



Acta Genet Med Gemellol 43: 125 (1994)
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International Congress
40th Anniversary of The Mendel Institute

Echocardiography, Angio-TC and Angiography in Assessing the Feasibility of Separation of Thoracopagus Twins.

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Thoraco-abdominal fusion of twins is a rare malformation (1/50.000 live births) known as "Thoracopagus sternopagus tetrabrachius". Most of the therapeutic problems encountered concern the degree of cardiac and hepatic fusion involved and this may be assessed by performing echocardiography, angio-TC and angiocardiology together with the conventional radiology techniques.

Case report. Two month-old 'conjoined twins' (Alphonsine *Al*, and Stephany *St*) with thoraco-abdominal fusion were admitted to our hospital. Gastrointestinal tract contrastography failed to show any communication between the twins. Echocardiography showed cardiac fusion at atrial and ventricular level. *Al* showed a well-formed heart with a small atrial septal defect and mild aortic stenosis, while *St* showed a common atrium, fused with the left atrium of *Al*, connected by a common atrioventricular valve with a discordant single ventricle of left type (ventricular L-loop). No evidence of pulmonary trunk was found. Computed tomography and angio-TC confirmed cardiac and hepatic fusion showing a common arterial hepatic circulation. Cardiac catheterization and angiocardiology of *Al* confirmed a mild aortic stenosis and showed a severe aortic coarctation with the lower part of the body served by artero-arterial anastomoses of *St*, whose ventriculography showed pulmonary atresia and pulmonary hypovascularity. Arterial oxygenation of both circulations was provided by *Al* via atrial and ventricular fusion, while peripheral perfusion was mainly due to the systemic circulation of *St*. In conclusion, echocardiography, angio-TC, and angiography integrate the conventional radiographic techniques and are useful diagnostic tools to clarify the anatomy and/or physiology of thoracopagus twins, and to evaluate the feasibility of their surgical separation.

(Poster presentation)

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