

IMAGES IN STRUCTURAL HEART DISEASE



An Unexpected Apparition—Or Old Valves Die Hard

Takehiro Yamashita, MD, PhD, FACC^a, Naoki Iwakiri, MD^a, Masato Suzuki, MD^b, Yohei Ohkawa, MD^b, and Yusuke Watanabe, MD^c

^aDepartment of Cardiology, Cardiovascular Center, Hokkaido Ohno Memorial Hospital, Sapporo, Hokkaido, Japan; ^bDepartment of Cardiovascular Surgery, Cardiovascular Center, Hokkaido Ohno Memorial Hospital, Sapporo, Hokkaido, Japan; ^cDepartment of Internal Medicine, Division of Cardiology, Teikyo University School of Medicine, Tokyo, Japan

A 73-year-old female with a history of severe aortic stenosis (AS) and idiopathic thrombocytopenic purpura (ITP) presented with exertional dyspnea and was scheduled for transcatheter aortic valve replacement (TAVR). Pre-procedural computed tomography measured that the left main height was 13.4 mm with no bulky calcium nodules at a valve leaflet (Figure 1, Panel A) and the sinus of valsalva dimension was 30.7 mm (Figure 1, Panel B), both of which suggested that she was a low risk for coronary obstruction during TAVR. Aortography during balloon valvuloplasty showed ascending aorta with patent left main coronary artery (Figure 1, Panel C). Transesophageal echocardiography (TEE) after a predilatation demonstrated a new finding of a 30 mm × 8 mm mobile mass attached to the commissure between the left coronary cusp and non-coronary cusp, which was fluttering and

traversing the valve annulus back and forth in accordance with cardiac cycles (Figure 1, Panel D, Video 1). Aortography after a 26-mm Sapien XT valve (Edwards Lifesciences, Irvine, CA, USA) implantation demonstrated a completely occluded left main coronary artery (LMCA), which resulted in a shock state (Figure 1, Panel E). Rescue balloon angioplasty was immediately performed, which restored TIMI 3 flow with contrast defect delineated from the ostium to the middle portion of the LMCA (Figure 2, Panel F1) where intravascular ultrasound demonstrated that the lumen was almost completely occupied by a heterogenous-echo mass (Figure 2, Panel F2). A LMCA embolism caused by a likely dislocated leaflet tissue during the predilatation was suspected, which was successfully compressed against the wall of the left main by a drug-eluting stent implantation resulting

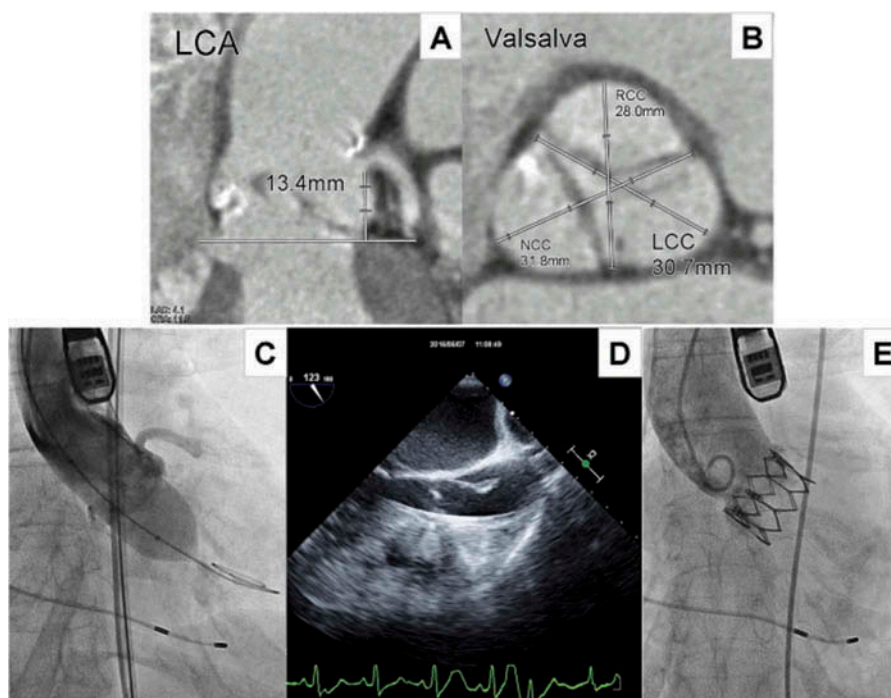


Figure 1. A: Left main coronary artery height; B: Sinus of valsalva dimension; C: Aortography during valvuloplasty; D: Transesophageal echocardiography after the valvuloplasty; E: Aortography after Sapien XT (26mm) valve implantation.

CONTACT Takehiro Yamashita, MD, PhD, FACC ✉ t_yamashita@cvc-ohno.or.jp 📍 Cardiology, Cardiovascular Center, Hokkaido Ohno Memorial Hospital, 2-1-16-1, Miyanosawa, Nishiku, Sapporo, Hokkaido 063-0052, Japan.

📎 Supplemental data for this article can be access on the [publisher's website](#).

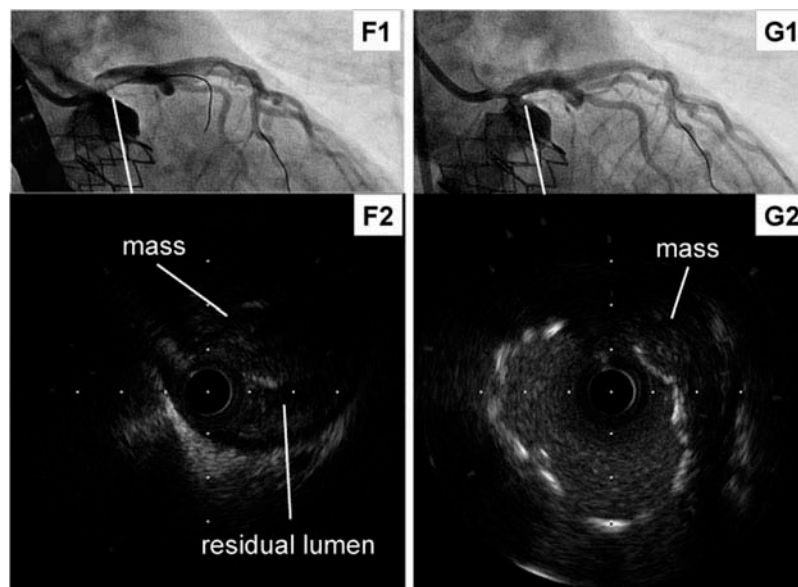


Figure 2. F1: Coronary angiogram after rescue balloon angioplasty; F2: Intravascular ultrasound after rescue balloon angioplasty; G1: Final coronary angiogram after drug-eluting stent implantation; G2: Final intravascular ultrasound after drug-eluting stent implantation.

in TIMI 3 flow and hemodynamic recovery (Figure 2, Panel G1). Final IVUS demonstrated a widely dilated lumen with a compressed mass between the stent struts and vessel wall (Figure 2, Panel G2). To the best of our knowledge, this is the very first report of this unexpected mechanism for LMCA occlusion during TAVR procedures where the observation of such dislocated and hyper mobile tissue after predilatation should prompt concerns for coronary and neuro embolization

that could be addressed by coronary protection and neuro protection, respectively.

Disclosure statement

Drs. Yamashita, Iwakiri, Suzuki and Ohkawa have reported no relationships relevant to the contents of this paper to disclose. Dr. Watanabe is a registered proctor for Edwards Lifesciences Japan, Tokyo, Japan.