

Long Term Efficacy When Using Multi-Array Catheters and Phased Radiofrequency Energy for Ablation of Chronic Atrial Fibrillation

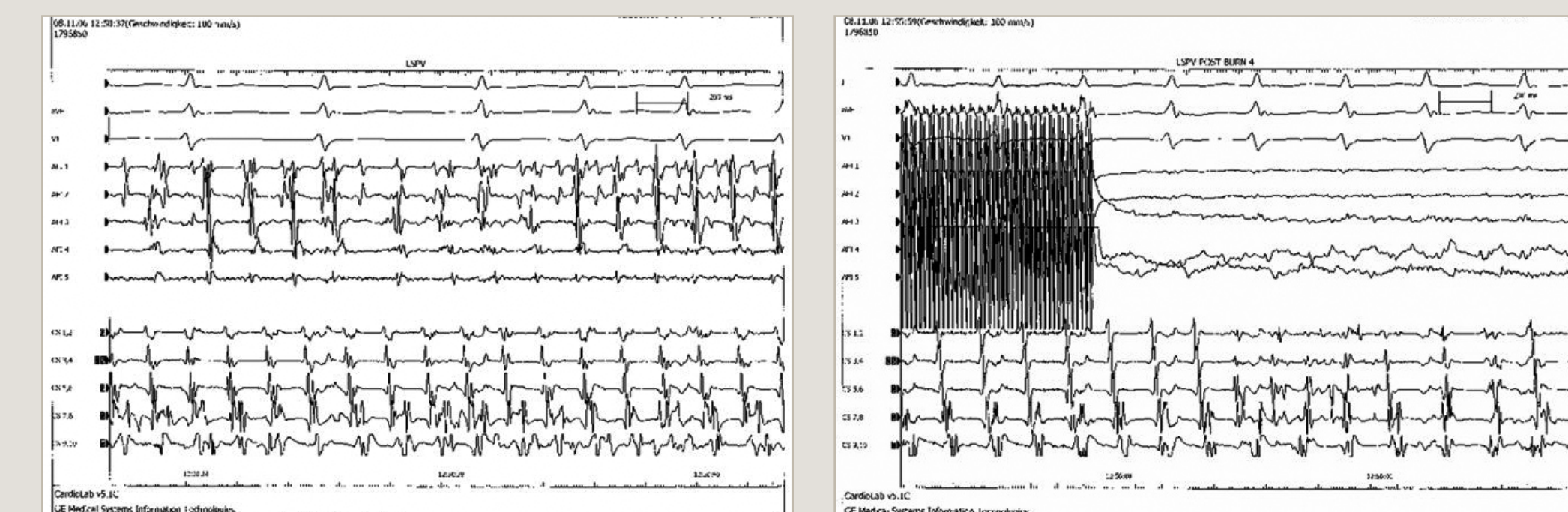
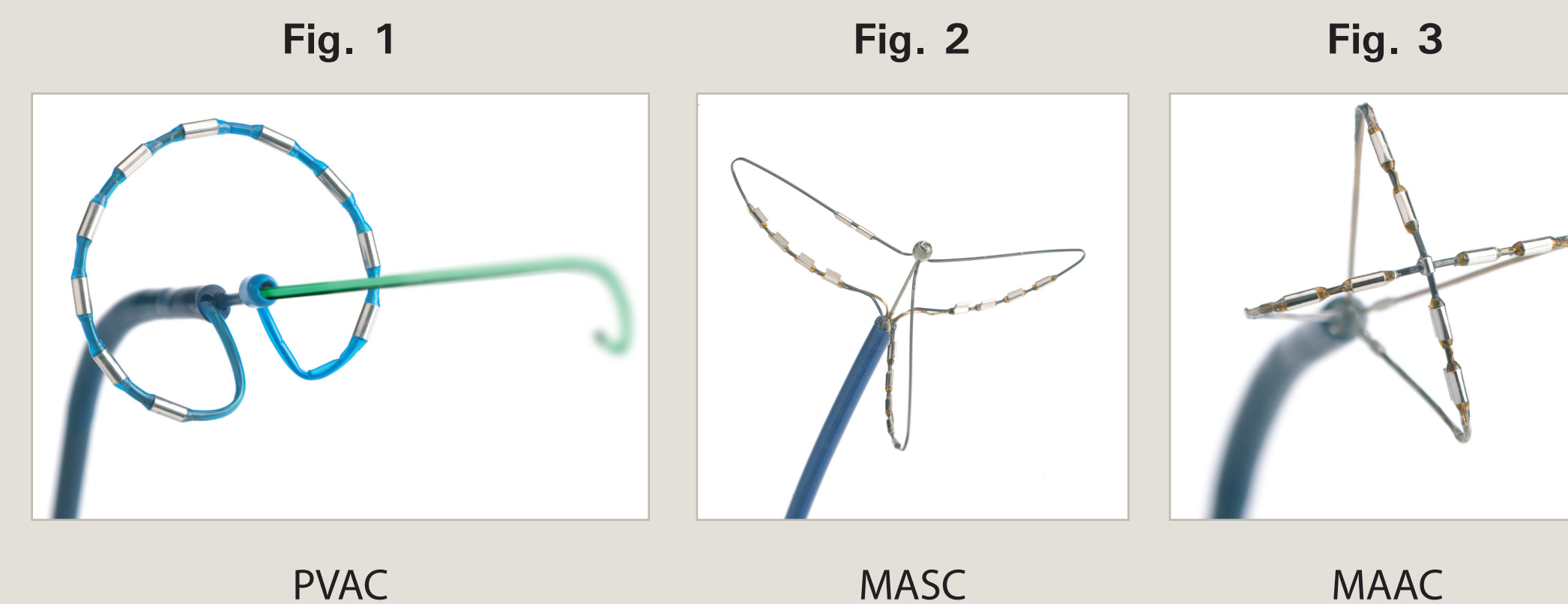
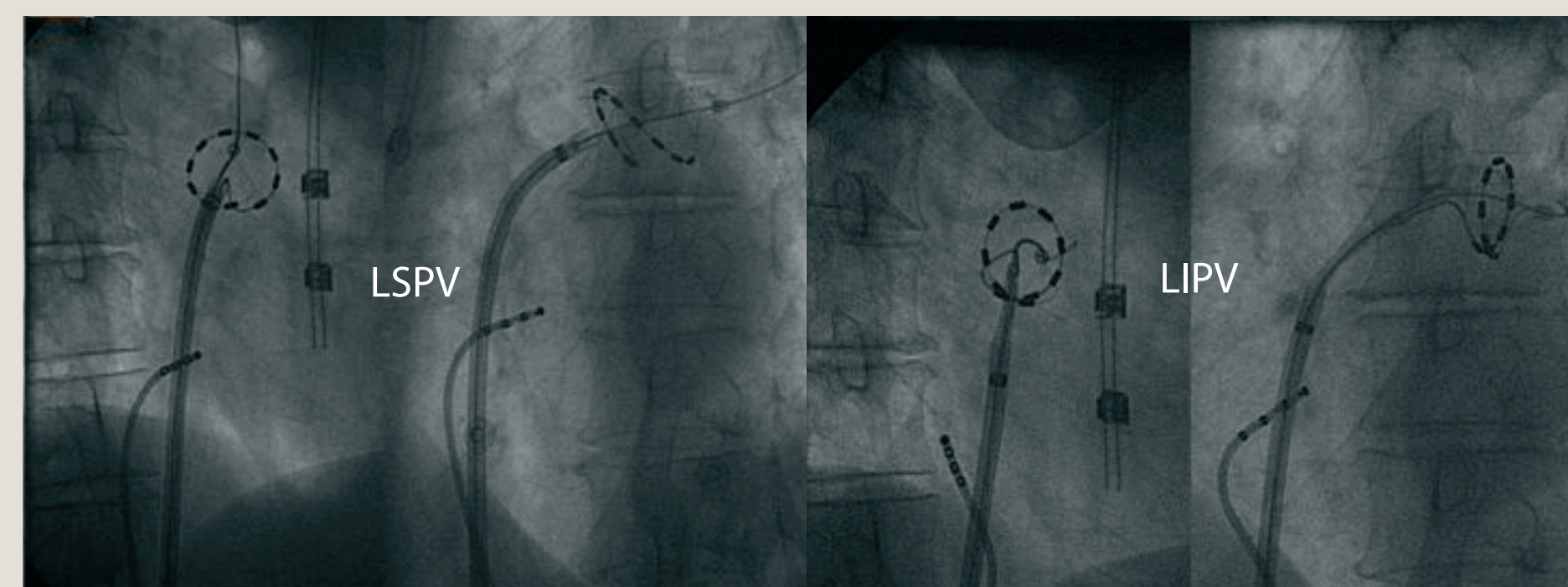
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Introduction

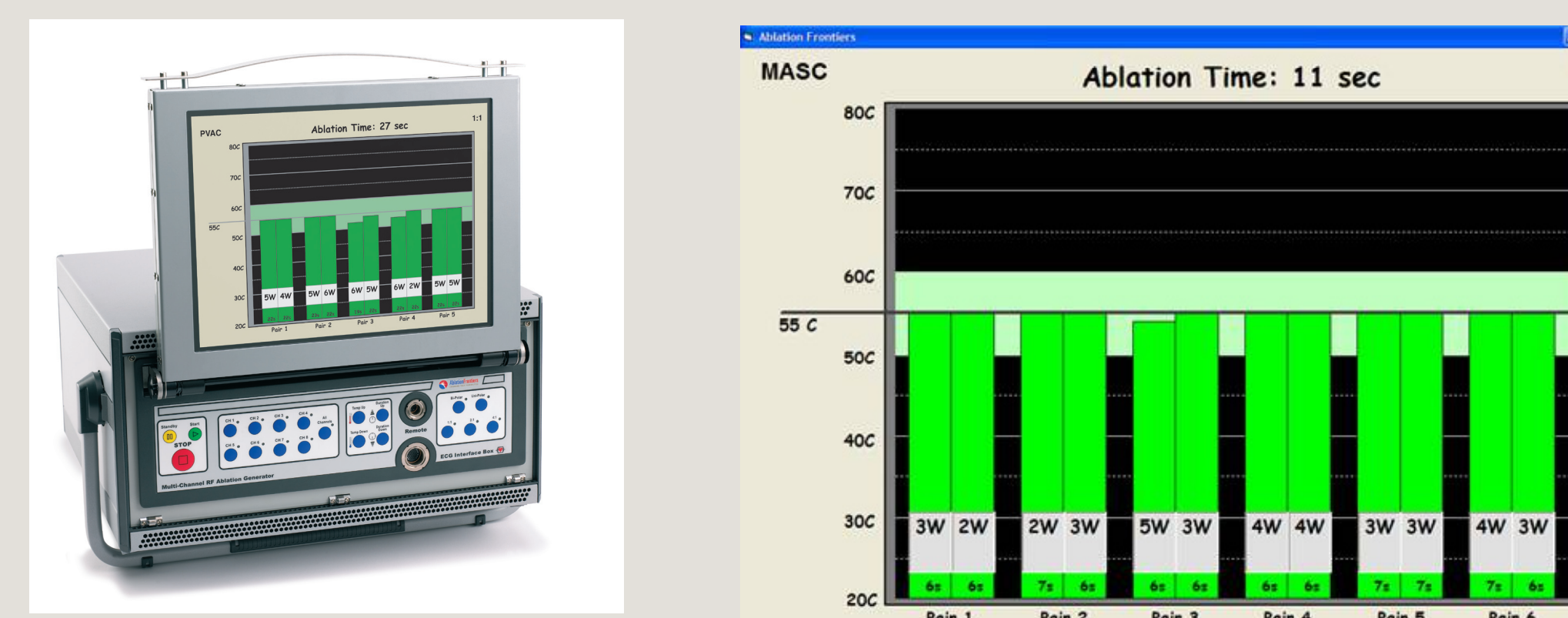
Widespread adoption of radiofrequency catheter ablation (RFCA) of chronic atrial fibrillation (CAF) has been limited by long procedure times, low efficacy and substantial risk. This study was designed to evaluate the safety and efficacy of multi-array mapping and ablation catheters combined with low power phased radiofrequency energy for RFCA of CAF.

Methods

- 53 patients (57 ± 8 years) from 5 European centers
- Combination of 3 catheters utilized for all patients
 - PVAC – spiral pattern 10-electrode catheter for PVI (Fig. 1)
 - MASC – 3-arm, 12 electrode catheter for septal CFAEs (Fig. 2)
 - MAAC – 4-arm, 8 electrode catheter for LA free wall CFAEs (Fig. 3)
- Energy delivered as phased unipolar/bipolar RF
- Ratio of phased RF and combinations of electrodes selected were operator dependent
- Power limited to 10 W/electrode (3-5 W average)
- Acute Success - complete isolation of all PVs and sinus rhythm at the end of the procedure
- Chronic Success – measurement of AF assessed with a continuous 7-day Holter monitor at six months post procedure



Pre and post ablation recordings of the LSPV (selection of channels 1-5)



GENius Multi-Channel RF Generator and Display

Results

EFFICACY

• Acute Success	50/53	94.3%
• Single Treatment	26/53	49.1%
• Completed 6 Month Follow Up (7-Day Holter Recording)	45/53	84.9%
• Chronic Success	37/45**	82.2%
– No AF	34/45	
– PAF (<16%)	3/45	

**4 patients remain on AAD

SAFETY

- Transient Neurologic Event (1)
- Cardiac Tamponade 2^o TS Puncture (1)
- AV Fistula at Femoral Access (1)
- No PV Stenosis Measured by CT/MRI at 6 Months

Conclusions

The multi-array mapping and ablation catheters combined with phased unipolar and bipolar RF energy may provide good safety and long term efficacy in the ablation of chronic AF.