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► RESÚMENES

PRESENTACIONES ORALES: CIRUGÍA CARDÍACA PEDIÁTRICA

20-YEAR EXPERIENCE WITH PEDIATRIC HEART TRANSPLANT IN A DEVELOPING COUNTRY

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Introduction: Cardiomyopathies in advanced stages and highly complex congenital heart disease may not be amenable to therapy or surgical correction thus being indicated pediatric heart transplant. In this study, we sought to report and evaluate the immediate and long-term outcomes of our 20 years experience in pediatric heart transplant.

Methods: We conducted a retrospective study of 106 patients undergoing pediatric heart transplant between 1992 and 2011. We analyzed medical records, surgical reports and results of complementary tests.

Results: The mean age at transplantation was 5.9 years (min=12 days, max=18 years). The preoperative diagnosis was cardiomyopathy in 79% and congenital heart disease in 21%. The surgical technique for all cases was orthotopic transplantation, having been used the biatrial method until 1996 and, since then, the bicaval method. There were four retransplantation, three due to hyperacute rejection and one due to graft vasculopathy. Survival was 84% during hospital stay, 81% in 1 year, 72% in 5 years, 62% in 10 years and 56% in 15 years. Among the posttransplant comorbidities, recurrent lung infection was present in 70%, hypertension in 30%, graft vasculopathy in 25% and lymphoproliferative disease in 10%. During follow-up, one patient underwent renal transplantation 16 years after heart transplantation.

Conclusion: Our 20 years experience in pediatric heart transplant present results compatible to the literature, with values of survival and morbidity that strengthen it as an alternative to treat different heart diseases of childhood.

AORTITIS O HIPOPLASIA AÓRTICA SEMEJANDO UN SÍNDROME DE COARTACIÓN DE AORTA Y SU REPARACIÓN

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Se presenta un caso de una niña de 30 meses de edad que ingresa a nuestro hospital en edema agudo de pulmón que requiere asistencia mecánica respiratoria y diálisis, sin poder controlar dicho cuadro y con un diagnóstico clínico de coartación de aorta y sin poder confirmarlo por eco cardiografía, ante la situación desesperante de la niña se decide la exploración quirúrgica. Se efectúa una toracotomía posterolateral izquierda, realizando una disección del cayado de la aorta y de los vasos del cuello sin encontrar imagen de coartación de aorta, continuando con la disección de la aorta descendente se observa aproximadamente a 10 cm. del nacimiento de la subclavia una infiltración de la aorta, por lo que se decide el remplazo de la aorta por una prótesis de P.T.F.E. de 8mm. Posteriormente la paciente recupera su estado general. La niña continúa su control cardiológico hasta que a la edad de 14 años presenta hipertensión arterial y ausencia de pulsos femorales y distales, se decide estudio de aortografía por cateterismo y angiografía que demuestra discordancia entre el tamaño de la aorta y del P.T.F.E. que se encuentra permeable determinando una estenosis severa. Se decide una nueva re intervención. Se realiza una re toracotomía con colocación de una prótesis de dacron de 20 mm. mediante una anastomosis latero lateral de la aorta torácica proximal y la aorta distal subdiafragmática. Evoluciona satisfactoriamente a un año de su cirugía. Se repasa la bibliografía en cuadros de obstrucción aórtica aguda y la decisión del remplazo de la aorta.

MANEJO QUIRÚRGICO DE LA ESTENOSIS SUPRAVALVULAR AÓRTICA. EXPERIENCIA EN EL HOSPITAL CARDIOLÓGICO INFANTIL LATINOAMERICANO "DR. GILBERTO RODRÍGUEZ OCHOA"

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Objetivo: El objetivo de esta investigación fue evaluar los resultados quirúrgicos y a mediano plazo en el tratamiento de la estenosis supravalvular aórtica en nuestro centro.

Métodos: Se evaluaron los pacientes del período comprendido entre agosto 2006 y julio 2013, revisando características preoperatorias, técnica quirúrgica utilizada, reintervenciones y resultados postoperatorios inmediatos y seguimiento en el tiempo.

Resultados: Se intervinieron un total de 20 pacientes, dos de ellos ameritaron reintervenciones en el postoperatorio inmediato por gradientes residuales importantes. 75% del sexo masculino y 15% presentaban asociación genéticamente comprobada con síndrome de Williams-Beuren, otros aún en espera de corroboración del mismo, pero con características fenotípicas sugestivas de presentarlo. La media de edad fue 6,26 años, peso promedio 22,2 Kg y talla 107,4 cm. Se utilizó técnica de ampliación con parche en forma de diamante en 40% de los pacientes, Técnica de Doty en 40% y Bromm en 20%. Dos pacientes que ameritaron ser reintervenidos por gradientes residuales importantes presentaban el tipo difuso de la enfermedad, ambos fallecen por persistir gradientes distales a las reparaciones (enfermedad difusa) que impidieron su extubación. Un neonato que fue llevado a quirófano en malas condiciones y fallece de sepsis. Todos los pacientes presentaron disminución de gradientes aunque en mayor medida en los que se corrigieron con técnicas de múltiples senos. En el seguimiento todos los pacientes se encontraban asintomáticos, sin ameritar hasta la fecha reintervención quirúrgica por reestenosis, en clase funcional I y II de NYHA.

Conclusión: La corrección quirúrgica de la estenosis supravalvular aórtica arroja resultados satisfactorios. Sin embargo los resultados son menos favorables en aquellos pacientes con el tipo difuso de la enfermedad. Los resultados de la cirugía en nuestro centro ha permitido la incorporación de los pacientes a una vida acorde a su edad y un adecuado desarrollo psicomotor y pondoestatural.

NEW POLYURETHANE EXPANDABLE STENT VALVE, FOR REPLACEMENT OF HEART VALVULAR DISEASE, IN PEDIATRIC PATIENTS

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Introduction: The biological cardiac prosthesis on the market today, are durable and functional, but still not the ideal valve replacement in children.

Objectives: Develop two different reproductions of polyurethane prostheses prototypes, for substitution of heart valve disease, in pediatric patients.

Material/Methods: Prototype 1: Polyurethane valve. We made a delrin ring, keeping the anatomical characteristics of the aortic annulus, linked to a matrix polyurethane. Prototype 2: Polyurethane Expandable stent valve A cobalt chromium stent valve was built following the aortic valve cusp and using deeping procedure was applied the polyurethane, building 3 leaflets. The stent valve, after clipping procedure was incorporated within the catheter. A balloon catheter allow expansion of the stent during implantation.

Results: The macroscopic appearance of two prototypes was approved by the group of Engineer, Biologist and Pediatric Cardiac Surgeon. Macroscopic and microscopic analysis performed in Chemist Laboratory to optical, scanning imaging studies of polyurethane leaflet.

Discussion: The stent valves developed for pediatric use, so far, using biological tissue, have as main drawback: early calcification and the impossibility of changing diameters. Experimental studies of polyurethane valve published showed good hemodynamic performance, low incidence of calcification and resistant to fatigue, thrombosis and infection. The expandable stent has advantages because It is possible to changing the diameter of the stent, using catheter balloon, following the development of the child.

Conclusion: It is possible to reproduce these results and further studies, carried out to better understand the properties of the polyurethane, with a view of release by health authorities for clinical application, thus becoming one more option among the prostheses on the market today.

SHORT - TERM RESULTS OF THE WARDEN TECHNIQUE: A RETROSPECTIVE SINGLE-CENTER STUDY

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Introduction: The Warden technique was introduced in an attempt to decrease the incidence of sinus node dysfunction and venous obstruction after the repair of partial anomalous pulmonary venous connection to the superior vena cava. In this study, we sought to report and evaluate the immediate outcomes of our experience with the Warden technique.

Methods: We conducted a retrospective study of 9 patients with anomalous drainage of the pulmonary veins to su-

perior vena cava who have undergone the Warden technique during the year of 2011. We analyzed medical records, surgical reports and results of complementary tests.

Results: Besides the anomalous pulmonary venous connection to the superior vena cava, 5 (56%) patients also presented an ostium secundum or patent foramen ovale atrial defect and 2 (22%) presented persistent left superior vena cava. One patient presented Turner Syndrome. Before surgery, 3 (33%) patients presented some form of conduction disorder: two right bundle branch block and one atrial extrasystole. The mean age at surgery was 10.8 ± 7.6 (min=2, max=29.7) years, and the distribution of the sexes was 2:1, the majority being male. None patient underwent reoperation or evolved to death during the follow-up period. After surgical repair, a fourth patient presented with right bundle branch block. The degree of right chambers dilatation improved significantly at both atrial ($p=0.002$) and ventricular ($p=0.046$) level, after surgical repair. Three (33%) patients had postoperative tricuspid and/or pulmonary insufficiency. No venous obstruction occurred.

Conclusion: Short-term results with the Warden technique were satisfactory. Although postoperative valvopathies and arrhythmias seems to be a risk, longer follow-up is required to evaluate its impact on morbidity and mortality.

TRANSPOSICIÓN DE GRANDES ARTERIAS CONGÉNITAMENTE CORREGIDA ASOCIADA A ANOMALÍA DE EBSTEIN. HOSPITAL DOCTOR "MIGUEL PEREZ CARREÑO" CARACAS, VENEZUELA. A PROPÓSITO DE UN CASO.

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Introducción: La transposición de grandes arterias congénitamente corregida (ccTGA) está caracterizada por la inversión ventricular, donde la aurícula derecha se comunica a través de la válvula Mitral con el ventrículo izquierdo conectado a la arteria pulmonar, y la aurícula izquierda se comunica a través de la válvula tricúspide un ventrículo morfológicamente derecho del que emerge la aorta. La inversión ventricular está potencial y fisiológicamente corregido, al no asociar transposición de grandes arterias. Así la sangre venosa sistémica regresa al corazón, hacia la arteria pulmonar, y el retorno venoso pulmonar se dirige a la aorta. Solo el 1% de estos casos se asocian a otras anomalías, siendo común la Anomalia de Ebstein (AE) (0.3 al 0.5%) en la cual la válvula tricúspide en posición Mitral es desplazada (valvas septal y posterior) hacia el ápex.

Caso Clínico: Paciente masculino de 19 años de edad con diagnóstico de ccTGA y AE desde la infancia, manteniéndose asintomático hasta el año 2012, cuando presenta palpitaciones, evidenciando por electrocardiograma bloqueo de rama izquierda del Haz de His y ecocardiográficamente dilatación de cavidades cardíacas, válvula tricúspide en ventrículo sistémico con valva anterior redundante, laxa e implantación baja de la valva septal y posterior, por lo cual se lleva a cabo Reemplazo Valvular Tricúspideo con prótesis mecánica Mitral 31mm con tiempo de bomba 114 minutos y pinza 79 minutos, permaneciendo en unidad de cuidados postoperatorios por dos días y egresado a domicilio a los catorce días postoperatorios.

Conclusiones: CcTGA es una alteración anatómica pero no funcional, que al estar asociada con AE, el grado de severidad de la misma permitirá que el paciente pueda llegar a edad adulta; incluso requerir intervención quirúrgica escogiendo la técnica adecuada para cada circunstancia.

VALVAR REPLACEMENT IN INFANTS AND PRESCHOOL CHILDREN: A RETROSPECTIVE SINGLE-CENTER STUDY

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Introduction: The use of prosthetic valves in children is controversial, being indicated only if valve repair is not possible. In this study, we sought to report and evaluate the immediate and long-term outcomes of our experience in valvar replacement in infants and preschool children.

Methods: We conducted a retrospective study of 16 infants and preschoolers patients who undergone valve replacement between 1997 and 2006. We analyzed medical records, echocardiographic exams and surgical reports.

Results: Mean age at surgery was 11.7 ± 10.4 (min=0.8, max=32.9) months. Diagnoses were isolated congenital valvopathy (38%), atrioventricular septal defect (AVSD) (31%), common arterial trunk (19%) and tetralogy of Fallot (12%). Nine (50%) of the prostheses were located in mitral, 4 (22%) in aortic, 2 (11%) in pulmonary and 3 (17%) in truncal position. Five (31.3%) patients underwent reoperation during the follow-up period and the major indication was prosthetic valve stenosis. The mean time free of reoperation was 76.5 ± 18.8 months. Hospital mortality was 43.8% and the average survival time 58.4 ± 9.3 months. Statistically significant association was found between age at surgery and the occurrence of intra-hospital death, the younger the patient, the greater the risk of dying during the first month after the surgery ($p=0.026$). There were differences between the intra-hospital mortality risks according to the underlying congenital heart disease, although this difference was not statistically significant ($p=0.084$). Valvopathies due to other cardiac defects (AVSD, common arterial trunk and tetralogy of Fallot) had higher occurrence of intra-hospital death.

Conclusion: Valve replacement in infants and children in preschool age, although should be reserved for cases in which there is no possibility of valvuloplasty, proved to be an immediate therapeutic alternative. Still, reoperations are needed and the duration of the valve prosthesis quite variable.