proliferation, two for vessel growth. One postoperative dilatation (group 2) was complicated by acute fracture, requiring additional postdilation. One ductal stent was completely occluded in a child with borderline hypoplastic left heart that acquired biventricular circulation. The other 11 were fully patent. Surgery performed in six patients (interval 1.9 to 10 months), showed completely endothelialized and patent stents. No ‘late’ obstructive stent fractures were seen on chest X-Ray, CT scan or fluoroscopy performed in 90% of the patients during follow-up. Predilation was the only significant risk factor for acute complication in univariate analysis. Conclusion.— The VALEO® stent is a useful stent in growing children. Low radial force is counter balanced by high flexibility, allowing implantation in distal and tortuous lesions. Early fractures may occur. Longer-term follow-up is needed.

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11 Atrial septal defect area assessed by 3D echo is relevant for calibration during percutaneous closure
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Background.— Balloon sizing during percutaneous atrial septal defect (ASD) closure leads to bigger device, extending time procedure and radiation dose but remains the gold standard. Real time-3D TransEsophageal Echocardiography (RT-3D-TEE) allows diameters and area measures on a 3D view. We assessed the relationships between the occlusive balloon diameter (BD), area and diameters measured using 2D- and 3D-TEE. The effect of ASD shape and the predictive value of the measures in children with ostium secundum ASD were investigated.

Methods.— From 2011 to 2013, we prospectively enrolled 30 children (mean weight 30.9 ± 12.9 kgs max 64 min 18) who underwent transcatheter closure of an isolated ASD under 3D-TEE (3D-matrix array 2–7 MHz TEE probe and iE33 ultrasound machine Philips®). ASD diameters were measured by transthoracic echo (TTE), 2D-TEE and off-line by 3D Multiplanar reconstruction on Qlab® software. An asymmetric ratio was calculated (mTVAd/mTVAd).

Results.— Sixty-four children (7.1 ± 5.4 years; weight 2.2–82 kgs) with (42.2%) and without (57.8%) cardiopathy were prospectively included. Feasibility of 3D TV dataset was possible in all cases. Quality was estimated to be fairly good in 69.8% of cases. Leaflets visualization was possible in all unless in three children (95.2%) and was better when 3D data set quality was good (P < 0.0001) mTVAd was from septal to lateral axis. Pearson Correlations were good between mTVAd, mTVAd and 2D sectional diameters (r ≥ 0.8 in all cases, P < 0.0001). TVA was asymmetric with a ratio > 1.2 in 43 children (67.2%) without significant difference according to the cardiopathy. Difference between mTVAd and mTVAd was 10.3 ± 13.2 mm/m² (P < 0.0001). PSA was higher than mTVAd (P = 0.001) whereas mTVAd was higher than PRSVI (P < 0.0001) and closed to A4C although superior (P = 0.03) mTVAd was higher than A4C when mTVAd < 25 mm and the contrary was seen for mTVAd > 25 mm.

Conclusion.— Feasibility of 3D imaging of the tricuspid valve is good in children with or without cardiopathy. According to 3D TV diameters, the 2D A4C seems to be the most reliable sectional view, while the 2D-PRSVI underestimates the TAD. Conversely, the 2D PSA seems to overestimate TVA compared to 3D measures.

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12 Tricuspid annulus assessment using 3D echocardiography in children with and without congenital heart disease
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Tricuspid valve (TV) assessment is essential in various congenital heart diseases. 2D echo remains the cornerstone of TV annulus (TVA) measure but is limited by its complex shape. We investigated in children, the feasibility of 3D-Transthoracic echo (TTE) in TVA assessment compared with 2D.

Methods.— Diameters of TVA were performed on three 2D sectional views [parasternal short axis (PSA), apical four chambers (A4C), parasternal right ventricular inflow (PRSVI)]. ‘En face view’ of the TV was obtained with real time zoom 3D in A4C (3D-matrix array X7-2, X5-1, X3-1 probes, ie33 Philips®). Off-line measures of maximal (mTVA) and minimal (mTVA) diameters were performed using multiplanar reconstruction on Qlab® Software. An asymmetric ratio was calculated (mTVA/mTVAd).

Results.— Forty-six children (7.1 ± 5.4 years; weight 2.2–82 kgs) with (42.2%) and without (57.8%) cardiopathy were prospectively included. Feasibility of 3D TVA dataset was possible in all cases. Quality was estimated to be fairly good in 69.8% of cases. Leaflets visualization was possible in all unless in three children (95.2%) and was better when 3D data set quality was good (P < 0.0001) mTVA was from septal to lateral axis. Pearson Correlations were good between mTVA, mTVA and 2D sectional diameters (r ≥ 0.8 in all cases, P < 0.0001). TVA was asymmetric with a ratio > 1.2 in 43 children (67.2%) without significant difference according to the cardiopathy. Difference between mTVA and mTVA was 10.3 ± 13.2 mm/m² (P < 0.0001). PSA was higher than mTVA (P = 0.001) whereas mTVA was higher than PRSVI (P < 0.0001) and closed to A4C although superior (P = 0.03) mTVA was higher than A4C when mTVA < 25 mm and the contrary was seen for mTVA > 25 mm.

Conclusion.— Feasibility of 3D imaging of the tricuspid valve is good in children with or without cardiopathy. According to 3D TVA diameters, the 2D A4C seems to be the most reliable sectional view, while the 2D-PRSVI underestimates the TAD. Conversely, the 2D PSA seems to overestimate TVA compared to 3D measures.

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13 Decreased left ventricular longitudinal myocardial deformation in type 1 diabetic children: An early sign of diabetic cardiomyopathy?
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Background.— The relation between type 1 diabetes and cardiac structure and function in children is poor documented. We used 2D speckle strain imaging to investigate whether children and adolescents with type 1 diabetes have early echocardiographic signs