Repair Options for Aortic-Valve Cusp Prolapse

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WASHINGTON — Three types of repairs are available for fixing aortic-valve cusp prolapse, but it's important to select the repair that best suits the cusp pathology.

All three methods for cusp repair produced very similar outcomes in a series of 427 patients, Dr. Diana Aicher reported at the annual meeting of the American Association for Thoracic Surgery.

But "the three repair methods are not directly comparable; they're used for different pathologies," said Dr. Aicher, a cardiac surgeon at University Hospital in Homburg, Germany. "All three techniques have similar durability. Normal cusp configuration [following repair] is critical for good functional results."

The three types of repair are central placation of the free margin of the cusp, triangular resection with adaptation of the remaining tissue, or cusp repair with insertion of a pericardial patch. The most complex of these repairs is pericardial patching, while central placation is the least complex. More than one repair method was used in 102 patients. In these cases, the patient was categorized based on the most complex repair performed.

The 427 patients were treated at University Hospital during October 1995–October 2006. Tricuspid prolapse occurred in 246 patients, and the remaining 181 patients had bicuspid prolapse. Central placation was used on 275 patients, triangular resection was used for 80 patients, and a pericardial patch was placed in 72 patients. Patients treated with central placation tended to have a higher rate of concurrent cardiac surgery; pericardial patches were more commonly used for isolated valve repairs. Bicuspid prolapse was more frequently repaired with triangular resection.

Overall in-hospital mortality was 2.6%.

Among patients having isolated aortic-valve repairs the in-hospital death rate was 1.2%. Patients were followed by regular examinations with transthoracic echocardiography. The average duration of follow-up for this review was 35 months, with a range of 1-133 months.

The actuarial rate of freedom from recurrent aortic regurgitation of grade 2 or higher during 5 years of follow-up ranged from 90% to 92% for all three repair methods, Dr. Aicher said.

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Thirteen patients required repeat surgery for recurrent disease during follow-up. The rate of freedom from reoperation was 94%-95% for the three repair methods. The most common reason for repeat surgery was recurrent cusp prolapse, which occurred in seven patients. The aortic valve was eventually replaced in seven patients; freedom from valve replacement was maintained during follow-up in 97%-99% of patients in the three repair groups.

Diagnosis of cusp prolapse is a subjective decision that depends on surgical judgment, Dr. Aicher said. No one instrument provides an objective identification of a cusp that needs repair. During the first few years of this series, prolapse was diagnosed if the free cusp margin was at least 2 mm higher than the adjacent margins.

More recently, a refined definition has been used. The difference between the central free margin and the lowest point of cusp insertion is the effective height. Patients with an effective height of 7-10 mm are stable; those with an effective height of less than 7 mm are considered to have prolapse. ■