

# Minimally invasive VATS-LCSD helps children with refractory ventricular arrhythmias

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Inherited ventricular arrhythmias are an important cause of morbidity and sudden cardiac death in children who have structurally normal hearts. Despite conventional medical therapy, some of these children remain symptomatic with recurrent life-threatening arrhythmias, syncope, or frequent discharges from implantable cardioverter defibrillators (ICDs). Video-assisted thoracoscopic left cardiac sympathetic denervation (VATS-LCSD) is a minimally invasive procedure that can help many of these children with refractory cardiac arrhythmias. The results of a single-center experience with VATS-LCSD will be presented during the Congenital Heart Disease Session of the 93rd AATS Annual Meeting in Minneapolis by Dr. Sophie C. Hofferberth, MBBS.

"Existing treatments for inherited arrhythmias are often poorly tolerated or leave patients with ongoing symptoms and risk of sudden death. We have shown that VATS-LCSD is safe and should be considered as part of the treatment approach in all patients with ventricular arrhythmias," comments lead investigator Dr. Francis Fynn-Thompson, who is affiliated with the Department of Cardiac Surgery at Boston Children's Hospital.

This was a retrospective study of 24 patients who had undergone VATS-LCSD between August 2005 and December 2011. Of the 24 patients, 13 presented with congenital [Long QT syndrome](#) (LQTS), 9 with

catecholaminergic polymorphic ventricular tachycardia (CPVT), and 2 with idiopathic recalcitrant ventricular tachycardia (VT). Eight patients also were implanted with an ICD device at the same time as undergoing the sympathetic [denervation](#).

Almost three-quarters of symptomatic patients responded well to the treatment, and 55% of 22 patients became arrhythmia-free after sympathectomy. Good results were found in patients who were treated after experiencing multiple ICD discharges despite optimal medical therapy and those who had [persistent symptoms](#) despite medical therapy.

For patients who were unable to tolerate medical therapy, three of four showed excellent improvement. "Adjunctive VATS-LCSD appears to be a promising strategy for this subgroup of patients to be maintained at a lower medication dose and still remain symptom-free." In fact, anti-arrhythmic medications may be discontinued entirely for some patients after the procedure, says Dr. Fynn-Thompson.

Two patients underwent the procedure because they were at high risk of developing fatal arrhythmias. These children did not benefit from the procedure, and the authors believe it should not be used as a prophylactic measure.

Postoperative complications were minor. Eleven patients were initially managed in the ICU, and children generally left the hospital within 1-2 days.

**More information:** "Left Thoracoscopic Sympathectomy for Cardiac Denervation in Children with Life-Threatening Ventricular Arrhythmias," by Sophie C Hofferberth, Frank Cecchin, Dan Loberman, Francis Fynn-Thompson. Presentation at the 93rd AATS Annual Meeting. May 4-8, 2013. Minneapolis, MN, during the Congenital Heart Disease Session on May 7, 2:20 PM CT. [aats.org/annualmeeting/](http://aats.org/annualmeeting/)

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