COMPLETE REPAIR OF TETRALOGY OF FALLOT IN FIRST THREE MONTH PERIOD

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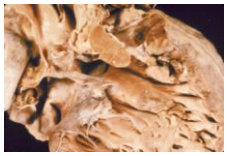
Introduction

Tetralogy of Fallot (TOF) is the most common cyanotic congenital heart disease in childhood with an incidence of 356 x 10 ^{6} newborns. It is characterized by stenosis at the right ventricle outflow tract, subaortic ventricular sptal defect, aortic dextroposition and right ventricle hypertrophy.

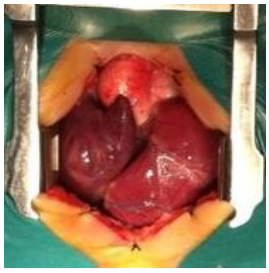


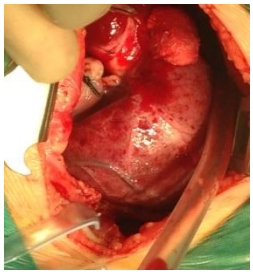
TOF palliation with systemic-pulmonary artery shunts has been the accepted standard for symptomatic neonates and infants. Complete repair has traditionally been reserved for infants from 6 months of age, due to the perception that young children face a high surgical risk.

Objetive

To check more than a decade of experience in the complete repair of Tetralogy of Fallot (TOF) in patients with less than 3 months of life at Barcelona Children´s Hospital, to assess early and late survival, perioperative complications and incidence of reoperation in neonates. To demonstrate excellent long term results, avoiding palliative procedures and the morbidity and mortality associated with them.

Surgical technique



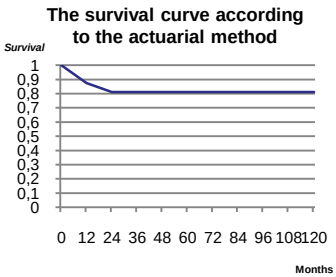


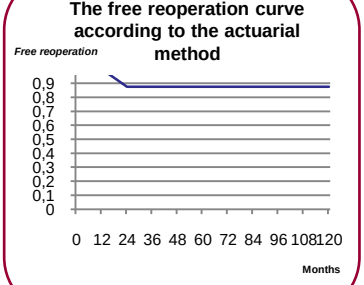
The surgical technique involves resection of hypertrophic muscle bands and limited opening of the infundibulum (4-5 mm), closure of the ventricular septal defect with a patch of heterologous pericardium and enlargement of the outflow tract of the right ventricle with a monoleaflet transannular patch.

Methods

We performed a retrospective study of patients diagnosed with Tetralogy of Fallot who underwent complete correction of their disease in the first three months of life. Sixteen patients were operated during the period 2003-2013 in our hospital. All of them were diagnosed with symptomatic Tetralogy of Fallot with good development of the pulmonary arteries. The mean age at repair was 35 + / - 24 days (7-90 days) and mean weight was 3.6 + / - 0.8 kg. One patient required a palliative shunt before the corrective surgery due to hemodynamic instability.

Patients	
Weight (Kg)	3.6 ± 0.8
Height (cm)	52.7 ± 3.5
Body surface (m2)	0.2 ± 0.0
CED time(min)	114 ± 22
Aortic croos-clamping time (min)	71 ± 15





Results

No patient died during hospitalization. There is a 10-year follow-up. The survival curve according to the actuarial method at 10 years is 81.2%. Three patients died of noncardiac causes, all of them were diagnosed with TOF with absent pulmonary valve. Free reoperation curve according to the actuarial method at 10 years was 87.5%. Two patients needed a new surgery, one case by pulmonary failure requiring pulmonary homograft implantation and the second patient with progressive pulmonary stenosis. All patients are asymptomatic.

Conclusion

The correction of congenital heart disease at neonatal period, using surgical techniques such as Switch Technique or Ross Operation at neonatal age, has already shown excellent results. Forward the complete correction of Tetralogy of Fallot, the first weeks of life, is an equally effective treatment option with excellent results and good medium-term survival. The variant of tetralogy of Fallot with absent pulmonary valve has a higher mortality from respiratory complications secondary to bronchial compression caused by the large dilated pulmonary arteries.

Early correction of Tetralogy of Fallot have a very low reoperation rate and avoids palliative procedure with high morbility and mortality.