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IMAGES IN INTERVENTION

Very Late Stent Migration Within a Giant Coronary Aneurysm in a Patient With Kawasaki Disease

Assessment With Multidetector Computed Tomography

Umihiko Kaneko, MD,[a] Yoshifumi Kashima, MD,[a] Makoto Hashimoto, MD, PhD,[b] Tsutomu Fujita, MD[a]

A 35-year-old man with a history of Kawasaki disease underwent urgent percutaneous coronary intervention for total occlusion of the left anterior descending artery. He had been treated with warfarin, aspirin, and ticlopidine since adolescence. Pre-procedural multidetector computed tomography (MDCT) showed a giant coronary aneurysm (30.7 mm × 24.1 mm) in the proximal left anterior descending artery, which was completely occluded (**Figure 1A**). Baseline angiography (**Figure 1B**) and intravascular ultrasound examination verified the giant aneurysm and showed a massive thrombus (**Figures 1C and 1D**). Following deployment of a 4.0 mm × 32 mm bare-metal stent that was post-dilated to 6.0 mm, satisfactory angiographic results were obtained (**Figure 1B'**). The stent was placed inside the aneurysm (without normal vasculature on intravascular ultrasound) (**Figures 1C' and 1D'**). At 4-year follow-up, no additional clinical event had occurred. Notably, MDCT demonstrated progressive coronary aneurysm enlargement reaching 37.0 mm × 29.0 mm (2-year follow-up: 35.3 mm × 26.7 mm), and stent migration in the aneurysm (**Figures 1E to 1G**). Considering the risk of stent thrombosis and aneurysm rupture, he underwent aneurysmectomy (**Figures 1H to 1J**) and coronary artery bypass grafting.

This is a unique case of very late stent migration in a progressively enlarging coronary aneurysm from Kawasaki disease. Mechanisms of stent migration include: 1) continued expansion of the giant coronary aneurysm; 2) stent implantation inside the aneurysm with soft thrombus and discontinuation of normal vasculature; and 3) stent position at a vessel hinge point that produces a shearing force. In adult patients with Kawasaki disease, the continued expansion of the coronary aneurysm occurs infrequently (1); stent implantation has been recommended in these cases (2,3). Our case highlights the importance of a long-term follow-up using MDCT in patients with Kawasaki disease after stent implantation because of the potential for progressive coronary aneurysm enlargement and possible stent migration.

ADDRESS FOR CORRESPONDENCE: Dr. Umihiko Kaneko, Cardiovascular Medicine, Sapporo Cardio Vascular Clinic, Sapporo Heart Center, North 49, East 16, 8-1 Higashi Ward, Sapporo, Hokkaido 007-0849, Japan. E-mail: uk434471@gmail.com.

From the [a]Department of Cardiovascular Medicine, Sapporo Cardio Vascular Clinic, Sapporo Heart Center, Sapporo, Japan; and the [b]Department of Cardiovascular Surgery, Sapporo Cardio Vascular Clinic, Sapporo, Japan. Dr. Fujita has served as a consultant for Terumo Corporation. All other authors have reported that they have no relationships relevant to the contents of this paper to disclose.

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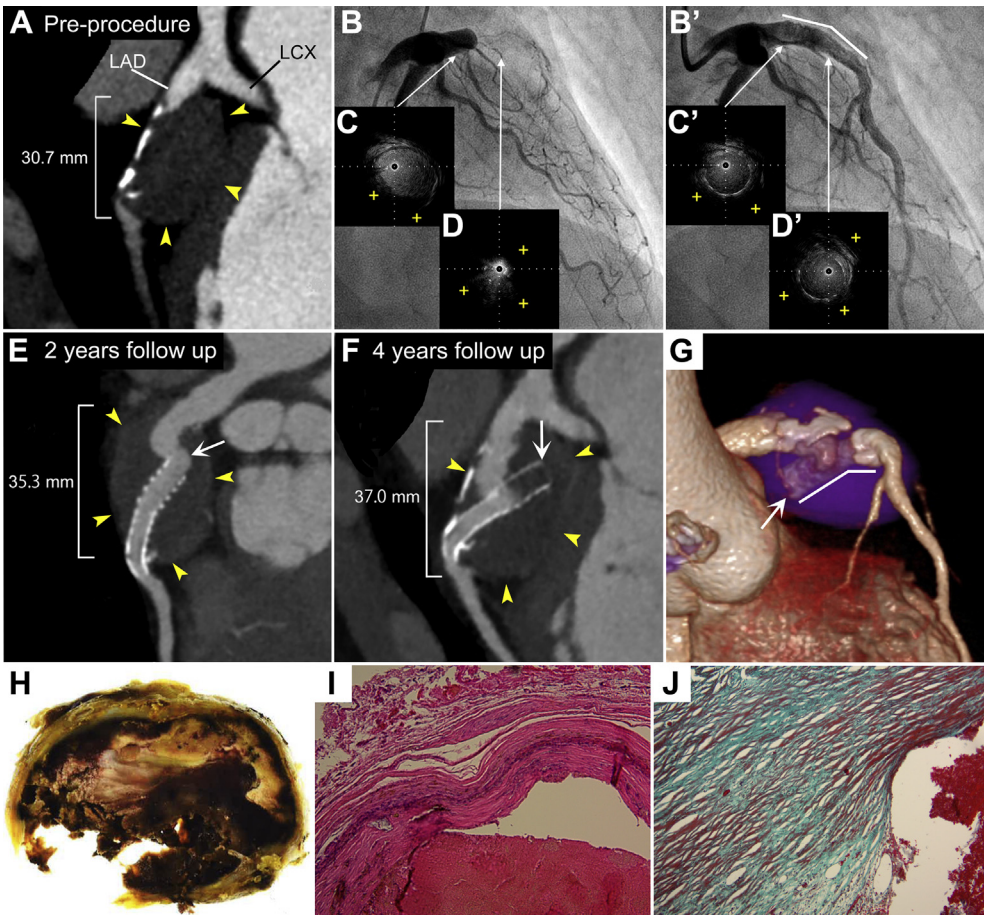
FIGURE 1 Percutaneous Coronary Intervention and Serial MDCT Follow-Up



(A, E, and F) Progressively enlarging coronary artery aneurysm is demonstrated with long-term multidetector computed tomography (MDCT) follow-up **(arrowheads). (A)** Pre-procedural MDCT showing the totally occluded proximal left anterior descending artery (LAD) by a giant aneurysm (30.7 × 24.1 mm). **(B)** Baseline coronary angiography. **(C, D)** Baseline intravascular ultrasound (IVUS) imaging showing the giant coronary aneurysm with massive thrombus **(plus signs)**. **(B')** Post-procedural angiography. The **white line** indicates the implanted stent. **(C')** At the proximal end of the stent, the stent is located inside the aneurysm with massive thrombus and discontinuation of normal vasculature. **(D')** The midsegment of the stent is well expanded in the aneurysm. The IVUS images **(C, D)** at baseline and **(C', D')** at post-procedure correspond with each other. **(C, D, C', D')** A massive thrombus in the aneurysm **(plus signs)**. **(E)** At 2-year follow-up, the proximal end of the stent is located at a hinge point **(arrow)** and enlargement of the giant coronary aneurysm (35.3 × 26.7 mm) is observed. **(F, G)** At the 4-year follow-up, further enlargement of the giant coronary aneurysm (37.0 × 29.0 mm) and very late stent migration **(arrow)** in the aneurysm are noted. The **white line** indicates the migrated stent. **(H)** Macroscopic findings of the resected aneurysm filled with massive, organized thrombus. **(I)** Histologic examination of the resected aneurysm wall showing atrophic media and adventitia transferring to fat tissue that formed the true aneurysm consisting of organized thrombus and collagen fibers (hematoxylin and eosin stain, 10×). **(J)** The vessel wall with increasing collagen fibers and mixed thrombus. No active inflammatory vasculitis is observed (combined Verhoeff and Masson's trichrome stain, 10×). LCX = left circumflex artery.

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KEY WORDS giant coronary aneurysm, Kawasaki disease, stent migration