were smaller than in conditions 3 and 4 (\(P < .001\)), but they were not significantly different from each other as imaged. In this model, factors including the direction of PV flow, the direction of MR as relates to the angle of interrogation, and the level of left atrial pressure influenced the size of MR jets. The effect of PV flow direction was diminished by increased left atrial pressure. PV flow directed away from the mitral valve was associated with larger MR jets than when PV flow was directed toward it (condition 4), probably because of jet distortion and flattening.

Author's abstract

CHARACTERIZATION OF RIGHT VENTRICULAR DIASTOLIC PERFORMANCE AFTER COMPLETE REPAIR OF TETRALOGY OF FALLOT: RESTRICTIVE PHYSIOLOGY PREDICTS SLOW POSTOPERATIVE RECOVERY

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Prolonged postoperative recovery caused by a low cardiac output state occurs in some patients after complete repair of tetralogy of Fallot. Biventricular systolic function is usually well preserved in these patients. The contribution of impaired diastolic function, particularly of the right ventricle, has not been studied in detail; therefore, we performed a prospective study of right ventricular diastolic function in this patient group. We studied biventricular systolic and diastolic function using Doppler echocardiographic examination. Tricuspid valve, superior vena caval, pulmonary arterial, and mitral valve Doppler spectral were obtained during the first postoperative day in 35 patients aged 6 months to 45 years who underwent complete repair of tetralogy of Fallot. Biventricular systolic function was grossly normal in all patients. Isolated restrictive right ventricular physiology characterized by pulmonary arterial antegrade flow coincident with atrial systole and associated with prominent retrograde superior vena caval flow was seen in 17 of the 35 patients (group I). This flow was augmented during the expiratory phase of positive pressure ventilation and abolished or greatly diminished during the inspiratory phase (\(P < .001\)). An increase in the duration of pulmonary regurgitation occurred during the inspiratory phase of positive pressure ventilation in these patients (\(P < .01\)). All patients with right ventricular restriction had a clinical picture compatible with a low cardiac output state, requiring prolonged stays in intensive care and the hospital. Clinical improvement was mirrored by resolution of the Doppler markers of right ventricular restriction in most of the patients. Isolated right ventricular restriction is characterized by antegrade diastolic pulmonary arterial flow on Doppler echocardiography and is responsible for the slower postoperative course and clinical evidence of low cardiac output state in some patients after complete repair of tetralogy of Fallot.

Author's abstract

Obstetrics & Gynecology

NUCUAL TRANSLUCENCY THICKNESS AND CROWN–RUMP LENGTH IN TWIN PREGNANCIES WITH CHROMOSOMALLY ABNORMAL FETUSES

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Abnormal collections of fluid behind the fetal neck (nuchal translucency) at 10 to 14 weeks’ gestation are associated with increased risk for chromosomal defects.1–3 In a series of 1015 fetuses with nuchal translucency 3 to 9 mm thick we found that translucency thicknesses of 3 mm, 4 mm, 5 mm, and ≥6 mm were associated with threefold, 18-fold, 28-fold, and 36-fold increases, respectively, in maternal age-related risk for trisomies 21, 18, and 13.3,5,6 Evidence also exists that fetuses with some types of chromosomal abnormalities demonstrate early onset intrauterine growth retardation; consequently, measurement of crown–rump length also may provide a useful method of screening. The aim of this study is to examine nuchal translucency thickness and crown–rump length in twin pregnancies in which at least one of each pair of fetuses is chromosomally abnormal.

Author’s abstract

FETAL EXOMPHALOS AT 11 TO 14 WEEKS OF GESTATION

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In an ultrasonic screening study at 11 to 14 weeks’ gestation involving 9885 singleton pregnancies, the prevalence of exomphalos was 0.11% (11 cases) and the prevalence of trisomy 18 or 13 was 0.35% (35 cases). The mean maternal age of the screened population was 35 years (range, 15 to 47 years) and a significant association was found between maternal age and both the prevalence of