

Diagnosis of an Intracoronary Thrombus With Intravascular Ultrasound

P. Serrano, MD; J.M. Kross, MD; J.M.R. Ligthart, Tech; M.A. Costa, MD;
M. Sabaté, MD; P.J. de Feyter, MD, PhD

A 60-year-old man was referred for coronary angiography because of exertional angina (Canadian Cardiovascular Society angina classification type II). Twelve years earlier, he had had a myocardial infarction with a venous bypass graft to the right coronary artery. Two months before we saw him, a stent (Figure 1A) was placed in the distal part of the venous graft because of stable angina.

Angiography showed an eccentric negative image of a severe stenosis at the proximal part of the saphenous vein graft (Figure 1B). Intravascular ultrasound imaging (0.5 mm/s motorized pullback with a 30-MHz UltraCross echocatheter, SciMed, Boston Scientific Corp) showed an echolucent, homogeneous, well-delineated, diaphragm-like image almost occluding the vessel lumen (Figure 1D and 1E).

Direct atherectomy was performed with good angiographic (Figure 1C) and intravascular ultrasound (Figure 1F) results.

Two biopsies from the atherectomy were processed for routine paraffin embedding. Conventional hematoxylin-eosin-stained images (Figure 2A and 2B) demonstrated a straight interface (arrow) between the “normal” vessel wall tissue and the tissue causing the stenosis. This consisted of young fibroblasts in a mixoid extracellular matrix, suggesting chronic thrombus. To confirm our findings, we stained with anti-CD31 and anti-CD34 antibodies (Figure 2D and 2E), which demonstrated endothelial cells forming new capillaries (arrows) within the thrombus. In a section stained with van Gieson’s elastica stain, resolution of the elastica interna at the site of the thrombosis was shown (Figure 2C).

From the Thoraxcenter, Dijkzigt University Hospital, Rotterdam, Netherlands.

Correspondence to P. Serrano, MD, Interventional Cardiology Department, Servicio de Cardiología, Clínico Universitario Lozano Blesa, Avenida San Juan Bosco No. 15, 50.009 Zaragoza, Spain. E-mail pserranoa@meditex.es

The editor of Images in Cardiovascular Medicine is Hugh A. McAllister, Jr, MD, Chief, Department of Pathology, St Luke’s Episcopal Hospital and Texas Heart Institute, and Clinical Professor of Pathology, University of Texas Medical School and Baylor College of Medicine.

Circulation encourages readers to submit cardiovascular images to Dr Hugh A. McAllister, Jr, St Luke’s Episcopal Hospital and Texas Heart Institute, 6720 Bertner Ave, MC1-267, Houston, TX 77030.

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