

## Feasibility and outcome of near zero fluoroscopy ablation procedures in children

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### Introduction:

Recent developments in mapping techniques allow to completely discard fluoroscopy in a great number of ablation procedures. We studied the feasibility and outcome of “near zero fluoroscopy ablation” in our pediatric population.

### Methods:

Data were retrospectively collected from twenty-four consecutive pediatric near zero fluoroscopy ablation procedures, performed from January to September 2016. Demographics, procedural parameters and outcome from these procedures were compared with previously collected data. Continuous data were analyzed using the 2-tailed Student's t test or the Mann–Whitney U test. Pearson Chi-square test was used for the categorical parameters.

### Results:

During a 10-month period twenty-four symptomatic children with a previously suspected or documented reentry tachycardia or pre-excitation underwent a radiofrequency (RF) ablation under general anesthesia. Fourteen patients (58%) had RF applications in the slow pathway region because of slow/fast atrioventricular nodal reentry tachycardia (AVNRT). In 8 patients (33%) there was overt conduction over an accessory pathway (AP), the remaining two had concealed conduction (3 right sided, 6 left sided and one mid-septal AP). The mean age at the time of the procedure was 11.4 years, the mean body weight 39.2 kilograms. The mean procedural time was 118 minutes.

In twenty children (83%) all imaging was performed only with the use of a non-fluoroscopic 3-dimensional (3D) mapping system (Ensite Nav X). In four children fluoroscopy was used during the transseptal puncture for access to the left AV groove.

The acute success rate was 92% and there were no procedural complications except for self-limiting mild groin discomfort in one patient (4.2%). One patient had recurrence of pre-excitation during follow-up.

### Conclusion:

This report underlines the feasibility and impact of “near zero fluoroscopy ablation” during pediatric RF-ablation procedures for AVRT or AVNRT. As fluoroscopy was only used in four procedures, 20 children were cured without any exposure to radiation and its associated risks. Not surprisingly, a significant reduction in mean DAP was observed, without compromising procedural time, patient safety or outcome.

Performing near zero fluoroscopy ablation procedures in children under guidance of a non-fluoroscopic 3-D mapping system should therefore be considered as a standard of care in pediatric ablation procedures.