A 66-YEAR-OLD MAN ADMITTED INTO THE HOSPITAL WITH INTERMITTENT CHEST PAIN

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BACKGROUND

The patient was a 66-year-old Caucasian male who was admitted to his local hospital with a 7-day history of intermittent chest pain. The pain was initially associated with exertion, but also occurred at rest on the morning he was admitted to the hospital. The pain, which he described as sharp, started the previous week while he was playing golf. It was associated with shortness of breath, but not diaphoresis, nausea, vomiting, or palpitation. The pain lasted for approximately 5 minutes and was relieved by rest. During the previous week, he had experienced similar episodes of exertion that lasted up to 15 minutes. On the morning he was admitted, the patient experienced an intense episode lasting approximately 40 minutes, which was associated with shortness of breath and nausea, while watching the news. His wife called 911, and the patient was transported to the emergency department.

MEDICAL HISTORY

The patient had no history of symptomatic cardiovascular disease. However, he had been treated for hypertension since age 50. In addition, he was being treated for hyperlipidemia and gastroesophageal reflux disease when he presented to the hospital.

CURRENT MEDICAL TREATMENT

The patient's daily treatment regimen included dil-tiazem SR 240 mg, simvastatin 10 mg, aspirin 325 mg, lansoprazole (Prevacid; TAP Pharmaceutical Products Inc, Lake Forest, IL) 30 mg, and a multivitamin.

FAMILY HISTORY

The patient's father suffered a myocardial infarction at age 52 and died at age 78. The patient's 76-year-old mother was alive. She had hypertension and diabetes. In addition, she had undergone stent placement in the mid-left anterior descending (LAD) coronary artery. There was no history of heart disease in the patient's 1 younger brother or 2 older sisters. He was a retired lawyer who lived with his wife. He had a son and a daughter who were both healthy.

SOCIAL HISTORY

The patient had a 45-pack-per-year cigarette smoking history. He had unsuccessfully tried to quit multiple times in the past. The patient drank alcohol socially.

PHYSICAL EXAMINATION

The patient was well nourished with normal development and weighed 165 lb. He appeared to be comfortable and in no acute distress, although he was breathing fast. His vital signs were as follows: temperature, 98.6°F; respiration rate, 25 respiration per minute; heart rate was regular at 80 beats per minute; and blood pressure, 152/89 mm Hg.

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Examination of the head, eyes, ears, nose, and throat revealed only mild hypertensive atherosclerotic fundoscopic changes. Cardiovascular examination revealed normal carotid pulses with a left carotid bruit and no jugular vein distention. Heart sounds were normal with no murmurs, gallops, or rubs. Popliteal pulses were normal. However, dorsalis pedis and posterior tibial pulses were diminished. The patient’s chest was clear to percussion and auscultation. His abdomen was soft, nontender, and nondistended with no organomegaly. The patient had hyperpigmented skin pretibially bilaterally. There was no clubbing, cyanosis, or edema. His cranial nerves were intact and deep tendon reflexes were normal. There was no motor or sensory deficit and no change in mental status.

**REVIEW OF SYSTEMS**

The patient reported a morning cough with minimal sputum production, which was unchanged, and mild dyspnea on exertion, which had recently worsened. He denied having hemoptysis or pleuritic chest pain. He reported no vomiting, constipation, diarrhea, abdominal pain, or weight change. He denied dysuria or hematuria. However, he noted some hesitancy when urinating. The patient reported no polyuria or polydipsia, and no intolerance to hot or cold.

**LABORATORY FINDINGS**

Initial laboratory tests revealed normal hematocrit and white blood cell count. The patient’s blood chemistry was within normal limits except for a creatinine level of 1.3 mg/dL. His blood glucose was normal. His initial creatinine kinase level was 106, his creatinine kinase myocardial band (CK-MB) level was 6, and his troponin I level was 0.4. The patient’s total cholesterol was 265 with a high-density lipoprotein level of 54. A chest x-ray showed slightly hyperinflated lungs, but no cardiomegaly or evidence of congestion. An electrocardiogram (ECG) showed normal sinus rhythm with ST depression in leads I, aVL, and V5 through V6.

Subsequent labs showed a creatinine kinase level of 852, a CK-MB level of 85, and the troponin I level increased to 3.4. ECG readings returned to normal after interventions.

**IMPRESSION AND DIAGNOSIS**

The patient had several risk factors for coronary artery disease, which included age, male sex, hypertension, smoking, hyperlipidemia, and family history. His symptoms were consistent with acute coronary syndrome (ACS). ACS consists of a group of clinical presentations including unstable angina, non–Q-wave myocardial infarction, and Q-wave myocardial infarction. Because the patient had abnormal cardiac enzymes and ST depression on presentation, he was diagnosed with non–Q-wave myocardial infarction. In a patient with ACS, it is crucial to assess mortality and morbidity risk to select an appropriate treatment strategy. This patient’s Thrombosis in Myocardial Infarction (TIMI) risk score was 6 because of the following factors: age >65; having 4 risk factors for coronary artery disease (family history of coronary artery disease, hypertension, hypercholesterolemia, and current smoker); ST-segment deviation; experiencing at least 2 anginal events in prior 24 hours; use of aspirin in prior 7 days; and elevated serum cardiac markers.

**TREATMENT PLAN**

In the emergency department, the patient was given sublingual nitroglycerin and was started on an antiplatelet agent (chewable aspirin, 325 mg), oxygen at 2 L/day by nasal canula, a beta blocker, and low–molecular-weight heparin. The beta blocker was administered intravenously in the form of metoprolol 5 mg in 3 boluses, and the patient was then started on metoprolol 50 mg twice daily. The patient’s chest pain resolved after these interventions. He was then transferred to the coronary care unit (CCU), where an angiotensin-converting enzyme (ACE) inhibitor and a statin were added to his medication regimen. Given his high TIMI risk score, the CCU team thought that he was at high risk for major complications from ACS. Therefore, he was started on a glycoprotein IIb/IIIa inhibitor.

The patient was taken to the cardiac catheterization lab and was found to have 90% stenosis in his circumflex marginal branch, which was stented with a drug-eluting stent with 0% residual. Additional lesions in the right coronary artery (50%) and LAD diagonal branch (60%) were also discovered, but no intervention was performed.

The patient had an uncomplicated hospital course. His medication regimen following hospital discharge included aspirin, a beta blocker, an ACE inhibitor, and a statin. Following hospital discharge, hydrochlorothiazide 25 mg once daily was also added to his regimen because his blood pressure was not adequately controlled with the beta blocker-ACE inhibitor combination.