

IMAGES IN INTERVENTION

Rapid Growth of Giant Coronary Artery Aneurysm Following Treatment of Stent Edge Dissection



Reiko Shiomura, MD,^a Nobuaki Kobayashi, MD, PhD,^a Noritake Hata, MD, PhD,^a Wataru Shimizu, MD, PhD^b

A 73-year-old man with diabetes mellitus, hypertension, chronic renal failure, and prior myocardial infarction was admitted with acute non-ST-segment elevation myocardial infarction. Coronary angiography (CAG) showed severe stenosis at the ostial left main trunk and the proximal left circumflex artery (**Figure 1A**, **Online Video 1**). We decided to perform percutaneous coronary intervention using a T-stent technique. Intravascular ultrasound imaging after stenting (XIENCE Xpedition 3.5/18 mm [Abbott Vascular, Santa Clara, California] for the proximal left anterior descending coronary artery to the left main trunk and XIENCE Xpedition 3.0/18 mm for the proximal left circumflex coronary artery) revealed a coronary dissection and intramural hematoma at the distal edge of the left anterior descending coronary artery stent (**Figure 1B**, **Online Video 2**). After additional stenting (XIENCE Xpedition 2.5/23 mm) from the distal edge of the left anterior descending coronary artery stent, final CAG revealed optimal luminal dilation without flow limitation (**Figure 1C**, **Online Video 3**). Final intravascular ultrasound showed that the dissection was fully covered by the additional stent, without any gaps (**Figure 1D**, **Online Video 4**).

Ten days after the procedure, the patient reported severe chest pain. Repeated CAG showed a giant coronary artery aneurysm (12.7 × 14.6 mm; calculated by quantitative CAG) causing a flow limitation at the site of the treated dissection (**Figure 1E**, **Online Video 5**). Computed tomography (**Figure 1F**) revealed a stent gap at the site of the aneurysm. As a result, the patient underwent coronary artery bypass grafting and aneurysm repair (aneurysmorrhaphy).

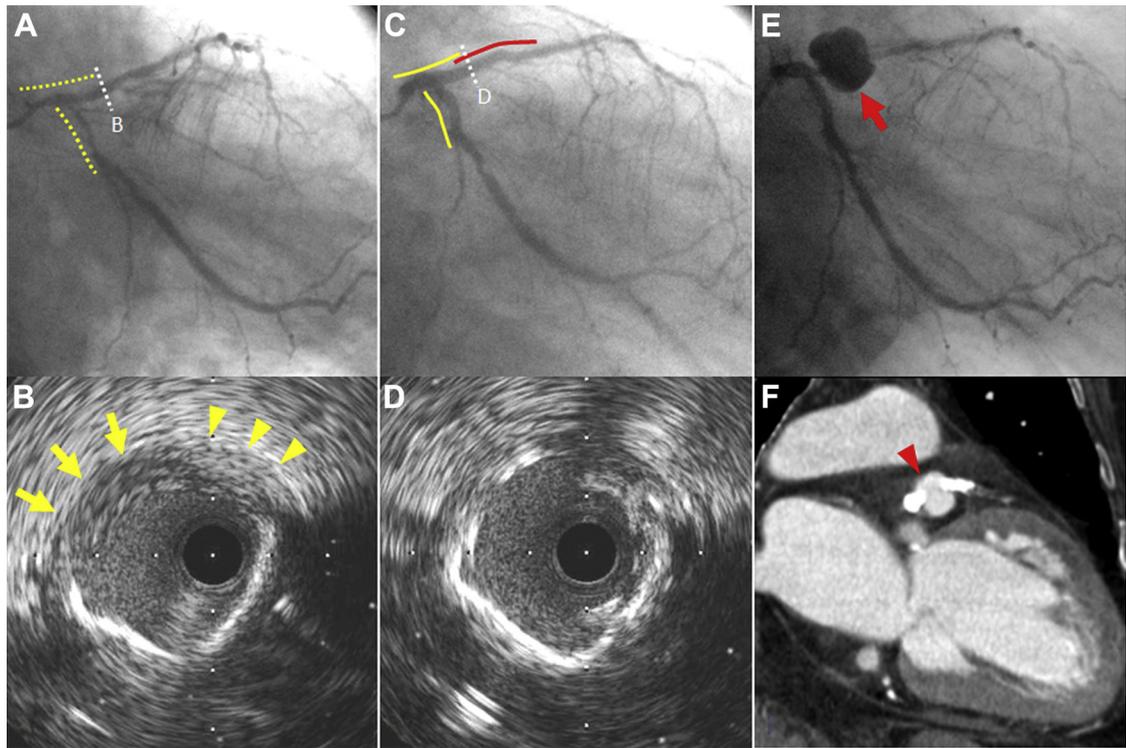
The possible mechanism responsible for the rapid growth of this giant coronary artery aneurysm was the treated stent edge dissection, and the aneurysm may have caused the early stent fracture.

REPRINT REQUESTS AND CORRESPONDENCE: Dr. Nobuaki Kobayashi, Division of Intensive Care Unit, Nippon Medical School, Chiba Hokusoh Hospital, 1715 Kamagari, Inzai, Chiba 270-1694, Japan. E-mail: s5047@nms.ac.jp.

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APPENDIX For supplemental videos, please see the online version of this article.

From the ^aDivision of Invasive Care Unit, Nippon Medical School, Chiba Hokusoh Hospital, Chiba, Japan; and the ^bDepartment of Cardiovascular Medicine, Nippon Medical School, Tokyo, Japan. The authors have reported that they have no relationships relevant to the contents of this paper to disclose.

FIGURE 1 Multiple Imaging Modalities for the Left Anterior Descending Coronary Artery

(A) Initial coronary angiography (CAG) showing severe stenosis at the ostial left main trunk and the proximal left circumflex coronary artery. Yellow dotted lines indicate the initial stenting strategy. See [Online Video 1](#). (B) Intravascular ultrasound (IVUS) image of the left anterior descending coronary artery (LAD) after stenting, showing the distal edge dissection reaching the media (**yellow arrows**) and intramural hematoma (**yellow arrowheads**). See [Online Video 2](#). (C) Final CAG showing optimal luminal dilation. **Solid lines** represent the implanted stents. See [Online Video 3](#). (D) Final IVUS image showing the stent edge dissection fully covered by an additional stent. See [Online Video 4](#). (E) Repeat CAG 10 days after the procedure, showing rapid growth of coronary aneurysm (**red arrow**) at the site of the dissection that was treated with additional stenting. See [Online Video 5](#). (F) Computed tomography showing a stent gap at the site of the aneurysm (**red arrowhead**).