

## IMAGES IN INTERVENTION

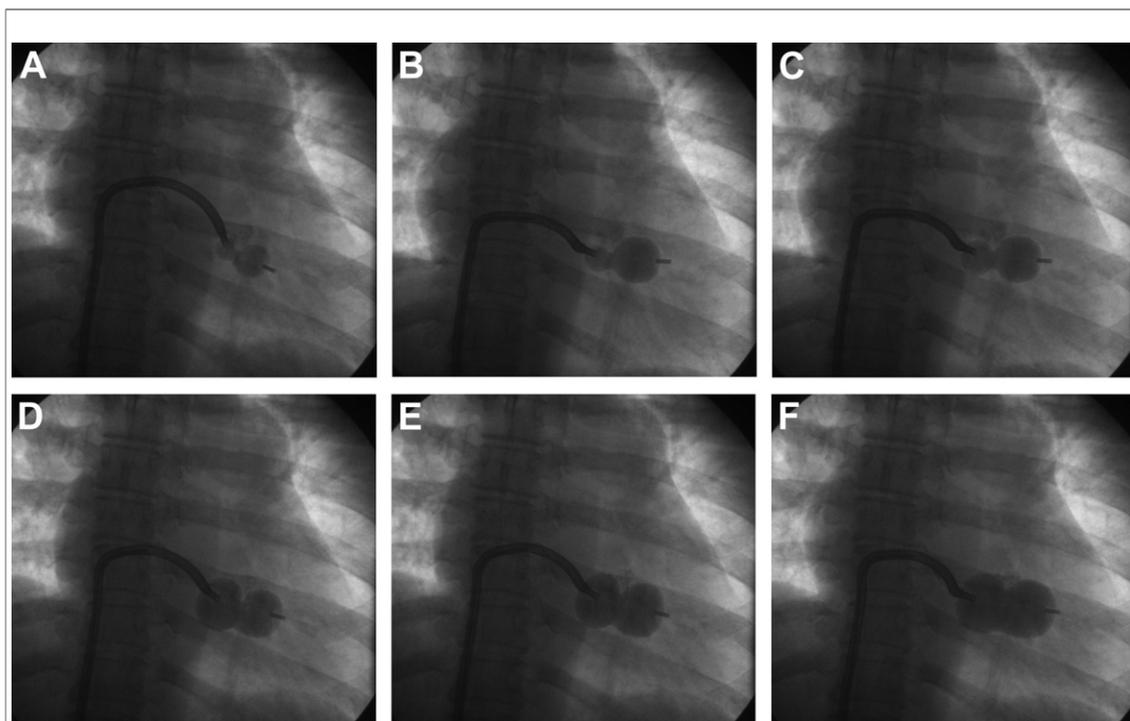
# Balloon Mitral Valvotomy for Calcific Mitral Stenosis

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Balloon mitral valvotomy (BMV) is the procedure of choice for severe mitral stenosis (MS) when valve morphology is feasible. When the Wilkins valve score is  $<8$ , the outcome of BMV is excel-

lent. Unfortunately when there is bicommissural calcification, BMV is contraindicated, because there is high probability of leaflet tear with resultant acute severe mitral regurgitation. But, BMV



**Figure 1. Cine-Film Demonstrating Balloon Mitral Valvotomy Across the Calcified Mitral Valve**

(A) The mitral valve is seen with dense calcification confined to the lateral commissure, whereas the medial commissure is free of calcium. (B) The Inoue balloon across the mitral valve with the distal part of the balloon being inflated. (C) The Inoue balloon with both the proximal and distal part being inflated. (D) On further inflation there is appearance of a waist, with the balloon assuming "dumb-bell"-like configuration. (E) The medial commissure is beginning to split on inflation. (F) On maximal balloon inflation, the medial commissure can be seen to give way, whereas the lateral commissure is unyielding. Also see the accompanying [Online Video](#).

can still be attempted in patients with unicommissural calcification. Here, we present a 46-year-old female patient with severe symptomatic MS with heavy calcification, which was confined to only one commissure of the mitral valve. On echocardiography the mitral valve orifice area (MVOA) was  $0.8 \text{ cm}^2$ , with mitral valve gradient (MVG) of 32/21 mm Hg and Wilkin's score of 12. During BMV the mean left atrial pressure was 32 mm Hg, and pulmonary artery systolic pressure (PASP) was 68 mm Hg. The BMV was done by standard technique with a 28-cc Inoue balloon (Toray Industries, Tokyo, Japan), which was inflated up to 26-cc volume. [Figure 1](#) shows the periprocedural cine-film, which demonstrates the extreme calcification of the lateral commissure. As the Inoue balloon was inflated the lateral commissure was unyielding, whereas the medial commissure gave way on serial graded, guided inflations. After the

procedure the MVOA was  $1.7 \text{ cm}^2$ , and the MVG was 14/7 mm Hg. The mean left atrial pressure dropped from 32 mm Hg to 14 mm Hg. The patient is asymptomatic at 2-year follow-up with an MVOA of  $1.6 \text{ cm}^2$ . This demonstrates the importance of assessing not only the presence of calcification but also the site of calcification in the mitral valve before BMV. A BMV can be performed safely and successfully for unicommissurally calcified mitral valves.

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#### APPENDIX

**For a supplementary video, please see the online version of this article.**