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Long-term single centre study on epicardial pacing leads in children and patients with congenital heart disease

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Introduction: Data on permanent epicardial pacing in young patients is limited with respect to long-term lead-survival, types of pacing leads and study size. We report on a 17-year single centre experience with various epicardial pacing leads in 215 patients.

Methods: We retrospectively reviewed all epicardial leads implanted in our centre between 1993 and 2010. A total of 215 patients (median age at implantation 5.2 years, range 1 day to 28 years) underwent 371 epicardial lead implantations (105 atrial and 266 ventricular leads). Various leads (157 [42 %] screw-in, 214 [58 %] suture-on leads) were used. The number of former cardiac surgeries, the number of former lead implantations, the age at implantation and a Fontan-type of palliation were investigated as predictors for lead failure.

Results: During a median follow-up of 3.9 years (range 1 day to 15.6 years), lead failure was documented in 61 leads (16 %) with exit block/elevated pacing thresholds being the most common cause (n = 42). The only predictor for lead failure was ventricular lead position (HR 2.2, CI 1.1 – 4.2, p = 0.02). The overall 1-, 5-, 10- and 15-year lead survival was 98 %, 84 %, 73 % and 49 %, respectively. There was no difference in lead survival of screw-in and suture-on leads. There were no deaths related to lead dysfunction.

Conclusions: In our study of 371 epicardial leads, lead survival was good, with no difference in screw-in versus suture-on leads.