

Preliminary study on left bundle branch area pacing in children:clinical observation of 12 cases

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Abstract

Objective: To explore the safety and feasibility of left bundle branch area pacing (LBBAP) in children. **Methods:** This study observed 12 children attempted LBBAP from 2019 to 2021 in our department prospectively. Clinical data, pacing parameters, electrocardiograms, echocardiographic measurements and complications were recorded at implant and during follow-up. **Results:** The 12 patients aged between 3 and 14ys and weighted from 13 to 48kg. 11 patients were diagnosed with third-degree AVB and 1 patient (case 4) suffered from cardiac dysfunction due to right ventricular apical pacing (RVAP). LBBAP was successfully achieved in all patients with narrow QRS complexes. LVEF of case 4 recovered on the 3rd day after LBBAP. The median of LVEDD Z score of the 12 patients decreased from 1.75 to 1.05 3 months after implantation ($p < 0.05$). The median of paced QRS duration was 103ms. The median of pacing threshold, R-wave amplitude and impedance were 0.85V, 15mV and 717Ω respectively and remained stable during follow-up. No complications such as loss of capture, lead dislodgement or septal perforation occurred. **Conclusions:** LBBAP can be performed safely in children with narrow QRS duration and stable pacing parameters. Cardiac dysfunction caused by long-term RVAP can be corrected by LBBAP quickly.

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