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Long-term follow-up of repaired Tetralogy of Fallot using small infundibulectomy in developing countries children

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Objectives: There are still controversies regarding the surgical approach and the optimal age for surgery in Tetralogy of Fallot. In the developed world it's common to operate earlier as a one stage procedure. The definitive repair in infancy have been reported to carry low mortality and morbidity. However, in developing countries staged repair is still practised due to various limitations. The aim was to analyze the early post-operative clinical course of the RVOT obstruction enlargement, using small infundibulectomy.

Methods: 46 consecutive operated-Tetralogy of Fallot, underwent complete correction, were clinically and instrumental evaluated. The resection of RVOT was done by excising parietal band, dividing all obstructing muscle bands and excising the fibrous tissue, through a small infundibulectomy. The RVOT and the pulmonary artery were closed with autologous pericardial patch whenever required. Median age at correction was 4.8 years.

Bi-ventricular volumes and ejection fraction, pulmonary regurgitation fraction, infundibular anatomy and function, pulmonary artery anatomy and flow, functional capacity and adverse outcomes were evaluated.

Results: RVOT reconstruction technique, transannular patch, right ventriculotomy size, duration of postoperative mechanical ventilator support and pulmonary valve regurgitation grade by immediate postoperative echocardiography were significant risk factors of right ventricular dilatation. Aggressive ventriculotomy predispose to RVOT aneurysms or akinetic regions. Of the various RVOT reconstruction techniques, pulmonary valve repair through pulmonary arteriotomy and small infundibulectomy had the lowest incidence of right ventricular dilatation. RV end-diastolic volume was low (146 ± 37 ml/m²), pulmonary regurgitation fraction was low ($36 \pm 13\%$), ejection fraction of the infundibulum was high ($28 \pm 11\%$).

Conclusions: Our data show that early and late right ventricular dilatation after total repair in Tetralogy of Fallot is low, using small infundibulectomy.