

QUESTION
 A 65-year-old male patient with a long history of hypertension and hyperlipidemia presents to the emergency department with acute chest pain. The pain is described as a heavy, crushing pressure in the center of the chest, lasting for approximately 30 minutes. The patient has a history of smoking 20 cigarettes per day for 30 years and has a family history of premature coronary artery disease. He is currently on amlodipine and atorvastatin. The patient's vital signs are: blood pressure 180/110 mmHg, heart rate 110 bpm, respiratory rate 20 breaths per minute, and oxygen saturation 92% on room air. Physical examination reveals a pale, diaphoretic patient with a third heart sound (S3) and a mild crackle in the right lower lung field. The ECG shows ST-segment depression in leads II, III, and aVF, and ST-segment elevation in leads V1, V2, and V3. The patient's troponin I level is 0.15 ng/mL.

ANSWER
 The patient's presentation is consistent with a non-ST-elevation myocardial infarction (NSTEMI). The key features include acute chest pain with a heavy, crushing quality, ST-segment depression in leads II, III, and aVF, and ST-segment elevation in leads V1, V2, and V3. The patient's risk factors, including hypertension, hyperlipidemia, and a long history of smoking, further support this diagnosis. The physical examination findings of a third heart sound (S3) and a mild crackle in the right lower lung field suggest left ventricular dysfunction and pulmonary congestion, respectively. The patient's troponin I level is elevated, which is consistent with myocardial injury.

NSTEMI

NSTEMI is a type of myocardial infarction characterized by chest pain with ST-segment depression or ST-segment elevation in only two leads. The pain is typically described as a heavy, crushing pressure in the center of the chest, lasting for more than 20 minutes. The patient's risk factors, including hypertension, hyperlipidemia, and a long history of smoking, are common in NSTEMI. The physical examination findings of a third heart sound (S3) and a mild crackle in the right lower lung field suggest left ventricular dysfunction and pulmonary congestion, respectively. The patient's troponin I level is elevated, which is consistent with myocardial injury.

The management of NSTEMI involves a combination of medical and interventional approaches. The patient should be treated with aspirin, a P2Y12 inhibitor (such as clopidogrel or ticagrelor), and a statin. The patient should also be treated with a beta-blocker and a nitrate. The patient should be monitored closely for signs of heart failure and arrhythmias. The patient should be considered for percutaneous coronary intervention (PCI) if the chest pain persists or if there are signs of hemodynamic instability.