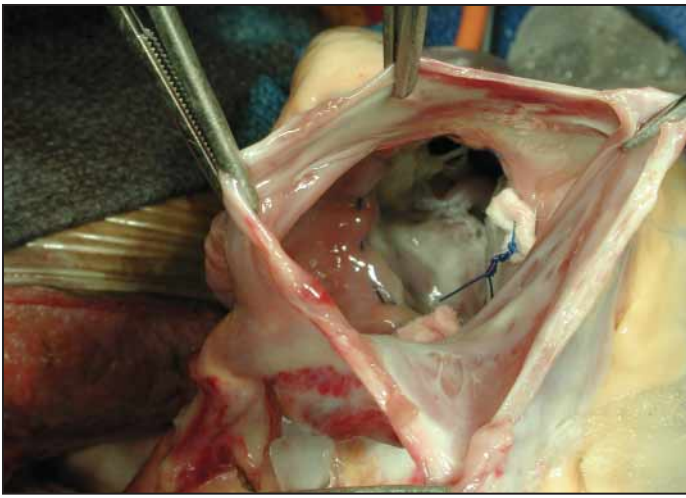


Tricuspid valve annuloplasty is a relatively simple and quick procedure. The tricuspid valve is easy to access through the open inferior vena cava of the donor organ. This eliminates the need to open the right atrium.



COURTESY DR. VALLUVAN JEEVANANDAM

## Tricuspid Valve Annuloplasty Boosts Transplant Outcomes

BY BRUCE K. DIXON  
Chicago Bureau

CHICAGO — Tricuspid valve annuloplasty of the donor heart before orthotopic transplantation provides short- and long-term benefits, according to a 6-year study. “Clearly, tricuspid annuloplasty, in the immediate postoperative period, augments myocardial function. Long term,

there’s a reduction in tricuspid regurgitation and less deterioration of renal function,” said Dr. Valluvan Jeevanandam. “Considering the advantages and how simple and quick a procedure this is, I think it should be used routinely as part of the orthotopic heart transplantation procedure.”

Tricuspid regurgitation (TR) is a common and significant complication after orthotopic heart transplantation (OHT), and there are no published reports on the long-term results of prophylactic tricuspid valve annuloplasty (TVA), Dr. Jeevanandam told the annual meeting of the Society of Thoracic Surgeons.

The incidence of TR following OHT ranges from 47% to 98%. “This incidence correlates with implant technique, endomyocardial biopsies, allograft dysfunction with right ventricle dilatation, and pulmonary hypertension, while greater than moderate TR is associated with right-sided heart failure symptoms, renal and hepatic dysfunction, and decreased long-term survival,” said Dr. Jeevanandam, who is now with the University of Chicago.

Donor recipients, none of whom had TR to begin with, were randomized to one of two groups: Group A underwent bicaval orthotopic heart transplantation (bOHT), and group B received a heart plus DeVega TVA. During April 1997–April 1998, 94 heart transplants were performed at Temple University in Philadelphia; of those, 60 met the criteria for comparison. The exclusion criteria included multiple organ transplantation, retransplantation, and low donor-recipient weight ratio.

Outcome data were prospectively obtained intraoperatively, at 1 month, at 1 year, and annually up to 6 years, he said.

Intraoperatively, the TVA group (B) required an average of 19 minutes less reperfusion time and had significantly lower central venous pressure and a larger gap between mean pulmonary artery and central venous pressures.

Regarding TR severity, group B showed significantly lower regurgitation readings up to year 6; at the end of follow-up, 36% of group A patients had TR levels at or above 2, compared with 0% in group B. There was a significant correlation between a TR of 2 or greater and increased risk of death, Dr. Jeevanandam said.

Differences in renal function were not significant until year 6, when group A experienced a spike in mean creatinine level to 2.9 mg/dL; at that point, the difference in creatine levels was two points in group B’s favor. As with TR, a creatinine level of 2.5 mg/dL or higher was associated with a significantly higher risk of death.

“The immediate intraoperative complications were similar [between] groups; however, the under 10-day mortality was statistically higher in the group without annuloplasty. Initially, we thought this would portend better long-term prognosis and survival, but that difference disappeared at 1 year.” By the end of the study, cardiac mortality was more common in group A, and though the cardiac survival was higher in group B, in the end, the cumulative survival was the same, he said. ■

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