

Percutaneous exclusion of post-transcatheter aortic valve replacement (TAVR) induced aortic pseudoaneurysm using an Amplatzer Vascular Plug 2 (AVP2)

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DESCRIPTION

Here we present a novel repair strategy of a rare aortic complication following transcatheter aortic valve repair (TAVR). A 73-year-old man with a history of mitral valve replacement secondary to endocarditis underwent a TAVR for severe aortic

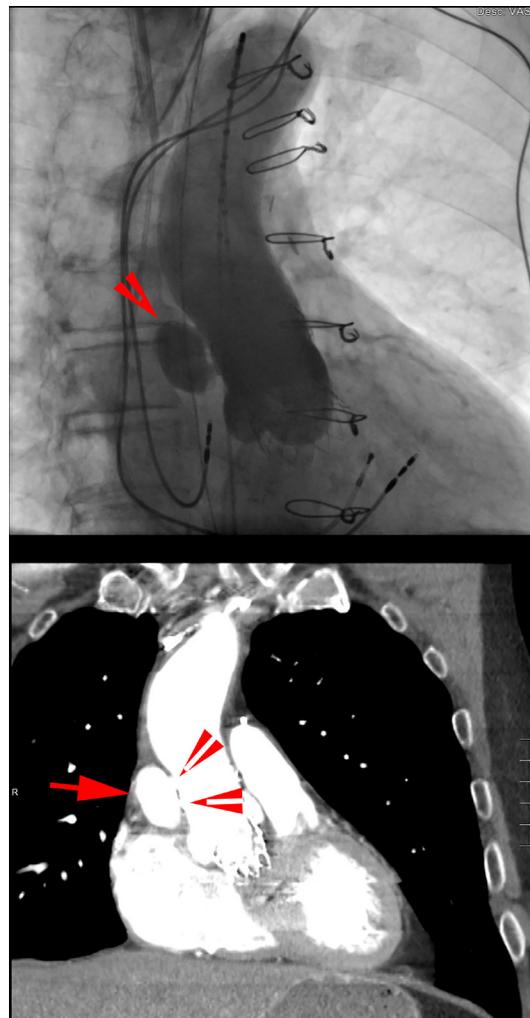


Figure 1 Top panel: pre-procedure aortography demonstrating pseudoaneurysm in communication with ascending aorta just distal to the transcatheter aortic valve repair scaffold (arrowhead). Bottom panel: pre-procedure CT scan demonstrating pseudoaneurysm (arrow) with two necks (arrowheads) communicating with ascending aorta.

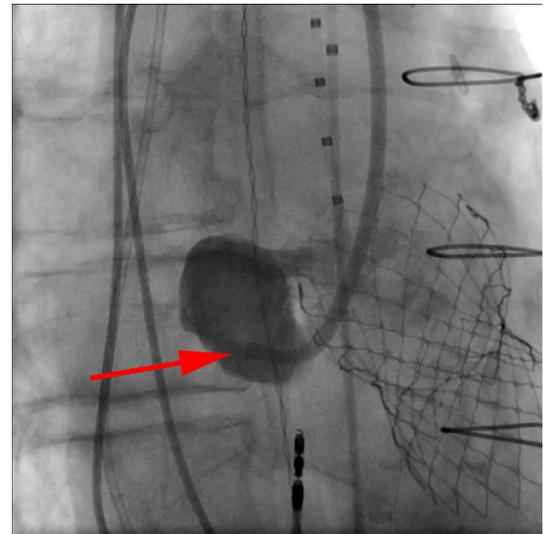


Figure 2 Initial engagement and opacification of pseudoaneurysm sac with a 6-French JR4 guide catheter (arrow).

insufficiency at an outside hospital (Medtronic Evolut R 34 mm Valve). After a routine follow-up, echocardiogram showing abnormal colour flow in the ascending aorta, a CT scan revealed TAVR leaflet thrombosis (requiring anticoagulation) and a 3.5×3 cm pseudoaneurysmal sac with two communications into the ascending aorta just

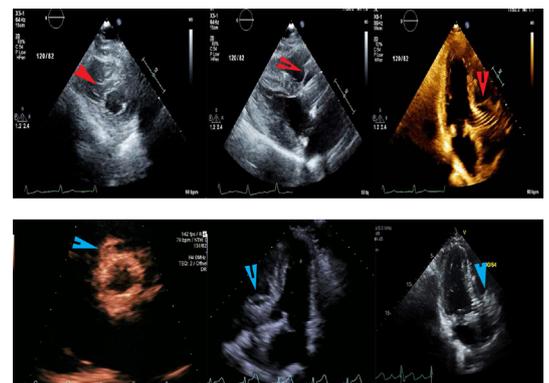


Figure 3 Top panel: aortography demonstrating Amplatzer Vascular Plug 2 (AVP2) device in place after release (arrowhead). Bottom panel: one-month post-procedure CT scan demonstrating AVP2 device in place with fully sealed pseudoaneurysm sac (arrow).



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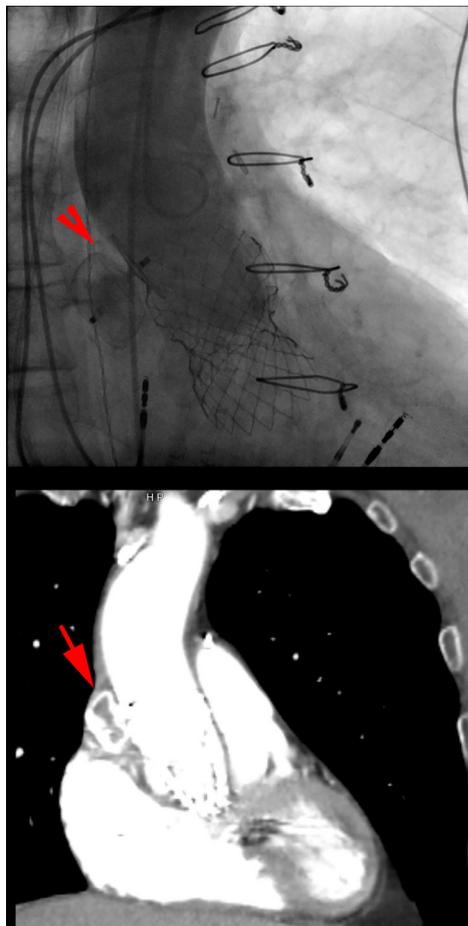


Figure 4 Top panel: pre-procedure echocardiogram in short axis, parasternal long axis and three-chamber view demonstrating the pseudoaneurysm sac. Bottom panel: post-procedure echocardiogram showing complete exclusion of the pseudoaneurysm sac.

distal to the TAVR scaffold (figure 1: aortography—top, CT scan—bottom; figure 4: top—pre-procedure echo images with red arrow pointing towards the pseudoaneurysm).

Heart team evaluation of the case determined that thoracic endovascular repair was not possible given the proximity of the pseudoaneurysm to the TAVR structure. A 6-French JR4 guide was used to engage the inferior neck of the pseudoaneurysm sac (figure 2) through the TAVR scaffold. An initial attempt at percutaneous coiling of the sac with a 20 mm Nestor vascular coil (Cook Medical, Bloomington, IN) failed to fill the cavity completely and was removed. Definitive repair of the sac was achieved using a 22 mm Amplatzer Vascular Plug 2 (St. Jude Medical, Saint Paul, MN). One month and 6 months post-procedure CT and echocardiogram showed a fully thrombosed and sealed off pseudoaneurysm sac with no residual communication with the ascending aorta (figure 3: aortography—top, CT scan—bottom; figure 4: bottom—post-procedure echo at 1 month with blue arrow pointing at the sealed PSA).

Learning points

- ▶ To our knowledge, this is the first reported case of transcatheter aortic valve repair-induced ascending aortic pseudoaneurysm.
- ▶ Our novel approach for percutaneous repair using an Amplatzer Vascular Plug 2 device appears to be both safe and efficacious.

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