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## **Balancing stenosis and regurgitation during mitral valve surgery in pediatric patients.**

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### **Abstract**

#### **BACKGROUND:**

The objectives of this study were to evaluate the composite outcome of reoperation or death for mitral valve repair and replacement and to determine the relative importance of regurgitation and stenosis during mitral valve repair to guide intraoperative decision making.

#### **METHODS:**

All consecutive patients undergoing first-time mitral valve surgery from 1990 to 2008 at our institution were reviewed. Those with atrioventricular septal defects were excluded. Intraoperative transesophageal echocardiography was used to assess mitral repairs. Residual mitral valve stenosis (mean gradient) and regurgitation (Grade I=less than mild; Grade II=mild to less than moderate; and Grade III=moderate or greater) were assessed.

#### **RESULTS:**

One hundred-fifty patients were included with median age of 47 months (range, 0.03 to 228 months) and median weight of 14 kg (range, 3-114 kg). Of these, 18 (12%) patients underwent replacement, and 132 (88%) patients underwent primary repair. In-hospital mortality was 6%. Of the patients reviewed, 21% underwent reoperation (repair or replacement) or died. Multivariable proportional hazard modeling adjusted for weight, valve replacement, postrepair mean gradient and grade of regurgitation showed postrepair mitral valve regurgitation to be the predominant predictor of death or reoperation. Compared with patients with mild to moderate mitral regurgitation, those with stenosis, but Grade I regurgitation, were associated with improved outcomes.

#### **CONCLUSIONS:**

Within the limits of our analysis, residual mild mitral valve stenosis was associated with less hazard than mild to moderate regurgitation. Taken together, our data suggest that an intraoperative strategy to minimize mitral valve regurgitation is rational, even at the expense of mild mitral stenosis.