



# Transfemoral aortic valve implantation with right-sided aortic arch – a case report

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## Objective

Transcatheter aortic valve implantation (TAVI) has become a routinely used therapy option in a selected patient population at high risk for conventional surgery. The configuration and anatomy of access ways differ between each patient. A rare anatomical variant is the right-sided aortic arch which aggravates transcatheter access to the aortic valve and results in a challenging implantation.



Figure 1: Due to impaired kidney function, magnetic resonance imaging was performed for preoperative planning. These investigation revealed the right-sided aortic arch.

## Patient history

An 82-year-old man diagnosed with a severe symptomatic aortic stenosis and worsening dyspnea during exertion was referred to our heart team. Comorbidities included hypertension, coronary artery disease (without the need for intervention) and status post stroke. Pre-intervention magnetic resonance tomography revealed a right-sided aortic arch

## Operation and perioperative course

The heart team performed a transfemoral TAVI under local anesthesia with sedation. A balloon-expandable valve was implanted using the standard delivery system through the right femoral artery. Particular attention was paid to the positioning and manipulation of the extra-stiff guidewire and the delivery system within the aortic arch. We could achieve an aligned view of the coronary cusps, the ascending aorta and arch with LAO 10° and cranial 5° in fluoroscopy. The native valve could be crossed without difficulties and the valve was successfully implanted. The femoral access was closed by a percutaneous closure system.

In-hospital stay was uneventful and the patient could be discharged home on the 6th postoperative day. Echocardiography showed a good prosthesis function with a mild aortic paravalvular leak.

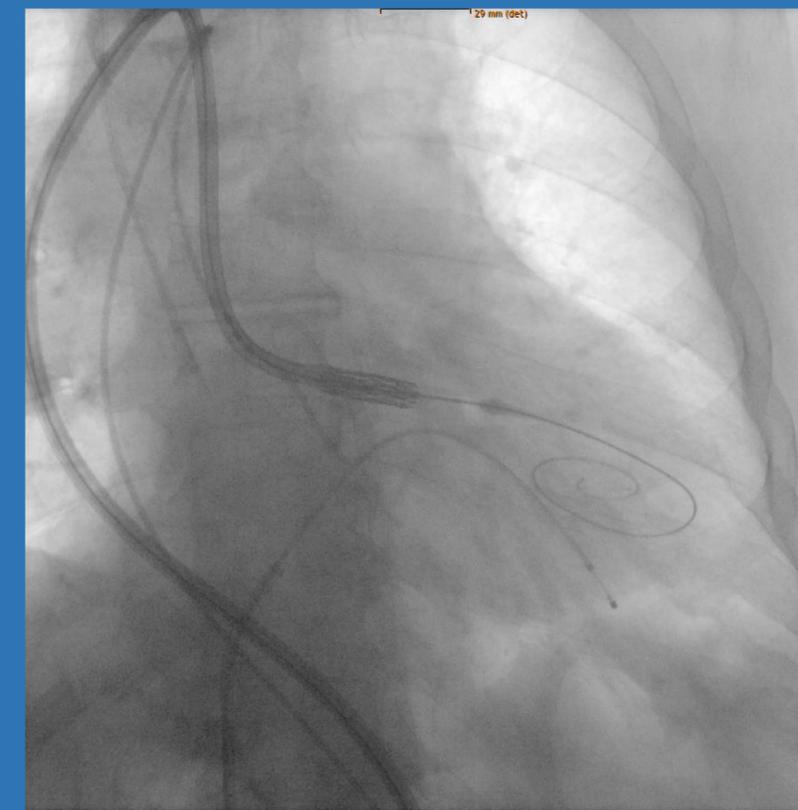


Figure 2: Intraoperative fluoroscopy is showing the transcatheter aortic valve delivery system in the aorta. The fluoroscopy setting is anterior-posterior.

## Conclusion

Especially in anatomically challenging cases, careful preprocedural evaluation and planning are crucial for a successful transcatheter intervention.