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Transoesophageal echocardiography-guided wire technique for crossing a stenosed aortic valve during transcatheter aortic valve replacement

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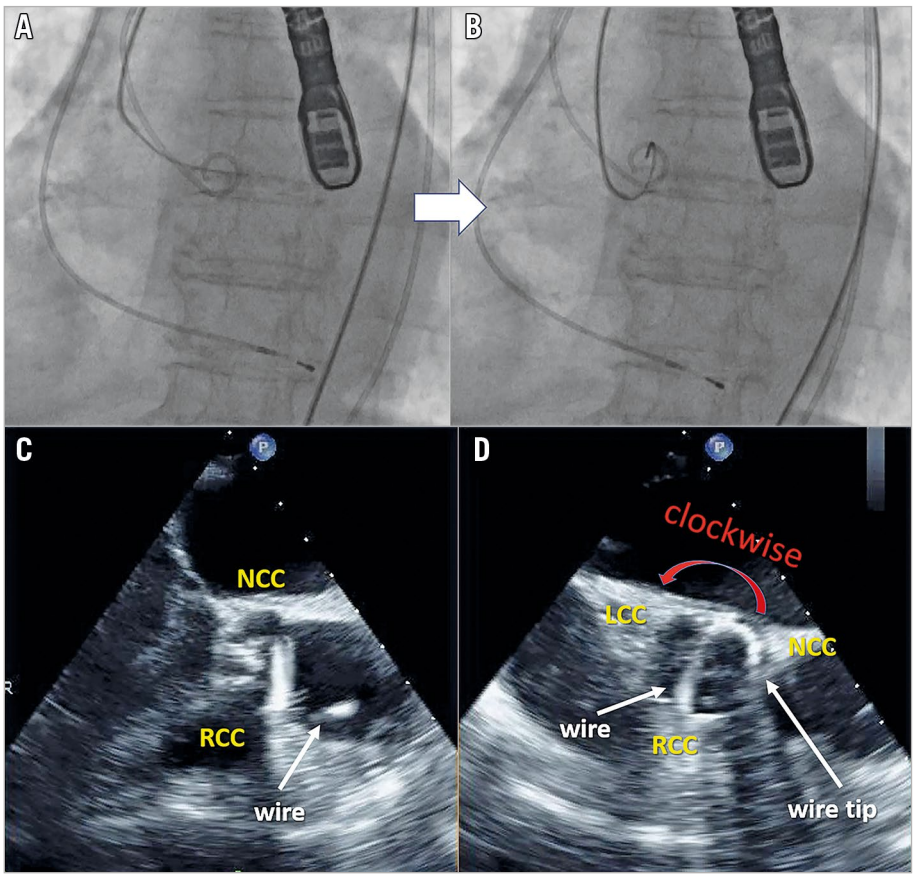

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A 90-year-old woman, with severe calcific aortic stenosis (maximum velocity 4.9 m/sec, mean pressure gradient 58 mmHg, and aortic valve area 0.43 cm^2), underwent transfemoral transcatheter aortic valve replacement (TAVR) using general anaesthesia and transoesophageal echocardiography (TOE), IE-33 (Philips Medical Systems, Andover, MA, USA) with an X7-2t matrix transducer, which can visualise the aortic valve (AV) simultaneously in the long and short axes[1]. We encountered difficulty crossing the stenosed AV with the tip of the catheter, which was slightly close to the AV **(Panel A, Panel B, Moving image 1**). The live X-plane mode of the TOE showed that the tip of the wire was located and trapped on the non-coronary cusp **(Panel C, Panel D, Moving image 2)**. Based on the echocardiologist's suggestion, the interventionist moved the wire clockwise and pulled the Judkins right catheter slightly, so that it could be relocated between the non-coronary and left coronary cusps, resulting in crossing of the wire.

This case shows the crossing of a TOE-guided wire in a stenosed AV during TAVR. We achieved crossing by running the wire between the non-coronary cusp and the left coronary cusp. Obtaining detailed assessment of wire location and direction is difficult using a fluoroscope only; frequent wire adjustment increases the risk of cerebral embolism substantially[2]. This simple and easy technique can decrease risk in patients, decrease radiation exposure and save time.

Conflict of interest statement

The authors have no conflicts of interest to declare.

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Supplementary data

Moving image 1. Failure of wire crossing to the aortic valve under a fluoroscope.

Moving image 2. Failure of wire crossing to the aortic valve in live X-plane transoesophageal echocardiography mode.

The supplementary data are published online at: www.asiaintervention.org