A 71-year-old man with paroxysmal atrial fibrillation underwent pulmonary vein isolation (PVI). Luminal oesophageal temperature (LET) was monitored throughout the procedure using a probe with three thermocouples (Figure panel A). Luminal oesophageal temperature remained below 39°C except for a 40 s episode of 40.3°C. An oesophageal endoscopy carried out on the day after the PVI disclosed ulceration. Patient was discharged from the hospital in the fifth post-operative day in sinus rhythm. Echoendoscopy undertaken 8 days after ablation found persistent ulceration 35 cm below the incisors. Figure panel B shows an axial ultrasound demonstrating the anatomical relationship of the oesophagus, the LA, the PV, and aorta. Figure panel C shows an endoscopic view of the oesophagus lumen with a posterior ulceration (arrow). The anatomic relationship with mediastinal structures are the same as shown in Figure panel B. Figure panel D is an ultrasound image from the oesophageal probe showing the ulcer (arrow) adjacent to the anterolateral wall of the aorta and not the LA. The ulcer did not reach the muscular layer. We hypothesize that radiofrequency-inductive heating of the stainless-steel thermocouple of the oesophageal probe, acting as an antenna, caused the ulceration. Stainless steel heats up seven times more easily than the human skin and transfers heat by two orders of magnitude greater than that the endothelium is able to disperse it. The location and size of the lesion is consistent with the shape and size of the olive-shaped thermocouple. Oesophageal probes with stainless-steel sensors may be protective against anterior oesophageal lesions but may increase the risk of posterior ulceration.

The full-length version of this report can be viewed at: http://www.escardio.org/communities/EHRA/publications/ep-case-reports/Documents/oesophageal-temperature-AF-ablation.pdf.

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