hypertension, hyperlipidemia
- Inactive Problems: None
- Hospitalizations: None
- Surgical History: None
- Immunizations: Up to date

Social History (SHx):

- Tobacco: Former smoker, quit 5 years ago
- Alcohol: Occasional social drinker
- Substances: Denies
- Diet: High in saturated fats
- Exercise: Sedentary, minimal physical activity
- Sexual Activity: Active, monogamous
- Home Life/Safety: Lives with spouse, safe home environment
- Mood: Anxious
- Contextual Details: Works as a desk job, high stress

Case Study: Chest Pain

Family History (FHx):

- Parents: Father had myocardial infarction at age 65
- Siblings: Siblings healthy

Medications and Allergies:

- Medications: Lisinopril, atorvastatin
- Allergies: NKDA

Review of Systems (ROS):

- Pertinent Findings: Positive for chest pain, shortness of breath, diaphoresis

Physical Examination:

- Findings: BP 152/92, HR 102, RR 22, afebrile, SpO2 94% on room air. Diaphoretic, appears in distress. Cardiovascular exam with normal S1/S2, no murmurs, rubs, or gallops. Lungs clear to auscultation bilaterally.

Diagnostic Reasoning:

- Essential HPI Details User Should Elicit: Onset, location, character, and duration of chest pain, associated symptoms, and risk factors
- Differential Diagnoses: Myocardial infarction, unstable angina, aortic dissection, pulmonary embolism, pneumothorax

Case Study: Chest Pain

- Rationale: The patient's presentation with acute, severe chest pain radiating to the left arm, associated with shortness of breath and diaphoresis, in the setting of known cardiovascular risk factors (hypertension, hyperlipidemia, family history) is highly concerning for an acute coronary syndrome, most likely a myocardial infarction. Additional diagnostic testing, including EKG and cardiac biomarkers, is warranted to confirm the diagnosis.

Teaching Points:

- Key Learning Objectives: Recognize the clinical presentation of acute myocardial infarction, understand the importance of a thorough history and physical examination in the evaluation of chest pain, and be aware of the key diagnostic tests required to confirm the diagnosis.
- Educational Content: Acute myocardial infarction is a life-threatening condition that requires prompt recognition and management. The classic presentation includes acute, severe, crushing chest pain that may radiate to the left arm, associated with shortness of breath, diaphoresis, and other autonomic symptoms. Risk factors include hypertension, hyperlipidemia, family history, and lifestyle factors such as smoking and sedentary behavior. Diagnostic evaluation should include an EKG to assess for ST-segment changes and cardiac biomarkers (troponin) to confirm myocardial injury. Immediate treatment focuses on restoring blood flow to the affected myocardium, either through thrombolytic therapy or percutaneous coronary intervention.

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PATIENT DOOR CHART and Learner Instructions

- Patient Name: John Smith
- Age: 54
- Legal Sex: Male
- Chief Complaint: Chest pain
- Clinical Setting: Emergency department

Vital Signs:

- Blood Pressure Reading: 152/92 mmHg
- Pulse Rate: 102 bpm
- Respiratory Rate: 22 breaths/min
- Temperature(Celsius): 36.8°C
- SpO2: 94% on room air