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Objectives To investigate the clinical efficacy and safety of radiofrequency ablation treatment of children with supraventricular tachycardia (PSVT).

Methods Conventional cardiac electrophysiology examination was performed in 36 children with PSVT to identify PSVT pathogenesis, and to determine the ablation site. Radiofrequency ablation was performed using the temperature control method.

Results Electrophysiological examination showed 22 cases of atrioventricular reentrant tachycardia (AVRT), 14 cases of atrioventricular nodal reentrant tachycardia (AVNRT) and all surgeries were successful. There were two cases of transient third degree atrioventricular block (AVB), which returned to sinus rhythm automatically, when His bundle electrode was placed. Two cases of complete right bundle branch block (CRBBB) occurred after surgery and returned to normal after 1–2 days. One child with AVNRT (2.7%) recurred after 9 months and need re-operation to be successful. No serious complications occurred such as permanent III degree AVB and pericardial tamponade.

Conclusions In the skilled interventional cardiology center, radiofrequency ablation of PSVT in children is as safe and effective as in adults. AVNRT recurrence after ablation may be related to physician fear in children with atrioventricular nodal development immaturity and more conservation for the ablation energy and ablation time in children.