

Single catheter technique for radiofrequency ablation of drug-refractory tachycardias in infants.

*Sarquella-Brugada G., Cesar-Díaz S., Bautista C., Moll I., Esquirol M., Serrano M., Torner S., Berruezo A., Brugada J.
Pediatric Arrhythmia Unit, Cardiology Service, Hospital Sant Joan de Déu for Children, University of Barcelona, Spain*

Radiofrequency ablation is a standard technique used for definitive cure in most cases of tachycardias in old children. Number of catheters used for these procedure might be a handicap when patients are small in weight or age. Description of single catheter technique for ablation of tachycardia substrate in these small patients is presented and discussed. Results are compared to older pediatric population in a single pediatric center.

Patients, methods and results

From 1995 to 2013, 1280 cardiac ablations were performed in children under 18 years of age in a pediatric electrophysiology service. Of those, 111 procedures were performed to 101 patients weighting less than 15 kg due to drug-refractory tachycardias. All of them were done under sedation or general anesthesia. Radiofrequency energy was used in all cases. Single catheter technique was used in 85 procedures (75.2%). In the other 26 cases, only two catheters were used. Primary success rate in a single procedure was 98% of cases. Nine patients needed a second procedure for recurrence. In only one patient, affected of severe Ebstein disease, a third procedure was needed. The mean procedural time was 44.5 +/-24.2 minutes, with a mean radiation time of 10.8 +/-8.7 minutes. Complications were the following: one complete AV block that completely recovered 24 hour after the procedure, 1 pericardial effusion that resolved with pericardial aspiration within the same procedure, 1 ventricular fibrillation that needed electric cardioversion with no further complications, 1 moderate mitral regurgitation free of medication after 7 years of follow-up. These results are similar to those seen in older children in our series except for the rate of single catheter technique that is less used in older patients (11%).

Conclusion

Ablation in small pediatric population is feasible and safe when performed in large pediatric units. Single catheter technique is an excellent option for those small patients requiring ablation.