Subaortic stenosis surgery in children: our experience with simple versus complex forms

Polo L., Aroca Á., Bret M., Sánchez R., González Á., Rey J., Uceda A., Arreo V., Sanz E., Villagrá F.
La Paz University Hospital. Madrid. Spain

Introduction: Subaortic stenosis in children is the second most frequent cause of left ventricle outflow obstruction. Usually is progressive and clinical symptoms are mild. There is no consensus about the best moment to operate these patients considering the subaortic gradient and aortic insufficiency progression. We present our experience during the period 2007-2014.

Material & methods: Retrospective study of 43 surgeries in 40 children aged ≤ 15 years. Main indication of surgery was subaortic stenosis (isolated membrane or fibromuscular tunnel). Depending if they had previous cardiac/great vessels surgery or not, two groups were defined respectively named complex (n=20) and simple (n=23).

Results: Complex group patients have worse subaortic stenosis with higher gradients (89±22 mmHg in complex, 72±22 in simple) and 75% tunnel predominance (70% membrane in simple group). Children of the complex group have more associated lesions (bicuspid aortic valve 20%, aortic coarctation 60%), and need surgery at a younger age (57±41 months) compared with simple group (110±54 months). Most of them were asymptomatic in both groups. Operations were performed under extracorporeal circulation. All cases received membrane/tunnel resection ± Morrow miectomy, and also in complex group were required more aggressive techniques (20% modified Konno or Ross-Konno) with longer by-pass and aortic cross-clamp times. Hospital mortality: 4.3% in simple, 0% in complex group. Morbidity related to pacemaker implantation because of postoperative atrioventricular block was 20% in complex and 0% in simple group. Mean follow-up: 35±24 months. Late mortality: 4.5% in simple, 5% in complex group. Simple group had lower reoperation rate during follow-up (9%) than complex group (21%). Aortic insufficiency increases over time in both groups.

Conclusions: Subaortic stenosis resection during childhood has good results in simple and complex forms. Surgery does not prevent progression of aortic insufficiency, neither recurrence of subaortic stenosis. Our mortality is low in both groups, but morbidity and reoperation during follow-up are higher in complex group.