

Catheter Ablation for Supra-Ventricular Tachycardias in 15 Patients after Mustard or Senning Procedures

*Taniguchi K., Toyohara K., Takeuchi D., Inai K., Sugiyama H., Shoda M.
Tokyo Women's University, Japan*

Introduction:

Atrial switch operation (ASO, Mustard or Senning procedure) was performed in patients of d-transposition of great arteries (d-TGA) as palliation and l-transposition of great arteries (l-TGA) as anatomical repair with Jatene or Rastelli procedures. Although patients after ASO often have supra-ventricular tachycardia (SVT), electrophysiological study and catheter ablation (EPS/CA) for them is challenging because of complex postoperative anatomy and multiple damaged substrates.

Methods:

We reviewed 24 EPS/CA procedures in 15 patients (d-TGA 9, l-TGA 6) who underwent ASO (Mustard 8, Senning 7).

Results:

The mean age at latest EPS/CA was 32.3 ± 8.2 years. Isthmus dependent atrial flutter (AFL) was induced in 9 patients. Multiple atrial tachycardias (ATs) were induced in 12 patients. Atrioventricular nodal reentry tachycardia (AVNRT) was induced in 2 patients (common AVNRT 1, uncommon AVNRT 1).

The number of patients who had only one arrhythmia was 3 (AFL 2 and common AVNRT 1 in Senning group), uncommon AVNRT and ATs was 1 (in Senning group), AFL and several ATs was 7 (3 in Senning group, 4 in Mustard group) and several ATs was 4 (in Mustard group).

ATs were often induced in Mustard group (Mustard 8, Senning 4, $p=0.04$). AFL was induced in both (Mustard 4, Senning 5, $p=0.40$). Patients of Mustard group tend to have multiple arrhythmias (Mustard 8, Senning 4, $p=0.04$).

A success rate at first procedure was higher in Senning group (Mustard 0%, Senning 43%, $p=0.04$), and the number of procedures per patient was higher in Mustard group (Senning 1.29, Mustard 1.88, $p=0.03$). However, we succeeded in 73% of patients (11 of 15), and there was no significant difference between two groups.

Although an access to pulmonary vein atrium (PVA) was needed with the exception of two patients of Senning group, there was tendency that Brockenbrough procedure was avoided in Mustard group because of the existence of baffle leak (Mustard 2, Senning 4, $p=0.06$).

Conclusions:

Compared to patients of Senning procedure, patients of Mustard procedure tend to have more ATs. Although several CA procedures are needed especially in Mustard group, those are effective in most patients after ASO.