Clinical vignette

Chicken's valve in a human heart

Dariusch Haghi*, Martin Borg referee, and Ole A. Breithardt

I. Medizinische Klinik, Universität Klinikum Mannheim, 68167 Mannheim, Germany

* Corresponding author. E-mail address: dariush.haghi@med.ma.uni-heidelberg.de

A 73-year-old woman was studied after admission for anterior wall 5-stage elevation myocardial infarction. Transthoracic echocardiography (GE Vingmed, Vivid 7, Horten, Norway) revealed what seemed to be a prolapsing posterior mitral leaflet (Panel A) with eccentric grade 2+ mitral regurgitation. However, 2D parasternal short-axis views (Panel B) and 3D rendered images (Panel C) clearly demonstrated a tricuspid, three-branch star (Mercedes star) morphology of the mitral valve with three distinct leaflets. An anterolateral papillary muscle, two posteromedial papillary muscles, and a small accessory papillary muscle—originating from the inferior wall and inserting into the inferomedial leaflet—could be distinguished (Panel D). No other structural abnormalities of the heart were observed. A tricuspid mitral valve is a rare entity in humans, but a normal finding in chicken hearts. Its appearance might be due to abnormal development of endocardial cushion tissue.

Panel A. Parasternal long-axis view exhibiting what seemed to be a prolapsing posterior leaflet (white arrow) of the mitral valve.

Panel B. Parasternal short-axis view demonstrating three distinct leaflets (1, 2, 3).

Panel C. 3D rendered images of the mitral valve.

Panel D. Apical long-axis view exhibiting two posteromedial papillary muscles (PMP1 and PMP2), as well as a small accessory papillary muscle (AccPM). LA, left atrium; AV, aortic valve; ant, anterior; sep, septal.

See Supplementary material online for a colour version of this figure.

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