

Incidences of esophageal injury during esophageal temperature monitoring: a comparative study of a multi-thermocouple temperature probe and a deflectable temperature probe in atrial fibrillation ablation

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Purpose

The study aim was to compare the incidence of esophageal injuries between different temperature probes in the monitoring of esophageal temperature during atrial fibrillation (AF) ablation.

Methods

One hundred patients with drug-resistant AF were prospectively and randomly assigned into two groups according to the esophageal temperature probe used: the multi-thermocouple probe group ($n = 50$) and the deflectable temperature probe group ($n = 50$). Extensive pulmonary vein (PV) isolation was performed with a 3.5-mm open irrigated tip ablation catheter by using a radiofrequency (RF) power of 25–30 W. In both groups, the esophageal temperature thermocouple was placed on the area of the esophagus adjacent to the ablation site. When the esophageal temperature reached 42 °C, the RF energy delivery was stopped. Esophageal endoscopy was performed 1 day after the catheter ablation.

Results

No differences existed between the two groups in terms of clinical background and various parameters related to the catheter ablation, including RF delivery time and number of RF deliveries at an esophageal temperature of >42 °C. Esophageal lesions, such as esophagitis and esophageal ulcers, occurred in 10/50 (20 %) and 15/50 (30 %) patients in the multi-thermocouple and deflectable temperature probe groups, respectively ($P = 0.25$). Most lesions were mild to moderate injuries, and all were cured using conservative treatment.

Conclusion

The incidence of esophageal injury was almost equal between the multi-thermocouple temperature probe and the deflectable temperature probe during esophageal temperature monitoring. Most of the esophageal lesions that developed during esophageal temperature monitoring were mild to moderate and reversible.

Keywords

Atrial fibrillation Catheter ablation Esophageal temperature monitoring Multi-thermocouple probe