

# A Rare Case of Spontaneous Dissection in a Left Internal Mammary Artery Bypass Graft in Acute Coronary Syndrome



Kohei Koyama, MD, PhD, Kihei Yoneyama, MD, PhD, Maya Tsukahara, MD, Shingo Kuwata, MD, Takanobu Mitarai, MD, Ryo Kamijima, MD, Yuki Ishibashi, MD, PhD, Yasuhiro Tanabe, MD, Ken Kongoji, MD, PhD, Tomoo Harada, MD, PhD, Yoshihiro J. Akashi, MD, PhD

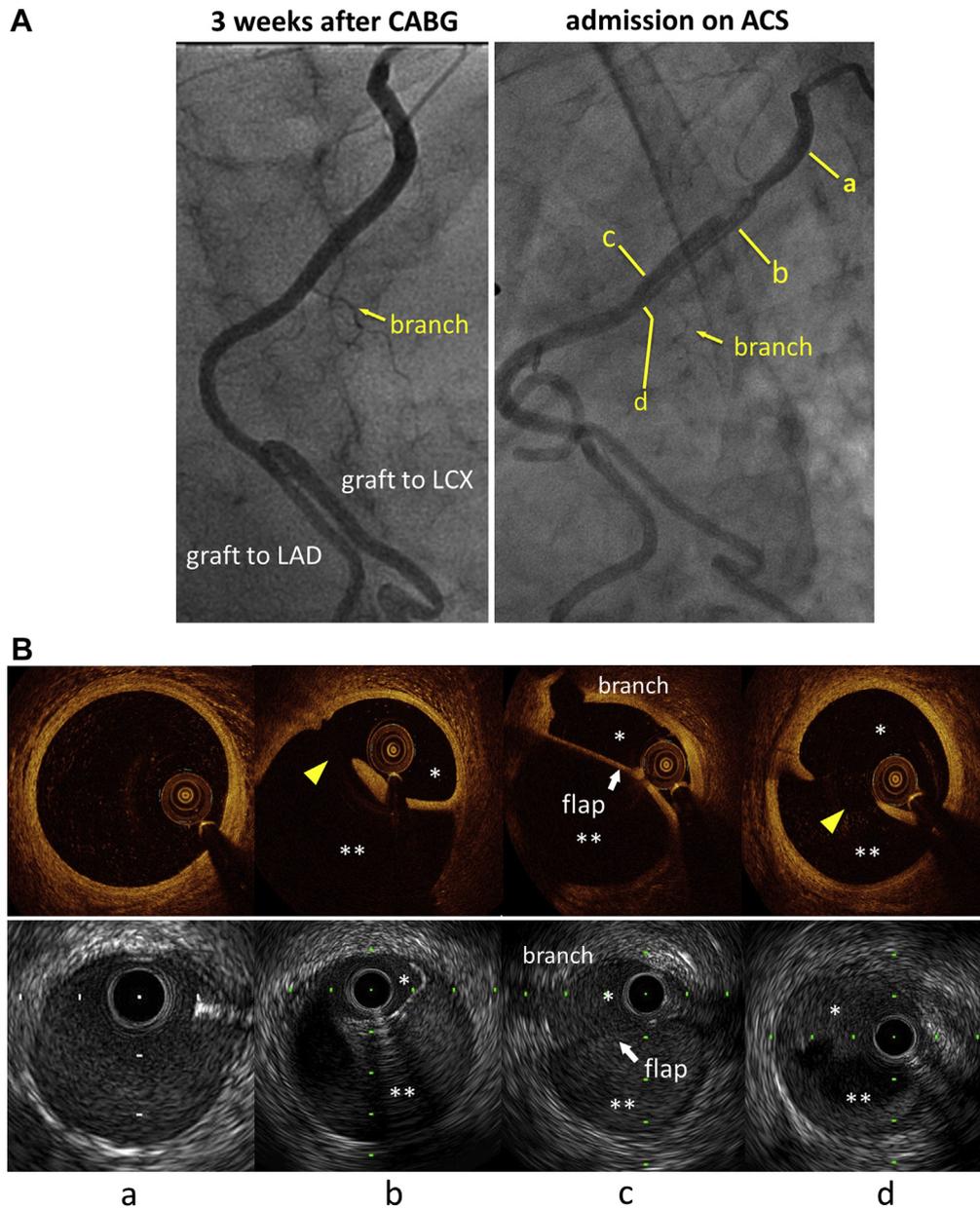
A 47-year-old man presented to our hospital after he was successfully resuscitated from ventricular fibrillation. He had experienced chest pain while seated at home. He had undergone successful sequential coronary artery bypass grafting 17 months previously, by the use of left internal mammary artery (LIMA) grafts to the left anterior descending artery and the left circumflex artery and a saphenous vein graft to the right coronary artery. Angiography showed dissection with severe stenosis at the middle body of the LIMA (**Figure 1A**). Intravascular ultrasound and optical coherence tomography revealed dissection at the LIMA

(**Figure 1B**, **Online Video 1**). Two stents were employed to cover the entire lesion. A few cases of internal mammary artery dissection after physical movement have been reported (**1**); however, to our knowledge, no previous report has described spontaneous dissection in a LIMA graft causing acute coronary syndrome without an external factor.

---

**REPRINT REQUESTS AND CORRESPONDENCE:** Dr. Kohei Koyama, Division of Cardiology, Department of Internal Medicine, St. Marianna University School of Medicine, 2-16-1, Sugao, Miyamae-ku, Kawasaki-City, Kanagawa 216-8511, Japan. E-mail: [kkouhei21@gmail.com](mailto:kkouhei21@gmail.com).

**FIGURE 1** Images of Spontaneous Dissection at the LIMA



(A) The angiogram revealed the appearance of a spontaneous dissection at the middle body of the left internal mammary artery (LIMA) at admission for acute coronary syndrome (right side; b-d). There was no abnormality at 3 weeks after bypass graft surgery (left side). (B) Optical coherence tomography and intravascular ultrasound confirmed the true lumen (\*), false lumen (\*\*), and a flap (b to d) (Online Video 1). Yellow arrowheads indicate rupture site. No dissection was observed at the proximal site (a). These images correspond to the angiogram (A).

ACS = acute coronary syndrome; CABG = coronary artery bypass grafting; LAD = left anterior descending coronary artery; LCX = left circumflex coronary artery.

**REFERENCE**

1. Freixa X, Gallo R. Internal thoracic artery dissection: a proposed mechanistic explanation. *J Am Coll Cardiol Intv* 2013;6:533-4.

**KEY WORDS** coronary bypass graft, internal mammary artery, optical coherence tomography, spontaneous dissection

**APPENDIX** For a supplemental video, please see the online version of this article.