

Electrocardiographic changes in children with pectus excavatum

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Introduction:

Pectus excavatum is a deformity of the chest that consists of backward displacement of the sternum and costal cartilages giving rise to a depression in the area under sternum. In the absence of any cardiac anomalies in children with pectus excavatum, electrocardiographic changes are to be expected, because of alterations in the position of the heart.

Methods:

Included in this study were 50 children with pectus excavatum seen at the pediatric clinic in Martin between 2008 and 2010. An electrocardiogram, chest roentgenograms and Frank vectorcardiograms had been obtained in all 50 children.

Results:

The authors evaluated in detail electrocardiographic findings in 50 children with pectus excavatum, before surgically repairing their lesions. 68% of patients with pectus excavatum have electrical axis displaced to the right. Most frequently, but also the most typical, are complexes of rSf or rsf of the whole right precordium. Complexes of rSf or rsf were found in 41 per cent of children with pectus excavatum. In the right precordial leads, evidence of the right ventricular hypertrophy has been not recorded. Quite often - in 43.2% of cases - there has been proven the absence of q waves in the left precordial leads. In 11.4% of the cases above the left precordium, there has been found the high waves (R waves), but with no changes on the T waves.

Conclusions:

The authors refer to interesting electrocardiographic findings in children with pectus excavatum. They claim that electrocardiographic changes in pectus excavatum in children are relatively constant. The results of the authors confirm the claims of other authors that rSr or rsr complexes above the right precordium are caused by the distortion cardioelectrical field arising from the cavities of the heart for abnormal changes in the heart by deformation of the thorax. Waves r in the right precordial leads means the depolarization of the base part of the right ventricle and also the higher parts of the interventricular septum, if these areas are located at the front and right by the rotation of the heart in pectus excavatum.