



## Emergency transfemoral valve-in-valve transcatheter aortic valve implantation in patient with chronic type A aortic dissection

Hugo M. Aarts · Astrid C. van Nieuwkerk · Jan Baan · Ronak Delewi  · Marcel A. M. Beijk

Accepted: 24 July 2023 / Published online: 31 August 2023  
© The Author(s) 2023

A 71-year-old woman was admitted to our hospital with progressive dyspnoea. She had a history of aortic dissection (DeBakey type I), which was treated with a biological Bentall procedure (Crown 23 mm) and hemiarch replacement in 2016. Echocardiography showed severe valve degeneration and acute deterioration in left ventricular function. Despite optimal medical treatment, she went into cardiogenic shock with multi-organ failure. Redo surgery was considered extremely high risk due to the chronic aortic dissection and ongoing cardiogenic shock (Fig. 1a). Therefore, we performed salvage transfemoral valve-in-valve transcatheter aortic valve implantation (TAVI) under local anaesthesia. An Edwards Sapien 3 Ultra 23-mm valve was successfully implanted without any procedural complications (Fig. 1b). Haemodynamics improved immediately after valve deployment, and after a few days, the patient was discharged home.

This case highlights that transfemoral valve-in-valve TAVI is a treatment option for patients requiring immediate intervention, especially for those who harbour high risk during conventional redo surgery.

**Funding** H.M. Aarts and R. Delewi acknowledge the support from the Netherlands Organisation for Health Research and Development (*ZonMw*).

**Conflict of interest** R. Delewi has received educational grants from Boston Scientific and Edwards Lifesciences. H.M. Aarts,

A.C. van Nieuwkerk, J. Baan and M.A.M. Beijk declare that they have no competing interests.

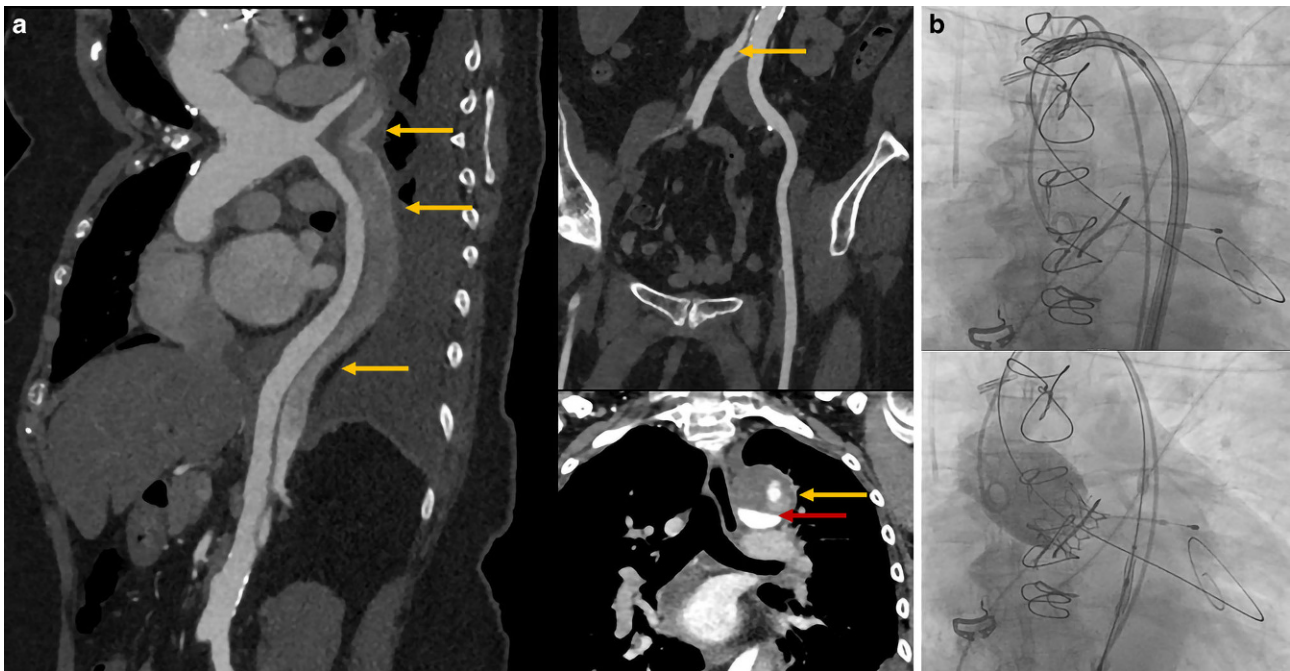
**Open Access** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

---

H. M. Aarts · A. C. van Nieuwkerk · J. Baan · R. Delewi (✉) ·  
M. A. M. Beijk  
Department of Cardiology, Amsterdam University Medical  
Centres, Amsterdam, The Netherlands  
[r.delewi@amsterdamumc.nl](mailto:r.delewi@amsterdamumc.nl)

H. M. Aarts  
Department of Utrecht, University Medical Centre Utrecht,  
Utrecht, The Netherlands





**Fig. 1** **a** Preprocedural computed tomography scans showing chronic aortic dissection extending into left proximal carotid artery and left subclavian artery, left renal artery and both common iliac arteries (all indicated by *yellow arrows*).

Red arrow indicates true lumen of aortic arch. **b** New valve was passed through dissected aortic arch as operators gave traction on guide wire to make sure inner curve was followed. New valve was implanted without any complications

Advertisement placed here.



Houten 2021