Clinical applications

## P921

# Feasibility of multipoint, high-definition mapping with grid cathether of SVTs in patients with D-Transposition of the great arteries treated with atrial switch surgery

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**Introduction:** Patients with D-transposition of the great arteries (TGA) treated with Senning or Mustard surgery develop supraventricular tachycardias (SVTs) that require treatment with ablation. The use of multipoint, high-density, wavefront-activation-orientation independent mapping catheters hasn't been reported in literature.

**Purpose:** To describe the feasibility of using a specific mapping catheter in SVTs in this set of patients.

**Methods:** Prospective observational study in patients with history of SVT and atrial switch surgery, that underwent EP study and electroanatomic (EA) mapping with a new 8Fr deflectable, multipoint (16 equidistant electrodes along 4 splines), with magnetic sensor, wavefront-activation-orientation independent catheter, in a third level hospital since April 2018 until May 2019, with medium-term follow-up.

**Results:** A total of 8 EPS (electrophysiologic studies) were performed in 7 patients (clinical data in Table 1). One patient had a tachycardia recurrence, accounting for a second EPS. The pulmonary venous atrium (PVA) was mapped in all procedures, whereas the systemic venous atrium (SVA) was mapped only in 75% of them, A total of 15 EA maps were obtained, with a ratio of 1.9 maps/patient, and an average of 20 375 ± 13 045 total points per patient. In all cases, PVA mapping was performed via retrograde transaortic approach, without transbaffle puncture. Tachycardia was induced in 5 out of 8 procedures, obtaining 6 different tachycardias (4 CTI dependent macro-reentry: 3 w/anticlockwise activation; 1 localized re-entry in SVA; 1 focal AT in SVA). No arrhythmia was induced in the other 3 procedures, however, in a patient with a previous CTI ablation, evidence of a gap in the ablation line on the voltage map was found. Ablation was performed with an irrigated, contact force, 3.5 mm catheter in 6 of the 8 procedures (75%). A retrograde transaortic approach was used in 3 of CTI dependent macro-reentries (75%). In one patient (who underwent two procedures) ablation was performed through a baffle leak. We report an acute success rate of ablation of 100%, and a recurrence rate of 20% on medium-term follow up. There were no major complications; nonetheless, one patient with history of morbid obesity had a minor vascular complication on the femoral puncture site treated medically.

**Conclusions:** it's feasible and safe to use this new mapping catheter in patients with history of atrial switch surgery, both via retrograde and anterograde approach on the PVA and SVA respectively. The most frequent tachycardia observed in this study was anticlockwise CTI-dependent atrial flutter.

Abstract Figure. Patient characteristics

| TABLE 1 Patients characteristics | |
|---|---|
| Patients, n | 7 |
| Women, n (%) | 3 (43) |
| Age at procedure (years old), median ± SD | 35 ± 6.3 |
| Senning, n (%) | 6 (86) |
| EF systemic V - CMR 6/7 patients, (%) | 48.7 ± 5.4 |
| Asymptomatic sinus node disease, n (%) | 3 (43) |
| Previous ablation, n (%) | 4 (57) |
| CTI-dependent | 4 (100) |
| Non CTI-dependent | 2 (50) |
| Localized reentry | 1 (25) |
| Focal AT | 1 (25) |
| AVNRT | 1 (25) |
| Symptoms, n (%) | |
| Dyspnoea | 6 (86) |
| Palpitations | 6 (86) |
| Syncope | 3 (43) |
| CIED, n | 0 |