

Videoscopic cardiac sympathetic denervation for pediatric patients – one center experience.

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Introduction: Left or bilateral cardiac sympathetic denervation (CSD) in patients with life-threatening ventricular arrhythmias (VA) may be supportive therapy. Recently thoracoscopic cardiac sympatectomy as minimally invasive method is used. We present our experience in the method in pediatric patients.

Material and methods: During last ten years video-assisted thoracoscopic CSD was performed in 16 patients (8 boys) age from 6 weeks to 17,8 years. Thirteen children suffered from life-threatening VA, 11 pts were after aborted cardiac arrest, 8 had syncope attacks. In 11 of them long QT syndrome (LQTS) was diagnosed, in 2 catecholaminergic polymorphic ventricular tachycardia, in 1 familiar short QT syndrome, 1 girl had hypertrophic and 1 dilated cardiomyopathy. Before CSD all patients were on propranolol and 6 additional on mexiletine. In 13 pts ICD was implanted, in 9 before CSD – 6 of them had appropriate interventions. On standard ECG mean QT/QTc interval (according to Bazett's formula) was 479/520 ms.

Result: CSD (left in 15 and bilateral in 1 patient) was successfully performed under general anesthesia. In two patients pleural effusion accumulated early after the CSD procedure. Mean QT/QTc interval on ECG performed before discharge from the hospital was 468/504 ms. Follow-up period lasting from 2 months to 4,3 years (mean 2,9 years). At the time 13 of our patients with ICD had no appropriate interventions. The girl with hypertrophic cardiomyopathy had a heart transplant. In one boy appropriate ICD interventions appeared 3 years post left CSD despite continuous therapy of propranolol and mexiletine in high doses, he died 4 months later during electrical storm. Another boy with extremely long QT/QTc interval died seven months after bilateral CSD also during electrical storm. We did not observed serious side effects associated with the CSD procedure.

Conclusions. Videoscopic cardiac sympathetic denervation is a minimally invasive method of treatment and can be performed even in the youngest patients. QT/QTc intervals shortened slightly after CSD, the number of adequate ICD interventions decreased. CSD seems to be a good additional method of therapy for the majority of pediatric patients with life-threatening VA, especially with LQTS but further research is needed.°