Fungal Obstruction of Transcatheter Aortic Valve Replacement Valve

Adam J. Nelson, BMedSc(hons), MBBS; Nicholas J. Montarello, MBBS; Ross L. Roberts-Thomson, BMedSc(hons), MBBS; Natalie Montarello, MBBS; Sinny Delacroix, MD; Ramesh G. Chokka, MD; Samuel L. Sidharta, BMedSc, MBBS; Tony Thomas, MBBS, BSc, MSc, PhD; Stephen G. Worthley, MBBS, PhD

An aged pensioner with a history of exertional dyspnea and severe aortic stenosis underwent uneventful J-type upper hemisternotomy with direct trans-aortic transcatheter aortic valve replacement (TAVR) of a 23-mm Edwards valve. Planned for review at 3 months, she returned 4 weeks early complaining of lethargy with no features of cardiac failure. Echocardiography revealed a mass at the leaflet level confirmed via transoesophageal imaging to be a large, oval-shaped echogenic mass (1.7×1.6 cm; Figure [A]). Given unimpressive inflammatory markers, heparin was commenced with a provisional diagnosis of TAVR thrombus. On day 14, our patient was found unresponsive and, despite resuscitation, passed away shortly after. Postmortem demonstrated an obstructing mass across her aortic valve (Figure [B]) later revealed histologically to be an aspergilloma (Figure [C] and [D]), changing her cause of death from TAVR thrombus to fungal endocarditis. Prosthetic endocarditis is an uncommon but highly lethal complication of TAVR. Fungal endocarditis is often associated with recent surgery, and although minimally invasive, TAVR with its invasive catheters and hybrid surgical approaches may confer little protection in this regard. Large vegetations, thromboembolic phenomena, and nonspecific symptoms ought to raise suspicion in a population in which immunologic senescence and paravalvular leak may obscure the diagnosis.

Disclosures

None.

Key Words: aortic valve • endocarditis • transcatheter aortic valve replacement

From the Department of Cardiology (A.J.N., N.J.M., R.L.R.-T., N.M., S.L.S.) and Cardiovascular Research Centre (A.J.N., R.L.R.-T., N.M., S.D., S.L.S., S.G.W.), Royal Adelaide Hospital, South Australia, Australia; Department of Medicine, University of Adelaide, South Australia, Australia (A.J.N., R.L.R.-T., N.M., S.D., S.L.S., S.G.W.); Vascular Research Centre, Heart Health Theme, South Australian Health and Medical Research Institute, Adelaide, South Australia, Australia (A.J.N., R.L.R.-T., R.G.C.); and Department of Surgical Pathology, Flinders Medical Centre, SA Pathology, Adelaide, South Australia, Australia (T.T.).

Correspondence to Adam J. Nelson, BMedSc(hons), MBBS, Department of Cardiology, Royal Adelaide Hospital, Adelaide, South Australia, 5000 Australia. E-mail adam.nelson@adelaide.edu.au

(Circ Cardiovasc Interv. 2016;9:e004117. DOI: 10.1161/CIRCINTERVENTIONS.116.004117.)

© 2016 American Heart Association, Inc.

Circ Cardiovasc Interv is available at http://circinterventions.ahajournals.org DOI: 10.1161/CIRCINTERVENTIONS.116.004117
Figure. A, Still frame of midesophageal echocardiogram at 130°, demonstrating mass attached to aortic valve prolapsing through to left ventricular outflow tract. B, Aortic root viewed from above showing complete occlusion of the aortic outflow by thrombus. Hematoxylin and eosin (C) and Grocott Methenamine Silver (GMS: D) stained sections of aortic root thrombus. Note septate branching hyphae of aspergillus on GMS stain.
Fungal Obstruction of Transcatheter Aortic Valve Replacement Valve

Circ Cardiovasc Interv. 2016;9:
doi: 10.1161/CIRCINTERVENTIONS.116.004117
Circulation: Cardiovascular Interventions is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2016 American Heart Association, Inc. All rights reserved.
Print ISSN: 1941-7640. Online ISSN: 1941-7632

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://circinterventions.ahajournals.org/content/9/8/e004117

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in Circulation: Cardiovascular Interventions can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to Circulation: Cardiovascular Interventions is online at:
http://circinterventions.ahajournals.org/subscriptions/