



ARITMIE PEDIATRICHE

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AVNRT CRYOABLATION IN CHILDREN < 26 KG: EFFICACY AND SAFETY OF ELECTROPHYSIOLOGICALLY GUIDED LOW VOLTAGE BRIDGE STRATEGY

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Introduction: Radiofrequency transcatheter ablation of atrioventricular nodal reentry tachycardia (AVNRT) in small children <25 kg is at high risk of iatrogenic AV-block in up to 8.5% of patients.

The most recent pediatric literature reported that cryoablation of the slow-pathway with the electrophysiologically guided low voltage bridge (LVB) strategy is very effective and safe in the treatment of AVNRT in children.

For this reason, the purpose of our study was to evaluate the efficacy and safety of pediatric AVNRT cryoablation < 26 Kg using this strategy both in the acute phase and in mid term follow up.

Methods and Results: Thirteen pediatric patients (69% males, mean age 7 ± 1.65 years, mean weight 24.8 ± 1.77 Kg), with previous history of symptomatic AVNRT underwent slow pathway cryoablation using the combined electrophysiological and LVB approach in the region of Koch's Triangle (KT).

A typical AVNRT was present in 12 patients, while 1 patient showed both a typical and atypical form.

An AV jump was induced in 46% of patients. The voltage gradient mapping of the Koch's triangle showed a LVB, associated with a typical jackman-like potential, in all patients. In particular the LVB was observed at the M1-M2 level in 8 patients (61.5%), at P2 or P2-M1 level in 4 (31%) and at A2 in 1 (7.5%). The LVB was highlighted by changing the voltage scale bar from 0.1 mV up to 7mV to differentiate the low voltage area from the typical voltage range of the atrial septum. For the LVB a mean area of 0.22 ± 0.07 cm² was measured within a mean KT area of 1.00 ± 0.7 cm².

Cryoablation was performed in the area of the LVB with an acute success rate of 100% achieved with a mean of 5 cryoablation deliveries. AVNRT was non-inducible in all patients at EP post-ablation study. No peri-procedural complications occurred in all patients. All the procedures were performed with near-zero fluoroscopy (0 in 12/13). During the follow-up (10.58 ± 10.23 months) there were no AVNRT recurrences.

Conclusions:

AVNRT cryoablation using the LVB strategy is a very effective and safe procedure also in very small pediatric patients.