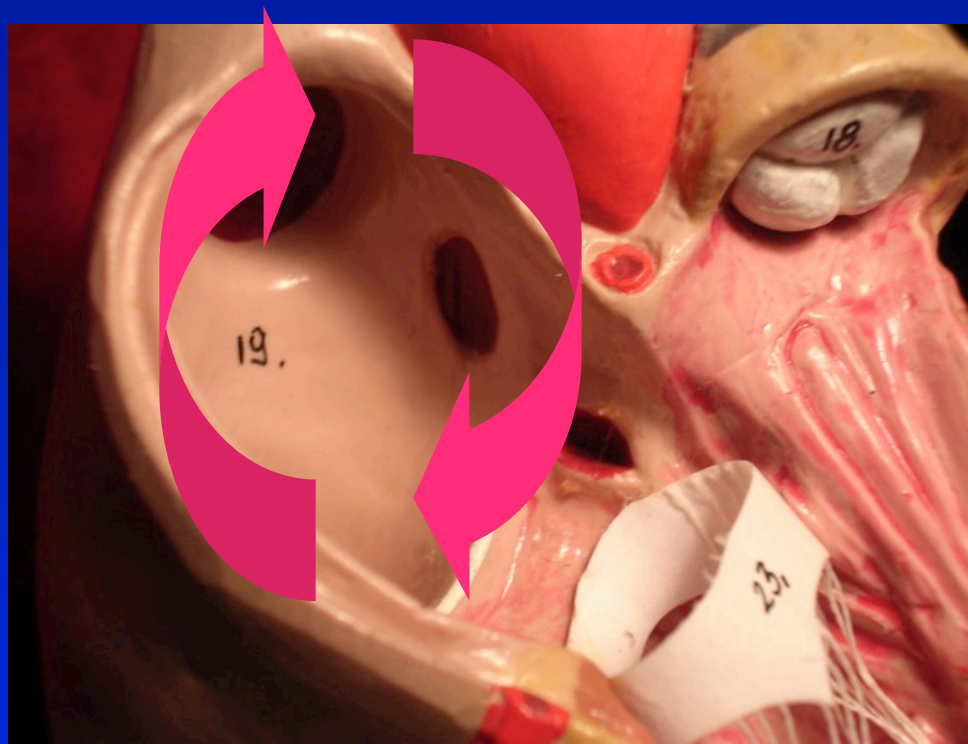
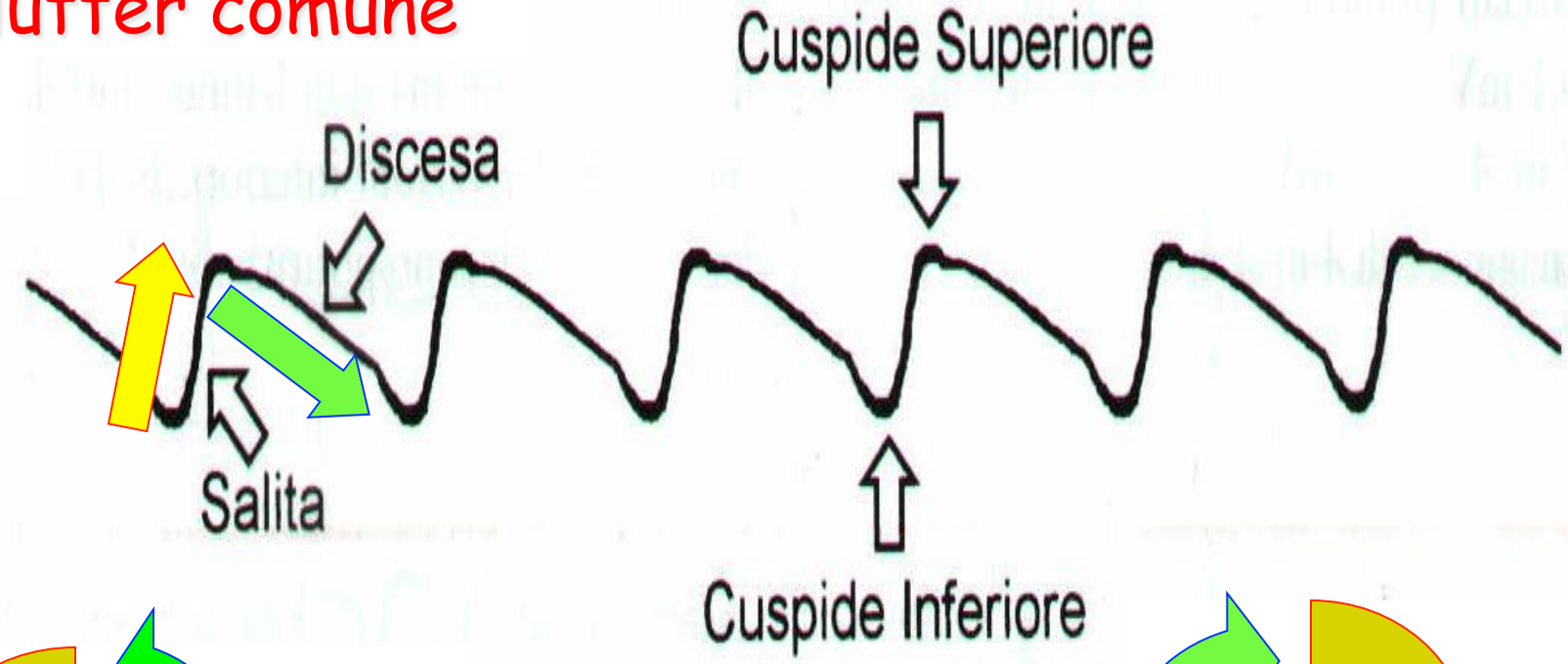
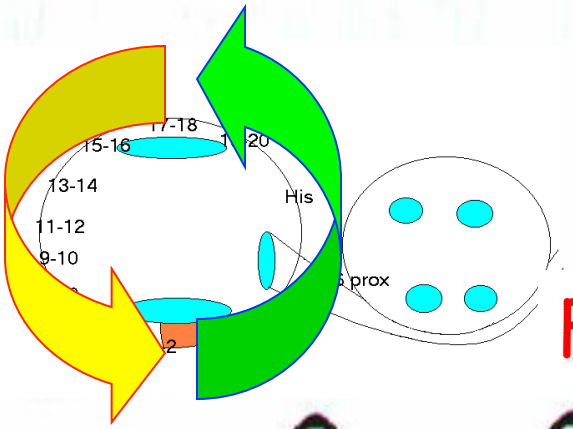
FA E FLUTTER ATRIALE: ASPETTI DIAGNOSTICI, TERAPEUTICI, POSSIBILI COMPLICANZE

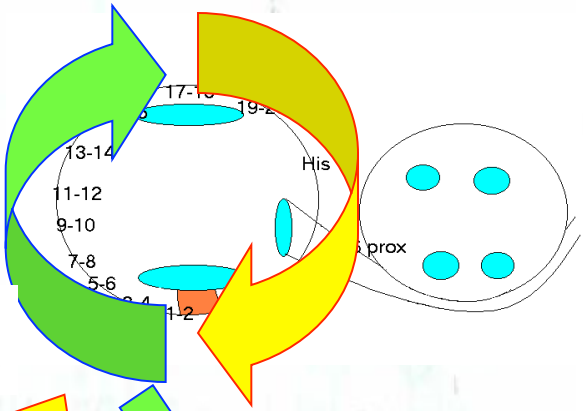

19.

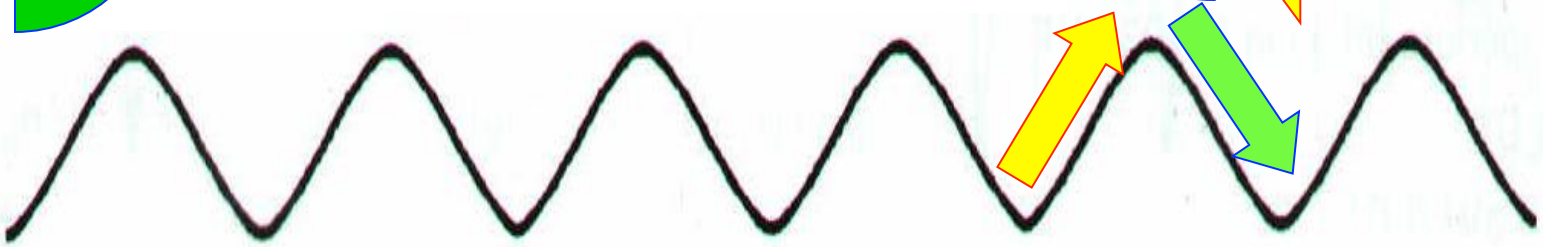
Flutter comune

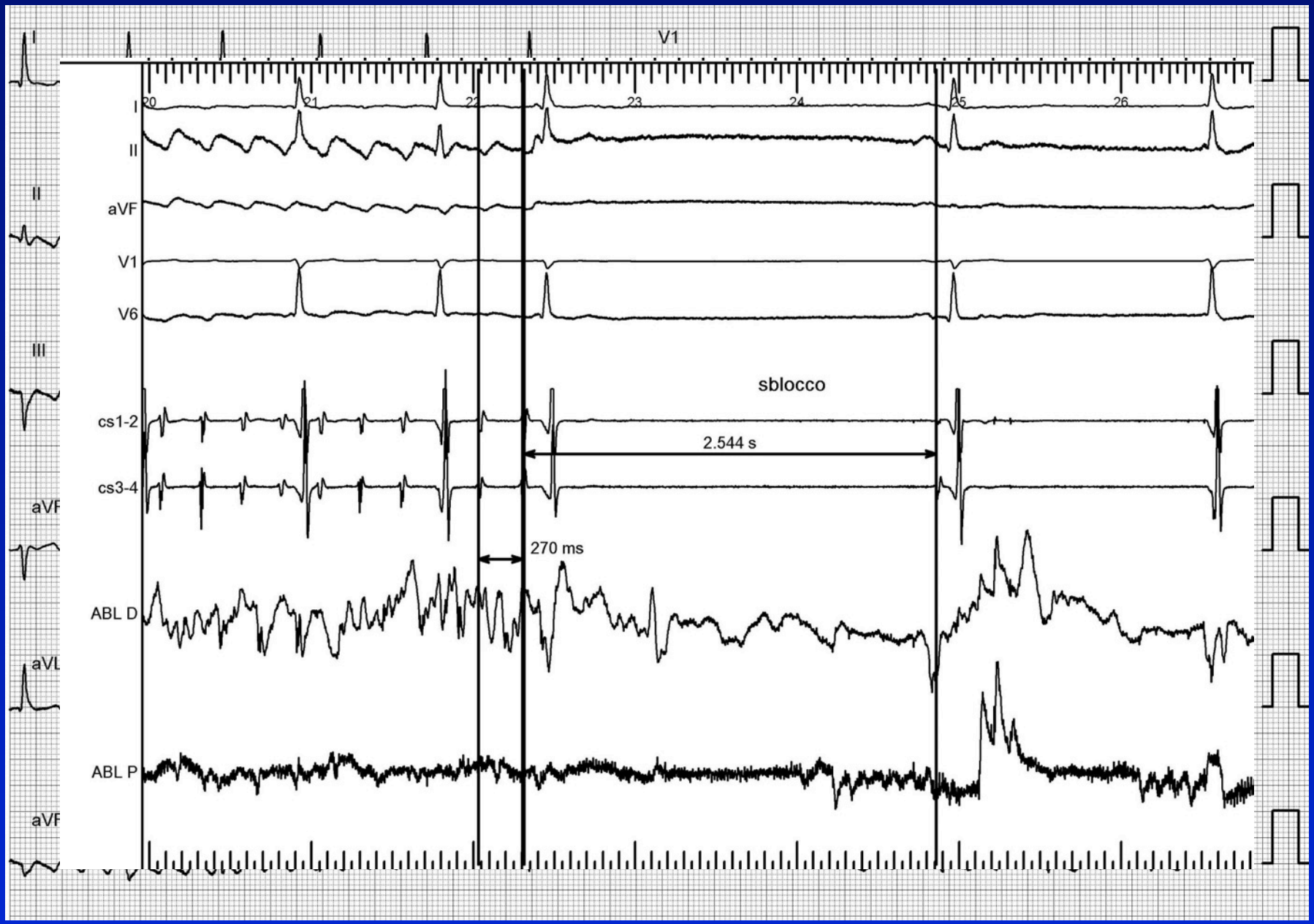


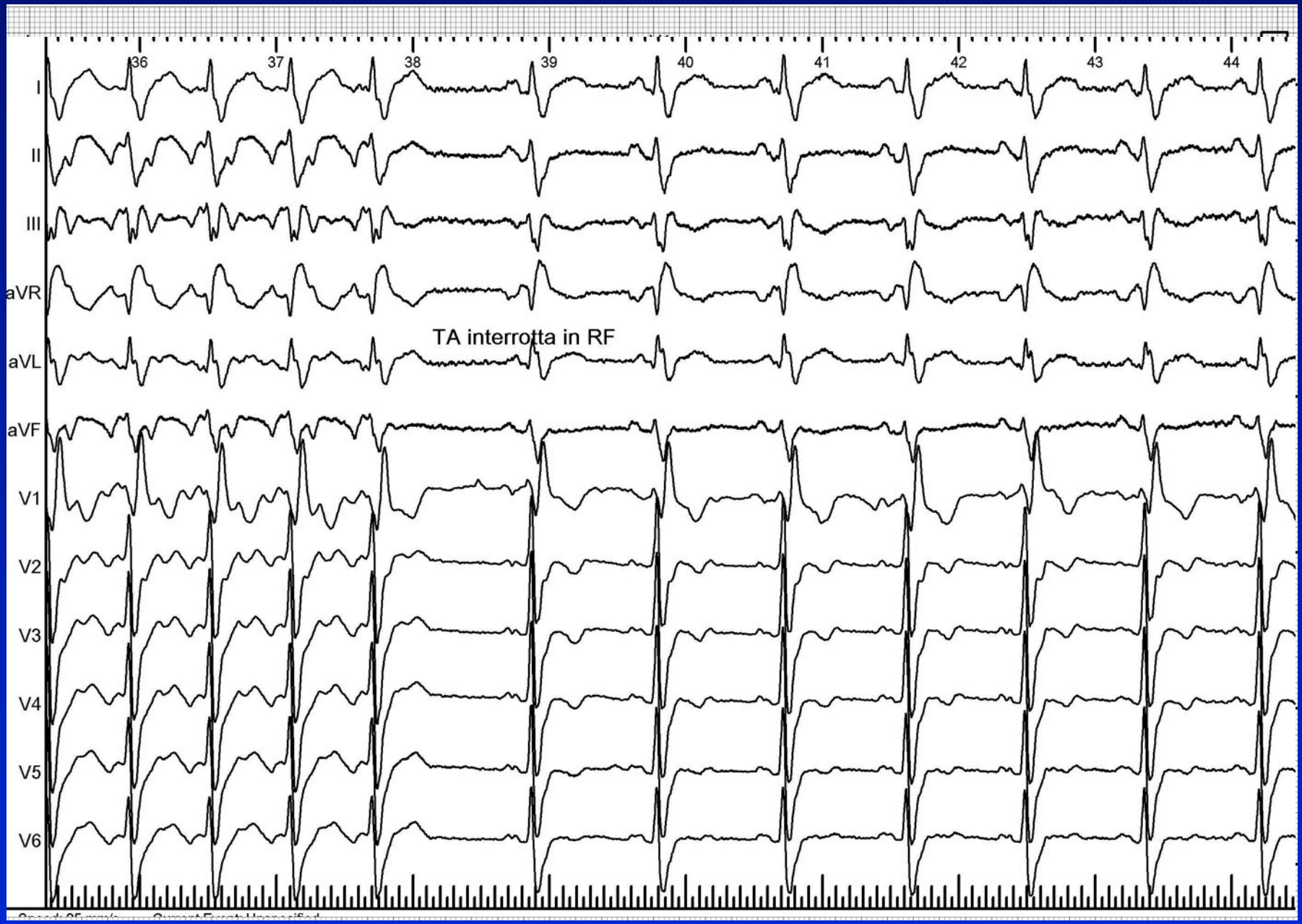


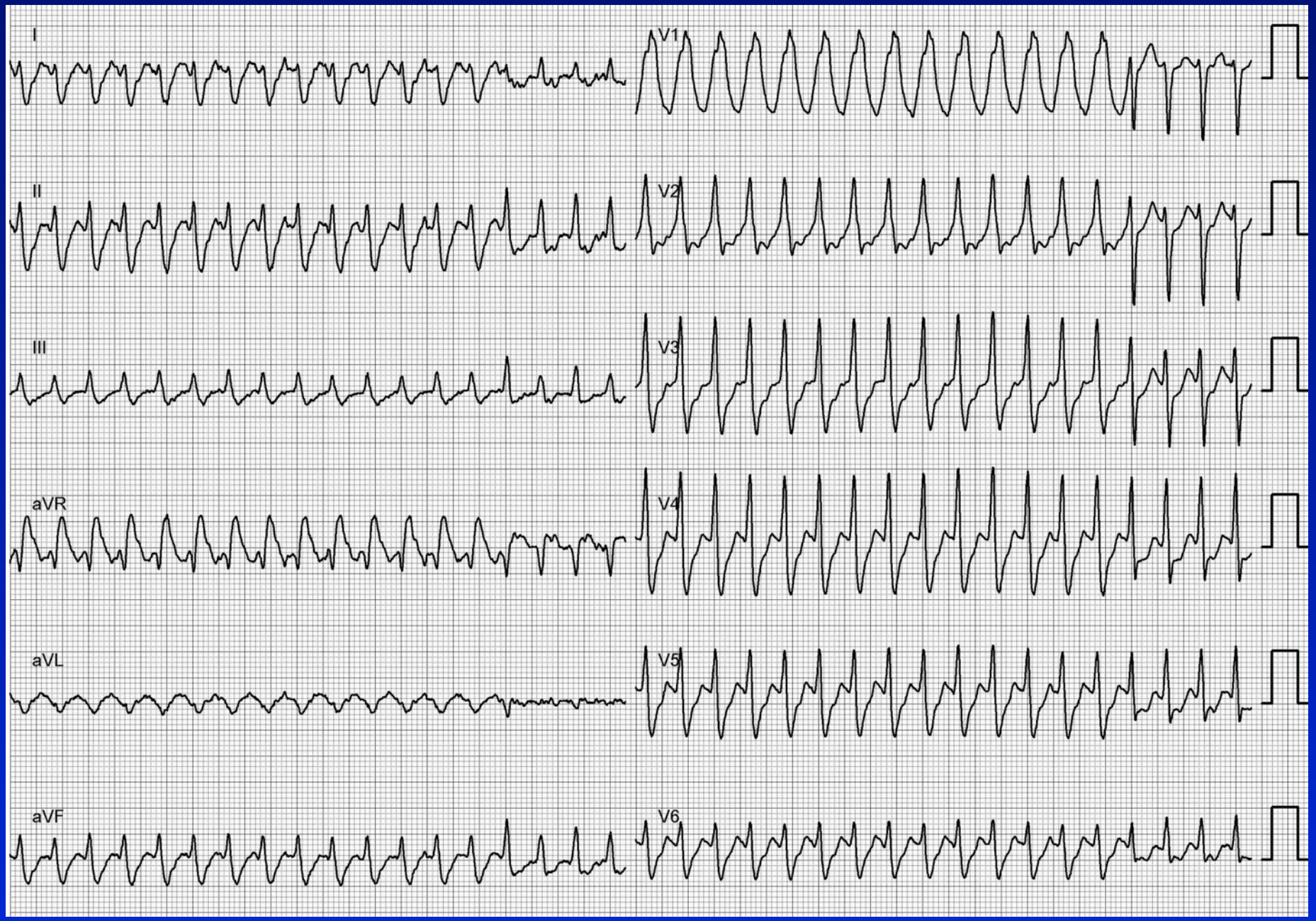
Flutter non comune

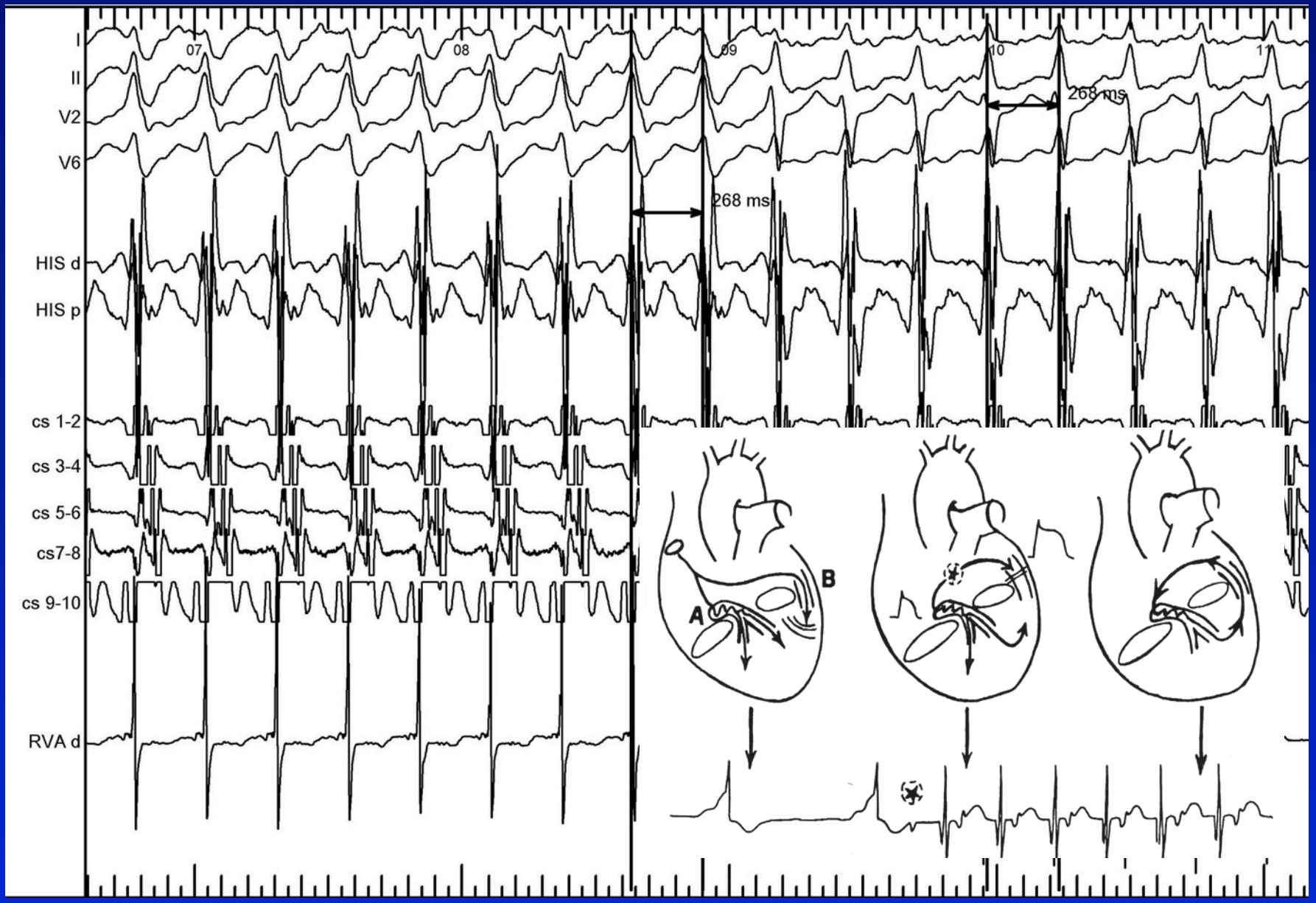




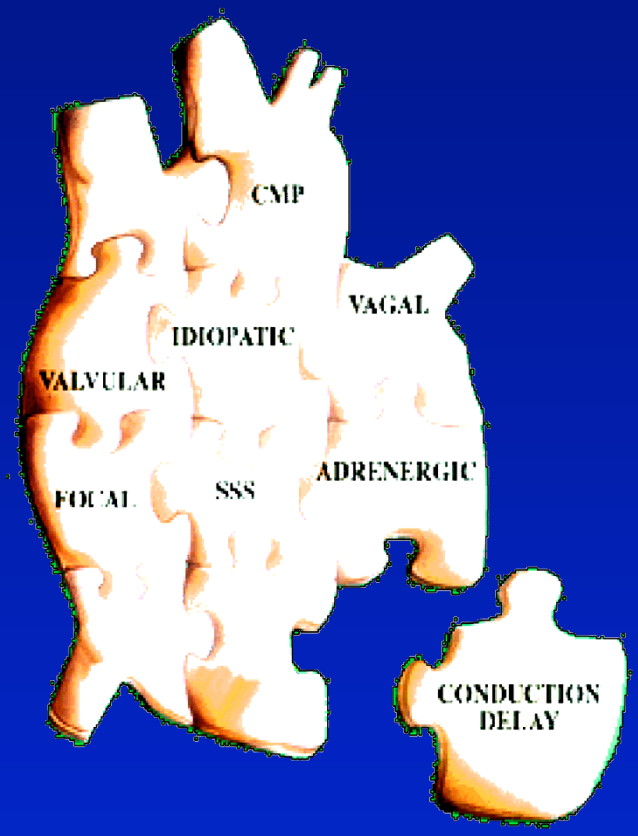

V1
I
II
aVF
V1
V6
III
cs1-2
cs3-4
aVR
ABL D
aVL
ABL P
aVF
20
21
22
23
24
25
26
sblocco
2.544 s
270 ms

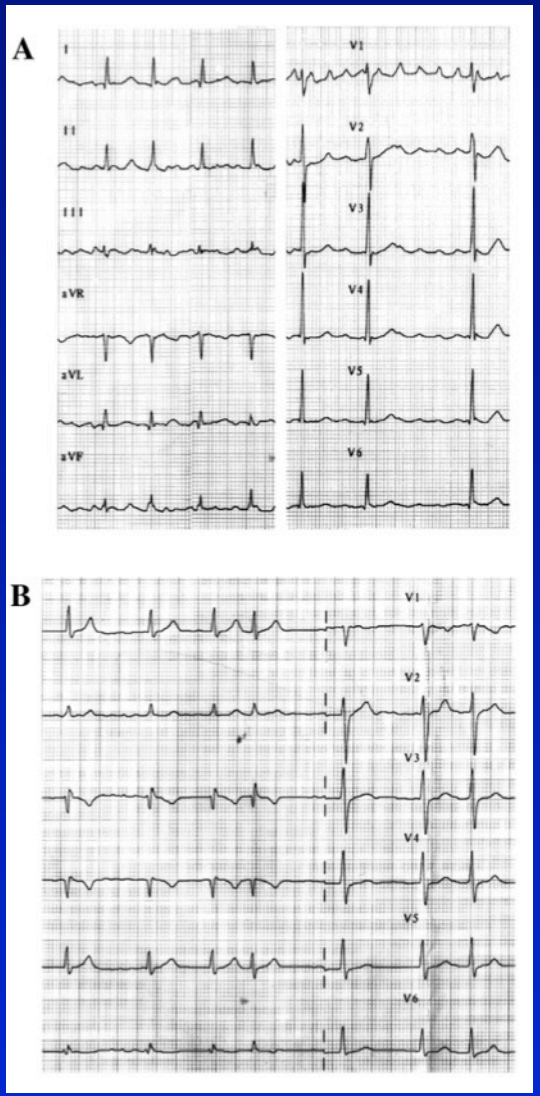

36
37
38
39
40
41
42
43
44
I
II
III
aVR
aVL
aVF
V1
V2
V3
V4
V5
V6
TA interrotta in RF


I
II
III
aVR
aVL
aVF
V1
V2
V3
V4
V5
V6

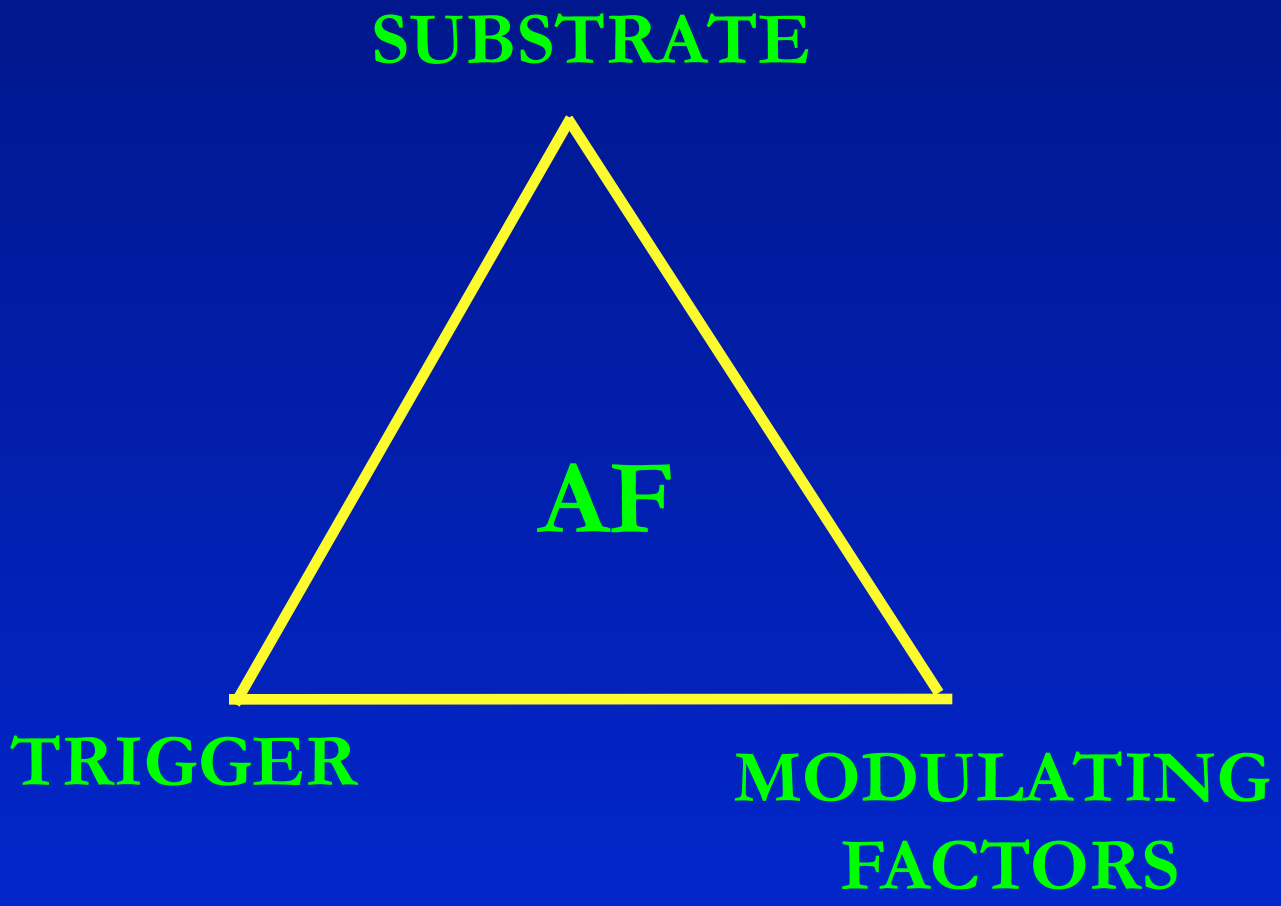

I
II
V2
V6
HIS d
HIS p
cs 1-2
cs 3-4
cs 5-6
cs7-8
cs 9-10
RVA d
07
08
09
10
1
268 ms
268 ms
A
B

FA = Eterogeneità





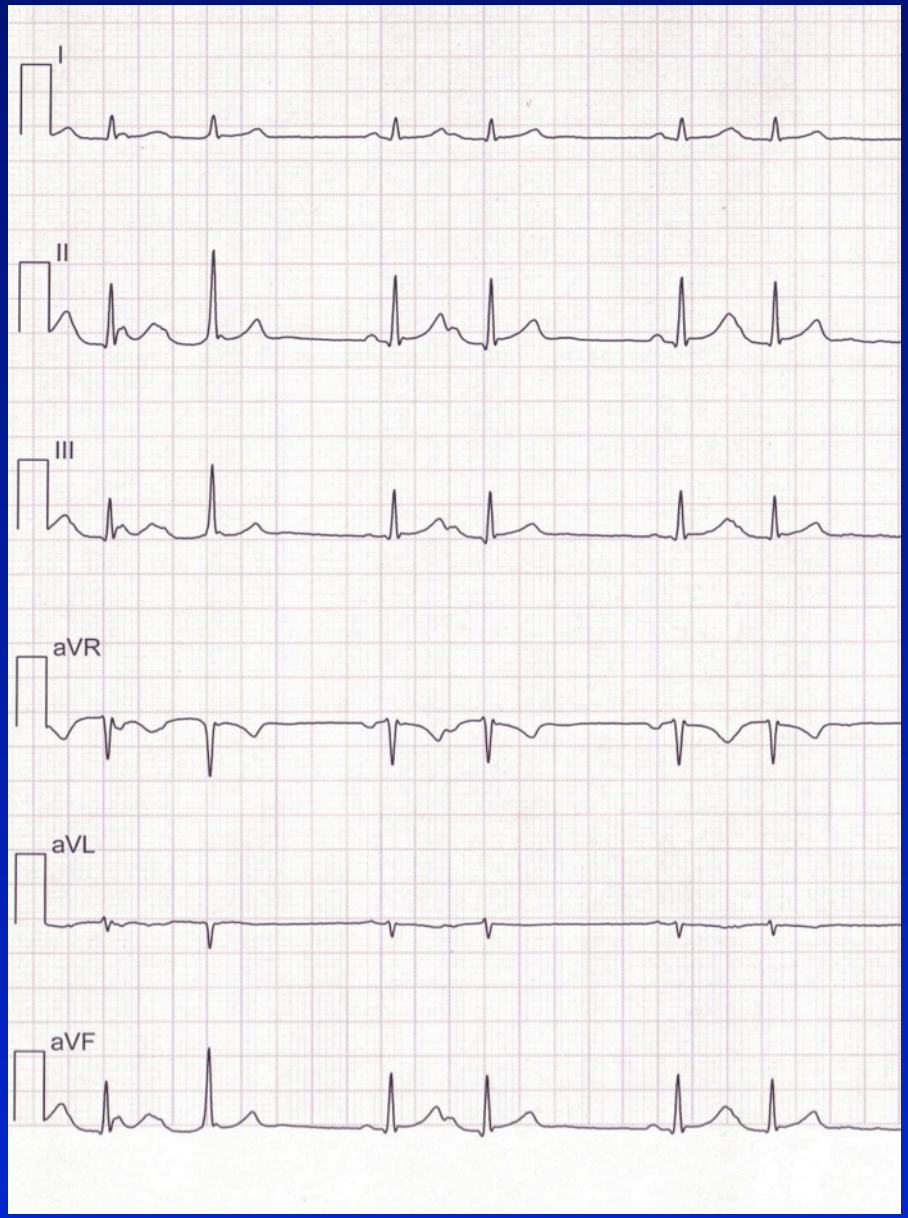
FA: il trangolo di Coumel

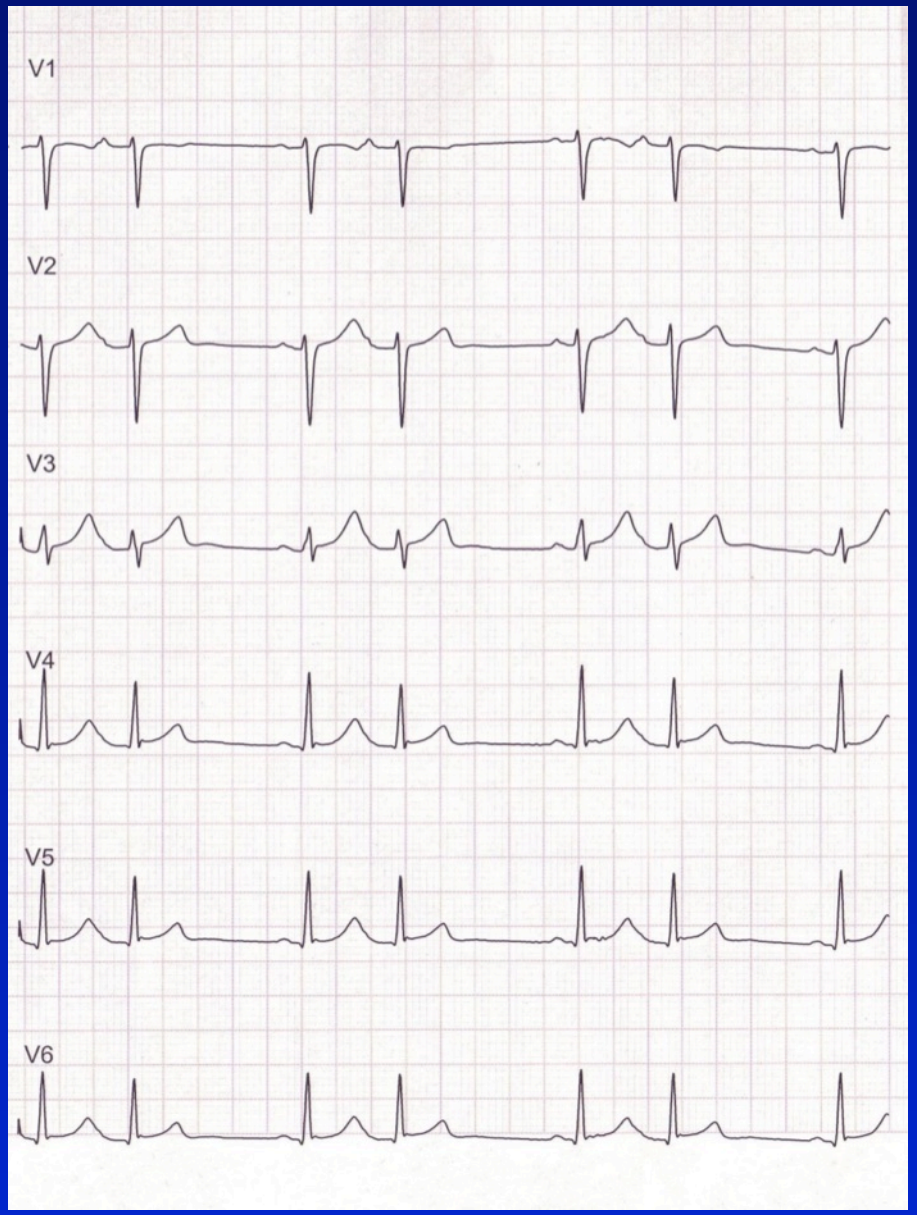


Prima la diagnosi (studio dell'avvrsario), poi la strategia (tattica) e poi la vittoria sul campo!

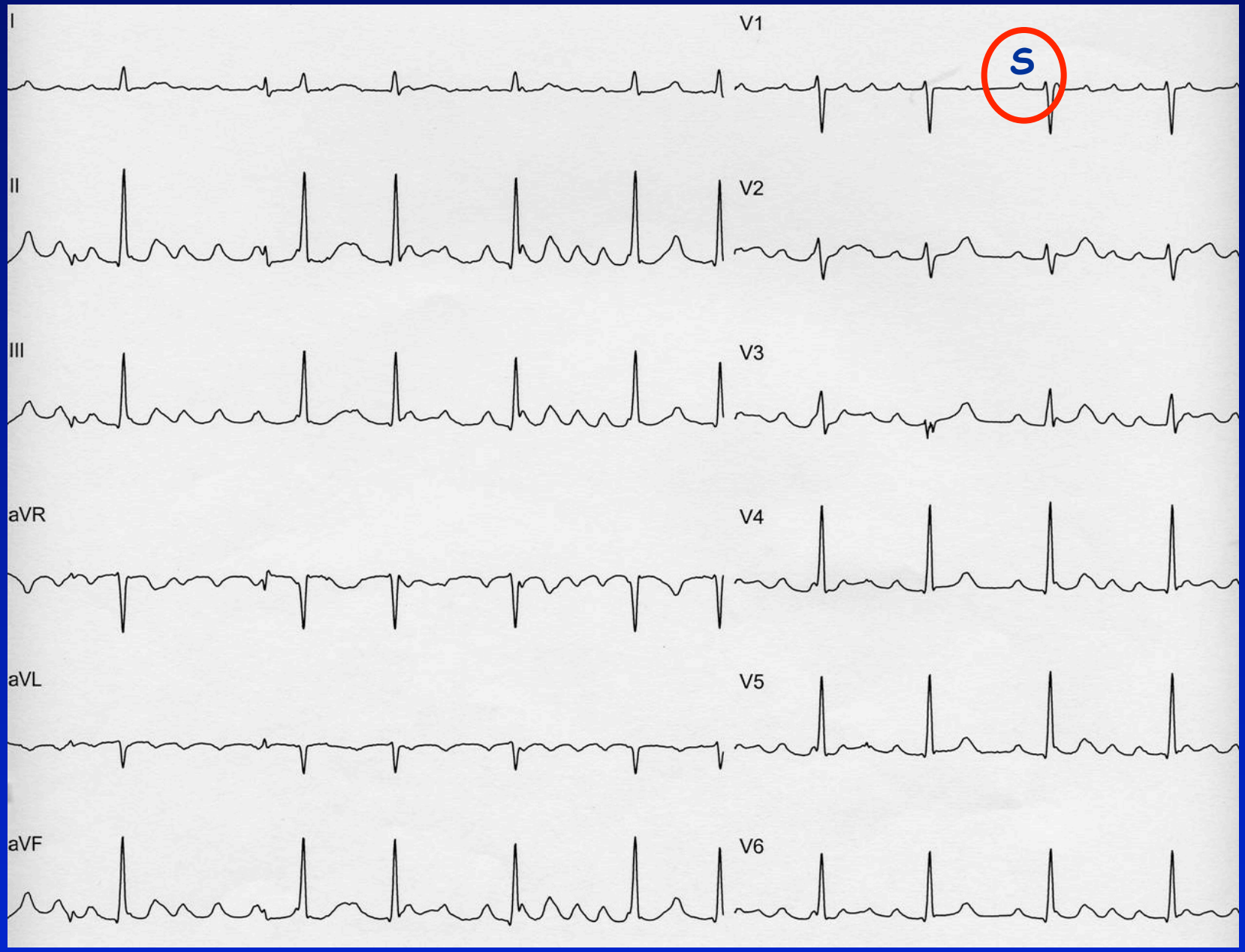
Fa: possibili triggers

- ✓ Focalità nelle vene polmonari
- ✓ Flutter atriale
- ✓ WPW
- ✓ Kent occulto
- ✓ Tachicardie da rientro nodale
- ✓ Tachicardie atriali

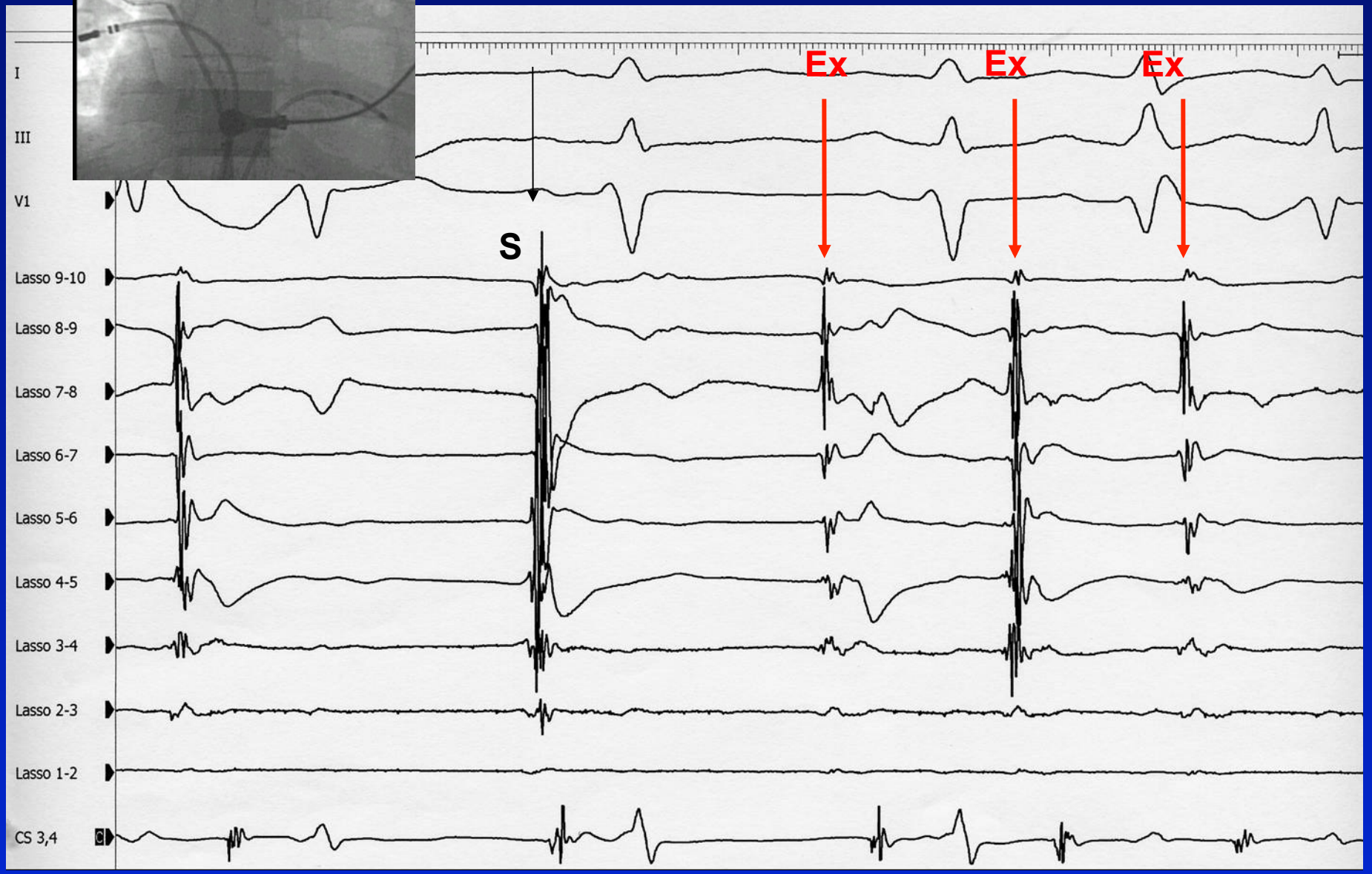




M.M. aa 26. Non cardiopatica
Focalità all'ECG

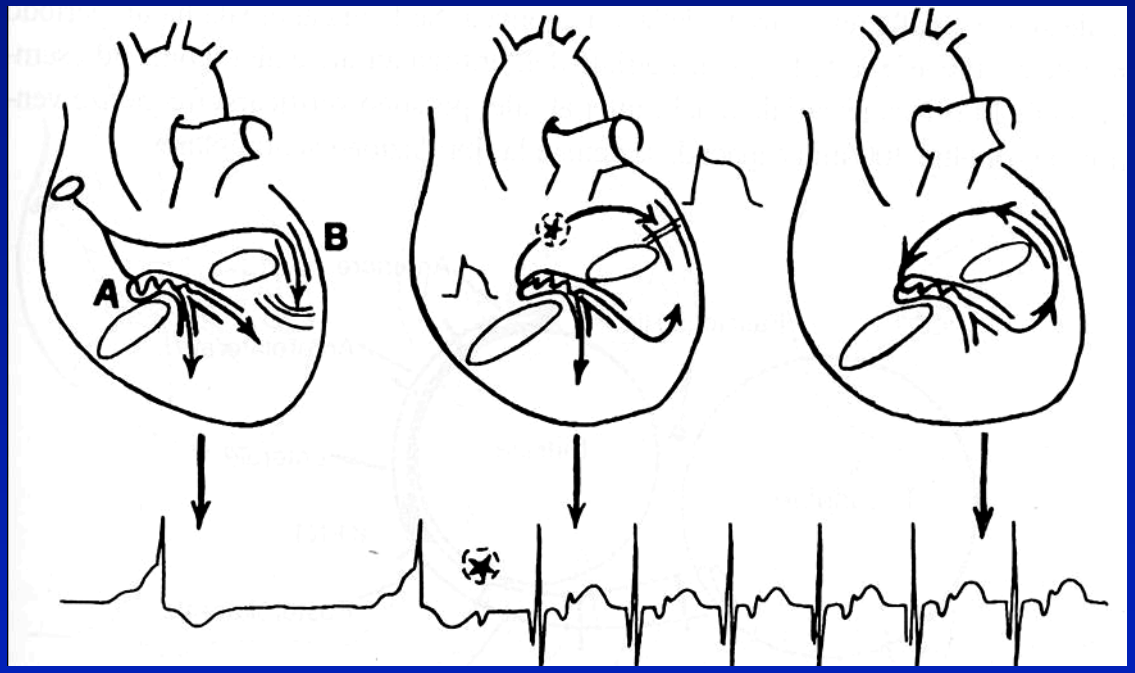


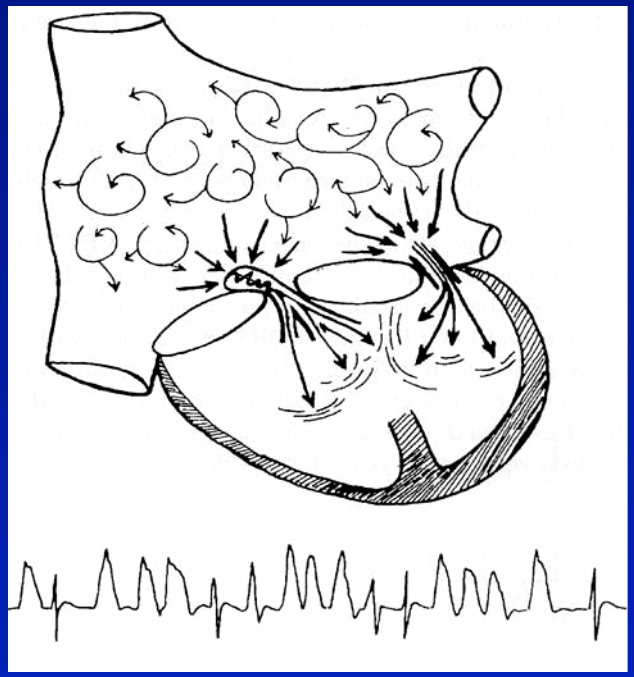
M.M. aa 26. Non cardiopatica
F.atriale focale



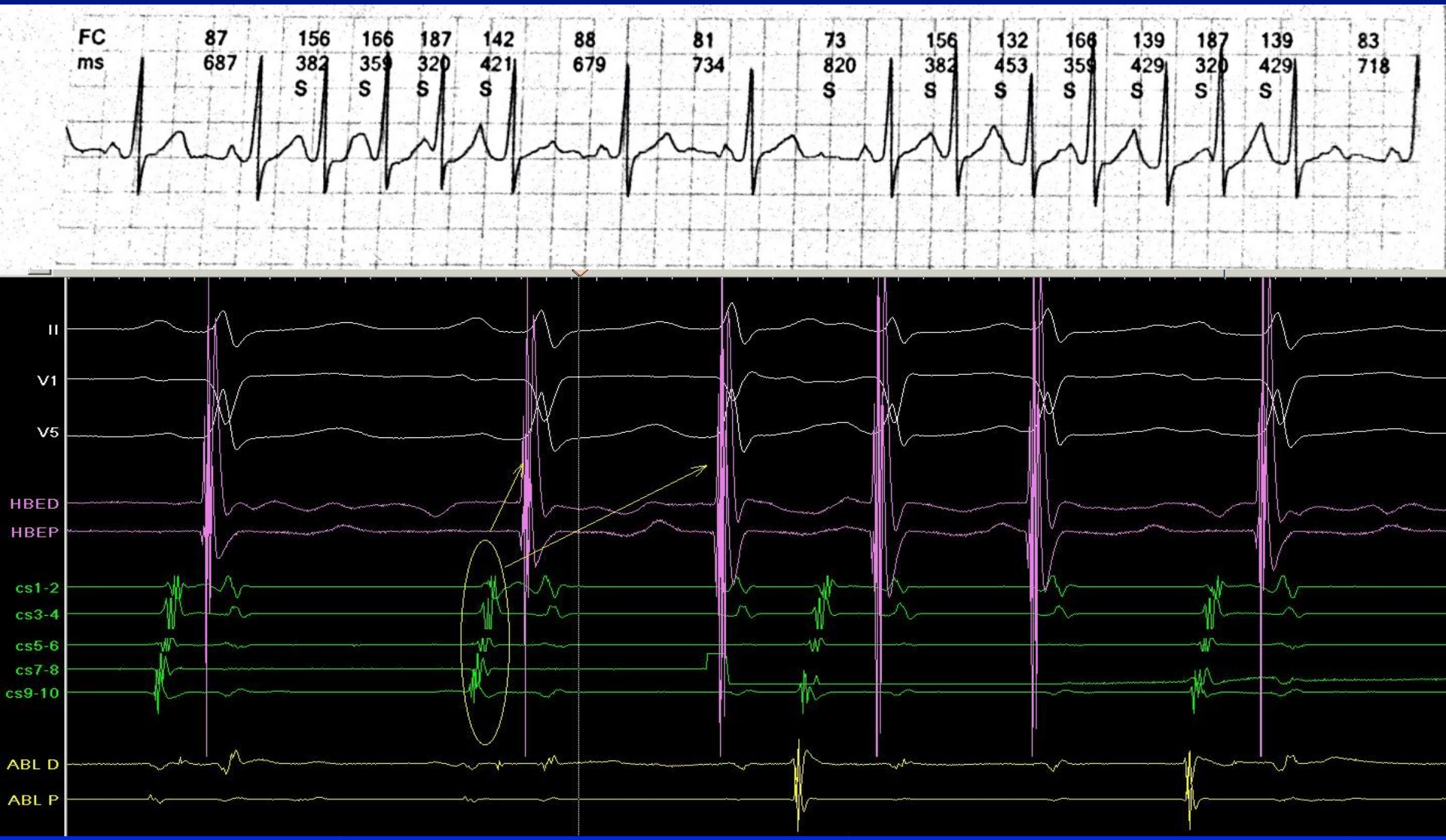
M.M. aa 26. F.atriale focale (vena polmonare superiore destra)

Sindrome di WPW





TRAV → F.A.


FC
ms
87
687
156
382
S
166
359
S
187
320
S
142
421
S
88
679
81
734
73
820
S
156
382
S
132
453
S
166
359
S
139
429
S
187
320
S
139
429
S
83
718
II
V1
V5
HBED
HBEP
cs1-2
cs3-4
cs5-6
cs7-8
cs9-10
ABL D
ABL P

Updated Worldwide Survey on the Methods, Efficacy, and Safety of Catheter Ablation for Human Atrial Fibrillation

Riccardo Cappato, MD; Hugh Calkins, MD; Shih-Ann Chen, MD; Wyn Davies, MD; Yoshito Iesaka, MD; Jonathan Kalman, MD; You-Ho Kim, MD; George Klein, MD; Andrea Natale, MD; Douglas Packer, MD; Allan Skanes, MD; Federico Ambrogi, PhD; Elia Biganzoli, PhD

Background—The purpose of this study was to provide an updated worldwide report on the methods, efficacy, and safety of catheter ablation of atrial fibrillation (AF).

Methods and Results—A questionnaire with 46 questions was sent to 521 centers from 24 countries in 4 continents. Complete interviews were collected from 182 centers, of which 85 reported to have performed 20 825 catheter ablation procedures on 16 309 patients with AF between 2003 and 2006. The median number of procedures per center was 245 (range, 2 to 2715). All centers included paroxysmal AF, 85.9% also included persistent and 47.1% also included long-lasting AF. Carto-guided left atrial circumferential ablation (48.2% of patients) and Lasso-guided ostial electric disconnection (27.4%) were the most commonly used techniques. Efficacy data were analyzed with centers representing the unit of analysis. Of 16 309 patients with full disclosure of outcome data, 10 488 (median, 70.0%; interquartile range, 57.7% to 75.4%) became asymptomatic without antiarrhythmic drugs and another 2047 (10.0%; 0.5% to 17.1%) became asymptomatic in the presence of previously ineffective antiarrhythmic drugs over 18 (range, 3 to 24) months of follow-up. Success rates free of antiarrhythmic drugs and overall success rates were significantly larger in 9590 patients with paroxysmal AF (74.9% and 83.2%) than in 2800 patients with persistent AF (64.8% and 75.0%) and 1108 patients with long-lasting AF (63.1% and 72.3%) ($P<0.0001$). Major complications were reported in 741 patients (4.5%).

Conclusions—When analyzed in a large number of electrophysiology laboratories worldwide, catheter ablation of AF shows to be effective in ≈80% of patients after 1.3 procedures per patient, with ≈70% of them not requiring further antiarrhythmic drugs during intermediate follow-up. (***Circ Arrhythm Electrophysiol.* 2010;3:32-38.**)

Fattori che influenzano Il rate di complicanze

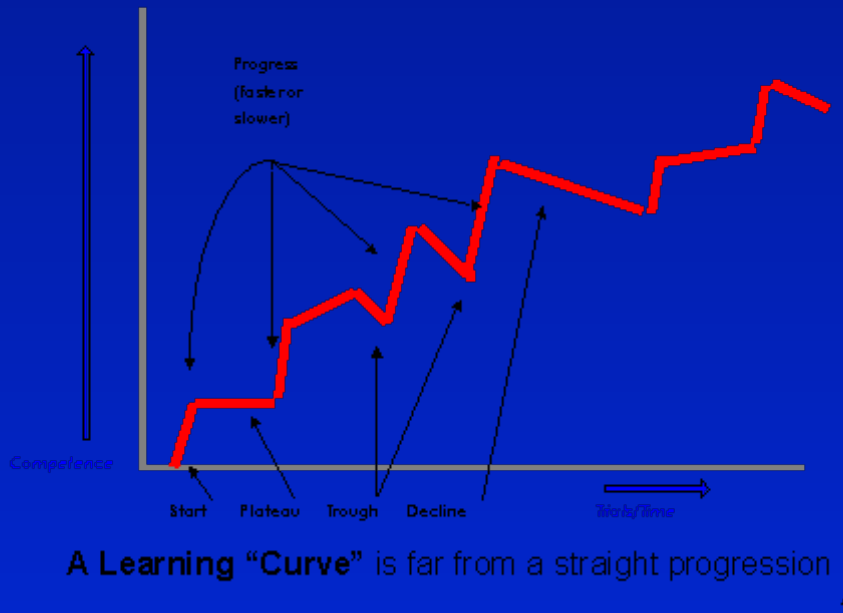
Operatore dipendente

Esperienza

Conoscenza materiali

Conoscenza procedura

Preparazione del paziente



Fattori che influenzano Il rate di complicanze

Paziente dipendente

Scompenso
Anatomia
Tipo di procedura
Collaborazione

Fattori che influenzano Il rate di complicanze

Struttura dipendente

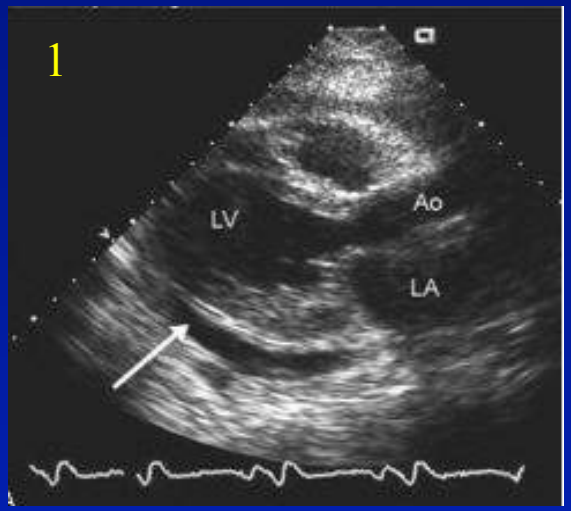
Centro basso volume
Gare regionali
Quality vs quantity

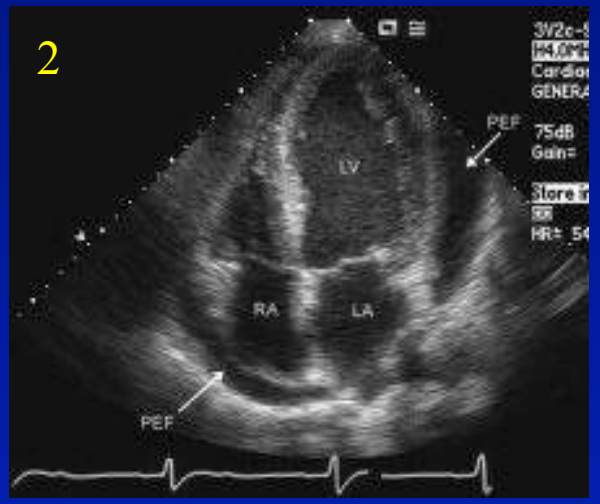
Complicanze nelle procedure interventistiche: Il tamponamento cardiaco

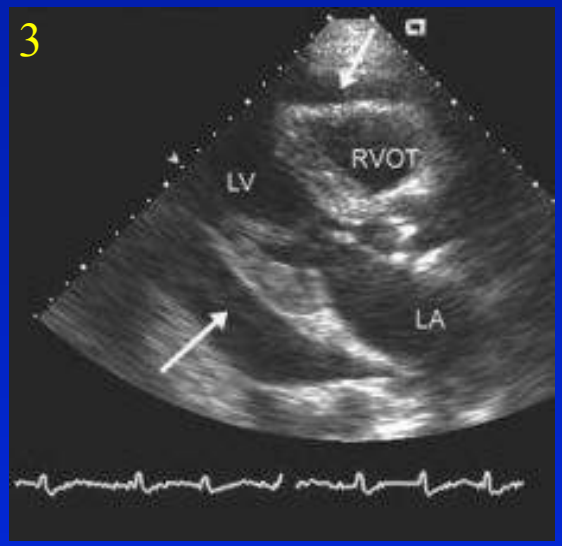
Effusioni

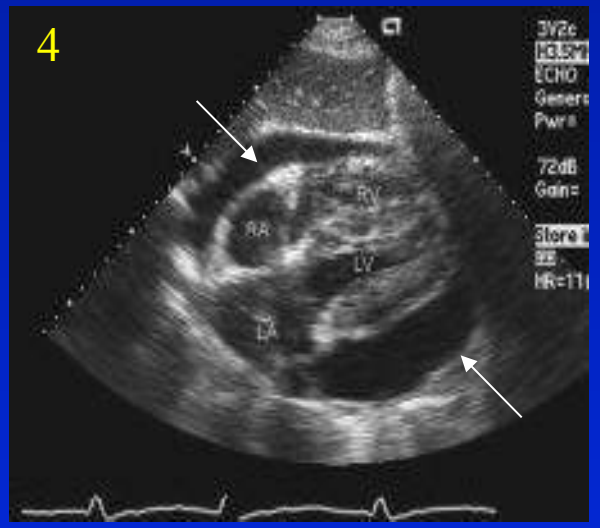
Versamento pericardico

Tamponamento cardiaco









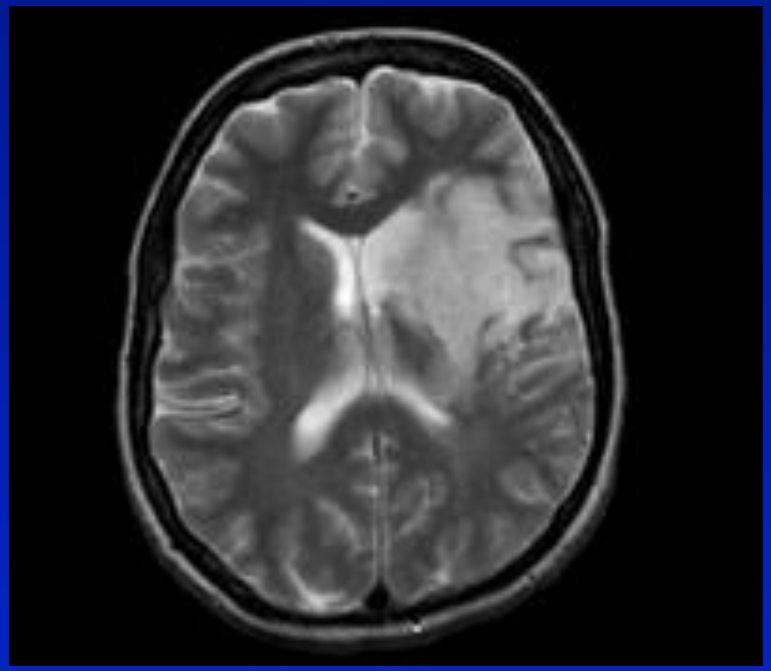
STROKE/ICTUS

Complica circa 1 % delle procedure a sinstra, in particolare per via transettale
0.25% c.a. Stroke
0.71 % TIA

Prevalentemente origine ischemica – embolia gassosa o tromboembolia

Raramente sottoforma massiva emorragica

Fattori predisponenti età > 70 aa
Pregressi eventi ischemici cerebrali
Disordini della coagulazione



Early heparinization decreases the incidence of left atrial thrombi

When patients received heparin therapy either preTS1 or TS1–TS2, there was a significant decrease in the occurrence of ICE-detected left atrial thrombus compared with those who received heparin postTS2

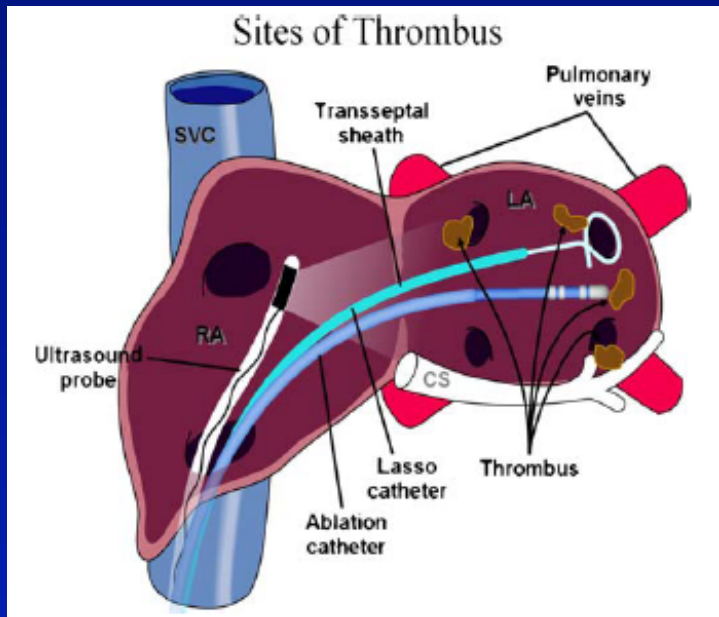


Fig. 4 The ultrasound probe placed in the right atrium in the region of the interatrial septum was used to visualize thrombus. Thrombus was detected at various locations including on the transseptal sheath–Lasso catheter, ablation catheter, or in the left atrium (see text for details)

Conclusions

Early administration of intravenous heparin, specifically before transseptal puncture, decreases the incidence of left atrial thrombi.

Bruce et al. J Interv Card Electrophysiol (2008) 22:211–219

TIA/Stroke

Precoce esecuzione di TAC encefalo con mezzo di contrasto,
Eventualmente non praticare rimozione di almeno una linea di accesso venoso o di una linea di monitoraggio arterioso
Monitorizzare la respirazione ed in caso di interessamento bulbare o mesopontino valutare intubazione per prevenire ab-ingestis.
In caso di stroke emorragico rivalutare costantemente il paziente per disturbi della deglutizione

Somministrare protamina solo dopo TAC – se vi è certezza dell'origine embolica praticare aspirina e valutare ACT.

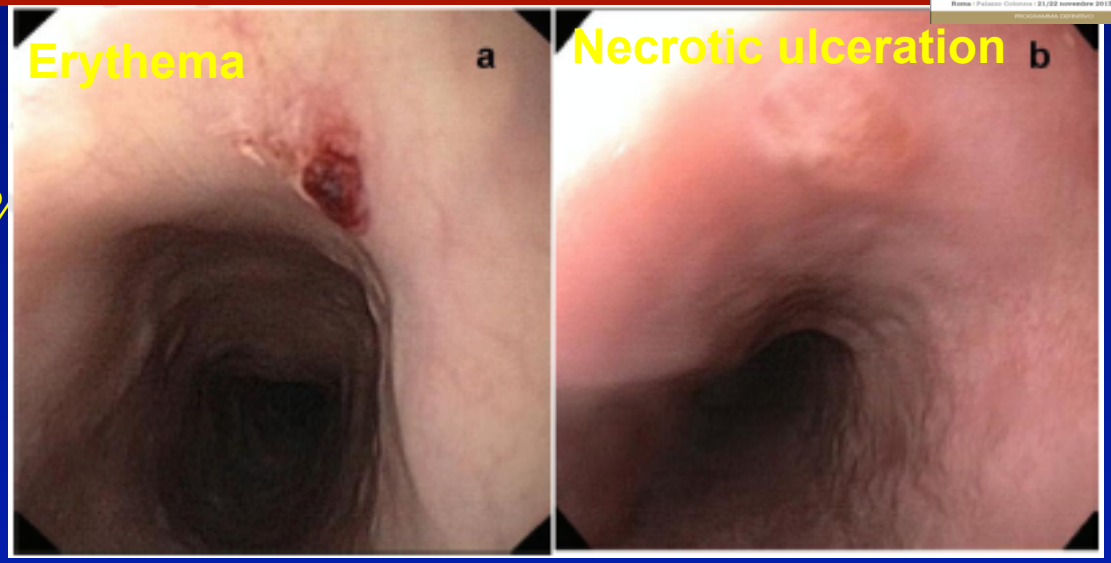
Esophagus-Related Complications

Atrio-Esophageal Fistula

Incidence: 0.03%-1%

Peri-Esophageal Nerve Injury: 1.1%

Mortalità 75%



Due principali meccanismi

Danno termico

Necrosi tissutale

TRISTRAM D. et al. PACE 2009; 32:248–260)

*La presenza di Ulcere esofagee (ritenuto il precursore della fistola) è riportato fino al **48%** dei pazienti trattati con ATC*

Di Biase et al. Circuation Arrhythmia and Electrophysiology 2, 108-112

Esophagus-Related Complications

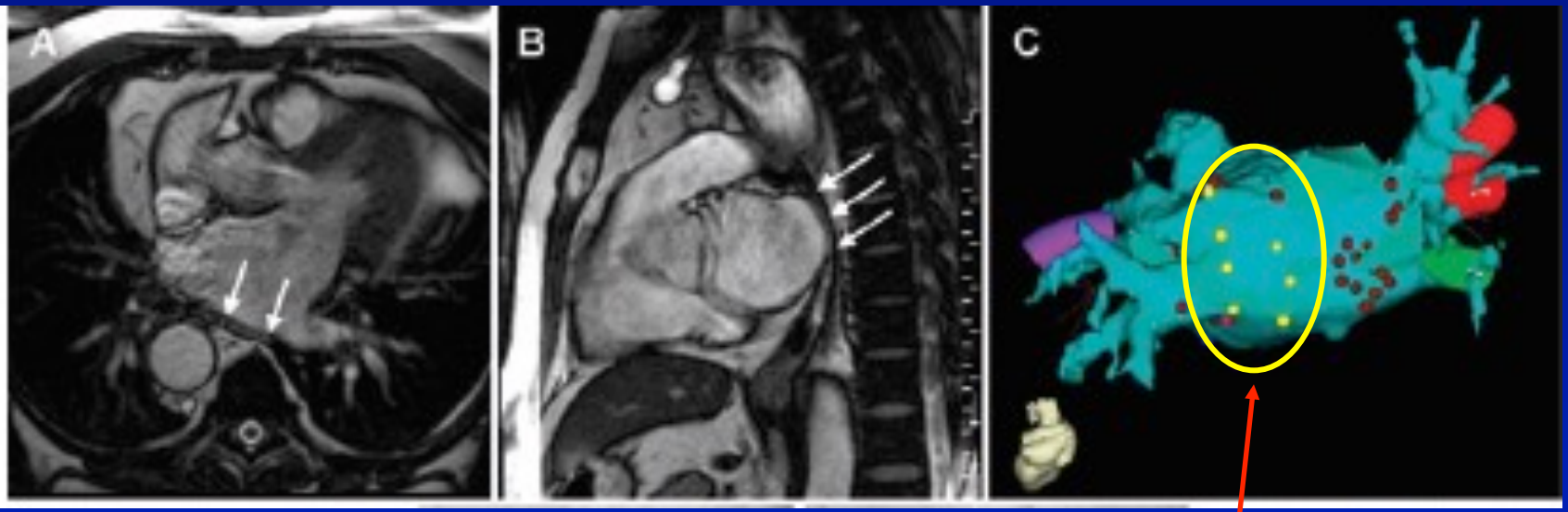
Atrio-Esophageal Fistula

Metodi per visualizzare l'esofago

extra	intraprocedural
CT	Barium
MRI	ICE
Barium	TEE sonda
	3 D mapping
	termistore

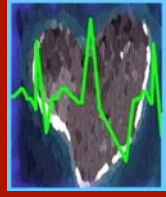
Atrio-Esophageal Fistula

Methods to identify anatomical relationship between esophagus and atrium (MRI, CARTO Merge)



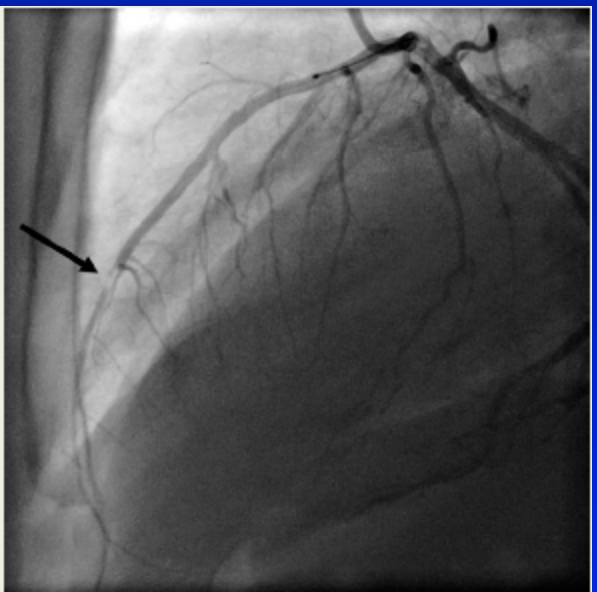
The left and rightward margins of the esophagus are tagged in yellow

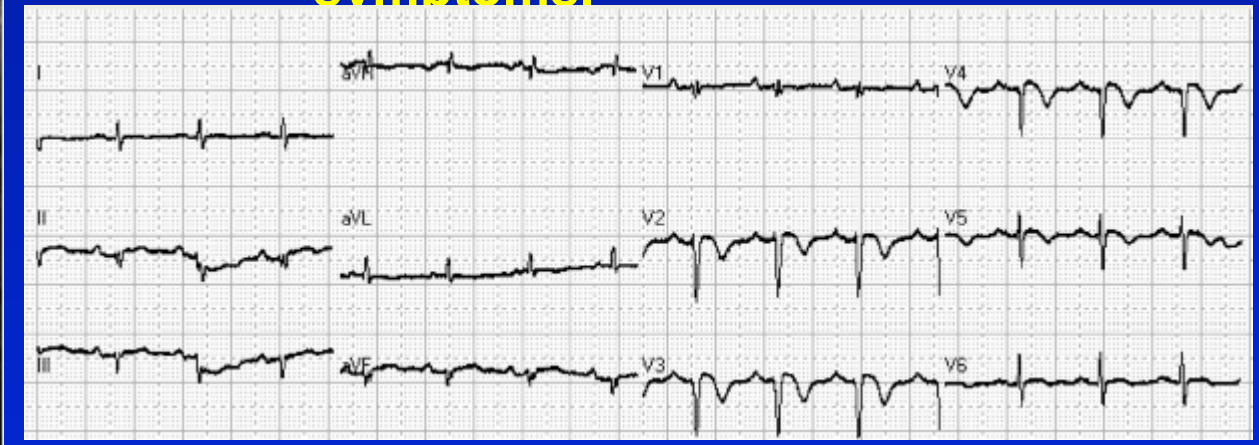
Coronary occlusion during Afib ablation



Causes

Trombus formed at level of RF application on left atrium thrombi either formed in the long sheats or were shed from the catheters, when they were removed.
Irrigated catheter flow too low.
In several cases coronary occlusion is characterized by ECG modification in absence of angina or other symptoms.

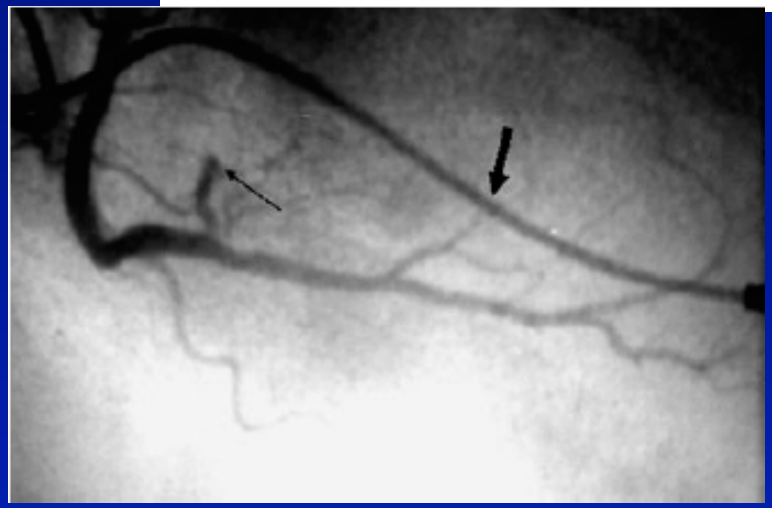


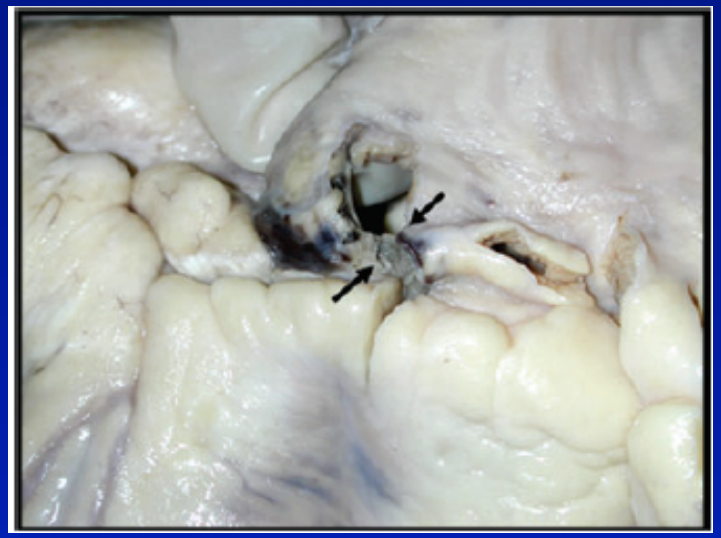


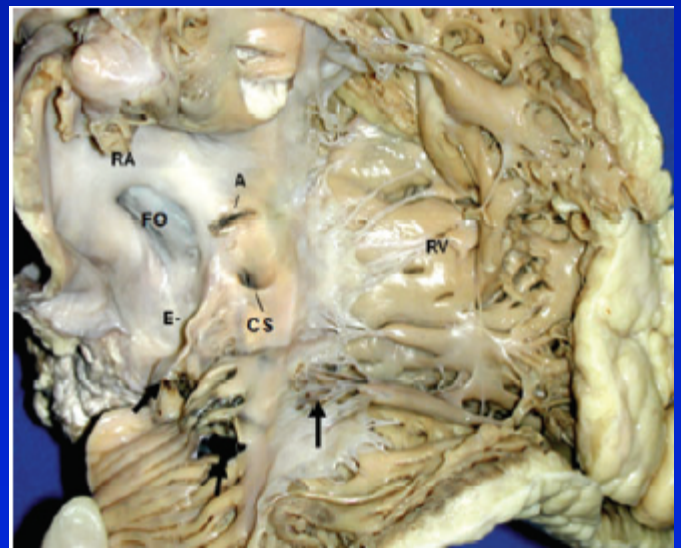
Christian Sticherling*, Europace 2008

Right Coronary Artery Occlusion During RF Ablation of Typical Atrial Flutter

ANDREW MYKYTSEY, M.D.,* RICHARD KEHOE, M.D.,‡ SAROJA BHARATI, M.D.†,§
PRADEEP MAHESHWARI, M.D.,‡ SEAN HALLERAN, M.D.,* KOUSIK KRISHNAN, M.D.,*
MANSOUR RAZMINIA, M.D.,‡ ADEL MINA, M.D.,† and RICHARD G. TROHMAN, M.D.*







- Septal or lateral RF delivery may increase the risk.
- A 6.00 o clock approach between the IVC and the TA seems most prudent.

Mykytsei, et al.JCE 2010