

## QUESTION

A 65-year-old male patient with a long history of hypertension and hyperlipidemia presents to the emergency department with a 2-day history of severe, crushing chest pain. The pain is described as a heavy weight on his chest and is exacerbated by exertion. He has a history of smoking 20 cigarettes per day for 30 years. His medical history is significant for a previous myocardial infarction 10 years ago. He is currently on amlodipine, atorvastatin, and aspirin. He has no known allergies. His vital signs are: heart rate 110 bpm, blood pressure 180/100 mmHg, 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 new mitral regurgitation murmur. An electrocardiogram (ECG) shows ST-segment elevation in leads V1, V2, and V3, consistent with an anterior wall myocardial infarction. Laboratory tests show a troponin I level of 0.15 ng/mL and a creatine phosphokinase-MB level of 120 U/L. The patient is diagnosed with an acute anterior wall myocardial infarction.

Question	Answer	Explanation
1. What is the most likely cause of the patient's chest pain?	Myocardial infarction	The patient's symptoms, including severe chest pain, ST-segment elevation on ECG, and elevated troponin and CK-MB levels, are consistent with an acute myocardial infarction.
2. What is the most likely mechanism of the patient's chest pain?	Ischemia	The patient's symptoms are consistent with myocardial ischemia, which is caused by a reduction in blood flow to the heart muscle.
3. What is the most likely cause of the patient's chest pain?	Coronary artery disease	The patient's symptoms, including severe chest pain, ST-segment elevation on ECG, and elevated troponin and CK-MB levels, are consistent with an acute myocardial infarction, which is caused by atherosclerosis of the coronary arteries.
4. What is the most likely cause of the patient's chest pain?	Coronary artery disease	The patient's symptoms, including severe chest pain, ST-segment elevation on ECG, and elevated troponin and CK-MB levels, are consistent with an acute myocardial infarction, which is caused by atherosclerosis of the coronary arteries.

ANSWER: 1. Myocardial infarction

## ANSWER



The patient's symptoms, including severe chest pain, ST-segment elevation on ECG, and elevated troponin and CK-MB levels, are consistent with an acute myocardial infarction. The patient's history of hypertension, hyperlipidemia, and smoking, along with a previous myocardial infarction, are risk factors for atherosclerosis of the coronary arteries. The patient's physical examination findings, including a third heart sound (S3) and a new mitral regurgitation murmur, are consistent with a large anterior wall myocardial infarction. The patient's ECG shows ST-segment elevation in leads V1, V2, and V3, which is consistent with an anterior wall myocardial infarction. Laboratory tests show a troponin I level of 0.15 ng/mL and a creatine phosphokinase-MB level of 120 U/L, which are also consistent with an acute myocardial infarction.