

Efficacy of Implantable Loop Recorders in Establishing Symptom-Rhythm Correlation in Children with Unexplained Syncope; The first experience from Turkey

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Background:

Syncope is a frequent complaint in children and adolescents. While the etiology is benign in the vast majority of cases, syncope may be an ominous sign for serious pathologies. Although the patient history, family history, and a physical examination are sufficient to make a diagnosis in most cases of syncope, are occasionally unable to establish a diagnosis. Despite a wide array of diagnostic tools (electrocardiogram, echocardiography, Holter monitoring, exercise testing, cardiac event monitoring, electroencephalographic recordings, tilt testing, and invasive electrophysiological study(EPS)) the cause of syncope is not determined yet after initial investigations in from one-third to half of all patients. In this study, our aim was to evaluate the diagnostic yield of the implantable loop recorder (ILR) in children with unexplained syncope.

Patients and Methods:

Retrospective review of clinical data, indications, findings, and final management strategy in patients who underwent ILR implantation in two different centers.

Results:

Between March 2010 and December 2013 a total of 12 patients (mean age of 9.3 ± 4.5 years) underwent ILR (Reveal Plus, Medtronic, USA) implantation. Indication was the syncope in all of the patients. Family history was normal in all of the patients. Routine cardiac assessment, including resting 12 lead electrocardiograms, transthoracic echocardiography, 24 hour Holter recordings and event recorder were normal except one patient with operated tetralogy of Fallot. ILR was implanted subsequently to the EPS in 6 patients because EPS did not reveal the etiology. After median 20 months (1–36 months), 6 patients presented with symptoms. ILR memory was showing torsades de pointes - ventricular fibrillation (3), CPVT (1), asystole and ventricular tachycardia (1), and normal sinus rhythm (1). ILR was explanted from prior 5 patients and transvenous ICD implantation was performed in prior four patients. Six patients are still in follow up with no symptoms for 25,2 months (20-35 months). Complications that needed reintervention were occurred in 2 patients.

Conclusion:

Implantable loop recorders plays an important role in the diagnosis of life-threatening arrhythmias whose syncope is otherwise unexplained. ILRs should be remembered in children whose symptoms are strong correlated with rhythm disturbances.