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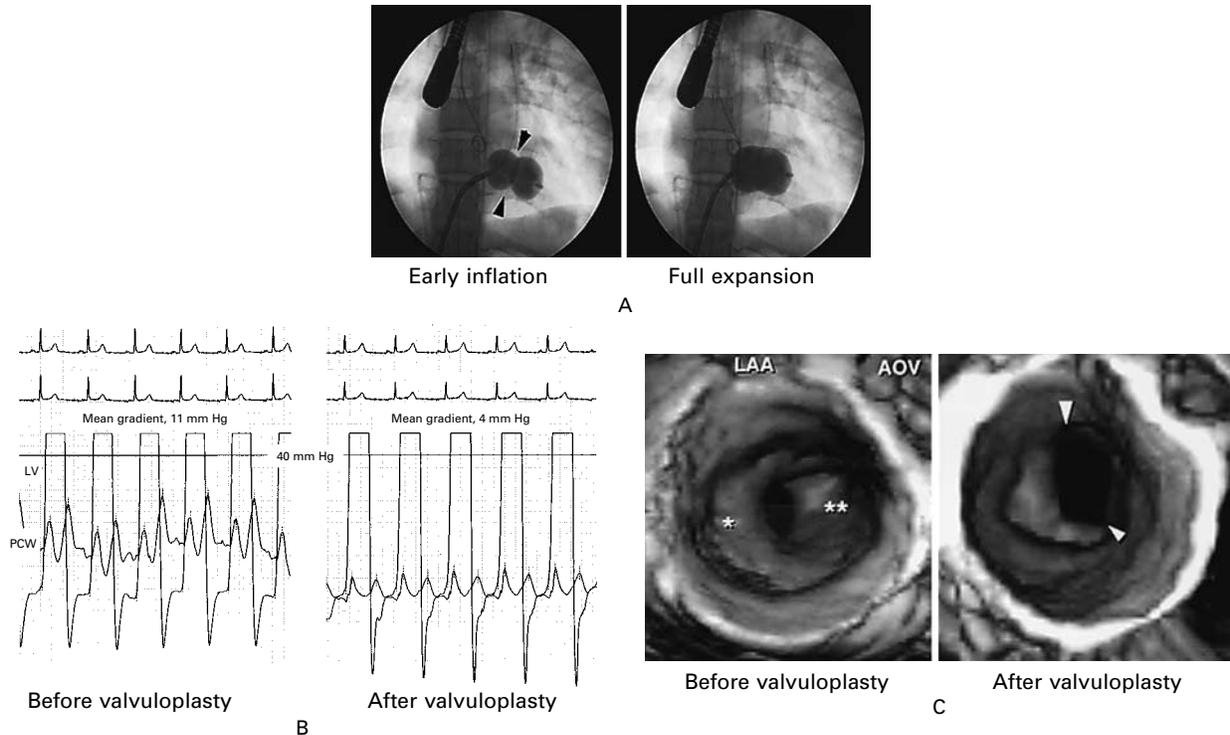
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Images in Clinical Medicine

*Percutaneous Mitral Valvuloplasty*

A 27-year-old woman was admitted to the hospital with dyspnea on exertion and with orthopnea. She was four months pregnant and otherwise healthy. Her history was unremarkable except for rheumatic fever during childhood. On examination, she had no signs of left-sided or right-sided heart failure. Her heart rate was regular, at 85 beats per minute. Cardiac auscultation suggested tight mitral stenosis, with a loud first heart sound, an early opening click, and a diastolic rumble. The diagnosis was confirmed by transthoracic echocardiography. The area of the mitral valve was calculated to be 1.1 cm² (by planimetry and measurement of the pressure half-time), with a mean pressure gradient of 9 mm Hg. There was trace mitral insufficiency, and the valve was considered suitable for valvuloplasty.

The procedure was performed while the patient was under general anesthesia; transesophageal echocardiographic guidance was used for interatrial septal puncture. A 30-mm Inoue balloon was passed through the valve, its distal end was inflated (arrowheads in Panel A, left), and under traction, the whole balloon was expanded (Panel A, right). The mean pressure gradient measured by catheter fell from 11 to 4 mm Hg (Panel B; LV denotes left ventricular pressure, and PCW pulmonary-capillary wedge pressure). The transesophageal probe was used to construct a three-dimensional image of the mitral valve before and after the procedure. A view during diastole from the left atrium before valvuloplasty (Panel C, left) showed commissural fusion, with limited opening of the valve (the single asterisk denotes the posterior mitral leaflet, the double asterisk the anterior mitral leaflet, LAA left atrial appendage, and AOV aortic valve). After dilation (Panel C, right), the anterior commissure was wide open (top arrowhead), whereas the posterior commissure was still partially fused (bottom arrowhead). The posterior leaflet was fixed. The area of the mitral valve increased from 1.1 to 2.3 cm². There was grade 1 mitral regurgitation after the procedure according to ventriculography and echocardiography.

The patient recovered uneventfully and delivered a 3180-g female infant with Apgar scores of 9 and 10 at one and five minutes, respectively. After the delivery the patient remained asymptomatic.

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