

Ablation of Paroxysmal Atrial Fibrillation with the nMARQ ablation catheter: clinical impact of a 3D irrigated multiablation technology"

Dr Giovanni Rovaris
San Gerardo, Monza (MB)

Circular Ablation Catheter

- Centered helical design -> improved contact and stability
- Stiff distal shaft to support loop at pulmonary vein ostia
- Variable loop diameter - 20-35 mm (One device with wider range)



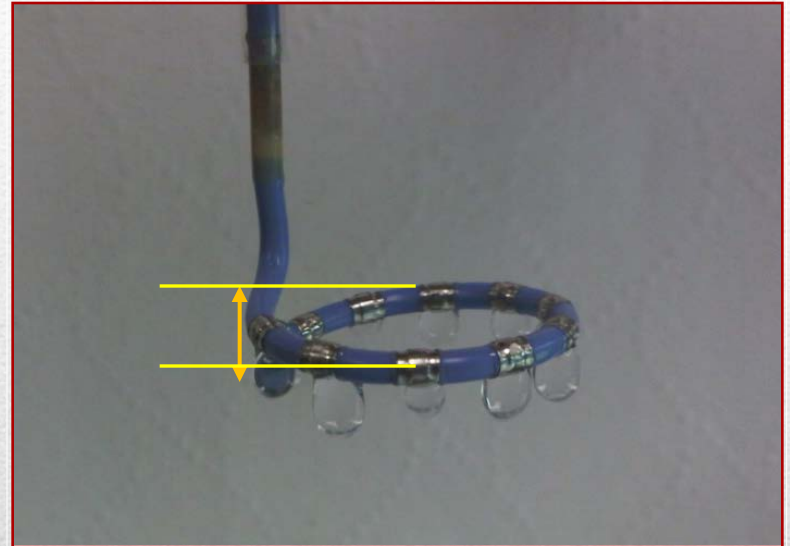
LASSO[®]
Catheter



Approximately 15g of Force will align the loop



~ 15 grams



Visual Contact Assessment

nMARQ™ Multi-Channel RF System

- Unipolar ablation – max power 25 Watts per electrode
(ablating with 1-10 electrodes)
- Bipolar ablation – max power 15 Watts
(1-2,2-3,3-4,...8-9,9-10)
- Each generator acts independently, and one does not interact with the other.
 - Each generator has it's own frequency.
 - Other electrode frequencies are filtered out





Fast and effective irrigated
multielectrode RF ablation of AF

Pulmonary vein isolation using a circular, open irrigated mapping and ablation catheter (nMARQ): a report on feasibility and efficacy

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Conclusion

Irrigated multi-electrode RF ablation of AF using the nMARQ device **is fast and effective.** We observed a very high rate of isolated PVs without the need of touch-up lesions in an unselected, consecutive cohort of patients, simplifying and accelerating this otherwise complex ablation procedure. Success rates were **comparable with other techniques** applied in the interventional treatment of symptomatic AF with a low complication rate. Longer FU and larger, multi-center randomized studies are needed to confirm these results.

Pulmonary Vein Isolation with a New Multipolar Irrigated Radiofrequency Ablation Catheter (nMARQTM): Feasibility, Acute and Short-Term Efficacy, Safety, and Impact on Postablation Silent Cerebral Ischemia

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FEDERICO FERRARIS, M.D.,† PAOLO DI DONNA, M.D.,* ELISA EBRILLE, M.D.,†
FRANCK HALIMI, M.D.,‡ JEAN F. LECLERCQ, M.D.,‡ COSTANZA IUNCO, M.D.,§
CARLOEUGENIO VAUDAGNA, M.D.,§ FEDERICO CESARANI, M.D.,§ and
FIORENZO GAITA, M.D.†

From the *Cardiology Division, Cardinal Guglielmo Massaia Hospital, Asti, Italy; †Division of Cardiology, Department of Medical Sciences, University of Turin, Italy; ‡Department of Rythmology, CMC Parly II Le Chesnay, Le Chesnay, France; and §Division of Radiology, Cardinal Massaia Hospital, Asti, Italy

Conclusions

The limited size of our patient population does not allow any firm conclusion. However, our preliminary experience demonstrated the feasibility, the safety and the good acute procedural success of the PVI performed with the nMARQTM catheter.

The Italian Roundtable on the nMARQ™ Technology

Discussion by a Panel of Experts

ABSTRACT

December 12th, 2013. A group of Italian physicians who are using the nMARQ™ Technology were brought together in Milan for a roundtable discussion on the technology. The purpose of this document is to summarize and consolidate their opinion about their workflow and addressing challenges.

Roundtable Participants

Dr Ermenegildo De Ruvo, Policlinico Casilino, Rome; Dr Gaetano Fassini, Centro Cardiologico Monzino, Milan; Dr Massimo Grimaldi, Ospedale Miulli, Acquaviva delle Fonti (BA);
Dr Giovanni Rovaris, AO San Gerardo, Monza; Dr Marco Scaglione, Ospedale Cardinal Massaia, Asti;
Dr Luigi Sciarra, Policlinico Casilino, Rome; Dr Ezio Soldati, AO Santa Chiara, Pisa;
Dr Nicola Trevisi, Ospedale San Raffaele, Milan.

The Italian Roundtable on the nMARQ™ Technology Discussion by a Panel of Experts

SAFETY CONSIDERATIONS IN THE WORKFLOW

CATHETER POSITIONING AND CONTACT OPTIMIZATION

RF ABLATION

PV ISOLATION VALIDATION

SAFETY CONSIDERATIONS:

Anticoagulation Protocol

The consensus at the end of the meeting was that ACT value should be higher than 320 sec at least before starting RF.

of 5000/6000 U Heparin is given, additional Heparin is given if patient weight is < 75Kg 5000U ; if its >75Kg 6000U. During the procedure I have a continuous infusion of 1000U/h and I consider additional Heparin dosages depending on ACT value, which is monitored every 15 minutes.”

Sheaths management

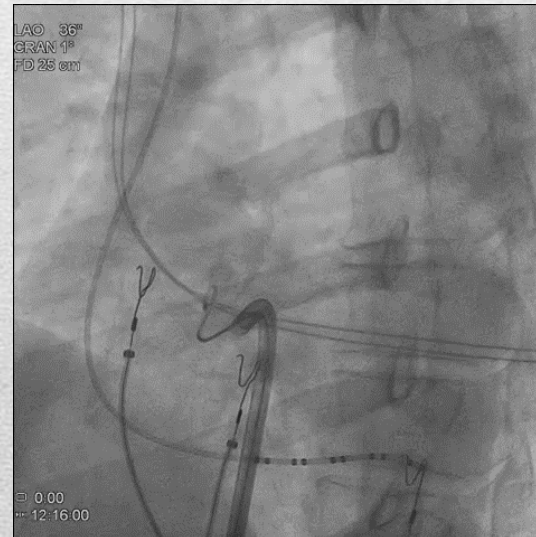
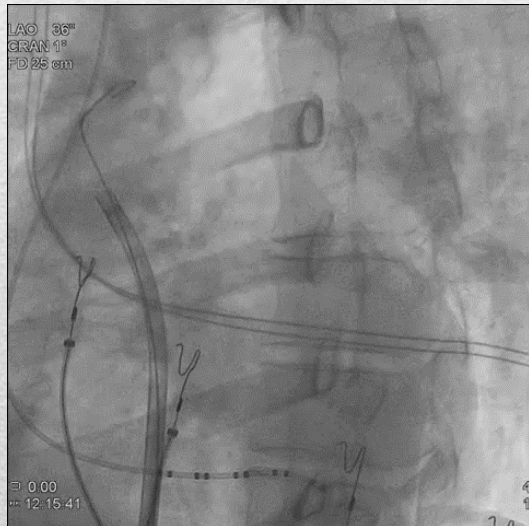
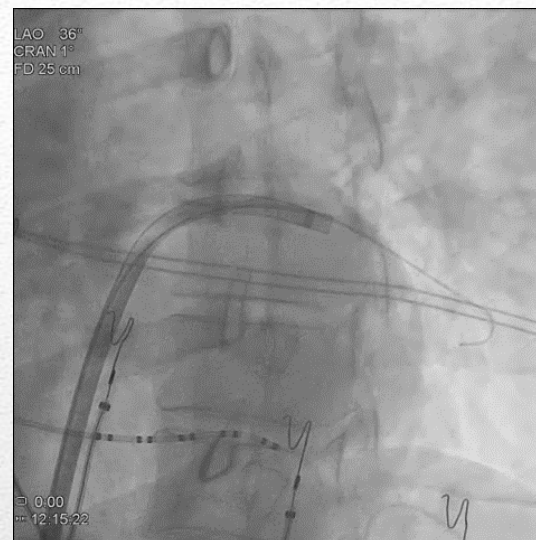
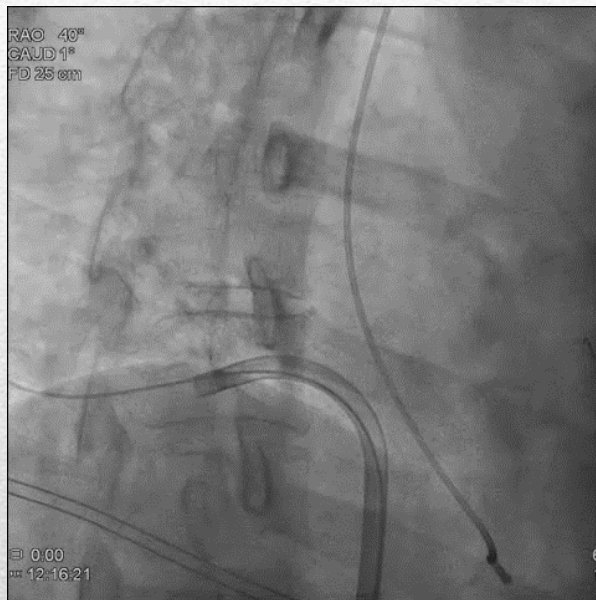
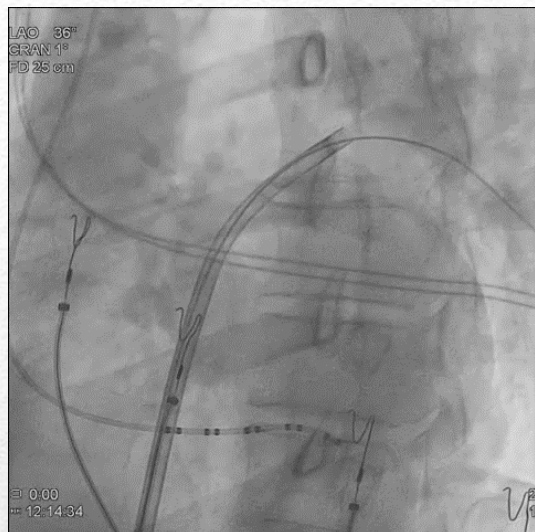
All participants concluded that the SCL are not only related to the technology adopted but also the workflow practices: anticoagulation protocol and careful sheath managements are extremely important



CATHETER POSITIONING AND CONTACT OPTIMIZATION

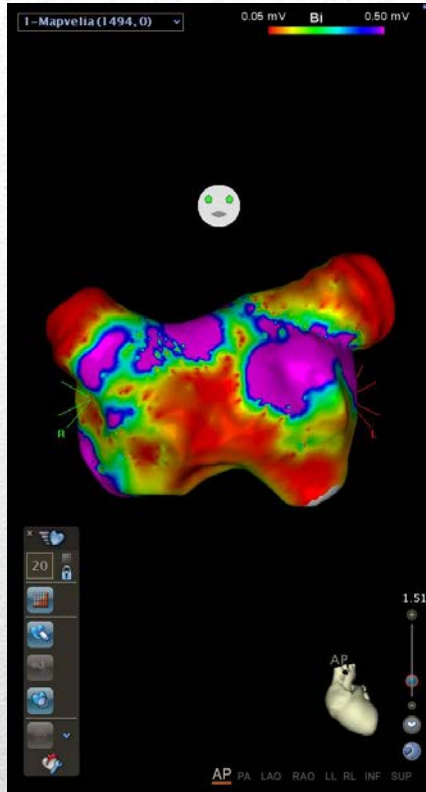
Anatomy and PV ostium definition

Selective angiography

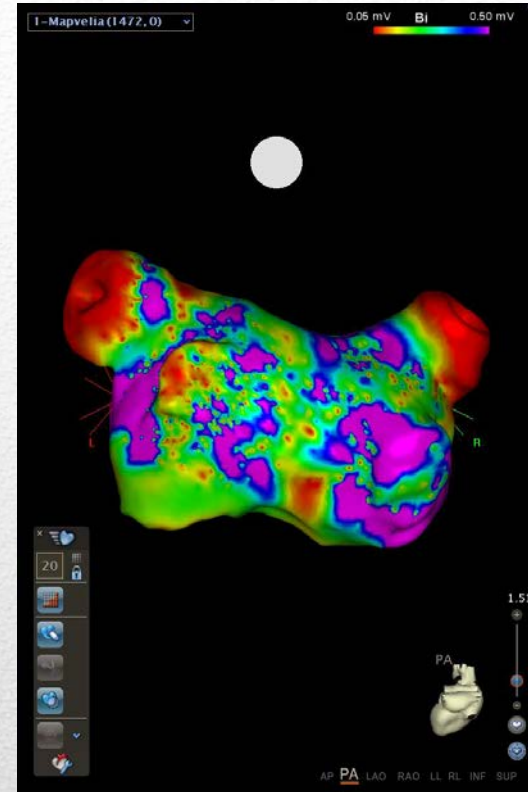




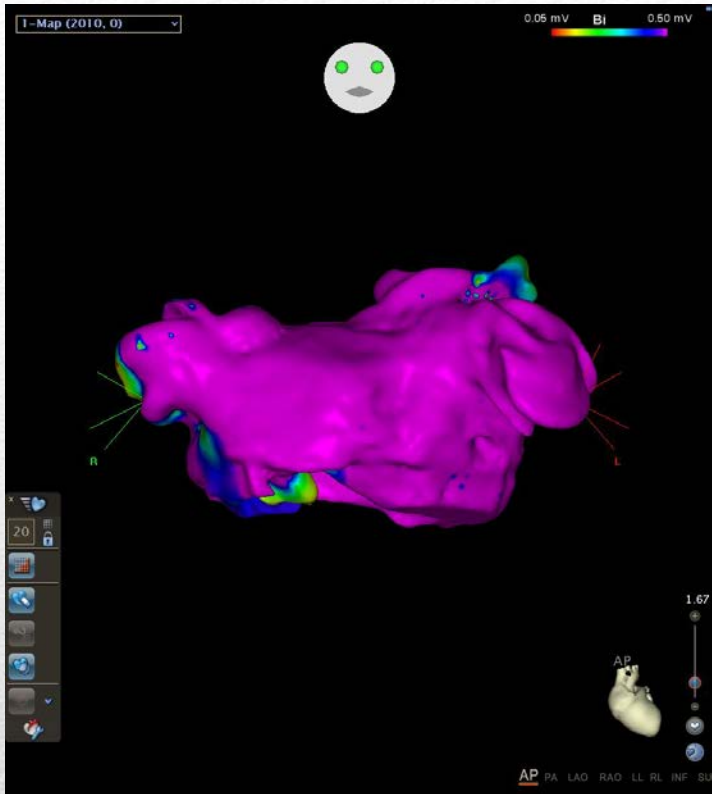
FAST MAP



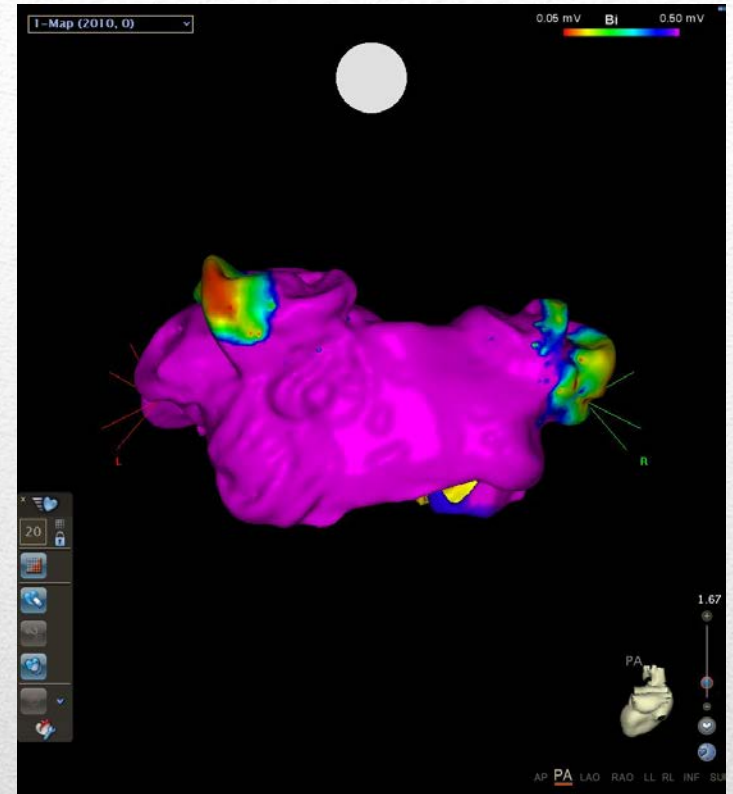
Range
0,05->0,5 mV



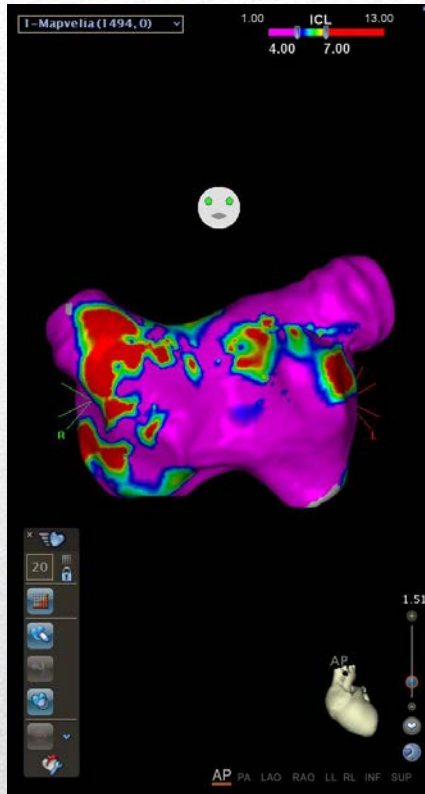
BIPOLAR SUBSTRATE: FIBROSIS



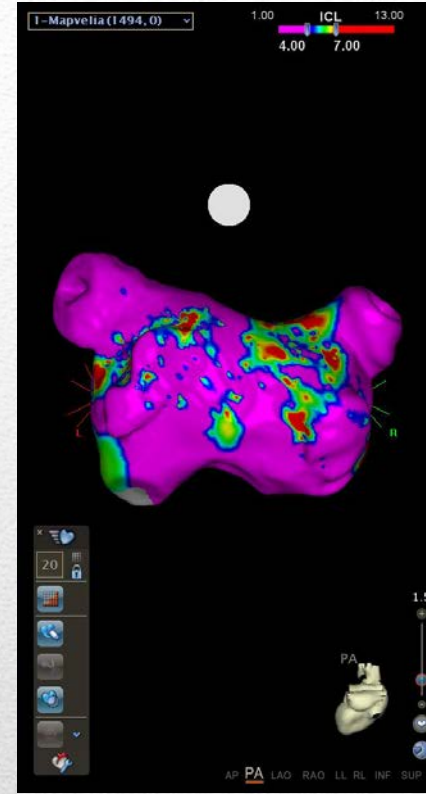
Range
0,05->0,5 mV



BIPOLAR SUBSTRATE:
NORMAL TISSUE



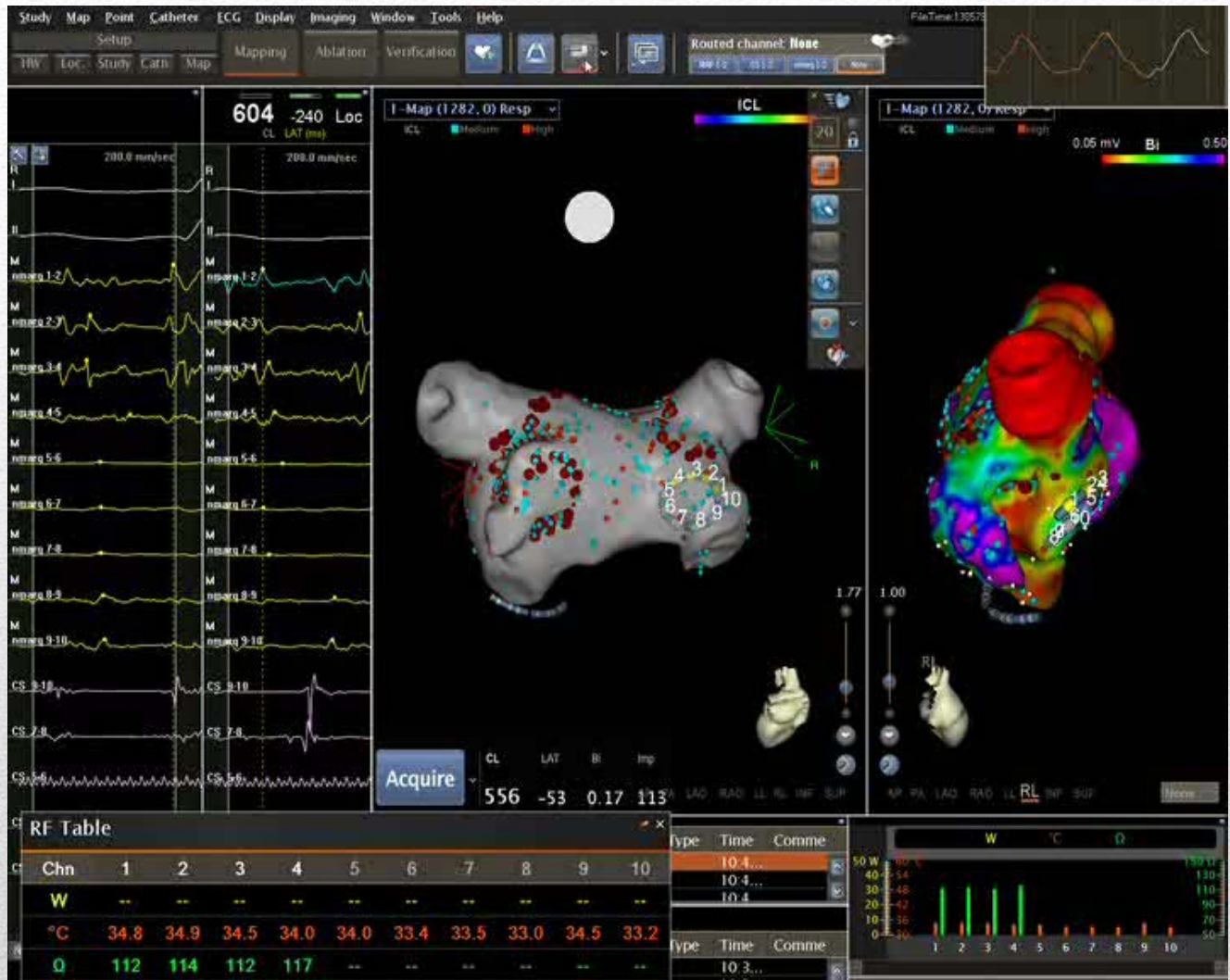
ICL (interval complex level)
4->7



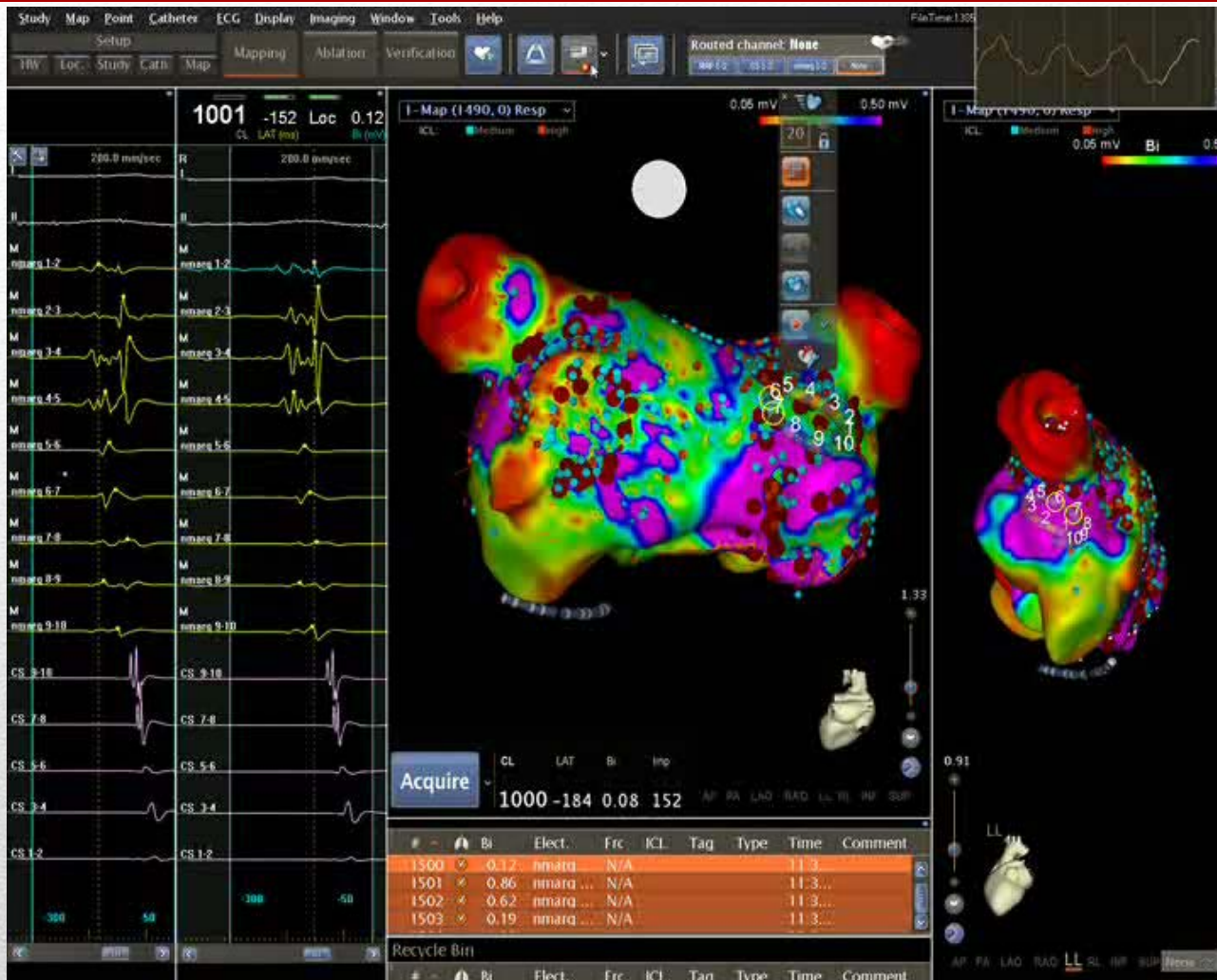
CFAE MAP

RF ABLATION

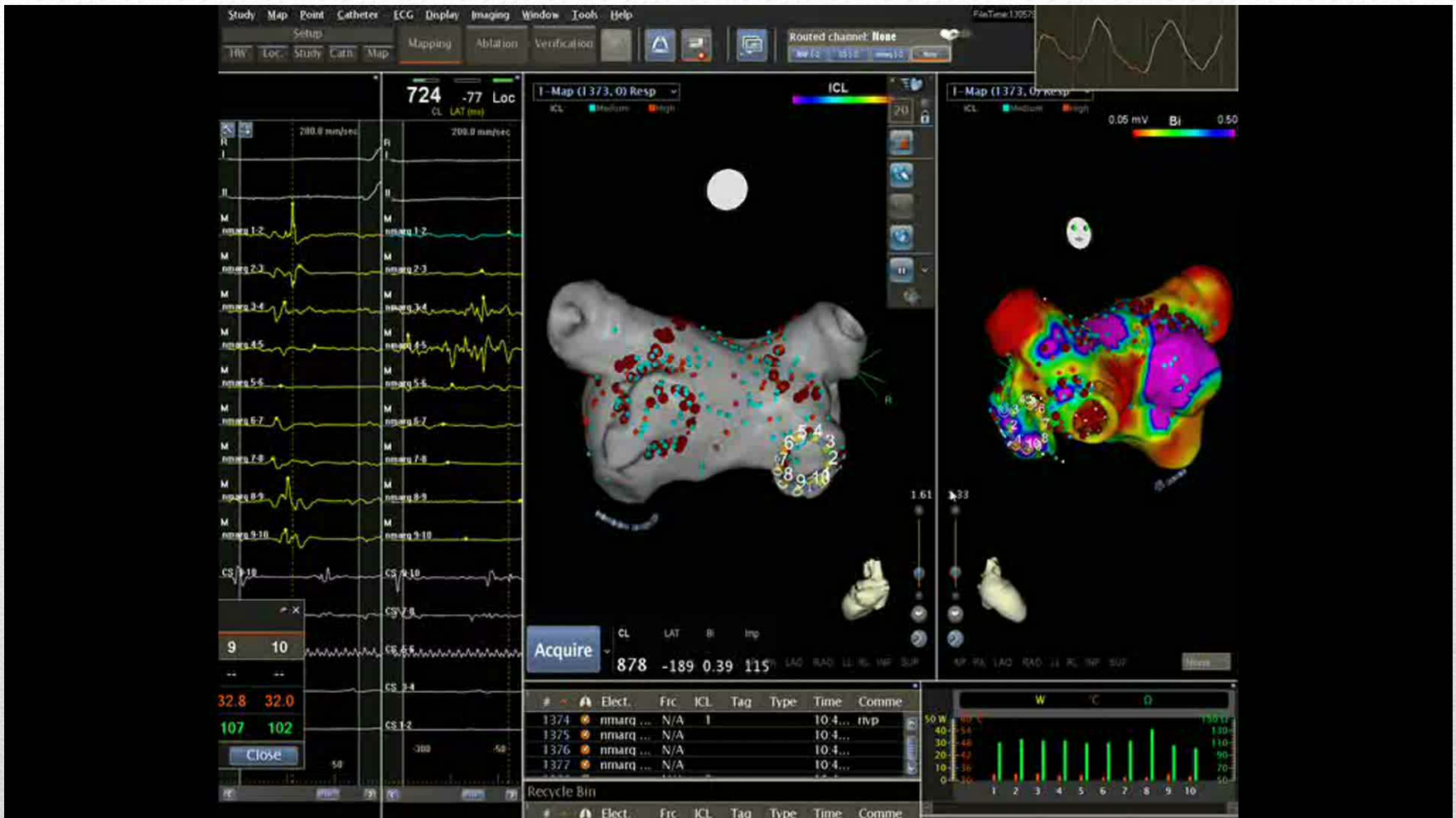
Each physician underlined that the stability is associated with effective Energy transfer to the tissue.



Unipolar selective ablation



Bipolar ablation - because of frenic nerve capture



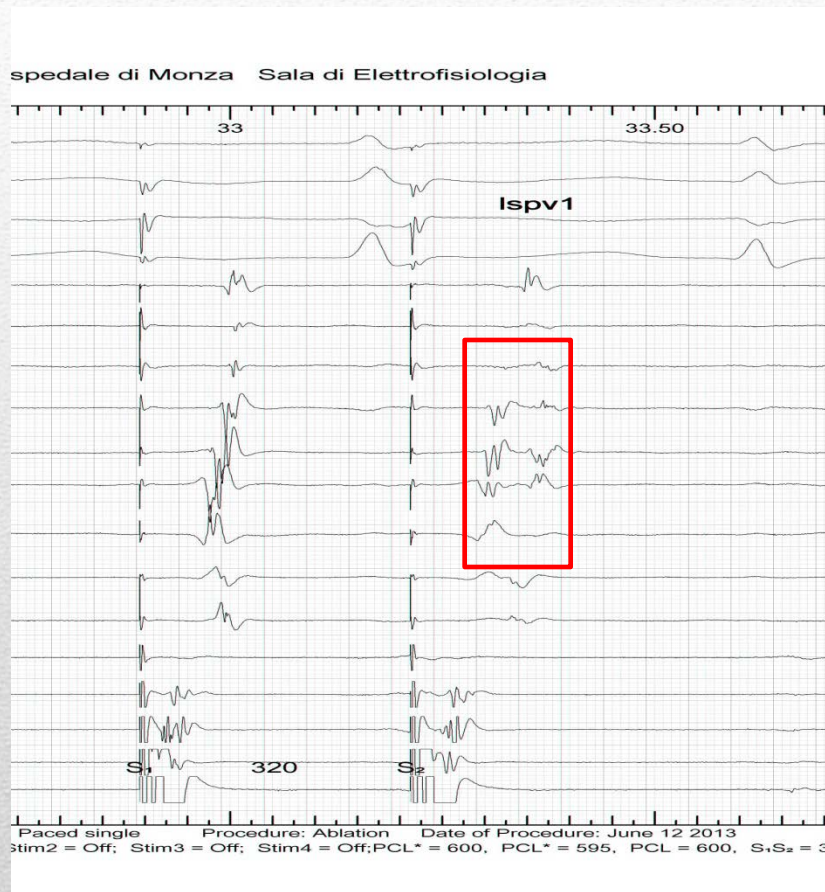
20 sec – 18/20 W

Unipolar ablation RIPV

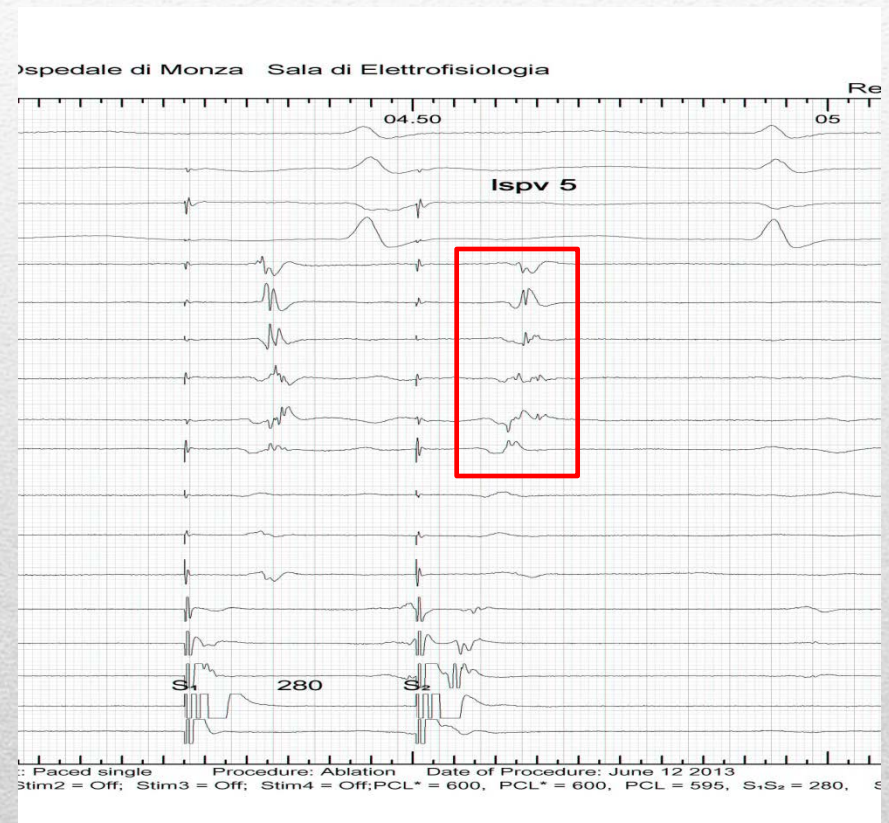


PV ISOLATION VALIDATION

BEFORE RF



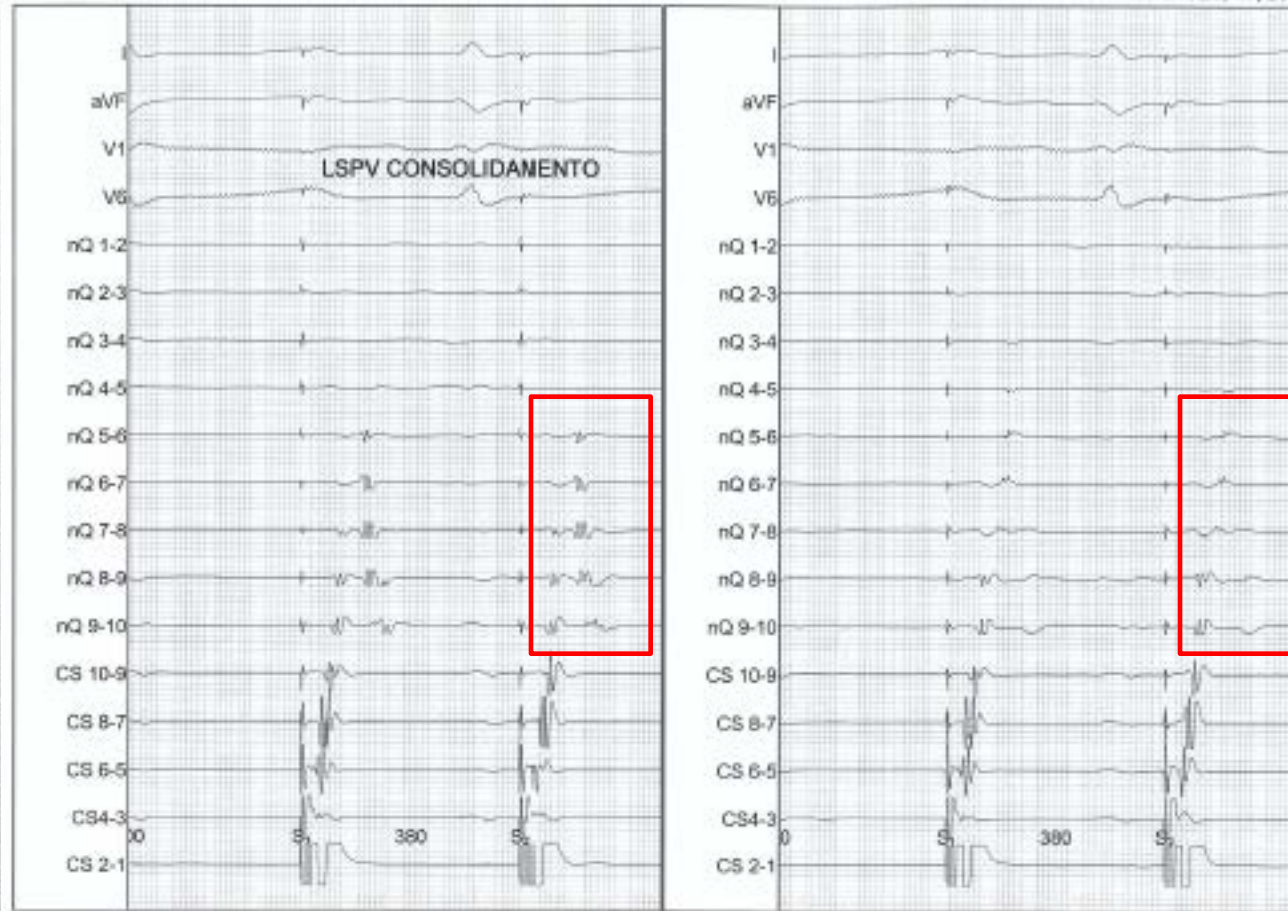
AFTER RF



PULMONARY VEIN POTENCIAL DISCLOSURE

BEFORE RF

AFTER RF



PULMONARY VEIN POTENCIAL DISCLOSURE

BEFORE RF

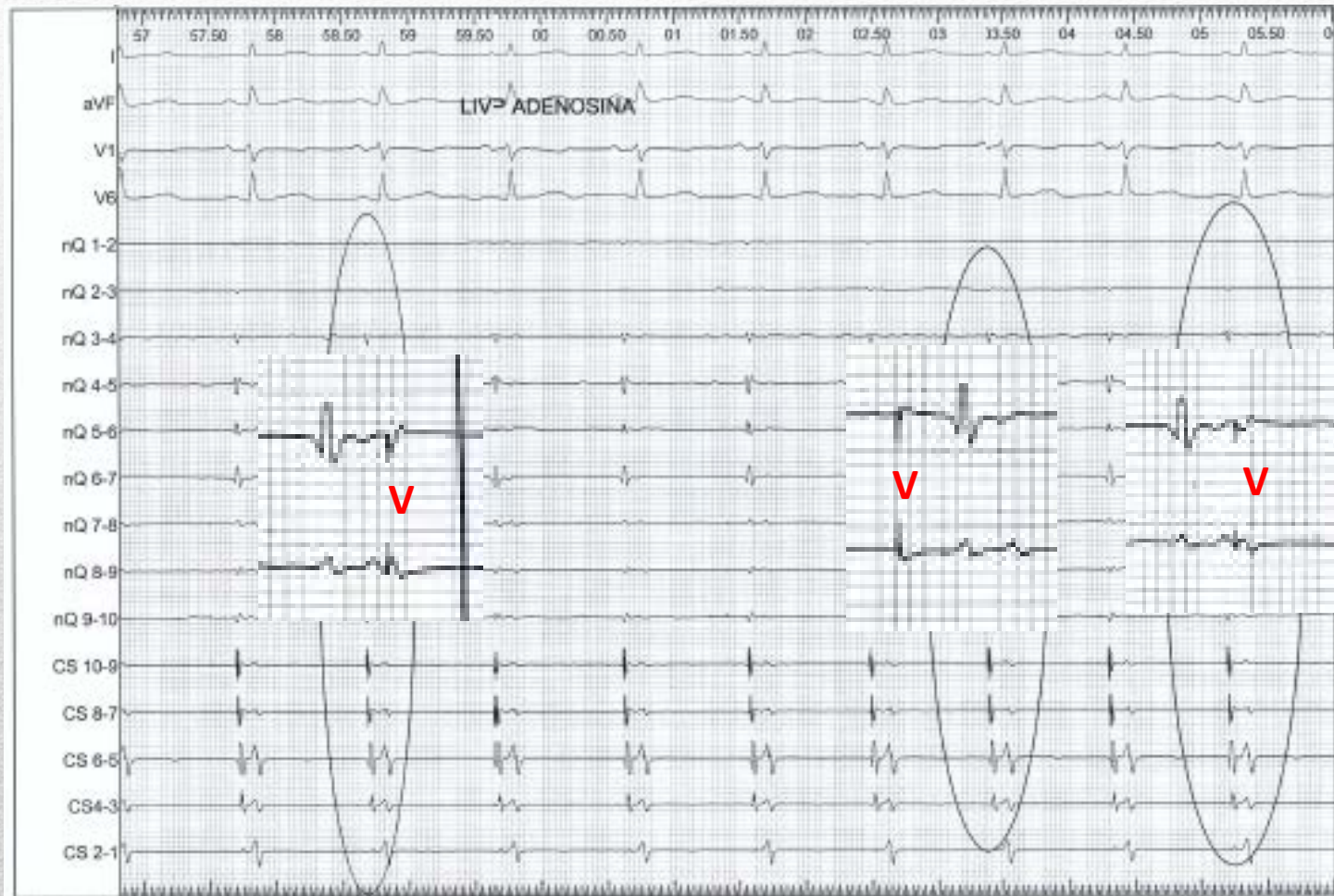
AFTER RF

I
aVF
V1
V6
nQ 1-2
nQ 2-3
nQ 3-4
nQ 4-5
nQ 5-6
nQ 6-7
nQ 7-8
nQ 8-9
nQ 9-10
CS 10-9
CS 8-7
CS 6-5
CS 4-3
CS 2-1

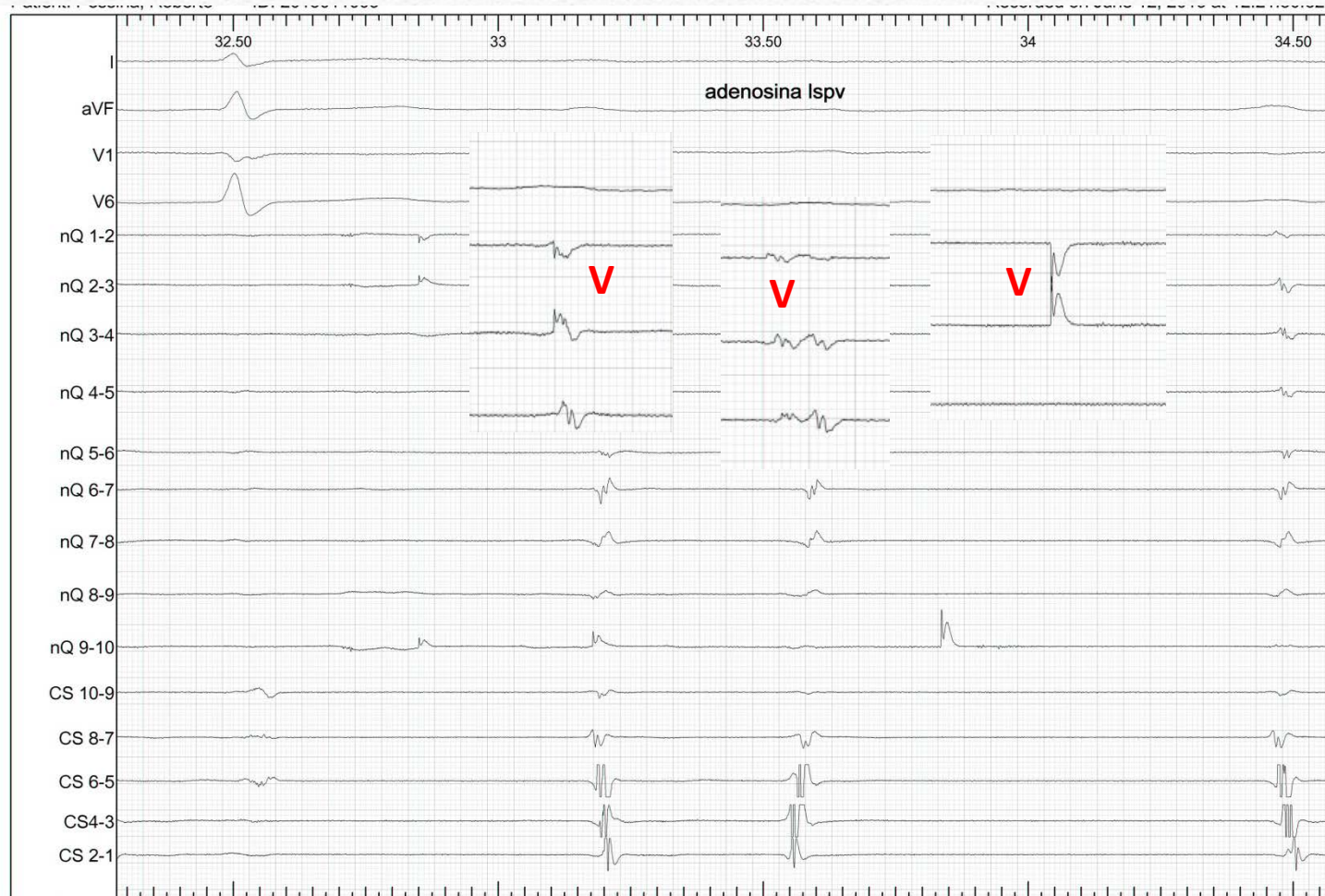


PULMONARY VEIN POTENCIAL DISCLOSURE

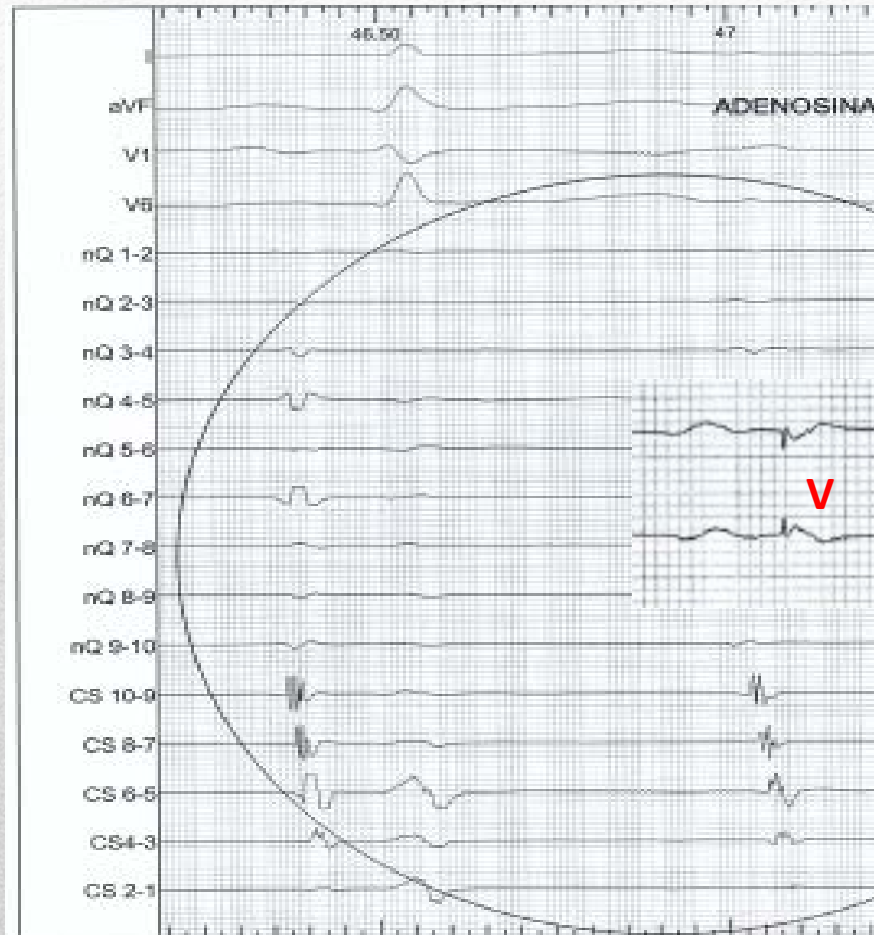
ADENOSINE TEST



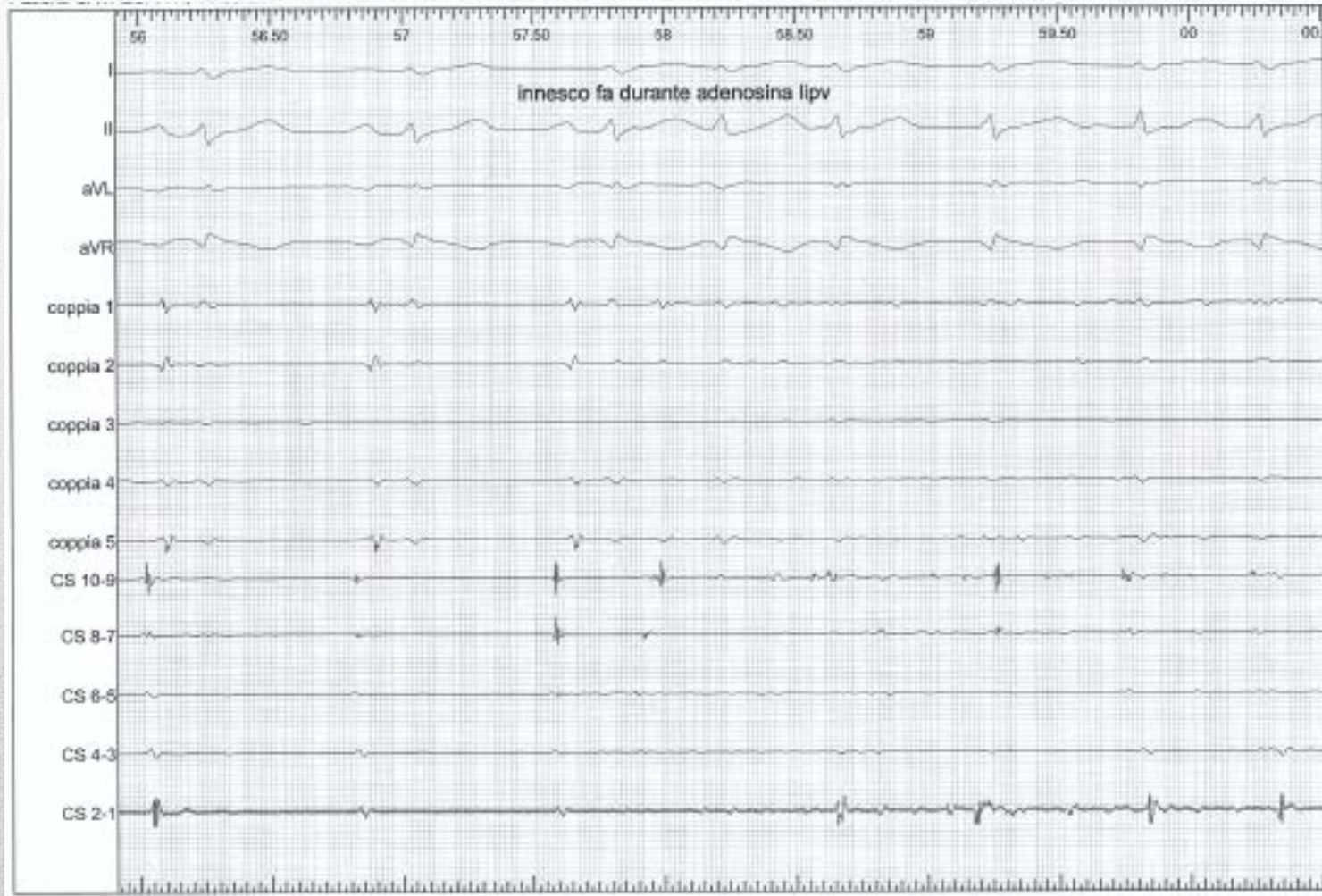
ADENOSINE TEST



ADENOSINE TEST

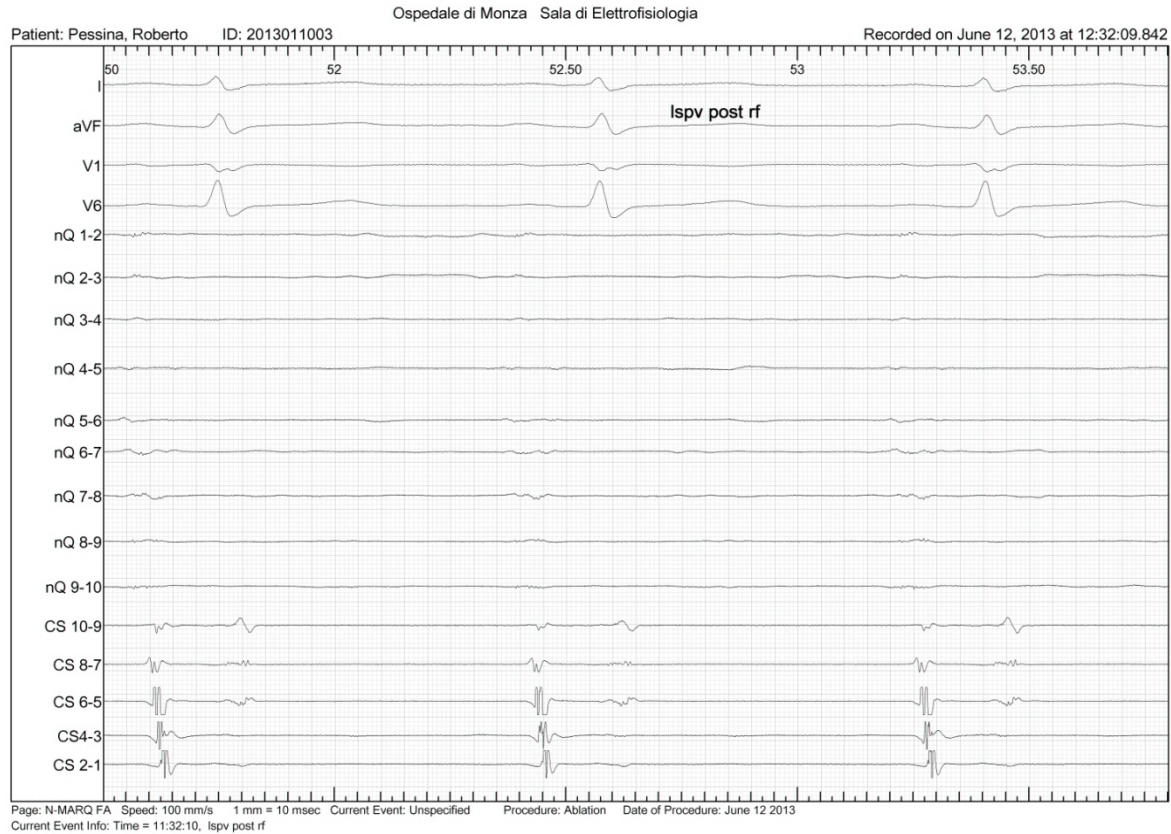


ADENOSINE TEST



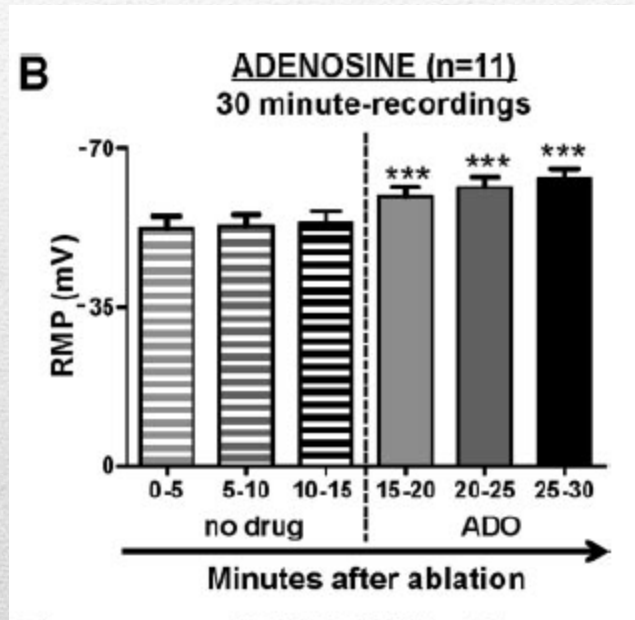
CONFIRMATION PULMONARY VEIN ISOLATION

30 MINUTES AFTER RF



IPERPOLARIZATION EFFECT: 30 MINUTES

ADENOSINE TEST



12 – 18 mg e.v

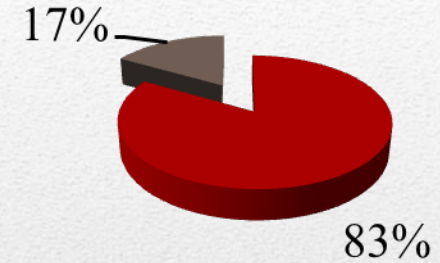
ADENOSINE TEST

- AFTER 30 MINUTES FROM THE LAST RF
 - 12-18 MG INTRAVENOUS INJECTION PER VEIN
-

...OUR EXPERIENCE

# AF	# paroxysmic AF	# persistent AF
24	20	4

■ Paroxysmic AF ■ Persistent AF



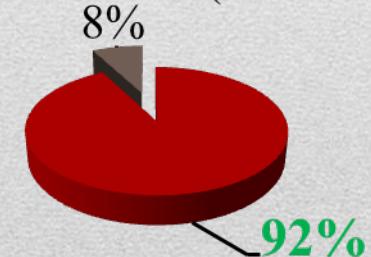
ALL PATIENTS WITH REVEAL AND CARLINK

FOLLOW UP
—
6 MONTHS

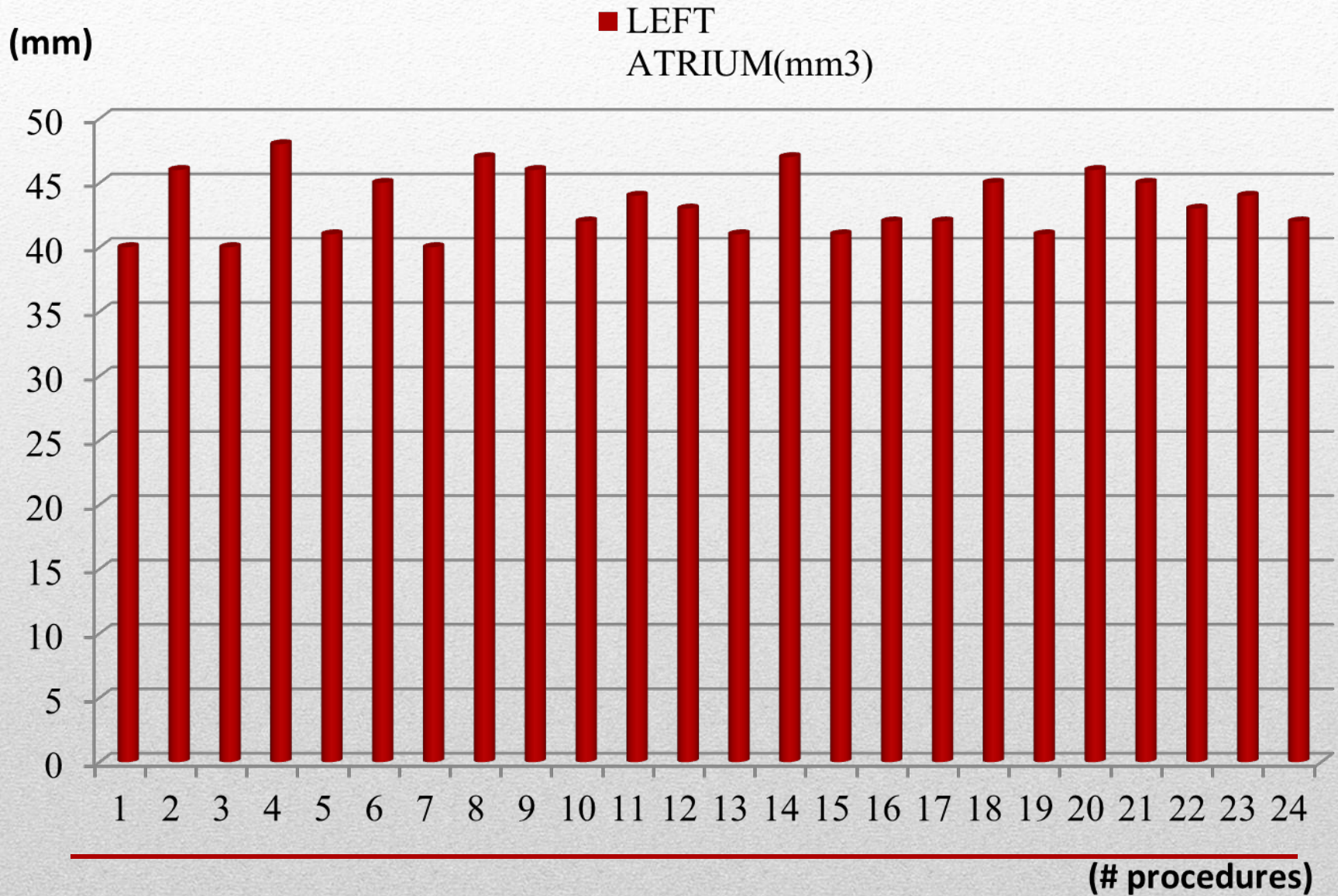
0 RECURRENT
AF EVENTS

2 RECURRENT
AF EVENTS

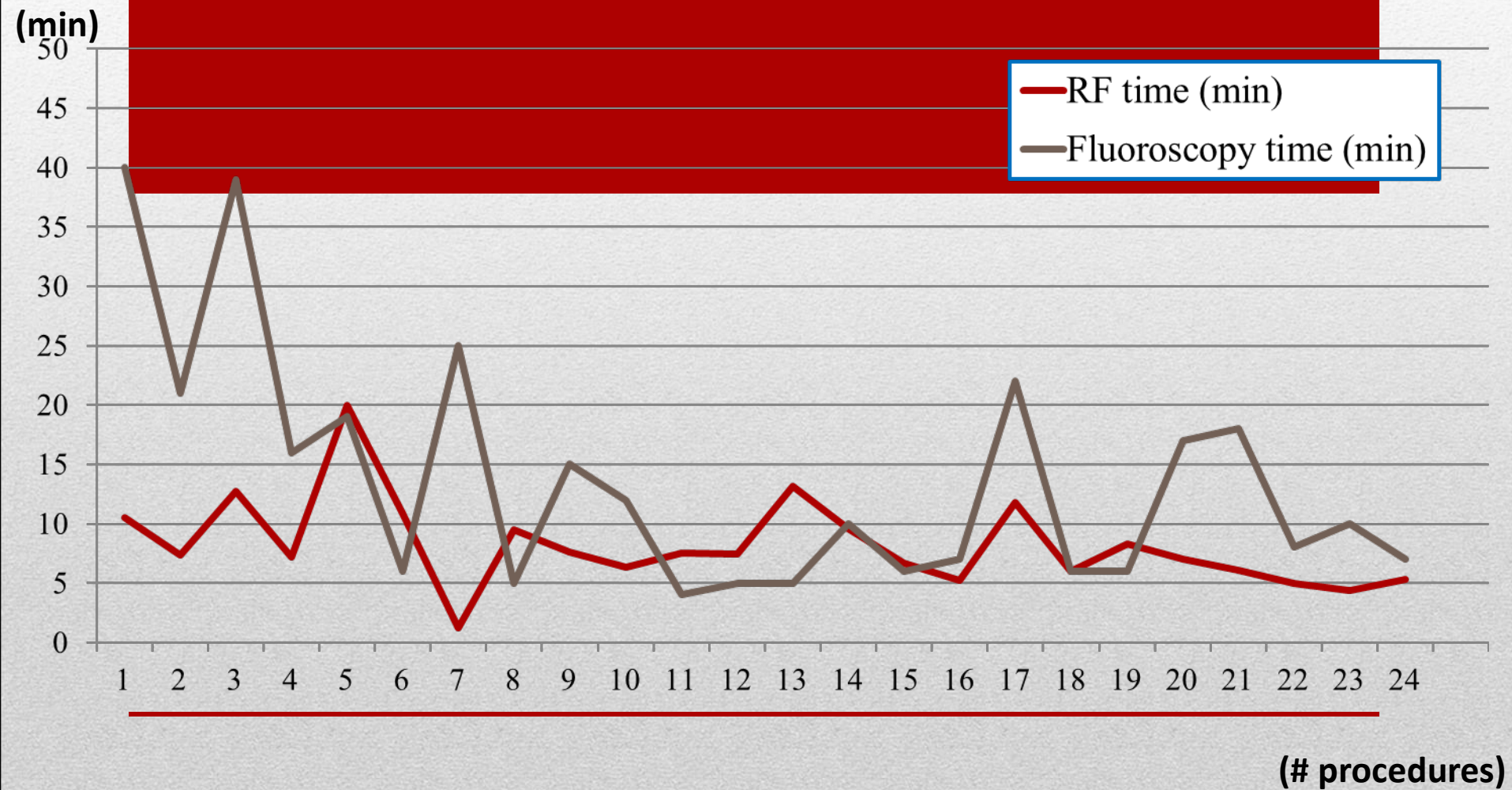
■ AF procedures
■ Recurrent AF events (Persistent AF)



...some details



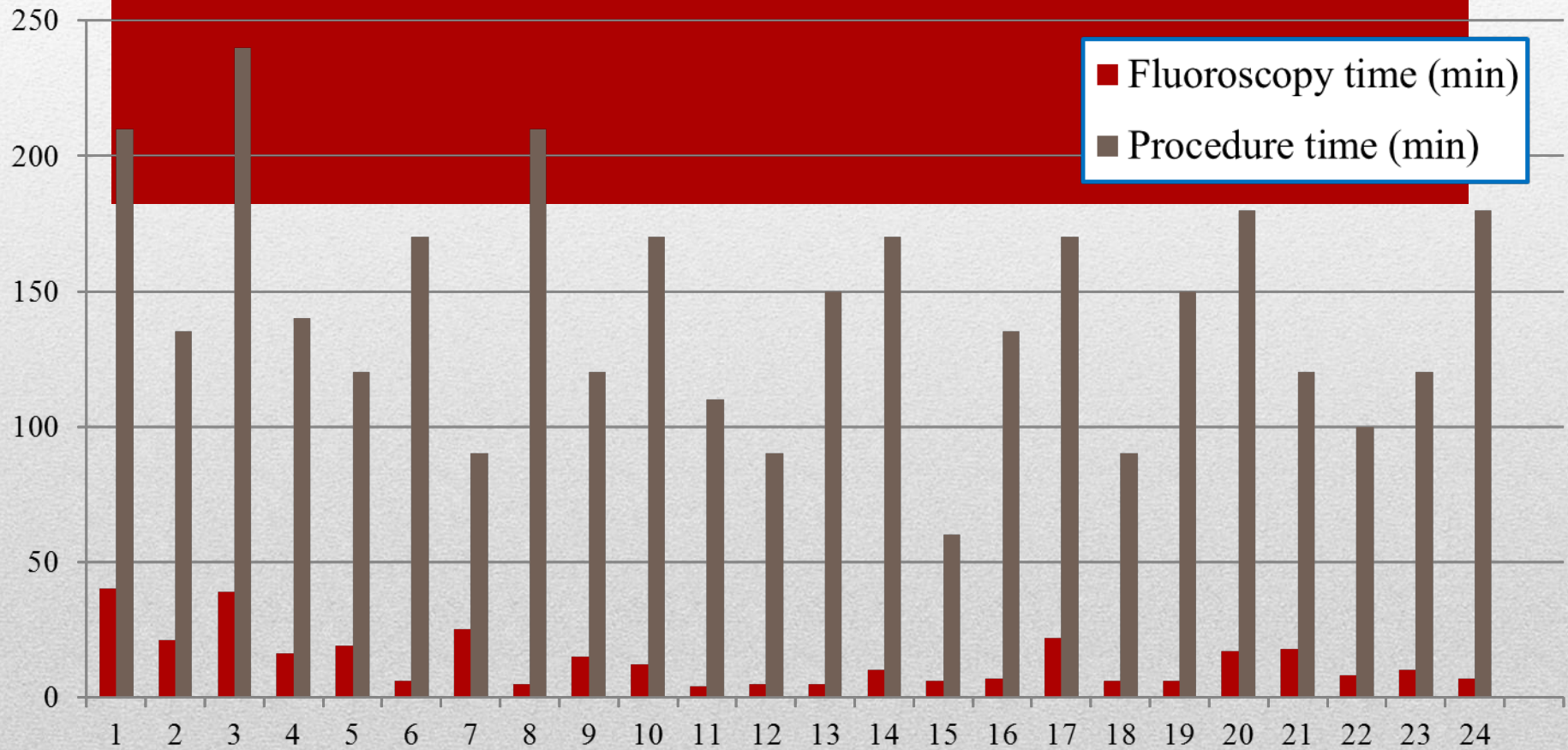
...results



(# procedures)

...results

(min)



(# procedures)