

### 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 patient reports a sharp, tearing pain that radiates to his back. He has a blood pressure of 180/100 mmHg, a heart rate of 100 bpm, and a respiratory rate of 20 breaths per minute. An electrocardiogram (ECG) shows sinus tachycardia with ST-segment depression in leads V1-V4. A chest X-ray is unremarkable. The patient is currently on amlodipine and atorvastatin.

Parameter	Value
Blood Pressure	180/100 mmHg
Heart Rate	100 bpm
Respiratory Rate	20 breaths per minute
Oxygen Saturation (SpO2)	98% on room air
ECG Findings	Sinus tachycardia, ST-segment depression in leads V1-V4
Chest X-ray	Unremarkable

What is the most likely diagnosis?

### ANSWER

The most likely diagnosis is aortic dissection. The patient's symptoms of acute, tearing chest pain radiating to the back, along with a blood pressure of 180/100 mmHg and sinus tachycardia, are highly suggestive of this condition. The ST-segment depression on the ECG is a common finding in aortic dissection. The chest X-ray being unremarkable further supports this diagnosis, as aortic dissection often does not show significant changes on a standard chest X-ray.

The patient's history of hypertension and hyperlipidemia, along with his current medications (amlodipine and atorvastatin), are also consistent with this diagnosis. Aortic dissection is a medical emergency that requires immediate treatment to prevent complications such as aortic rupture or stroke. The patient should be treated with beta-blockers to reduce the heart rate and blood pressure, and then with aortic dissection-specific medications like amlodipine and atorvastatin.