



EUROPACE 2011 I MADRID

Det er ikke lett å vite om det var direkte effekt av opptrapping i radiofrekvensablasjons-virksomhet i Norge og/eller første resultat av legemiddel- og utstyrsindustriens håndtering av restriksjoner, men det var ikke mange norske rytmologer på årets *Europace*.

Alessandro de Bortoli (stipendiat ved HUS) gir oss en oversikt over det han syntes var viktig å få med seg (fra elektrofysiologien). Det var en del oppmerksomhet rundt ikke-kliniske iskemiske cerebrale lesjoner påvist på MR ved bruk av en spesiell radiofrekvensablasjonsmetode (PVAC), og det er store forhåpninger rettet mot direkte kontaktinformasjon under ablasjon som man håper kan føre til bedre effekt.

Fra implantatmiljøet kan vi vente de nyeste oppdateringene etter NCS' konsensuskonferanse om CRT 14.9.11.

Peter Schuster

DIVERSE TEMA

Allesandro de Bortoli, Haukeland universitetssykehus

The 2011 edition of *Europace* took place between June 26th and 29th in Madrid, Spain with a record attendance of over 5500 participants, including delegates, presenters and representatives from the industry.

As in the previous editions, catheter ablation of atrial fibrillation and ventricular tachycardias represented the hottest topic in cardiac electrophysiology.

Intense discussion has followed the work of Herrera Siklódy et al. (1) concerning the incidence of asymptomatic intracranial embolic events following pulmonary vein isolation for atrial fibrillation. In this prospective, multicenter study, cerebral MR imaging was performed before and after the ablation procedure with the purpose of investigating the incidence of asymptomatic cerebral ischemic events. More specifically, three different ablation technologies were employed during the study: conventional irrigated RF catheter, cryoballoon or pulmonary vein ablation catheter (PVAC). Due to the initial dramatic results, the trial has

been stopped prematurely by an independent ethics committee (2). Overall, new silent embolic lesions were demonstrated in 12 patients (16.2%). The subgroups analysis found new lesions in 9 of 24 patients (37.5%) in the PVAC group, 2 of 27 (7.4%) in the RF group and 1 of 23 (4.3%) in the cryoballoon group ($p=0.003$ among the three groups).

At the present time, several centres have decided to suspend the use of PVAC until new research can prove either inaccuracies in this study or the resolution of these silent lesions in time. The questions raised by this work have suggested further directions in research; more needs to be understood in the mechanism of catheter-mediated thrombogenesis and its cerebral embolization. Furthermore, the crucial question concerns the consequences of these lesions. Previous studies have shown that the presence of silent brain ischemia has been associated with reduced neuropsychological performance, decline in

cognitive function, and increased risk of developing dementia (3). Long-term follow-up of AF ablation patients will be needed to provide additional information to these matters.

Increased attention from both clinicians and researchers is focusing on contact information for catheter ablation. Tissue contact is believed to be a critical parameter for the creation of transmural lesions. All those procedures in which RF energy is delivered on thick myocardial tissue (AF and VT above all) can particularly benefit from monitoring the contact force applied on the tissue. Furthermore, contact monitoring could also reduce the use of excessive force and therefore limiting the incidence of cardiac perforation. The two main competitors in the field of 3D navigation systems, St. Jude Medical and Biosense Webster, have presented their products:

- NavX Contact™
- Carto 3 SmartTouch™

Whilst the NavX system relies on electrical data as an indirect measure of tissue contact, the Carto software uses specifically designed ablation catheters with a pressure sensor on the tip. The availability of these systems promises consistent improvements

in both efficacy and safety of catheter ablation.

Marrouche and colleagues from University of Utah have presented the results of their studies utilizing MR to assess the degree of fibrosis of the atria. Several studies have hypothesised an inverse relation between content of fibrosis in the left atrium and long-term outcome after atrial fibrillation ablations. The use of pre-procedural MR and a dedicated scoring system (UTAH score) could find an application in the patient-selection phase providing better results and avoiding unnecessary interventions (4).

Additionally, Marrouche showed that the use of a real-time MR immediately after catheter ablation allows verifying directly the lesions and excluding gaps in the pulmonary veins encirclement (5). Due to the scarcity of dedicated real-time MR machines, these results will encourage the development of this imaging system towards a fluoro-free future for cardiac electrophysiology.

Another interesting update came from Nademane from Bangkok (6). Nine young patients with Brugada syndrome, implanted defibrillator and recurrent episodes of VF were scheduled for electrop-



hysiological evaluation. During the study, VT/VF was inducible in all of them. Peculiar low voltage and fractionated late potentials were found in the anterior epicardial aspect of the right ventricular outflow tract. Epicardial ablation at these sites rendered 7 of 9 patients non-inducible for VT or VF. In 8 patients, Brugada EKG features disappeared after catheter ablation. Long-term outcome were excellent with no recurrence off-medications (except one patient). The results of this small study provide further knowledge about the triggering mechanism of VT/VF episodes in Brugada patients. Catheter ablation on the anterior epicardial aspect of the right ventricular outflow tract may become a treatment option in very symptomatic Brugada patients.

References

- 1) Herrera Siklódy C, Deneke T, Hocini M, Lehmann H, Shin DI, Miyazaki S, Henschke S, Fluegel P, Schiebeling-Römer J, Bansmann PM, Bourdias T, Dousset V, Haïssaguerre M, Arentz T. Incidence of asymptomatic intracranial embolic events after pulmonary vein isolation comparison of different atrial fibrillation ablation technologies in a multicenter study. *J Am Coll Cardiol.* 2011;58:681-8.
- 2) Steinberg JS, Mittal S. Intracranial emboli associated with catheter ablation of atrial fibrillation has the silence finally been broken? *J Am Coll Cardiol.* 2011;58:689-91.
- 3) Vermeer SE, Prins ND, Heijer TD, Hofman A, Koudstaal PJ, Breteler MMB. Silent brain infarcts and the risk of dementia and cognitive decline. *N Engl J Med* 2003;348:1215-22.
- 4) Mahnkopf C, Badger TJ, Burgon NS, Daccarett M, Haslam TS, Badger CT, McGann CJ, Akoum N, Kholmovski E, Macleod RS, Marrouche NF. Evaluation of the left atrial substrate in patients with lone atrial fibrillation using delayed-enhanced MRI: implications for disease progression and response to catheter ablation. *Heart Rhythm.* 2010;7:1475-81.
- 5) Daccarett M, McGann CJ, Akoum NW, MacLeod RS, Marrouche NF. MRI of the left atrium: predicting clinical outcomes in patients with atrial fibrillation. *Expert Rev Cardiovasc Ther.* 2011;9:105-11.
- 6) Nademanee K, Veerakul G, Chandanamattha P, Chaothawe L, Ariyachaipanich A, Jirasirojanakorn K, Likittanasombat K, Bhuripanyo K, Ngarmukos T. Prevention of ventricular fibrillation episodes in Brugada syndrome by catheter ablation over the anterior right ventricular outflow tract epicardium. *Circulation.* 2011;123:1270-9.

