

Anesthesia management for left cardiac sympathetic denervation in children with congenital long QT syndrome and catecholaminergic polymorphic ventricular tachycardia

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Objective

To describe our experience in the anesthetic management of pediatric patients undergoing left cardiac sympathetic denervation (LCSD) for congenital long QT syndrome (LQTS) and catecholaminergic polymorphic ventricular tachycardia (CPVT).

Background

LQTS and CPVT predispose patients to ventricular arrhythmias and sudden death. Nowadays one of the most effective therapeutic options involves LCSD. Appropriate avoidance of drugs that can prolong the QT interval and of arrhythmogenic triggers are crucial in this setting [1]. The selective intubation of pediatric patients makes the anesthesiological management of LCSD even more challenging.

Methods

Retrospective review of the medical records of 10 pediatric patients aged between 2 and 16 who underwent LCSD between January 2021 and February 2023.

Results

All the patients received midazolam as a premedication and sevoflurane for induction and maintenance of anesthesia. In 2 patients only the erector spinae plane (ESP) block was performed, while in 8 patients also the serratus plane block was

performed with the insertion of a perineural catheter. No significant cardiac or other events occurred in any of these patients in the perioperative period. All patients were extubated in the operating room and sent to the ICU in spontaneous breathing with their parents.

Conclusions

Important anesthetic considerations in this population include avoidance of sympathetic stimulation, prompt correction of any abnormal electrolytes and the immediate availability of a defibrillator and drugs to treat arrhythmias. Patients may benefit from premedication to reduce sympathetic tone [2]. We have safely used volatile agents for induction and maintenance of anesthesia. Airway management involves the use of bronchial blocker, since selective tubes in the right size for children are not available. Local anesthetics commonly used for locoregional anesthesia do not prolong QTc or electrical dispersion across the myocardium [3], both ESP and serratus block ensure good postoperative analgesia. Permanence in ICU for at least 24 hours is highly recommended.

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