

Automatic Magnetic-Guided Electroanatomical Mapping and Remote-Controlled Ablation of Atypical and Typical Atrial Flutter

MICHAEL A. E. SCHNEIDER, M.D.,* HANS NEUSER, M.D., MARCUS L. KOLLER, M.D.,
and BURGHARD SCHUMACHER, M.D.

From the Department of Cardiology, *Med. Klinik III, Klinikum Pforzheim, and Center of Cardiovascular Medicine, Bad Neustadt, Germany

Two patients with inconclusive surface electrocardiogram patterns underwent nonfluoroscopy automatic mapping and remote-controlled ablation of nonisthmus and isthmus-dependent right atrial flutter.

Methods and Results: A 0.08 magnetic vector force and a motor drive enable a complex steering of a new 8-mm magnet tip electrode. The navigation system performs atrial electroanatomical mapping fully automatically. Total procedural fluoroscopy time for ablation of nonisthmus-related atypical and isthmus-dependent flutter was 8.5 and 3.2 minutes, respectively.

Conclusion: Automatic electroanatomical mapping offers a promising option to effectively guide the remote-controlled ablation of atrial reentry tachycardias and to reduce fluoroscopy time. (PACE 2008; 31:1355–1357)

atrial flutter, remote control, magnetic guidance, ablation

Summary:

- This study demonstrates successful ablation of nonisthmus and isthmus-dependent right atrial flutter with a remote-controlled 8mm magnetic ablation catheter.
- Automated electroanatomic maps that do not require the use of fluoroscopy were created in both cases and were useful in differentiating typical versus non-typical atrial flutter.
- These automated maps are versatile enough to allow for the addition of remote-controlled mapping points without the need for additional fluoroscopy.
- Total fluoroscopy time was minimal in both cases;
 - 8.5 minutes in the atypical flutter case; and
 - 3.2 minutes in the typical flutter case.
- The authors suggest that the risk of perforation is minimized by the soft and flexible design of the magnetically enabled catheter.