Turned, wedged, but still no feeling: asymptomatic late transcatheter aortic valve dislocation into the LVOT

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An 81-year-old male underwent elective trans-femoral transcatheter aortic valve implantation. The aortic annulus was intra-operatively measured with 25.2 mm by 2/3D-TEE and subsequently, a 29 mm Edwards SAPIEN XT™ was chosen (Panel A). The procedure was uneventful and final echocardiography confirmed excellent prosthesis function (Panels B and C). After an unremarkable post-operative course, pre-discharge X-ray of the chest on post-operative Day 6 unmasked abnormal position of the bioprosthesis (Panel D, arrow). Immediately performed echocardiography confirmed dislocation of the bioprosthesis (Panel E, arrow). The native aortic valve was intact again, preventing from severe aortic regurgitation (Panel E, asterisk). The embolized bioprosthesis caused subvalvular aortic stenosis with a $P_{\text{max}}$ of 75 mmHg. Notably, the patient still was completely asymptomatic without any signs of cardiac failure, rather organizing his upcoming discharge home. Instead, the patient underwent urgent surgery. Intra-operatively, the intact native aortic valve (Panel F, asterisk) and the bioprosthesis, turned by 90° and stably wedged in the left ventricular outflow tract (LVOT) were confirmed (Panel G, arrow). Additionally, an 8 mm cut in the AML, fixing the bioprosthesis in its position, was seen and repaired using 6.0 polypropylene suture. Subsequently, aortic valve replacement by implantation of a 27 mm SJM Epic™ bioprosthesis was performed. The further course—once again—was completely uneventful.

Complete dislocation of the valve—particularly in the LVOT—is extremely rare. Conceivable causes are prosthesis-annulus-mismatch, alone or combined with low implantation height. With regard to the finally implanted 27 mm bioprosthesis, both are probable causes in the reported patient. It sincerely can be discussed, whether a 31 mm Medtronic CoreValve™ would have been the better choice in this setting. In these rare cases of valve embolization, surgical aortic valve replacement remains the best option and often provides even in this high-risk group excellent results.