Valve-in-valve trans-cutaneous aortic valve implantation (TAVI) is now feasible and in a recent multi-centre study showed performed with high technical success rates, acceptable post-procedural valvular function, and excellent functional improvement.\(^1\) Multi-modality cardiac imaging in such patient’s is slowly becoming routine and it is becoming pivotal for physicians to recognize structural and anatomical changes present in such patients. A 70-year-old gentleman was admitted to our unit with pyrexia and suspected infective endocarditis. He had previously undergone bio-prosthetic aortic valve implantation in 2004 for aortic stenosis. When he re-presented with heart failure in 2012 due to re-stenosis of the aortic valve bioprosthesis, he was deemed not suitable for re-do surgery because of high-risk involved. Thus, he had TAVI using Medtronic CoreValve. Three-dimensional transoesophageal echocardiogram (3D TEE) and multi-slice contrast enhanced computed tomography (CT) scan were performed to look for the source of infection. 3D TEE clearly showed the groove of CoreValve in

Valve in Valve: Three-Dimensional Transoesophageal Echocardiogram and Multi-Slice CT Images of Bio-Prosthetic Aortic Valve Replaced by Medtronic CoreValve

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Fig. 1. Three-dimensional transoesophageal view of Medtronic CoreValve (blue arrows) embedded in sinus of Valsalva, where bio-prosthetic aortic valve was previously implanted. In this systolic view the CoreValve cusps are open (red arrows). LA: left atrium, LV: left ventricle, LVOT: left ventricular outflow tract.

Fig. 2. Computed tomography three-dimensional multi-slice reconstruction showing well-seated CoreValve strut (blue arrows) in the left ventricular out-flow tract to aortic root.
3D vascular multi-slice reconstruction (Fig. 2). Two-dimensional short-axis colour Doppler views confirmed patent left main stem and location of the strut in relation to it (Fig. 3). The highlight of this peculiar case is that the CoreValve can be recognised by 3D TEE and also CT. However, it is not possible to distinguish the remnant leaflets of the previous bio-prosthesis. This is important to bear in mind when performing and reporting TEE and CT in patients with aortic valve in valve systems. To best of our knowledge, this state-of-the-art 3D-volume rendered multi-modality imaging assessment of valve in valve TAVI has not been reported previously in literature.

REFERENCE