Abstract: P1205

Endocardial ICD system implantation in children by epicardial approach: case series

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Topic(s):
Implantable Cardioverter / Defibrillator

Citation:
Implantable cardioverter-defibrillators (ICDs) have reduced the incidence of sudden cardiac death in the pediatric population.

Inappropriate shocks and lead complications may occur as children grow and increase their physical activity. Furthermore, a patient's size at the time of implantation can make lead and generator placement difficult. Despite these challenges, support has increased for the use of ICDs in children, even as primary prevention.

Here, we present three cases of a pediatric patients with a successfully implanted ICD using an endocardial lead system implanted epicardially with long term follow up.

A 2-year-old boy was referred to our hospital for syncope. He had been diagnosed with Jervell and Lange-Nielson syndrome (JLN) by genetic testing (KCNQ1 mutation). As an ordinary intravenous lead system was unsuitable for his small body, chest surgery was performed to place the mini-ICD endocardial system implanted epicardially. The generator was implanted in the abdomen, under the rectus abdominis muscle. The thresholds of pacing, sensing, and impedance of the lead was satisfactory. The defibrillation test was done. During 12 months of postoperative follow-up, appropriate shocks was observed. The thresholds of pacing, sensing, and impedance of the lead was normal.

A 8-year old girl was referred to our hospital for syncope due to atrial fibrillation with complete heart block. Her weight was 19 Kg. She had diagnosed as arrhythmogenic right ventricular cardiomyopathy. There was strong family history of SCD. The ICD endocardial system was implanted epicardially. The generator was implanted in the abdomen. The thresholds of pacing, sensing, and impedance of the lead was satisfactory. The defibrillation test was done. During 6 months of postoperative follow-up, ventricular pacing was 99% with fair sensing and impedance without inappropriate shock.

A 5-year old girl was referred to our hospital for aborted cardiac arrest. There was strong family history of SCD. Her echo revealed normal structural heart. A mini-ICD endocardial system was implanted epicardially. The thresholds of pacing, sensing, and impedance of the enoccardial lead was satisfactory. The defibrillation test was done. During 6 months of postoperative follow-up, inappropriate shocks was not observed. The thresholds of pacing, sensing, and impedance of the lead was satisfactory.

Our experience, epicardial ICD implantation in children can be effective for secondary prevention of lethal arrhythmia regardless cause of lethal arrhythmia.
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