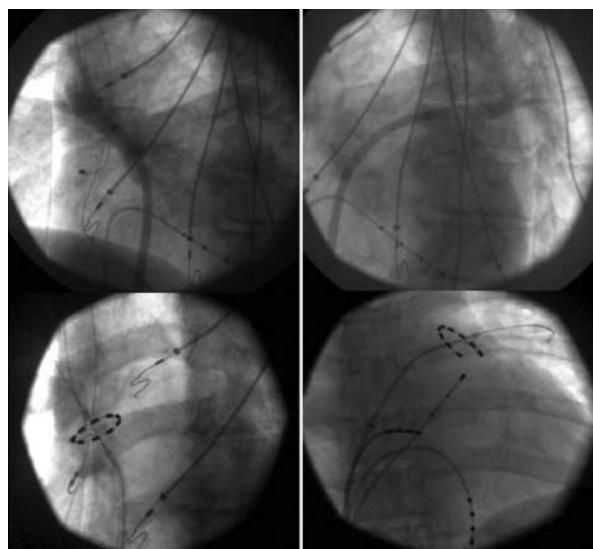


Novel Technology for Ablation of Atrial Fibrillation Using Multi-Electrode Catheters and Duty-Cycled Radiofrequency Energy

*First Department of Cardiology
Evangelismos General Hospital of
Athens*

Antonis S. Manolis, MD, Kostas Kappos, MD, Spyros Koulouris, MD



These are fluoroscopic views of the heart demonstrating the use of novel technology for catheter ablation of atrial fibrillation (AF) in a patient who has had frequent episodes of paroxysmal AF and had failed antiarrhythmic drug therapy. In the upper panels, a steerable guiding catheter has been introduced via a transseptal approach into the left atrium and inserted into the right upper (left upper panel) and left upper (right upper panel) pulmonary veins (PVs), which are visualized with hand injection of contrast material. Subsequently, through the same guiding catheter, another deflectable circular multi-electrode (decapolar) 9-F catheter is inserted over a guide-wire and stabilized at the antrum of each PV (lower panels). Via this catheter, simultaneous mapping and ablation is performed by delivering duty-cycled unipolar and bipolar radiofrequency (RF) energy at 4-10 Watts with use of a multichannel RF generator. Thus, electrical isolation of the PVs is effected by delivering RF energy simultaneously to multiple points in the perimetry of the PV antrum, rather than employing extensive point-by-point or stepwise ablation with use of conventional single electrode catheters. With this novel technology, the procedure appears potentially safer and more efficiently performed with a shorter procedural time in a simplified approach compared with the conventional single-electrode catheter technique.

Address for correspondence:
Antonis S. Manolis, MD
Professor & Director of Cardiology
First Department of Cardiology
Evangelismos General Hospital of
Athens
Athens, Greece
E-mail: asm@otenet.gr

Submitted: September 18, 2009

Accepted: September 25, 2009