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Automated Recognition of Still’s Murmur in Children

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Abstract : Still’s murmur, a vibratory heart murmur, is the most common normal innocent murmur of childhood. Many children with this murmur are unnecessarily referred for cardiology consultation and testing, which exacts a high cost financially and emotionally on the patients and their parents. Pediatricians to date are not successful at distinguishing Still’s murmur from murmurs of true heart disease. In this paper, we present a new algorithmic approach to distinguish Still’s murmur from pathological murmurs in children. We propose two distinct features, spectral width and signal power, which describe the sharpness of the spectrum and the signal intensity of the murmur, respectively. Seventy pediatric heart sound recordings of 41 Still’s and 29 pathological murmurs were used to develop and evaluate our algorithm that achieved a true positive rate of 97% and false positive rate of 0%. This approach would meet clinical standards in recognizing Still’s murmur.

Keywords : AR modeling, auscultation, heart murmurs, Still's murmur
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