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Case Report

Combination of drug-coated balloon angioplasty and excimer laser coronary angioplasty ablation for coronary restenosis of Kawasaki disease: A case report

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ABSTRACT

Coronary aneurysm is a well-known sequela of Kawasaki disease. Although ischemic heart disease often becomes problematic due to coronary aneurysm and severe calcification, there is no consensus on how to treat ischemic lesions in those with Kawasaki disease. We describe a case of successful percutaneous coronary intervention of the restenosis lesion within a coronary artery aneurysm accompanied by Kawasaki disease by using an excimer laser coronary angioplasty ablation technique followed by drug-coated balloon angioplasty.

<Learning objective: Patients with coronary aneurysms after Kawasaki disease have a high rate of coronary artery stenoses. As children with Kawasaki disease mature, cardiologists are likely to see increasing numbers of these patients with cardiovascular complications, including intrastent restenosis. A combination of drug-coated balloon angioplasty and excimer laser coronary angioplasty ablation may be an effective strategy for intrastent restenosis lesions near the coronary aneurysm.>

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Introduction

Kawasaki disease (KD) is an acquired systemic vasculitis that affects infants and children. Vasculitis affects medium and small arteries, notably the coronary arteries. One of the chief complications of KD is a coronary aneurysm. Patients with coronary aneurysms after KD have a high rate of complications, including thrombosis or stenosis, which may lead to myocardial infarction [1].

Percutaneous coronary intervention (PCI) for stenosis of coronary aneurysms accompanied by KD is often challenging because of the following reasons. (1) Coronary artery stenoses usually occur near coronary aneurysms, which increase the tendency for incomplete stent apposition of a stent strut [2]. (2) Coronary artery stenoses are commonly severely calcified compared to the majority of adult atheromatous coronary artery lesions [3]. (3) Patients with persistent or remodeled coronary

aneurysms after KD may have a hypersensitivity reaction to the stents [4].

We describe a case of successful PCI for severe coronary artery restenosis at the distal portion of a coronary aneurysm. In our case, optical coherence tomography (OCT) images showed some calcification, and the lesion was similar to neoatherosclerosis. The lesion was successfully treated with excimer laser coronary angioplasty (ELCA) ablation followed by drug-coated balloon (DCB) angioplasty.

Case report

A 47-year-old man was referred to our hospital because of monomorphic ventricular tachycardia. He had a medical history of KD when he was 1-year-old. He presented with acute antero-septal myocardial infarction and ventricular fibrillation at 35 years of age. He underwent emergency coronary angiography, which detected an acute thrombotic occlusion at the distal edge of the coronary aneurysm in the left anterior descending artery (LAD). He underwent primary PCI with the implantation of a bare metal stent (BMS; Multi-Link Penta 3.5 mm × 13 mm, Guidant Corp.,

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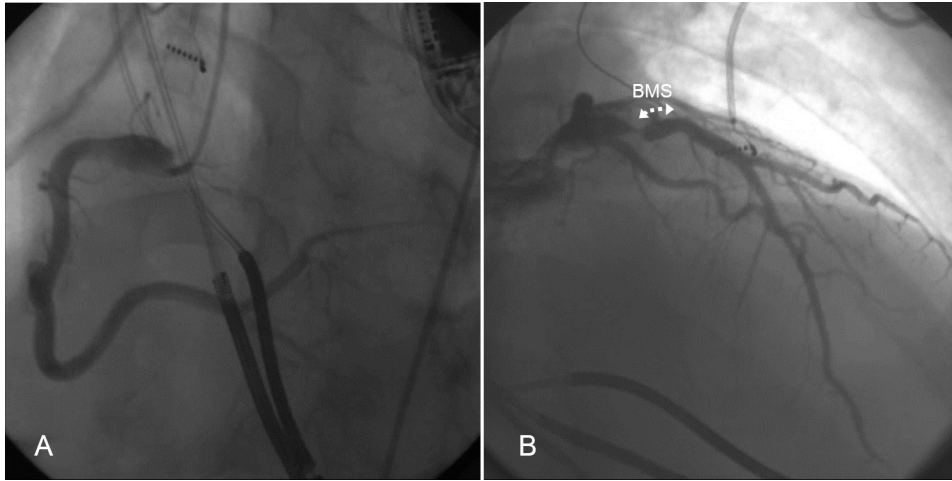


Fig. 1. Coronary angiography before percutaneous coronary intervention showing the saccular form of giant coronary aneurysms proximal and distal to the right coronary artery, and proximal from the left main trunk to the left anterior descending artery with calcification. A stented segment is shown in white double-headed dashed arrow. (A) Left anterior view on right coronary angiography. (B) Right anterior view on left coronary angiography. BMS, bare metal stent.

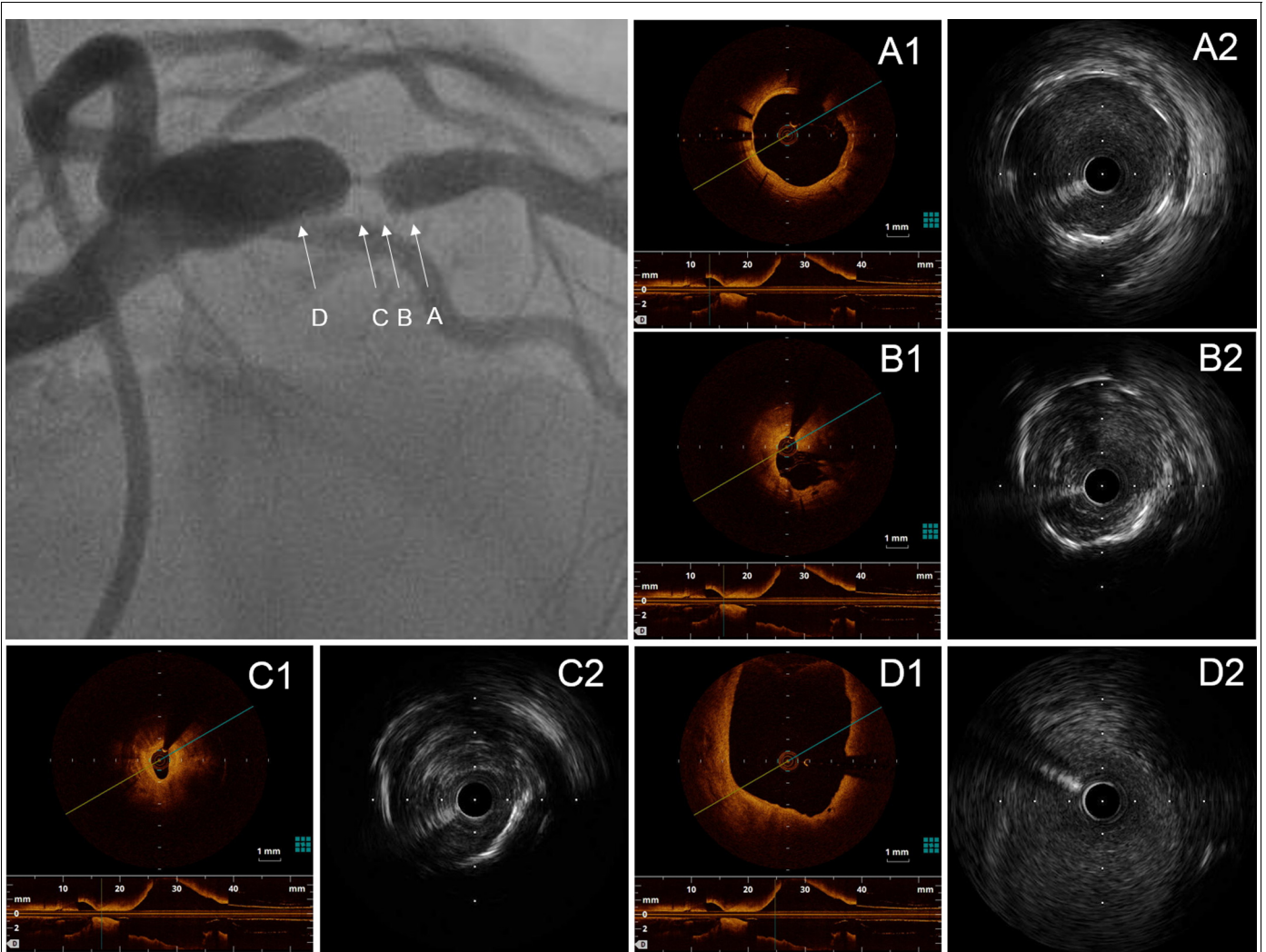


Fig. 2. Right anterior coronary view on left coronary angiography (arrows, A–D), optical coherence tomography images (panels A1, B1, C1, and D1), and intravascular ultrasound image (panels A2, B2, C2, and D2) before catheter intervention. Panel A1 and A2, the well-dilated bare metal stent was covered by neointima. Panel B1 and B2, the culprit lesion with inaintima neovascularization. Panels C1 and C2, the severe restenosis site with an attenuated signal intensity. Panel D1 and D2, the inlet of the aneurysm with inaintima neovascularization.

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