

Images in Cardiology

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Papillary Muscle Rupture During Acute Myocardial Infarction

JONG-WON HA, M.D., PH.D., NAMSIK CHUNG, M.D., SEUNG-YUN CHO, M.D., MEYUN-SCHICK KANG, M.D.,* SANG-HO CHO, M.D.†

Cardiology Division, *Department of Cardiothoracic Surgery, †Department of Pathology, Yonsei Cardiovascular Center, Yonsei University, Seoul, Korea

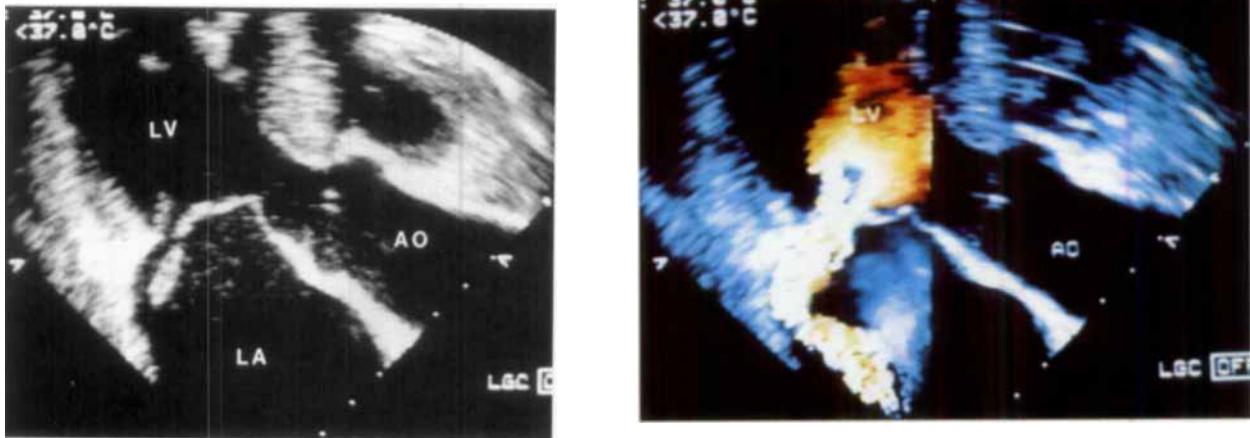


FIG. 1 (A) Multiplane long-axis view (129°) shows ruptured head of anterolateral papillary muscle pointing toward the posterior wall of the left atrium. (B) Color flow image corresponding to (A) shows severe eccentric mitral regurgitation.

A 67-year-old man presented with complaints of dyspnea and palpitation that had been present for 3 days. Physical examination revealed an acutely ill and tachypneic appearance with blood pressure of 100/60 mmHg, pulse rate of 110 beats/minute, audible pulmonary crackles, and a pansystolic murmur at the apex. The electrocardiogram revealed atrial fibrillation with rapid ventricular response and ST segment elevation in leads I, V₅, and V₆. Immediate transthoracic echocardiography revealed a severe degree of mitral regurgitation that was eccentric in direction toward the posterior wall of the left atrium and suspicious of rupture of chordae tendineae or the head of the papillary muscle. As soon as the patient was moved to the cardiac catheterization laboratory, hemodynamic deterioration was followed by cardiogenic shock and severe pulmonary edema. Both coronary angiography and left ventriculography were performed after endotracheal intubation and institution of intraaortic balloon pump. Left coronary angiography revealed total occlusion at the obtuse marginal

branch. Right coronary angiography revealed a significant luminal narrowing at the distal right coronary artery. Left ventricular angiography demonstrated severe mitral regurgitation. Transesophageal echocardiography performed at the operating room revealed the ruptured head of the anterolateral papillary muscle, flail motion (Fig. 1A), and a severe degree of turbulent eccentric mitral regurgitation (Fig. 1B). These findings were confirmed at operation (Fig. 2). Emergent mitral valve replace-

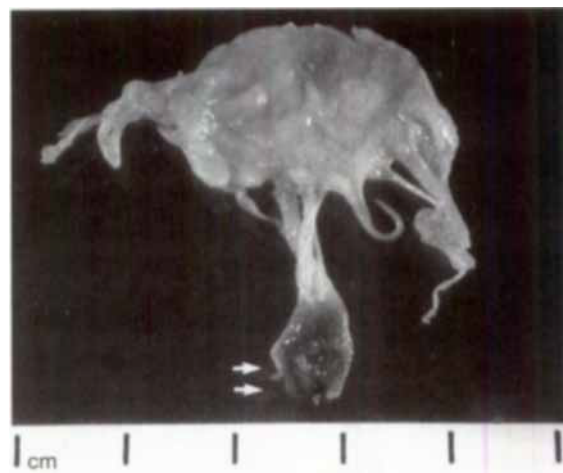


FIG. 2. Operative specimen illustrates completely ruptured anterolateral papillary muscle (arrow) almost identical to echocardiographic image.

Address for reprints:

Jong-Won Ha, M.D., Ph.D.
Cardiology Division
Yonsei Cardiovascular Center
Yonsei University
C.P.O. Box 8044, Seoul, Korea

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ment and coronary artery bypass graft were performed. The patient subsequently recovered and was discharged without event days later.

Reference

Calvo FE, Figueras J, Cortadellas J, Soler-Soler J: Severe mitral regurgitation complicating acute myocardial infarction. Clinical and angiographic differences between patients with and without papillary muscle rupture. *Eur Heart J* 1997;18:1606-1610

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