

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 starts in the chest and radiates to the back. The pain is worse when he breathes in. He has a heart rate of 100 bpm, blood pressure of 180/100 mmHg, and oxygen saturation of 92% on room air. Physical examination is unremarkable. An electrocardiogram (ECG) shows sinus tachycardia with ST-segment depression in leads V1-V4. A chest X-ray is normal.

ANSWER
 The most likely diagnosis is aortic dissection. The patient's symptoms, including acute tearing chest pain radiating to the back, are characteristic of this condition. The physical examination and chest X-ray are normal, which is consistent with aortic dissection. The ECG findings of sinus tachycardia and ST-segment depression in leads V1-V4 are also consistent with this diagnosis.

KEY POINTS

Aortic dissection is a life-threatening condition characterized by a tear in the inner layer of the aorta, allowing blood to flow into the wall of the artery. This can lead to the formation of a false lumen and eventually rupture. The most common symptom is acute, tearing chest pain that radiates to the back. Other symptoms include syncope, stroke, and limb ischemia.

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