

## Complications in transcatheter aortic valve implantation – not one but two

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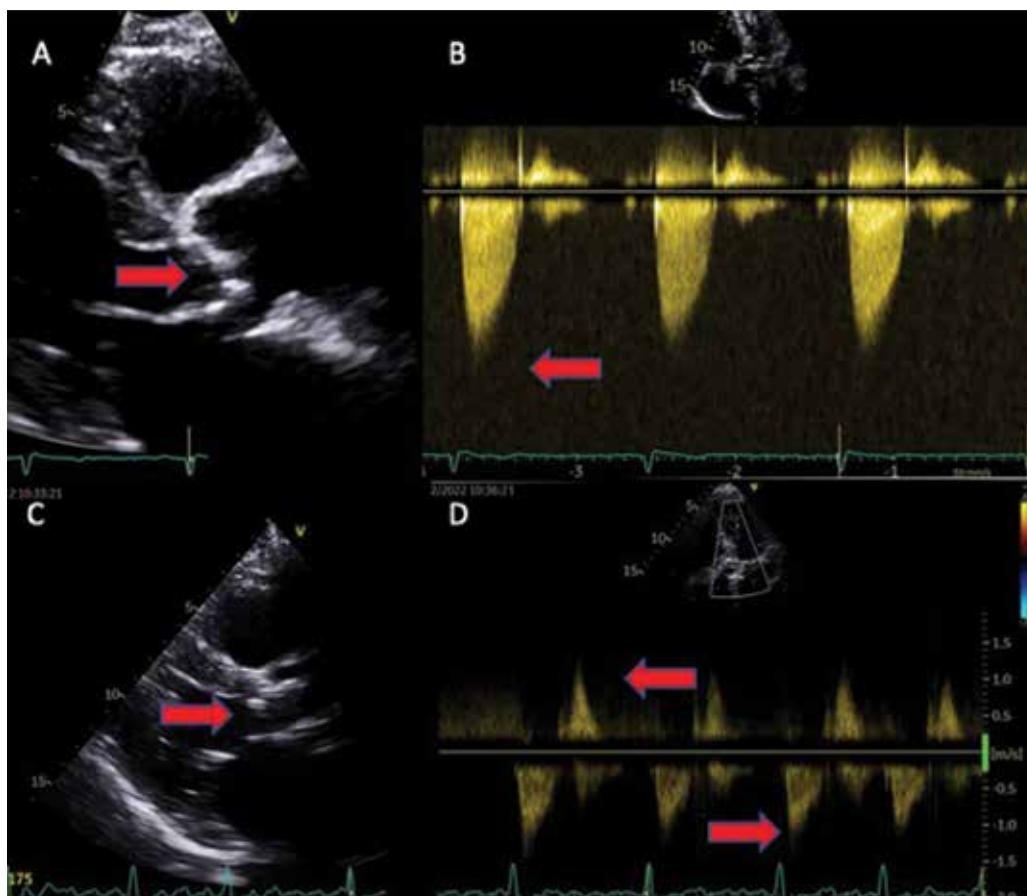
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**Introduction:** Transcatheter aortic valve implantation (TAVI) is a procedure which has become the new standard of care for patients with intermediate to high risk for the surgical correction of aortic stenosis. Prior to the procedure, echocardiography and MSCT angiography is done to evaluate the heart, aorta and peripheral vessel anatomy.<sup>1,2</sup>

**Case report:** We present 84 years old male patient admitted due to severe aortic stenosis in 2022 (**Figure 1**). The patient has a history of hypertension and presented with dyspnea. Coronary artery disease was excluded. The day before the TAVI procedure, the patient presented with first episode of atrial fibrillation (AF), frequency of 100 beats per minute. The TAVI procedure began by puncturing the left common femoral artery (AFC) and placing the 6F guide which was used to cross over to the right



**FIGURE 1.** A) Severe calcified aortic valve and stenosis. B) CW Doppler showing peak gradient across the aortic valve. C) Valve placed in aortic position. D) CW Doppler showing peak gradient after valve placement and mild paravalvular leak.

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AFC, then also punctured to allow access ports for introduction of the TAVI system later on in the procedure. Following, a balloon predilatation of the native aortic valve (24 mm) was done in order to accommodate the valve (Boston Acurate neo 2 valve size L). During the extraction of the “delivery” system, despite the optimal positioning of the “nose-cone”, the implanted valve “popped-up” into the aortic root. To correct that, a retraction of the embolized valve into the ascending aorta was attempted using numerous N-SNARE and SNARE-ONE systems which was unsuccessful. The retraction was succeeded by using a forceps (biopptome) which placed the valve in its final location - the ascending aorta. Another valve was then implanted at the aortic valve position, this time positioned optimally. Final aortography confirmed the correct position of the second valve as well as a securely situated primary valve inside the aortic arch with normal flow in the supraaortic branches (**Figure 2**). Echocardiography showed good transvalvular gradients and function with mild but not significant paravalvular leak.

**Conclusion:** Although TAVI is a promising solution for high-risk patients, positioning of the valve in severely calcified valves still remains one of the more challenging steps of the procedure. Despite all the precautionary steps taken, complications such as the one presented can still arise.

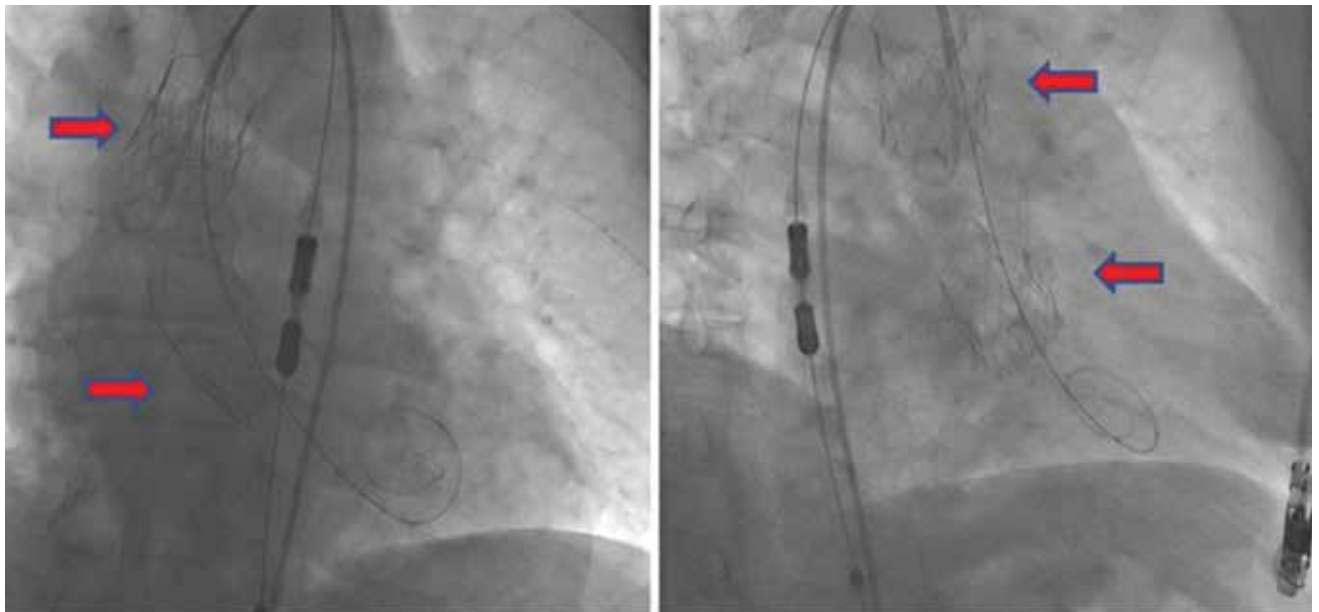


FIGURE 2. Fluoroscopy of two valves, one in the aortic valve position and one in the ascending aorta position.

### LITERATURE

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