The use of a radiofrequency needle improves the safety and efficacy of transseptal puncture for atrial fibrillation ablation

Roger A. Winkle, MD, FHRS, R. Hardwin Mead, MD, FHRS, Gregory Engel, MD, Rob A. Patrawala, MD

From Cardiovascular Medicine and Cardiac Arrhythmias, East Palo Alto, California, and Sequoia Hospital, Redwood City, California.

BACKGROUND Atrial fibrillation (AF) ablation requires transseptal puncture to gain entry to the left atrium (LA). On rare occasions, LA entry cannot be achieved or cardiac perforation results in pericardial tamponade.

OBJECTIVE This study sought to compare a new radiofrequency (RF) transseptal needle with the standard needle.

METHODS We evaluated 1,550 AF ablations in 1,167 patients. We compared 975 transseptal punctures done using a standard needle to 575 done using a new electrode-tipped RF perforation needle.

RESULTS The rate of failure to cross the atrial septum was lower for the RF needle (1 of 575 [0.17%] vs. 12 of 975 [1.23%], P = .039) and there were fewer pericardial tamponades with the RF needle (0 of 575 [0.00%] vs. 9 of 975 [0.92%], P = .0001).

CONCLUSION Our data suggest that the RF needle is superior to the standard needle for transseptal punctures in the ablation of AF.

The study compared the outcomes of 975 transseptal punctures done with a standard mechanical needle to the outcomes of 575 transseptal punctures done with a radiofrequency (RF) needle.

The RF needle was 7.2 times more likely to cross challenging septum compared to the mechanical needle.

There were fewer incidents of pericardial tamponade with the RF needle (0%) compared to the mechanical needle (0.92%).

The instrumentation time for the procedure was shorter for the RF needle (27.1 minutes) compared to the mechanical needle (36.4 minutes).

The study concludes that the RF needle is superior to the mechanical needle for doing transseptal punctures.

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