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Does endocardial fibroelastosis of the left ventricle affect right ventricular performance in fetuses with hypoplastic left heart syndrome? A prospective study using M Mode, PW and Tissue Doppler techniques

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Introduction & Purpose: Myocardial function (MF) of the systemic right ventricle (RV) determines the postnatal course of neonates with hypoplastic left heart syndrome (HLHS). Our study examines, whether the presence of endocardial fibroelastosis of the left ventricle (LV EFE) influences MF of the RV in HLHS fetuses.

Materials & Methods: A prospective study was conducted including 10 controls (group 1), 10 HLHS fetuses with (group 2) and 10 without LV EFE (group 3)-all matched for gestational age. M-mode was used to assess tricuspid plane systolic excursion (TAPSE) and the shortening fraction (SF). PW-Doppler and PW-TDI derived velocities were assessed. E/A, E/e', e'/a' ratios and the myocardial performance index (MPI) were calculated.

Results: The examination of MF revealed significantly lower velocities ($p < 0.05$) and higher values for SF in group 2 compared to group 3. ET (ejection time), E wave velocity, E/e' and SF showed significantly higher values in group 2 compared to group 1. In group 2 a' velocity increased significantly over gestational age. TAPSE increased during gestation in group 3 but not in group 2.

Conclusion: These significant differences in MF between the groups might lend support to the notion of negative ventricular-ventricular interaction in case of HLHS with LV EFE possibly influencing surgical outcomes.

Biography

O Graupner has completed his MD from the Philipps University Marburg. He is an Assistant Doctor in the Department of Obstetrics and Gynecology at the Right the Isar Hospital, Technical University Munich. He has done his Doctoral degree under the supervision of Professor Axt-Fliedner.

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