عنوان مقاله:

An Auscultation-Based Ventricular Septal Defect Size Detection Using Wavelet Transform

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خلاصه مقاله:

Ventricle septal defect (VSD) is one of the most important form of congenital heart disorder. VSD is a hole in the separator wall of heart's lower septum and allows blood to pass through this wall. This study presents a new approach to VSD size estimation based on both statistical analysis and discrete wavelet transform. An artificial neural network classifier finally used for categorization of heart sounds. Auscultation signals (heart sounds) were recorded for children with a VSD at Shaheed Modarres Hospital in Tehran. Designed diagnosis system was trained using 70 percent of all data and evaluated using the remaining 30%. It was found to be 97.67 percent accurate for small-size VSD and 94.95 percent accurate for large-size VSD. Obtained results show that this approach may offer clinical utility in detecting and classifying VSDs in both children and adults

کلمات کلیدی:

Biomedical signal processing, Discrete wavelet transforms, Neural networks, Phonocardiography, VSD

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