Coronary Compression in Transapical Transcatheter Aortic Valve Procedure

Javier Gualis, MD, PhD, Carlos Cuellas, MD, Felipe Fernandez-Vazquez, MD, PhD, Armando Perez, MD, PhD, Carlos Martín, MD, Jose Manuel Martínez-Comendador, MD, PhD, Rodrigo Estévez-Loureiro, MD, PhD, and Mario Castaño, MD, PhD

Departments of Cardiac Surgery and Cardiology, Complejo Asistencial Universitario de León, León, Spain

A 78-year-old man with symptomatic severe aortic stenosis was referred for transcatheter aortic valve implantation. A left thoracoplasty as a treatment of pulmonary tuberculosis was previously performed, with residual severe thoracic deformity. Afterward, a 26-mm Edwards Sapien XT aortic valve (Edwards Lifesciences, Irvine, CA) was implanted using a transapical approach. Significant cardiomegaly and firm pericardial and pleural adhesions were observed, and exposure was enhanced with a 7.5-cm Edwards Perivue soft tissue retractor (Edwards Lifesciences; Fig 1D). During the valve procedure, sudden ventricular fibrillation occurred. After successful cardiopulmonary resuscitation, the valve was emergently deployed (Fig 1B). Left coronary artery angiography showed new-onset severe stenosis of the mid segment of the left anterior descending (LAD) and the first and second diagonal branches. These three stenoses formed a straight line with no correlation with the previously observed atheromatous disease, suggesting external compression by the soft tissue retractor ring (Figs 1A, 1C). A new drug-eluting stent was implanted successfully in the mid-LAD. The postprocedural course was uneventful, and the patient was discharged on the 5th day. In conclusion, we think that the use of this retractor could be inadvisable in patients with significant chest wall deformities associated with firm pleural and pericardial adhesions.

Fig 1.