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IMAGES IN CARDIOLOGY

Stenosed Quadricuspid Aortic Valve Treated by Transcatheter Aortic Valve Implantation

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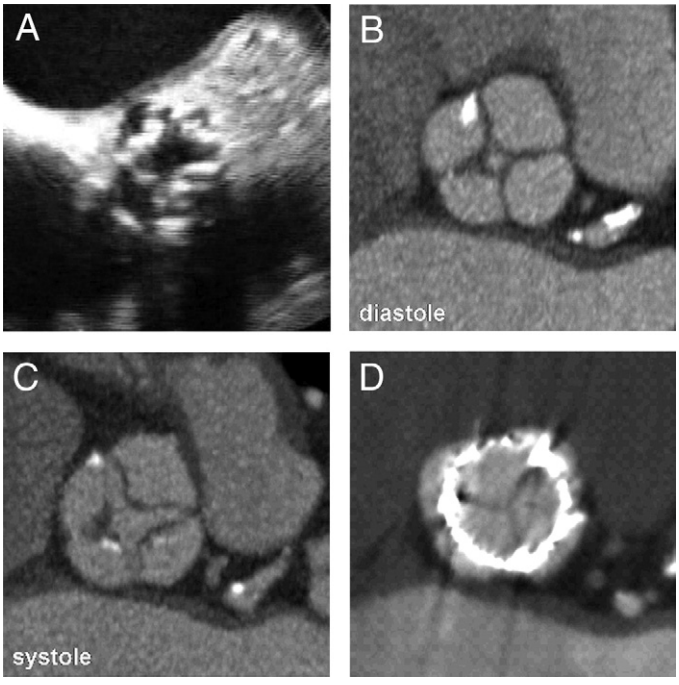

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A 79-year-old woman with known severe aortic stenosis and concomitant moderate aortic regurgitation underwent transesophageal echocardiography and electrocardiographically gated cardiac computed tomographic angiography for planning of transcatheter aortic valve implantation. On the midesophageal short-axis view (**A**, Online Video 1) and multiplanar reconstructed computed tomographic angiographic images (**B and C**, Online Video 2), the aortic valve was noted to be quadricuspid with 4 separate leaflets, thickened leaflet margins, and moderate calcifications. Diastolic reconstructions revealed a central zone of incomplete coaptation **(B)**, whereas systolic images showed incomplete opening (aortic valve area 0.8 cm^2) **(C)**. The patient underwent implantation of a 26-mm Edwards Sapien transcatheter heart valve (Edwards Lifesciences, Irvine, California) via a transapical approach and post-operative follow-up computed tomographic angiography to ensure proper positioning of the valve **(D)**.

Quadricuspid aortic valve is a rare congenital malformation with an incidence between 0.003% and 0.013% and is frequently associated with regurgitation (1). To our knowledge, this is the first documented case of a stenosed quadricuspid valve and the first documented case of a quadricuspid valve treated by transcatheter aortic valve implantation.

REFERENCE

1. Janssens U, Klues HG, Hanrath P. Congenital quadricuspid aortic valve anomaly associated with hypertrophic non-obstructive cardiomyopathy: a case report and review of the literature. Heart 1997;78:83–7.