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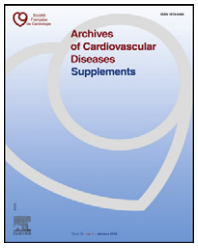

Communications orales

Vendredi 13 septembre de 11h à 12h30

CO 7

Congenitally corrected transposition of the great arteries: Is it really a transposition?

Nicolas Arribard[1], Meriem Mostefa-Kara[2], Damien Bonnet[3], Sébastien Hascoët[1,*], Lucile Houyel[4]

[1] *Departement of congenital heart diseases, Hôpital Marie-Lannelongue, centre de reference cardiopathies congénitales complexes M3 C, Université Paris Sud, 92350 Le Plessis-Robinson*

[2] *M3C-Necker Enfants malades, AP—HP, Université Paris Descartes,Sorbonne Paris Cité, Paris, France*

[3] *Aix Marseille University, Center for Studies and Research on Health Services and Quality of Life, Public Health and Chronic Diseases Laboratory, 13007, Marseille, France*

[4] *Department of Congenital Cardiac Surgery, Marie-Lannelongue Hospital, Le Plessis-Robinson, France*

* *Corresponding author.*
E-mail address: s.hascoet@hml.fr (S. Hascoët)

Congenitally corrected transposition of the great arteries (ccTGA) associates atrioventricular discordance and ventriculo-arterial discordance. The anatomy of the associated ventricular septal defect (VSD) remains controversial.

We analyzed 102 human heart specimens: 31 ccTGA, 36 TGA, 35 normal hearts (NH), to compare the right ventricular septal anatomy between the 3 groups and to determine the anatomy of the VSD in ccTGA. VSD were classified as outlet if above the septal insertions of the tricuspid valve, inlet if underneath. We measured the lengths of the anterior (AL) and posterior (PL) limbs of the septal band, the angle between the two limbs and, in order to assess the orientation of the septal band, the angle between AL and the arterial valve above (AL-AV).

VSD was present in 26 ccTGA (83.9%) and was outlet in 16 cases (62%). Mean AL-PL angle was 76.4° (ccTGA) compared to 90.6° (TGA, $P = 0.011$) and 76.1° (NH, P = ns). Mean AL-AV was 70.6° (ccTGA) compared to 90.6° (TGA, $P = 0.0004$) and 69.1° (NH,P = ns). PL was significantly shorter in ccTGA: AL/PL length ratio 21.4 (ccTGA), 2.2 (TGA), 1.5 (NH), $P < 0.0003$.

Conclusion The typical VSD in ccTGA is an outlet VSD. Its frequent misdiagnosis as an inlet VSD is due to the short PL, which creates the illusion of a posterior VSD. Surprisingly, the orientation of the septal band is similar in ccTGA and NH, despite the atrioventricular discordance, and different in ccTGA and TGA, despite the ventriculo-arterial discordance. ccTGA is not a TGA and the term ''double discordance'' might be more appropriate.

Disclosure of interest The authors have not supplied their declaration of competing interest.

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CO 8

Impaired pulmonary function and its association with clinical outcomes, exercise capacity and quality of life in children with congenital heart disease

Hamouda Abassi[a,b,*], Arthur Gavotto[a], Marie Christine Picot[c], Helena Bertet[c], Stefan Matecki[f], Sophie Guillaumont[a,d], Stephane Moniotte[e], Pascal Auquier[b], Johan Moreau[a], Pascal Amedro[a,b,f]

[a] *Montpellier University Hospital, Paediatric and Congenital Cardiology Department, M3 C Regional Reference Centre, 34295, Montpellier, France*

[b] *Aix-Marseille University, Center for Studies and Research on Health Services and Quality of Life, 13007, Marseille, France*

[c] *Montpellier University Hospital, Epidemiology Department, Clinical Investigation Centre, Inserm—CIC 1411, 34295, Montpellier, France*

[d] *St-Pierre Institute, Paediatric Cardiology and Rehabilitation Unit, 34250, Palavas-Les-Flots, France*

[e] *St-Luc University Hospital, Paediatric and Congenital Cardiology Department, 1200, Woluwe-Saint-Lambert, Brussels, Belgium*

[f] *University of Montpellier, PhyMedExp„ Inserm, CNRS, 34295, Montpellier, France*

* *Corresponding author.*
E-mail address: hamouda-abassi@chu-monrpellier.fr (H. Abassi)

Background Impaired pulmonary function is an independent predictor of mortality in adult congenital heart disease (CHD), but has been scarcely studied in the paediatric CHD population.

Aims To compare the pulmonary function of children with CHD to healthy controls, and evaluate its association with clinical outcomes, exercise capacity, and quality of life.

Methods Cross-sectional multicentre study among 834 children (555 CHD and 279 control subjects) who underwent a complete spirometry and a cardiopulmonary exercise test (CPET). The 5th centile (Z-score = — 1.64) was used to define the lower limit of normal. The association of clinical and CPET variables with spirometry was studied using a multivariate analysis. Children and their parents filled in the Kidscreen health-related quality of life questionnaire.

Results Forced vital capacity (FVC) and forced expiratory volume in one second (FEV1) Z-scores values were lower in children with CHD than controls (-0.4 ± 1.5 vs. 0.4 ± 1.3, $P < 0.001$ and -0.5 ± 1.4 vs. 0.4 ± 1.2, $P < 0.001$, respectively), without any obstructive airway disorder. Restrictive pattern was more frequent in CHD patients than in controls (20% vs. 4%, $P < 0.0001$). FVC Z-scores were predominantly impaired in complex CHD, such as heterotaxy (-1.1 ± 0.6), single ventricle (-1.0 ± 0.2), and complex anomalies of the ventricular outflow tracts (-0.9 ± 0.1). In multivariate analysis, FVC was affected by the age, the body mass index, the maximum oxygen uptake, the genetic anomalies, the number of cardiac surgery and cardiac catheter procedures. FVC and FEV1 correlated with self and proxy-related quality of life scores.
Conclusion These results suggest that pulmonary function should be monitored early in life, from childhood, in the CHD population.
Keywords Children; Congenital heart disease; Lung; Pulmonary function; Spirometry
Disclosure of interest The authors declare that they have no competing interest.

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CO 9

Anterograde blood flow associated with Blalock—Taussig shunts does not modify pulmonary artery growth compared with Blalock—Taussig shunt alone

Marien Lenoir[1,*], Beatrice Desnous[2], Bilal Rahmani[1], Nabila El Gueddari[1], Edouard Aries[3], Fedoua El Louali[3], Philippe Aldebert[3], Caroline Ovaert[3], Dominique Metras[1], Loic Macé[1], Virginie Fouilloux[1]
[1] *Service de chirurgie cardiaque pédiatrique, Timone, AP—HM, Marseille, France*
[2] *Service de neurologie pédiatrique, Timone, AP—HM, Marseille, France*
[3] *Service de cardiologie pédiatrique, Timone, AP—HM, Marseille, France*
* *Corresponding author.*
E-mail address: lenoirmarien@gmail.com (M. Lenoir)

Objective The difference between extreme Tetralogy of Fallot (T4F) and pulmonary atresia with ventricle septal defect (PA/VSD) is the anterograde pulmonary blood flow. It is speculated that the association of modified Blalock-Taussig shunt (mBTs) and additional pulmonary blood flow favours shunt thrombosis but promotes better pulmonary arterial (PA) growth. This study sought to compare (PA) growth after mBTs shunt between T4F and AP/VSD.
Methods From 1995 to 2018, 79 mBTs were performed in infants (< 1 years), 45 for T4F and 34 for AP/VSD. Using a 1:1 propensity score match analysis, 38 patients were included ($n = 19$ in each group). The primary outcome was, mBTs thrombosis, PA growth and operative mortality.
Results After matching, the preoperative Nakata was similar ($101 \pm 8\,mm^2/m^2$ in T4F; 106 ± 8 in AP/VSD $P = 0.75$). The age and weight were similar ($24{,}3 \pm 5$ days, 3.3 ± 0.5 kg in T4F; $24{,}15 \pm 4$, 3.3 ± 0.9 in AP/VSD $P = 0.84$ and $P = 0.77$ respectively). The mBTs size was similar (4.15 ± 0.5 mm in T4F; 4.3 ± 0.5 in PA/VSD $P = 0.35$) There was no difference in in-hospital mortality ($n = 0$, in T4F; $n = 2{,}11\%$ in AP/VSD, $P = 0.14$) and mBTs thrombosis (3,16% in T4F; 2,11% in AP/VSD, $P = 0.18$). The time to extubation tended to be longer in T4F (5 ± 1days vs. 2 ± 1 $P = 0.06$).
The left and right PA diameter at time of biventricular repair were similar (7.5 ± 0.5 mm, 7 ± 0.2 in T4F; 8.1 ± 0.7 mm, 7 ± 1 in AP/VSD $P = 0.43$ and $P = 0.78$, Figs. 1 and 2) and the Nakata delta ($112 \pm 23\,mm^2/m^2$ in T4F; 110 ± 17 in AP/VSD $P = 0.78$). Median time to complete repair was the same in the PA/VSD (12.26 [3.9—25] months) compared with T4F (9.7 [6.2—41.1] months) $P = 0.87$. The interstage reintervention were similar (3,16% in T4F; 4,22% in AP/VSD, $P = 0.9$).
Conclusions Anterograde blood flow with mBTs did not increase the risk of mBTs thrombosis. We couldn't show benefit of anterograde blood flow with mBTS versus mBTS for pulmonary arteries growth. Anterograde blood flow did increase the time to extubation, probably by increasing total pulmonary blood flow.
Keywords Tetralogy of Fallot; Pulmonary atresia with ventricular septal defect; Modified Blalock-Taussig shunt
Disclosure of interest The authors declare that they have no competing interest.

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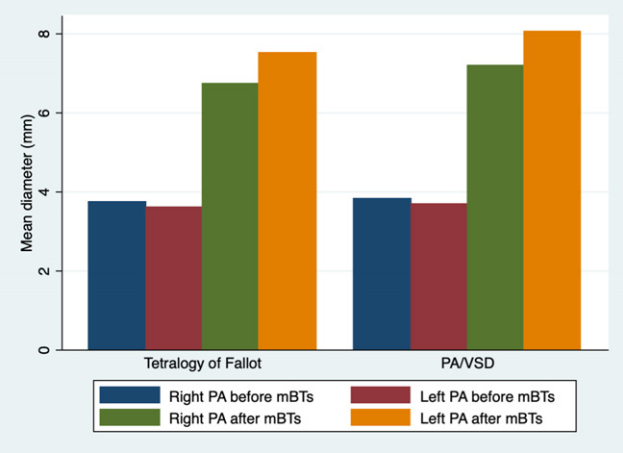

Fig. 1 Pulmonary arteries diameter before and after mBTs for T4F group and AP/VSD group.

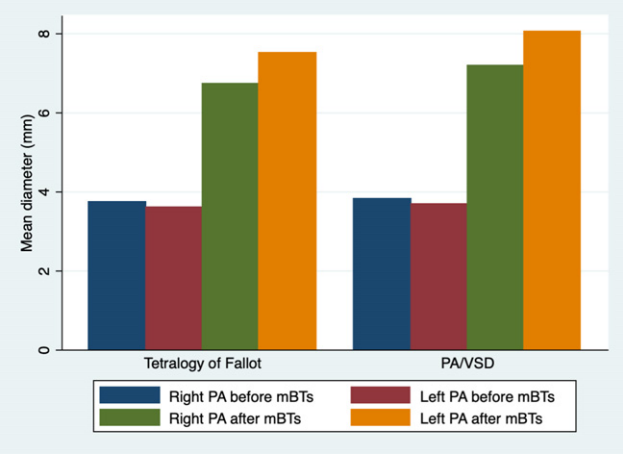

Fig. 2 Mean Nakata delta according to time after mBTs for T4F group and AP/VSD group. There was no difference between the two groups for pulmonary arteries growth.