A RARE COMPLICATION OF PAROXYSMAL VENTRICULAR TACHYCARDIA FOLLOWING INTERVENTIONAL CLOSURE OF VENTRICULAR SEPTAL DEFECT AND THE TREATMENT WITH RADIOFREQUENCY CATHETER ABLATION

Ruizheng Shi
Yanbo Liu
Qian Xu

Introduction: Trans-catheter closure of peri-membranous ventricular septal defects using Amplatzer-Type devices, has been widely reported in the past decade. It has been proven to have high closure rates, low mortality as well as low rate of complications. We hereby report a rare complication of frequent premature ventricular contractions (PVCs) and paroxysmal ventricular tachycardia sustained 48 days after the closure of VSD in an 8-year-old patient. More importantly, the arrhythmias were successfully treated with radiofrequency catheter ablation (RFCA) after medical therapy failed to restore and maintain sinus rhythm.

Methods: The 8-year-old boy was referred to our clinic due to PVCs and paroxysmal VTs observed by 24-hour Holter monitoring after interventional closure of ventricular septal defect for 2 months. The Holter monitoring revealed a total number of 41644 PVCs within 24 hours, comprising 31.5% of total heart beats. Radiofrequency catheter ablation was performed to maintain the sinus rhythm. Under the fluoroscopic guidance, XXF catheter was inserted into femoral artery and positioned at aortic sinus (AS).

Result: Early activation was spotted in left coronary cusp (LCC) 65 ms pre-QRS with a near perfect pace mapping (97% concordance). Ablation was carried out in the LCC with power set to 10 W and maximum temperature to 55 °C for 60 seconds around the spot. PVCs disappeared after 6s and were not induced by isoproterenol. The whole procedure lasted for 55 minutes, with fluoroscopic exposure dose of 33 mGy. The patient was discharged 48 hours with no complication and remained asymptomatic 12 months after the ablation.

Conclusion: In pediatric patients, late onset of frequent PVCs and paroxysmal VTs is a rare complication after trans-catheter VSD closure. Radiofrequency ablation is efficacious and safe in terminating the arrhythmias and maybe preferred over medical therapy for fewer side effects and better patient compliance.