Angiographic and Ultrasonic Evidence of Plaque Rupture Causing Myocardial Infarction

Hani S. Al-Sergani, MBBS; Philip J. Fitzpatrick, MD; Sergio Waxman, MD

A 60-year-old man with no prior cardiac history presented to the emergency room with 1.5 hours of substernal chest pain. An ECG revealed ST-segment elevation in leads V2 to V6. Acute anterolateral myocardial infarction was diagnosed, and thrombolytic therapy in the form of tPA was administered, with resolution of the chest pain and ST-segment elevation. Because of postinfarct angina, he underwent urgent cardiac catheterization. Coronary angiography (Figure, top) revealed a focal linear intraluminal filling defect in the middle portion of the left anterior descending coronary artery (arrow). Intravascular ultrasound of the corresponding area (bottom) demonstrated the presence of an eccentric lesion with a hypoechoic crescentic area within the plaque (large arrow) and an overlying cap (small arrow). The hypoechoic area within the lesion partially filled with contrast material and probably represents the site of a lipid pool in a plaque that ruptured. On the basis of the ultrasound findings, the angiogram showed the eccentric lesion filling with contrast material beneath a fibrous cap. A 4.0-mm intracoronary Palmaz-Schatz stent was placed successfully, with no residual stenosis. The patient had a full recovery and was discharged home on day 5 of hospitalization.
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