

# Three-Catheter Technique for Ablation of Left-Sided Accessory Pathways in Wolff-Parkinson-White is Less Expensive and Equally Successful When Compared to a Five-Catheter Technique

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## INTRODUCTION

- ▶ This study compared the safety, efficacy and cost-effectiveness of radiofrequency (RF) catheter ablation of supraventricular tachycardia (SVT) using a three-catheter versus five-catheter approach in pediatric patients with Wolff-Parkinson-White (WPW) Syndrome and concealed accessory pathways.

## METHODS

- ▶ A cohort of 28 patients who had undergone three-catheter mapping and ablation was retrospectively compared against 28 patients who underwent standard five-catheter ablation.
- ▶ All ablations were performed via the transseptal approach.
- ▶ Patient demographics, pathway characteristics, time and number of RF applications until loss of accessory pathway conduction, overall procedural time, fluoroscopy time, complications, and catheter costs were evaluated for each group.
- ▶ A microcost analysis was performed to compare the overall resource requirements for the two procedure techniques based on CPT fees, labor costs and supply costs.

## RESULTS

### Ablation procedure

- ▶ Catheter ablation was successful in 100% of patients in the three-catheter group and 96% of patients in the standard five-catheter group.
- ▶ There was no significant difference in the ablation success rate or likeliness of ablation on first RF application between the two groups. No complications were observed.

- ▶ The three-catheter procedure was associated with 15 min time savings (not statistically significant), which was used by the authors in the subsequent cost analysis.
- ▶ There was no difference in fluoroscopy time, time to loss of AP conduction or number of RF applications between the two groups.

### Cost analysis

- ▶ Microcost analysis indicated a total average savings per case of \$2,465 using the three-catheter approach. This included:
  - \$680 device cost savings using fewer number of catheters
  - \$1,785 by saving 15 min of procedure time (i.e. \$105/min ablation procedure fees + \$14/min personnel fees)

### Cost savings per minute of catheter ablation time:

$$\begin{aligned} & \$105/\text{min ablation procedure fees} \\ + & \$14/\text{min personnel fees} \\ \hline & \$119/\text{min total cost savings} \end{aligned}$$

## CONCLUSION

- ▶ The three-catheter technique for catheter ablation of left-sided WPW is equally safe and effective as the standard five-catheter approach, and offers total cost savings of approx. \$2,465/case.