**Change in Character of Mitral Prosthesis Regurgitant Murmur With Bundle-Branch Block**

**Correlation of Auscultatory and Echocardiographic Findings**

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This 75-year-old woman, in whom a Carpentier Edwards porcine mitral valve prosthesis (No. 29) had been implanted in 1990, presented with episodic breathlessness and dizziness. Examination revealed an apical pansystolic murmur with a frequent but intermittent loud musical “honking” character. The patient was in sinus rhythm, 68 to 74 bpm, with alternating runs of narrow QRS and bundle-branch block. The amplified, honking quality was observed intermittently only during periods of narrow QRS complexes.

Echocardiography revealed thickened prosthesis leaflets, a 3-mm vibrating density (Figure 1) on the leaflet’s atrial surface, and a 2-mm systolic coaptation defect with prosthesis regurgitation. The regurgitant jet was eccentric, directed anteriorly and toward the left atrial appendage. Regurgitation was graded as moderate. Mitral inflow velocities were mildly elevated (peak E 1.3 m/s, peak A 1.8 m/s, and mean gradient 6.6 mm Hg), with a pressure half-time of 123 ms, indicative of minimal prosthesis stenosis. Systolic vibration is noted on M-mode echocardiography of the mitral prosthesis (Figure 2) associated with marked aliasing of color (Figures 3 and 4) corresponding to the honking murmur. Increased density of the continuous-wave spectral Doppler (Figure 4) is also noted in conjunction with the intermittent honking murmur.

**Figure 1.** Transesophageal image of porcine mitral prosthesis. Arrow indicates a vibratory mass on atrial side of prosthesis. LA indicates left atrium; LV, left ventricle.

**Figure 2.** Transthoracic M-mode recording of mitral prosthesis. Arrows indicate systolic vibration of leaflets. LA indicates left atrium; MV, mitral valve prosthesis leaflets.
Figure 3. Transthoracic parasternal views showing mitral prosthesis regurgitation. Left image was obtained during bundle-branch block conduction. Image on right shows marked aliasing of color correlated with honking murmur and narrow QRS complexes. LV indicates left ventricle; Ao, aorta; and MR, mitral regurgitation.

Figure 4. Transthoracic spectral Doppler patterns (top) and color M-mode recordings (bottom) of mitral prosthesis. Images on right correlated with honking characteristic of regurgitant murmur. Increased density of Doppler signal (top right) and marked aliasing of color (bottom right) are noted compared with recordings when murmur did not have a honking quality (left). LA indicates left atrium.
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Circulation. 2001;103:1715-1716
doi: 10.1161/01.CIR.103.12.1715
Circulation is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
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Print ISSN: 0009-7322. Online ISSN: 1524-4539

The online version of this article, along with updated information and services, is located on the World Wide Web at:
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