

HOSPITAL PHYSICIAN®

INTERNAL MEDICINE BOARD REVIEW MANUAL

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Diagnosis and Early Management of Chest Pain and Acute Coronary Syndromes

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Cover Illustration by brand x pictures

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Diagnosis and Early Management of Chest Pain and Acute Coronary Syndromes

Kendal Williams, MD, MPH

INTRODUCTION

Despite significant advances in the prevention, diagnosis, and treatment of coronary artery disease (CAD), it remains the leading cause of mortality in the Western world and is having an increasing impact on developing countries. The majority of patients with CAD will at some point experience an acute coronary syndrome (ACS)—unstable angina (UA), non–ST segment myocardial infarction (NSTEMI), or ST segment myocardial infarction (STEMI). ACS represents the rupture of an unstable cholesterol plaque, resulting in complete or near-complete obstruction of the coronary lumen with the potential for downstream ischemia. In most cases, these patients will present with the syndrome of “chest pain” and require further evaluation to determine the best management strategy. This manual focuses on the diagnosis, classification, and early management of chest pain and ACS. Part 2 of this volume will discuss the therapeutic advances that are at long last reducing the case-fatality rate of this devastating disease.

CASE STUDY

INITIAL PRESENTATION

A 68-year-old woman with a history of chronic obstructive pulmonary disease, hypertension, and anxiety presents to the emergency department (ED) complaining of intermittent chest discomfort for the past 3 weeks.

HISTORY

The patient describes her pain as a “tightness” that begins in her mid-chest and radiates to her neck and jaw and is associated with nausea and palpitations. She denies shortness of breath, diaphoresis, or vomiting but does admit to feeling “anxious” when the pain occurs. There is no radiation to her shoulder or arms. The pain

first occurred while the patient was cooking and was minimally relieved when she took her sister’s sublingual nitroglycerin. She has experienced multiple similar episodes since then, each lasting a minute or two, but none have been as severe or prolonged as the first. There is no exertional component. The last episode occurred 6 hours prior to presentation, and the patient has been free from chest pain since then.

The patient reports that she is a 50 pack-year smoker and that both a brother and sister had myocardial infarctions (MI) in their sixth decade. She cannot recall her serum cholesterol values from her last lipid profile. Her only medications are an albuterol metered-dose inhaler as needed and hydrochlorothiazide.

PHYSICAL EXAMINATION

Physical examination reveals a well-nourished, well-developed, pleasant but anxious-appearing woman in no apparent distress. Her blood pressure is 156/94 mm Hg, heart rate is 76 bpm, respiratory rate is 20 bpm, and oxygen saturation is 92% on room air. Jugular venous pulse is appreciated and normal at 9 cm. Chest examination reveals mildly increased anteroposterior diameter with slight end-expiratory wheezes and prolonged expiratory phase but no rales or rhonchi. Heart sounds are normal with an S₁ and S₂ and no evidence of S₃, S₄, murmurs, or rub. Her carotid pulses are brisk. Abdominal, extremity, and skin examinations are normal.

- **What are initial steps in the evaluation of the patient with chest pain?**

EARLY ASSESSMENT

The chest pain symptom complex presents a unique challenge because it is extremely common but also may be the harbinger of acute life-threatening illness that will require immediate intervention. The first goal of the initial evaluation is to distinguish potentially lethal diagnoses, particularly ACS, pulmonary embolus, aortic dissection, and pneumothorax, from each other and from the more common benign causes of anterior