Prosthetic aortic valve stenosis secondary to non-optimal surgical suture

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A 73-year-old male came to the emergency department with a mildly increased troponin I level (0.28 ng/mL) and normal electrocardiogram complaining of dyspnea after having chest and back pain a few hours before. The patient had a past medical history of Type 2 diabetes mellitus, dyslipidaemia, and hypertension. Nine months before he had had three coronary bypasses and aortic valve replacement for aortic stenosis. The transthoracic echocardiogram revealed an increased aortic gradient of 70 mmHg with a functional area of 0.6 cm². The transesophageal echocardiogram confirmed the presence of a prosthetic 3-leaflet aortic valve with very poor leaflet motion and elevated aortic gradient; neither vegetation nor thrombus was noted (Panels A–C and see Supplementary data online, Videos S1–S3).

The aortotomy performed in the operating room revealed diffuse and severe atherosclerosis in the ascending aorta, mostly located at the sinotubular junction. The aortic valve had a polypropylene purse-string suture around the apex of the struts of the valve and tied. It appears the valve was sewn-in using an endoscopic suturing device. Prosthetic leaflets appeared stuck, thickened and covered by abundant pannus. The metal clips were removed, then the valve was debrided and excised without difficulty. The new prosthetic valve was easily seated and tied, the aorta was then closed in an endoscopic suturing device. Prosthetic leaflets appeared stuck, thickened and covered by abundant pannus. The metal clips were removed, then the valve was debrided and excised without difficulty. The new prosthetic valve was easily seated and tied, the aorta was then closed in an endoscopic suturing device. Prosthetic leaflets appeared stuck, thickened and covered by abundant pannus. The metal clips were removed, then the valve was debrided and excised without difficulty. The new prosthetic valve was easily seated and tied, the aorta was then closed in an endoscopic suturing device.

Supplementary data are available at European Heart Journal — Cardiovascular Imaging online.

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