E-CHALLENGES AND CLINICAL DECISIONS

Feroze Mahmood, MD
Madhav Swaminathan, MD
Section Editors

Aortic Regurgitation With a Prolapsing Aortic Dissection Flap: Is Valve Replacement Necessary?

Ziyad Knio, BS,* and Mario Montealegre-Gallegos, MD†

APPROXIMATELY 40% to 75% of type-A aortic dissection cases present with acute aortic insufficiency (AI).[1,2] Even though aortic valve repair is not traditionally performed in this emergency setting, it is now the first line of approach in selected cases. The severity of AI has important implications for acute patient management, but the mechanism of regurgitation is the main determinant of success for valve repair.[2] In the urgent setting of a type-A aortic dissection, this evaluation is performed mainly with intraoperative transesophageal echocardiography (TEE). The evaluation of the risks of prolonging cardiopulmonary bypass (CPB) versus the benefits of valve sparing can be complicated further in patients with hemodynamic instability or multiple mechanisms of AI. The authors present a case involving the prolapse of a large dissection flap through the aortic valve that illustrates this challenge.

CASE REPORT

A 65-year-old man with a history of hypertension presented to the emergency department with acute-onset abdominal pain. Computed tomography angiography revealed a type-A aortic dissection with pericardial effusion. The patient was transferred emergently to the operating room. Intraoperative computed tomography angiography and TEE showed a prominent dissection flap in the mid-ascending aorta, extending proximally to the sinotubular junction (STJ) (Figs 1–3, Video clip 1). There was no apparent involvement of the coronary arteries or arch vessels. The aortic valve was tricuspid with no significant calcification. The STJ and sinuses of Valsalva were dilated, with diameters of 3.8 cm and 4.0 cm, respectively. The dissection flap was prolapsing into the left ventricle during diastole. Eccentric AI of at least moderate severity also was present.

Challenge

Was the AI due to the prolapsing dissection flap alone? Should the aortic valve be replaced?

In this patient it was difficult to determine whether the AI would resolve with repair of the ascending aorta, which would address the prolapsing dissection flap and STJ dilation, or whether a more complex valve repair or replacement was necessary.

If the aortic valve is unsuitable for repair (eg, congenital abnormality, thickening with malcoaptation, or other significant structural abnormality), the most common procedure is placement of an aortic valve conduit graft (Bentall procedure). However, in addition to the long-term complications associated with prosthetic aortic valves, this procedure requires reimplantation of the coronary arteries, with the associated risks of anastomotic failure, flow obstruction, and coronary injury.

Clinical Course

After initiation of CPB and sternotomy, the aorta was opened and the aortic tear resected. The aortic valve was examined and determined to be intact, so the decision was made to proceed with an ascending aortic graft while preserving the native valve. After patient separation from CPB, TEE showed significant AI with an eccentric commissural jet between the noncoronary and the left coronary cusps, with no apparent cusp prolapse (Fig 4).

At this point the decision was made to return the patient to CPB, and a bioprosthetic aortic valve replacement procedure was performed. The patient was weaned from CPB without complications and post-CPB TEE showed a well-functioning prosthetic valve and intact biventricular function.

DISCUSSION

The decision to replace the aortic valve during emergency repair of type-A dissection typically is made under considerable time pressure in patients who may have significant hemodynamic instability. Given the urgent setting and the focus on minimizing surgical time, aortic valve repair traditionally has been avoided in these patients, even when the likelihood of success is high by criteria used in elective cases. However, recent studies have confirmed the ability of TEE to define the mechanism of regurgitation and therefore differentiate between valves that are amenable to repair and those that require replacement.[2] This case was unusual in that the prolapse of a large dissection flap masked

DOI of original article: http://dx.doi.org/10.1053/j.jvca.2016.02.014

*From the *Departments of Surgery, Division of Cardiac Surgery; and †Anesthesia, Critical Care and Pain Medicine, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA.*

Address reprint requests to Mario Montealegre-Gallegos, MD, Department of Anesthesia, Critical Care and Pain Medicine, Beth Israel Deaconess Medical Center, Harvard Medical School, 1 Deaconess Road, CC470, Boston, MA, 02215. E-mail: mmonteal@bidmc.harvard.edu

© 2016 Elsevier Inc. All rights reserved.

1053-0770/2602-0033$36.00/0
http://dx.doi.org/10.1053/j.jvca.2016.02.024
Key Words: type-A aortic dissection, aortic insufficiency, aortic valve replacement, aortic valve repair

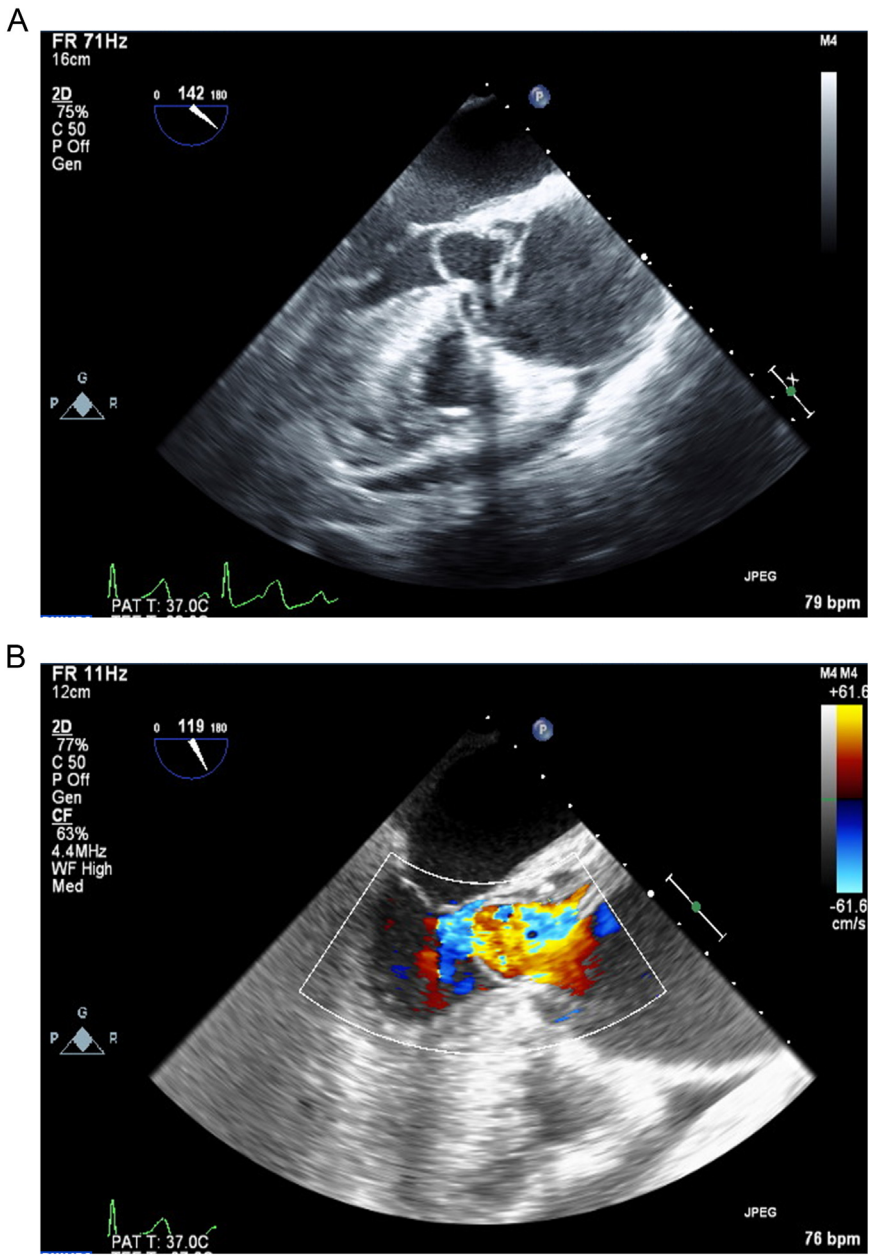

Fig 1. Midesophageal long-axis view of the aortic valve in diastole showing prolapse of the dissection flap through the valve (A) with color-flow Doppler (B).

Download English Version:

https://daneshyari.com/en/article/5883450

Download Persian Version:

https://daneshyari.com/article/5883450

Daneshyari.com