Methods: Doppler recordings of 24 fetuses with isolated VSD from 18 to 38 weeks were reviewed. Nine VSDs’ were found large in post-natal life (symptoms, medical or surgical treatment) and 15 were restrictive (no symptom, no therapy). A control group was constituted of 104 normal fetuses. In all cases, an isometric systolic index (ISI) was calculated as follows: (Nadir of end-systolic velocity / Peak systolic velocity) x 10. The gestational evolution of the ISI’s of the 3 groups was compared.

Results: In the control group, before 27 weeks of gestation, reference values of ISI were stable at ±2SD. After 28 weeks, a brief end-systolic retrograde flow was observed, increasing steadily with gestation and causing a fall of ISI whose mean value reached – 3a 2 SD at 38 weeks.

Conclusions: ISI provides a simple way to assess the relative performance of both ventricles throughout fetal life. Following the identification of a VSD, this index offers, for the first time, to fetal echocardiographers, an objective and easily accessible tool to predict the postnatal impact of the malformation.

Evolution of preexcitation syndrome in children

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Previous studies reported a spontaneous disappearance of preexcitation syndrome (PS) in patients with a long accessory pathway (AP) effective refractory period (ERP) and in children <12 years (y), but stability in children >12y with inducible VVT and short AP-ERP. The purpose of the study was to collect the data of untreated children with a PS, studied 2 times at least at one year interval.

Methods: 2 baseline electrophysiological studies (EPS) were performed within 1 to 25 years of one another (mean 6±years) in 39 children and teenagers, 17 boys, 22 girls, aged initially from 1 to 19 years (12.5±4), with overt symptoms, no therapy. A control group was constituted of 104 normal fetuses.

Results: At EPS2, among patients studied for syncope at EPS1, 1 has still syncope, 2 have AVRT, 1 is asymptomatic. Among patients with AVRT at EPS1, 14 (82%) have still AVRT, 3 are asymptomatic. Among asymptomatic patients, 13 (72%) remain asymptomatic, 2 have AVRT, 3 have syncope. AVRT in children presenting initially with syncope or initially asymptomatic children occurred in 2/8 with inducible AVRT at EPS1. The higher rate conducted by AP was similar in CS and after isoproterenol at EPS2 (178±72bpm, 203±81) and at EPS1 (188±62, 237±83)(p<0.01). AP-ERP’s were similar in CS at EPS2 (283±68ms) and 1 (281±91,5) and tended to increase from 211±72 at ESP1 to 234±58 at EPS2 (p<0.07) after isoproterenol. AP has lost anterograde conduction in 6 children with initially long AP-ERP, but all children with initially inducible AVRT had still inducible AP. Two children with initially a long AP-ERP had shorter AP-ERP at EPS2. AVRT was induced at EPS2 in asymptomatic PS with initially negative EPS in 3 children.

Conclusions: Contrary to previous studies, we did not find significant changes of clinical and electrophysiological data in children after a mean follow-up of 6±5 years. Most of children with spontaneous or inducible AVRT’s at the first evaluation have still inducible AVRT’s at the second evaluation. AP-ERP did not increase significantly.

Intraoperative pulmonary artery stenting for management of pulmonary artery stenosis in children with congenital heart diseases: a single center 5-year experience

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Introduction: Patients with Congenital Heart Diseases (CHD) often suffer from severe pulmonary artery (PA) stenosis. Management of PA stenosis is challenging for surgeons. The purpose of this study was to assess the results of intraoperative pulmonary artery stenting, performed additionally to, or instead of, conventional surgical angioplasty.

Methods and results: Between January 2008 and August 2013, 31 children with hypoplastic or stenosed PA, median age of 23 months (range 6 days to 15 years), and median weight of 11.8kg (range 2.8 to 63kg), underwent intraoperative placement of stents in PA. Patients had pulmonary atresia (15), tetralogy of Fallot (10), troncus arteriosus (4), and complex CHD (2). The aim of the concomitant surgical procedure was palliative surgery (10), complete repair (12), or improvement of right ventricular outflow tract after complete repair (9). A total of 42 balloon-expandable stents were deployed in left or right PA. Maximum balloon diameters ranged from 3 to 16mm (mean=9).

Intra-stent stenosis (n=17) or for asymptomatic PS (n=18). The pro-

Methods: 2 baseline electrophysiological studies (EPS) were performed within 1 to 25 years of one another (mean 6±years) in 39 children and teenagers, 17 boys, 22 girls, aged initially from 1 to 19 years (12.5±4), with overt symptoms, no therapy. A control group was constituted of 104 normal fetuses.

Results: At EPS2, among patients studied for syncope at EPS1, 1 has still syncope, 2 have AVRT, 1 is asymptomatic. Among patients with AVRT at EPS1, 14 (82%) have still AVRT, 3 are asymptomatic. Among asymptomatic patients, 13 (72%) remain asymptomatic, 2 have AVRT, 3 have syncope. AVRT in children presenting initially with syncope or initially asymptomatic children occurred in 2/8 with inducible AVRT at EPS1. The higher rate conducted by AP was similar in CS and after isoproterenol at EPS2 (178±72bpm, 203±81) and at EPS1 (188±62, 237±83)(p<0.01). AP-ERP’s were similar in CS at EPS2 (283±68ms) and 1 (281±91,5) and tended to increase from 211±72 at ESP1 to 234±58 at EPS2 (p<0.07) after isoproterenol. AP has lost anterograde conduction in 6 children with initially long AP-ERP, but all children with initially inducible AVRT had still inducible AP. Two children with initially a long AP-ERP had shorter AP-ERP at EPS2. AVRT was induced at EPS2 in asymptomatic PS with initially negative EPS in 3 children.

Conclusions: Contrary to previous studies, we did not find significant changes of clinical and electrophysiological data in children after a mean follow-up of 6±5 years. Most of children with spontaneous or inducible AVRT’s at the first evaluation have still inducible AVRT’s at the second evaluation. AP-ERP did not increase significantly.

Conclusion: Intraoperative stenting of PA is an effective option to prevent recoil and external compression. However, smaller stents seem to be at higher risk of intra-stent proliferation.