Mitral Valve Aneurysm in Endocarditis

To the Editor:

I read with interest the contribution by Cai et al in the “Images in Cardiovascular Medicine” section of the journal. They described a patient who developed severe aortic regurgitation and a mitral valve aneurysm 1 month after successful treatment of Streptococcus mitis endocarditis. The case presentation and the title implied that the mitral valve aneurysm was caused by the effect of severe aortic regurgitation on the mitral valve and not directly related to endocarditis. I am unaware of other cases of mitral valve aneurysm as a result of severe aortic regurgitation in the absence of endocarditis. On the other hand, mitral valve aneurysm is a well-known complication in patients with aortic valve endocarditis and is caused by the development of satellite infection on the anterior mitral leaflet. The vegetative process leads to inflammation and “softening” of the underlying tissue, leading to aneurysm formation, which can involve the aortic annulus, the intervalvular fibrosa, and the mitral valve.

We have previously described a patient with mitral valve endocarditis who went on to develop mitral valve aneurysm despite successful treatment of the infection. At surgery, there was chronic inflammation with no evidence of acute infection, similar to the finding in the case of Cai et al. In short, I believe it is misleading to suggest that the mitral valve aneurysm developed as a consequence of severe aortic regurgitation alone, since this was much more likely a direct result of the infective process on the anterior mitral leaflet.

Kwan-Leung Chan, MD, FRCPC
University of Ottawa Heart Institute
Ottawa, Ontario, Canada


Response

We appreciate the communication from Dr Chen emphasizing that the appearance of a mitral valve aneurysm as a complication of aortic valve endocarditis has long been recognized and has uniformly been attributed to an infectious process. We also agree with Dr Chen that a valve leaflet aneurysm or perforation resulting purely from a high-velocity “jet” of blood is not well established as a mechanism of valve dysfunction. We believed that the clinical course and serial findings on transesophageal echocardiography suggested that the mitral valve aneurysm was related to the aortic valve regurgitant jet. This was suggested by the direction of the jet when initially seen and the prompt response to antibiotic therapy before the appearance of the mitral valve abnormality. It is possible that a subclinical weakening of the mitral leaflet occurred as a result of endocarditis of the mitral valve and that the aneurysm developed at the site because of the impingement of the regurgitant aortic jet on the weakened leaflet area. In a previously reported series, mitral aneurysms due to aortic endocarditis generally displayed vegetations in the area of the aneurysm; in our patient, no mitral vegetation was seen on either the early or late transesophageal studies or at surgery.

Tung H. Cai, MD
Edward Y. Sako, MD
Division of Thoracic Surgery
Joe M. Moody, Jr, MD
Division of Cardiology
Audie L. Murphy VA Hospital
University of Texas Health Science Center at San Antonio
San Antonio, Tex

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Kwan-Leung Chan

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