VSD closure using detachment of anterior leaflet of the tricuspid valve

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Objectives
To analyse the impact of detachment of anterior leaflet of the tricuspid valve in closing various types of ventricular septal defects.

Methods
161 patients operated upon (2005 – 11) for closure of VSD (151 perimembranous, 4 malalignment, 4 inlet and 2 infundibular) using annular detachment of the anterior tricuspid valve leaflet were analysed. Median age and weight were 5(Range 1-202) months and 5.3(Range 2.6-53) kg respectively. VSD closure was performed using running polypropylene stitches. The detached leaflet was reattached while suturing the upper margin of the patch. Follow-up data was available from 148 patients with a median duration of 20 (Range 4 – 66) months.

Results
Early and late survival was 100%. Incidence of mild and moderate/severe tricuspid valve regurgitation was 13 and 1% at follow-up, 37 and 0% postoperatively as against 27 and 3% preoperatively. Incidence of mild aortic regurgitation was 1% at follow-up, 9% postoperatively as against 8% preoperatively; none had more than mild regurgitation. Trivial postoperative rest shunts seen in 23 (14%) were visible in 6 (4%) patients at follow-up. 3 patients (2 with inlet extension and tricuspid adhesions, 1 with DORV) suffered complete heart block.

Conclusion
Periannular detachment of the anterior leaflet of the tricuspid valve allows VSD closure staying clear of the sub-valvular suspension apparatus. Clear delineation of the inlet margin of the VSD facilitates its closure. Not only that elective detachment of the leaflet does not negatively impact tricuspid valve function but may even contribute to normal valve function.