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Surgical treatment of cardiac arrhythmia in pediatrics**Qingyu Wu and Yongqiang Jin**

Hospital of Tsinghua University, China

Background: Cardiac arrhythmia is a critical disease in pediatrics. Antiarrhythmic drug therapy, permanent pacemaker implantation and radiofrequency catheter ablation are common treatments. However, those traditional treatments are still ineffective for some patients. Surgical treatment may be an alternative choice.

Objective: To explore the effect and complications of surgical treatment for pediatric arrhythmia.

Method: From Jan. 2009 to Dec. 2017, 93 pediatric patients underwent surgical treatment for cardiac arrhythmia in the First Hospital of Tsinghua University. There were 53 males and 40 females with a mean age of 4.5 ± 4.0 y (1d~18y) and a mean body weight of 17.8 ± 14.4 kg (2.7~83.1kg). 59 patients underwent permanent epicardial pacemaker implantation because of bradycardia arrhythmia (61 atrium-ventricle block, 6 sick sinus syndrome and 1 complete left bundle branch block combined with severe cardiac dysfunction). 19 patients were performed appendectomy (8 left, 8 right) because of atrial tachycardia originating from atrial appendages since radiofrequency catheter ablation does not work. Four patients were performed cardiac tumor resection whose mainly symptom was ventricular arrhythmia. Three patients underwent abnormal atrio-ventricular conduction pathway resection because of pre-excitation syndrome with repeated tachycardia, of whom two patients were performed Ebstein's anomaly correction and 1 patient was performed right ventricular diverticulectomy simultaneously.

Results: All patients survived. Two patients who underwent permanent epicardial pacemaker implantation received pacemaker replacement because of pocket infection. Atrial tachycardia recurrence was found in three patients who underwent appendectomy. One patient was cured by radiofrequency catheter ablation once again and two patients were treated with antiarrhythmic drug therapy. Other patients recovered very well.

Conclusions: Surgical treatment of cardiac arrhythmia is a safe and efficacious treatment method for pediatric patients. For whom traditional treatments failed, surgical treatment is the best choice and with few complications.

wuqingyu@mail.tsinghua.edu.cn