

Electrophysiologic properties of the atrioventricular node, slow and fast pathway in children at long term follow up after slow pathway radiofrequency catheter ablation



Rima Sileikiene,
Migla Zebiene,
Jurate Kasparaviciene,
Aristida Ziuteliene,
Viktorija Sileikyte

Department of Children Diseases, Lithuanian University of Health Sciences

The aim of the study

was to evaluate anterograde conduction, fast and slow pathway electrophysiological properties in children before and after slow pathway RFA, to determine the efficacy and safety of this method.

Patients and methods

Transesophageal electrophysiological study was performed in 32 patients (mean age 16.6 (2.5) years) at the follow up period (mean duration 3.2 (1.7) years) after the slow pathway RFA.

Results

The slow pathway function was observed in 24 patients at the follow up period, and in 28 patients after atropine sulfate. No one had paroxysms due to AVNRT.

Conclusions

Anterograde conduction, ERP of atrioventricular node, slow and fast pathway changed significantly after long term follow up. RFA of slow pathway is effective and safe method of treatment AVNRT with preservation of dual atrioventricular nodal physiology.

1 Table. Atrioventricular conduction, atrioventricular effective refractory period before and after RF ablation of the slow pathway.

	AV conduction (bpm)	AV ERP (msec)
Before RF ablation (n=32)	190.2 (31.4)	251.3 (39.7)
Follow up period of 3.2 (1.7) years (n=32)	147.9 (28.3) *	347.9 (80.6) *
Follow up period of 3.2 (1.7) years + atropine (n=32)	190.6 (25.9)	284.8 (62.4) *

* Statistically significant difference (P < 0.05).
n - number of cases, bpm – beats per minute; msec - milliseconds.

2 table. The slow pathway effective refractory period before and after ablation

	SP ERP1(msec)	SP ERP2(msec)
Before RF ablation (n = 32)	321.8 (53.8)	246.0 (36.0)
Follow up period of 3.2 (1.7) years (n =24)	406.3 (123.4) *	334.5 (74.1) *
Follow up period of 3.2 (1.7) years + atropine (n = 28)	302.9 (92.0)	284.4 (63.3)

* Statistically significant difference (P < 0.05).
SP ERP – effective refractory period of the slow pathway, 1 - atrial incremental pacing, 2 - programmed atrial pacing, n - number of cases, msec – milliseconds.

3 table. The fast pathway effective refractory period before and after ablation

	FP ERP1(msec)	FP ERP2(msec)
Before RF ablation (n = 32)	408.0 (60.4)	351.3 (40.15)
Follow up period of 3.2 (1.7) years (n = 32)	481.2 (132.9) *	405.0 (105.9) *
Follow up period of 3.2 (1.7) years + atropine (n=32)	385.9 (104.0)	340.4 (87.2)

* Statistically significant difference (P < 0.05).
FP ERP- effective refractory period of the fast pathway, 1- atrial incremental pacing, 2 - programmed atrial pacing, n - number of cases, msec – milliseconds

1 fig. PR interval before RF ablation of the slow pathway and at the follow up period of 3.2 (1.7) years



There were no significant changes in PR interval before and after RF ablation of the SP.

2 fig. Sinus cycle length before RF ablation of the slow pathway and at the follow up period of 3.2 (1.7) years



Sinus cycle length before and after RF ablation of SP at the follow up period of 3.2 (1.7) years differed significantly (P < 0.05).