

SINUS RHYTHM MAINTENANCE IN EARLY PERIOD AFTER ATRIAL FIBRILLATION CATHETER ABLATION

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In this article we analyzed the treatment features of 91 patients in early postoperative period after atrial fibrillation (AF) ablation. It is shown that the recurrence of arrhythmia or other supraventricular arrhythmia occurrence observed in approximately 30% of patients. The incidence of arrhythmias is not dependent on the AF form and on the first or repeat procedure was performed. In most patients arrhythmia occurred in low potassium serum levels. Almost in half of patients for sinus rhythm restoration needed to perform electrical cardioversion. Due to comprehensive treatment we were able to discharge in sinus rhythm 93.4% of patients.

Key words: *atrial fibrillation, catheter ablation, postoperative management.*

Background. During atrial fibrillation catheter ablation extensive damage of the atrial myocardium can serve as a substrate for arrhythmias occurrence. The healing of damaged areas takes from 1 to 3 months. Occurrence of AF or other atrial tachycardia in this period is not considered as recurrence of arrhythmia [1].

Early recurrence of AF is an independent risk factor for the catheter ablation failure, but up to 60% of patients in whom AF occurred in the first month after the procedure have good long-term results [2]. Early occurrence of atrial flutter (AFI) also increases the arrhythmia incidence in the long-term period [3]. Possibility of the sinus rhythm maintenance increased in case of AF or AFI recurrence if

electrical cardioversion is performed up to 30 days from the beginning of the arrhythmia [4].

In literature discussed only the general principles of patient's management in the postoperative period. Many aspects of such management in each case remain unclear.

Objective. The purpose of this study was to analyze our own experience of early postoperative management in patients after AF catheter ablation.

Methods. Between January 2013 to December 2013 in Ukrainian Children's Cardiac Center were performed 91 AF catheter ablations in 89 consecutive patients aging from 20 to 70 years (average 55.1 ± 8.2 years), with the left atrium (LA) size not more than 5 cm.

Primary procedure was performed in 74 (81.3%) patients, repeat procedure in 17 (18.7%). Paroxysmal AF was observed in 56 (61.5%) patients, persistent - in 23 (25.3%), long-standing persistent - in 12 (13.2%). The duration of the arrhythmia was 0.5 - 43 years (average - 5.4 ± 3.6 years). There were 31 female patients.

In 48 patients we diagnosed arterial hypertension, in 3 - thyroid hyperplasia with normal thyroid function, in 1 - hyperthyroidism, in 1 - hypothyroidism, in 2 - diabetes mellitus, in 2 - coronary artery disease. 1 patient had patent foramen ovale, 1- chronic obstructive pulmonary disease. 1 patient underwent mitral valve replacement because of rheumatic heart disease. One patient had a two-chamber pacemaker. LVEF 30-35% was observed in 3 patients.

All procedures were performed under general anesthesia with endotracheal intubation, through a double transseptal puncture. We performed pulmonary vein isolation by using single 4 mm non-irrigated tip ablation catheter and circular mapping decapolar catheters "Lasso". Also we applied RF applications in sights of unusual atrial potentials and complex fractionated atrial electrograms registration.

RF energy was limited with a maximum power of 35W, target temperature of 55°C and time of application 40 seconds.

Results and discussion. Average time of X-ray exposure was 43 ± 6 min. (26 to 54 min.), number of applications – 118.5 ± 34.8 , procedure duration – 2.6 ± 1.5 hours (2 to 3,5). We had 2 complications: tamponade that required pericardial drainage, and pericardial effusion that was treated conservatively.

In the early postoperative period arrhythmias occurred in 27 (29.8%) of 91 patients. In 4 (14.8%) patients there was atrial flutter, in 2 (7.4%) atrial flutter alternated with AF, in 1 (3.7%) were atrial premature beats, and in 20 (74.1%) - AF.

At the end of the procedure after 3 consecutive electrical cardioversions attempt to restore sinus rhythm failed in 5 patients. They had persistent and longstanding persistent AF. There were 4 male patients weighing 94-124 kg, and 1 woman weighing 64 kg. After loading dose amiodarone on the next day in all of these patients sinus rhythm was restored by 1 or 2 consecutive electrical cardioversions. After 4 months of follow-up 3 of them preserved sinus rhythm.

Among the 74 patients in whom AF catheter ablation was performed for the first time, arrhythmias occurred in 22 (29.7%), in 17 patients after repeat procedure - in 5 (29.4%). Among 56 patients with paroxysmal AF arrhythmia recurred in 15 (26.8%), in 23 patients with persistent AF - in 9 (39.1%), in 12 patients with longstanding persistent AF - 3 (25.5%).

In 16 (59.3%) patients arrhythmia occurred in low potassium serum levels, in 3 (11.1%) - accompanied by increased blood pressure, in 8 (29.6%) clinical changes that could explain the occurrence of arrhythmias are not revealed.

In 15 (55.6%) patients sinus rhythm was restored on conservative antiarrhythmic therapy. We performed electrical cardioversion in 12 patients (44.4%).

6 (6.6%) patients had arrhythmia at discharge. There were 2 patients with AF and 4 with atrial flutter.

Conclusions.

1. In the early postoperative period after atrial fibrillation (AF) catheter ablation arrhythmia recurrence or other supraventricular tachycardias observed in 30% of patients.
2. The incidence of arrhythmias is not dependent on the AF form and first or repeat procedure was performed.
3. In 59.3% patients arrhythmia occurred in low potassium serum levels.
4. Electrical cardioversion need to restore sinus rhythm in 44.4% of patients.
5. Due to the comprehensive treatment in sinus rhythm can be discharged more than 90% of patients.

Literature.

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ЗБЕРЕЖЕННЯ СИНУСОВОГО РИТМУ В РАНЬОМУ ПІСЛЯОПЕРАЦІЙНОМУ ПЕРІОДІ ПІСЛЯ КАТЕТЕРНОГО ЛІКУВАННЯ ФІБРИЛЯЦІЇ ПЕРЕДСЕРДЬ

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В роботі аналізуються особливості ведення 91 пацієнта в ранньому післяопераційному періоді після проведення катетерної деструкції фібриляції передсердь. Продемонстровано, що в ранньому післяопераційному періоді рецидив аритмії або виникнення інших суправентрикулярних тахікардій спостерігається приблизно у 30% хворих. Частота виникнення аритмії не залежить від форми ФП та від того, вперше чи повторно проводиться процедура. У більшій половині хворих аритмії виникають на фоні зниженого рівня калію. Майже у половині пацієнтів для відновлення ритму доводиться застосовувати електроімпульсну терапію. Завдяки комплексному лікуванню на синусовом ритмі було виписано 93,4% хворих. Запропонована схема застосування електроімпульсної терапії у «сліпому періоді».

Ключові слова: *фібриляція передсердь, катетерна деструкція, результативність.*

СОХРАНЕНИЕ СИНУСОВОГО РИТМА В РАННЕМ ПОСЛЕОПЕРАЦИОННОМ ПЕРИОДЕ ПОСЛЕ КАТЕТЕРНОГО ЛЕЧЕНИЯ ФИБРИЛЛЯЦИИ ПРЕДСЕРДИЙ

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В работе анализируются особенности ведения 91 пациента в ранний послеоперационный период после проведения катетерной деструкции фибрилляции предсердий (ФП). Показано, что рецидив аритмии либо возникновение других суправентрикулярных тахикардий наблюдаются

приблизительно у 30% больных. Частота возникновения аритмий не зависит от формы ФП и от того, впервые или повторно проводилась процедура. У большей части пациентов аритмии возникают на фоне пониженного уровня калия. Почти у половины пациентов для восстановления ритма необходимо применение электроимпульсной терапии. Благодаря комплексному лечению на синусовом ритме было выписано 93,4% больных.

Ключевые слова: *фибрилляция предсердий, катетерная деструкция, послеоперационное ведение.*