

Neoatherosclerosis in a Bare Metal Stent: A New Problem of Atherosclerosis

Elad Asher MD MHA, Victor Guetta MD and Amit Segev MD

Leviv Heart Center, Sheba Medical Center, Tel Hashomer, Israel

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A 69 year old man was admitted to our department due to unstable angina pectoris. His past medical history was positive for hypertension, hyperlipidemia, obesity, as well as ischemic heart disease with acute myocardial infarction in 1995 for which he underwent percutaneous coronary intervention (PCI) to the left anterior descending (LAD) artery with insertion of a bare metal stent (BMS). His ejection fraction was 25% per echocardiography. In the month before admission he experienced chest pain on exertion, and

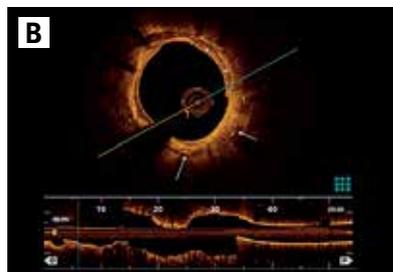
[A] Bare metal stent in the left anterior descending artery



myocardial perfusion scintigraphy showed ischemia and full viability to the anterior wall of his heart. The patient underwent diagnostic catheterization which demonstrated distal left main (LM) artery lesion, ostial LAD lesion and a mid-left circumflex (LCX) artery lesion. The patient was offered coronary artery bypass graft (CABG) surgery but refused.

At admission the patient underwent PCI to the LM-LAD and LCX arteries with a good result. During the PCI optical coherence tomography (OCT) imaging was performed to assess coronary anatomy and stent apposition. During OCT imaging to the BMS that was implanted in

[B] Optical coherence tomography (OCT) of the left anterior descending artery. OCT of the bare metal stent in the LAD shows neoatherosclerosis of calcified plaques (asterisks) inside the stent beyond the stent struts (arrows)



1995, a neoatherosclerosis of the artery was noticed [Figure 1 A and B]. Although in-stent restenosis of BMS was considered a stable condition with intimal hyperplasia, several studies [1] have reported in-stent restenosis presenting with acute coronary syndrome. Furthermore, both clinical and histologic studies of stents have demonstrated evidence of continuous neointimal growth during long-term follow-up [2]. Neointima with an atherosclerotic appearance is now recognized as neoatherosclerosis that can sometimes cause acute thrombotic occlusion following disruption of the atheroma. Early detection of neoatherosclerosis might be beneficial in improving long-term outcome of patients with stent implants.

Correspondence

Dr. E. Asher

Heart Institute, Sheba Medical Center, Tel Hashomer 5265601, Israel

Phone: (972-3) 635-2303

Fax: (972-3) 534 3888

email: el.asher@gmail.com

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“The supreme accomplishment is to blur the line between work and play”

Arnold J. Toynbee (1889-1975), British historian and philosopher of history. He is best known for his 12-volume *A Study of History*

“It is wrong always, everywhere, and for anyone, to believe anything upon insufficient evidence”

William Kingdon Clifford (1845-1879), English mathematician and philosopher, who introduced geometric algebra, important to mathematical physics, geometry, and computing