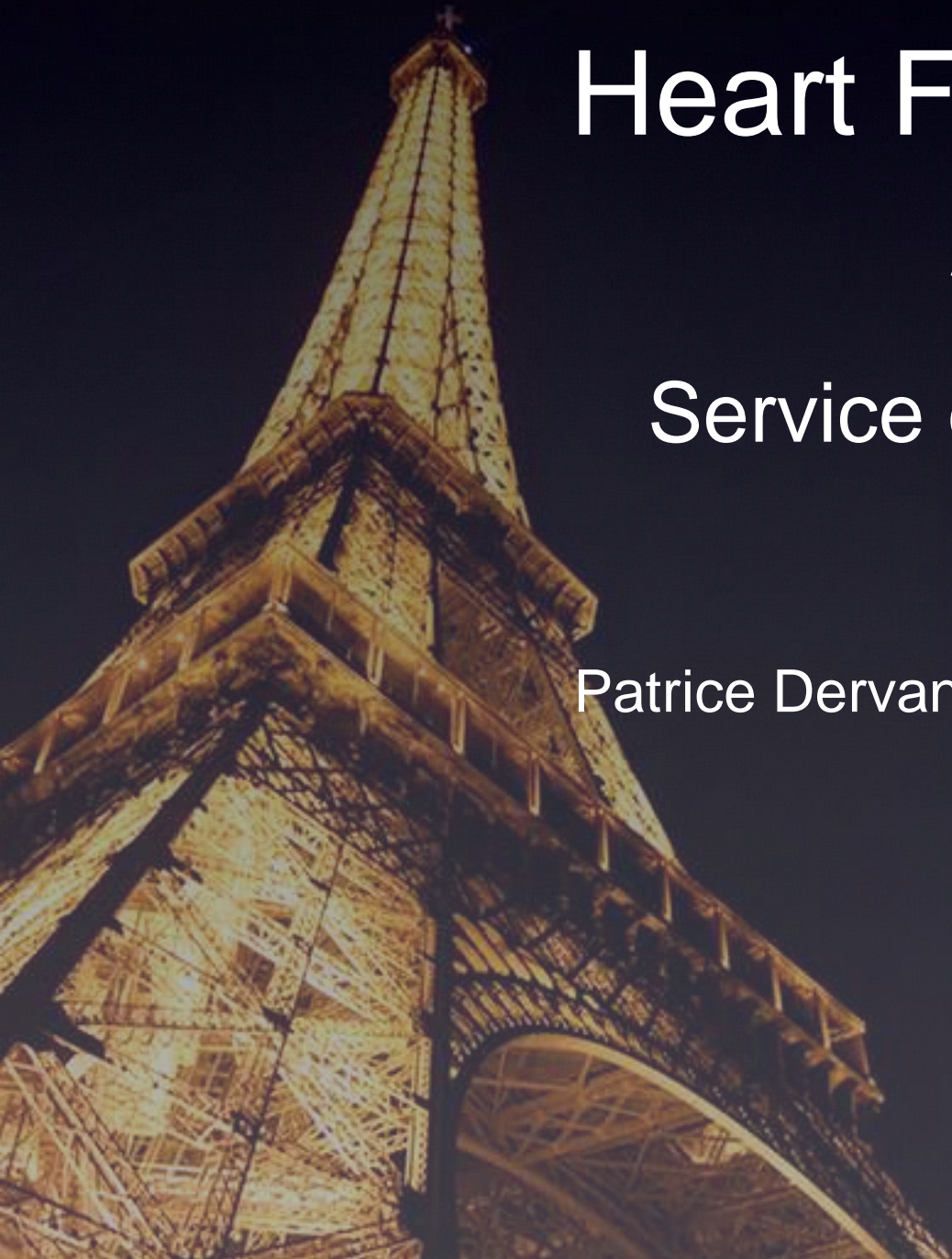


March 2-3

9<sup>th</sup> Congress Edition

Novotel PARIS Tour Eiffel



# Heart Failure and Surgical AF Ablation

Service de Pathologie Cardiaque

Konstantinos Zannis

Patrice Dervanian, Emmanuel Lansac, Suzana Salvi

Mathieu Debauchez



L'INSTITUT  
MUTUALISTE  
MONTSOURIS



## **Disclosure**

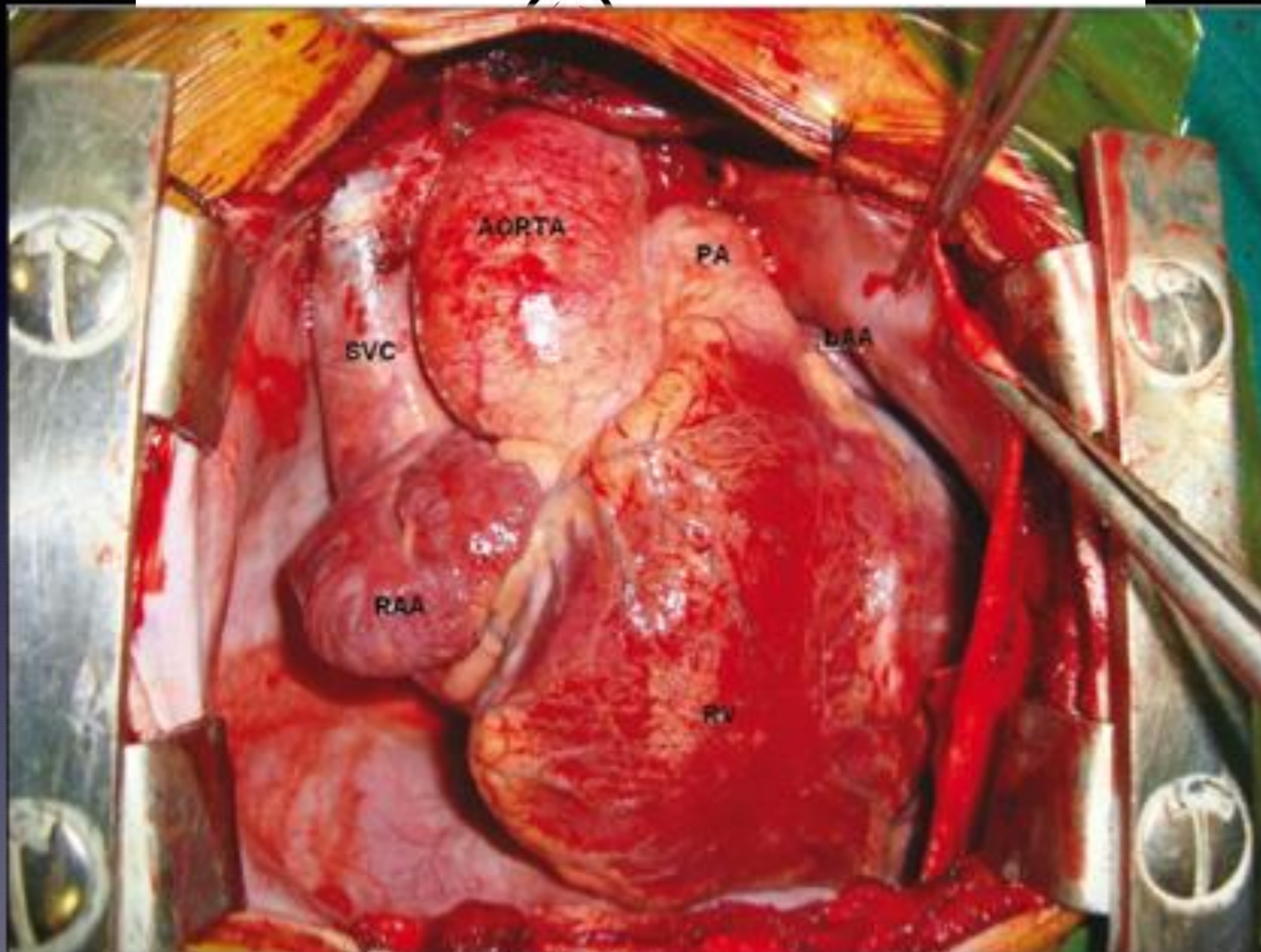
Konstantinos Zannis

I have the following potential conflicts of interest to report:

**NONE**





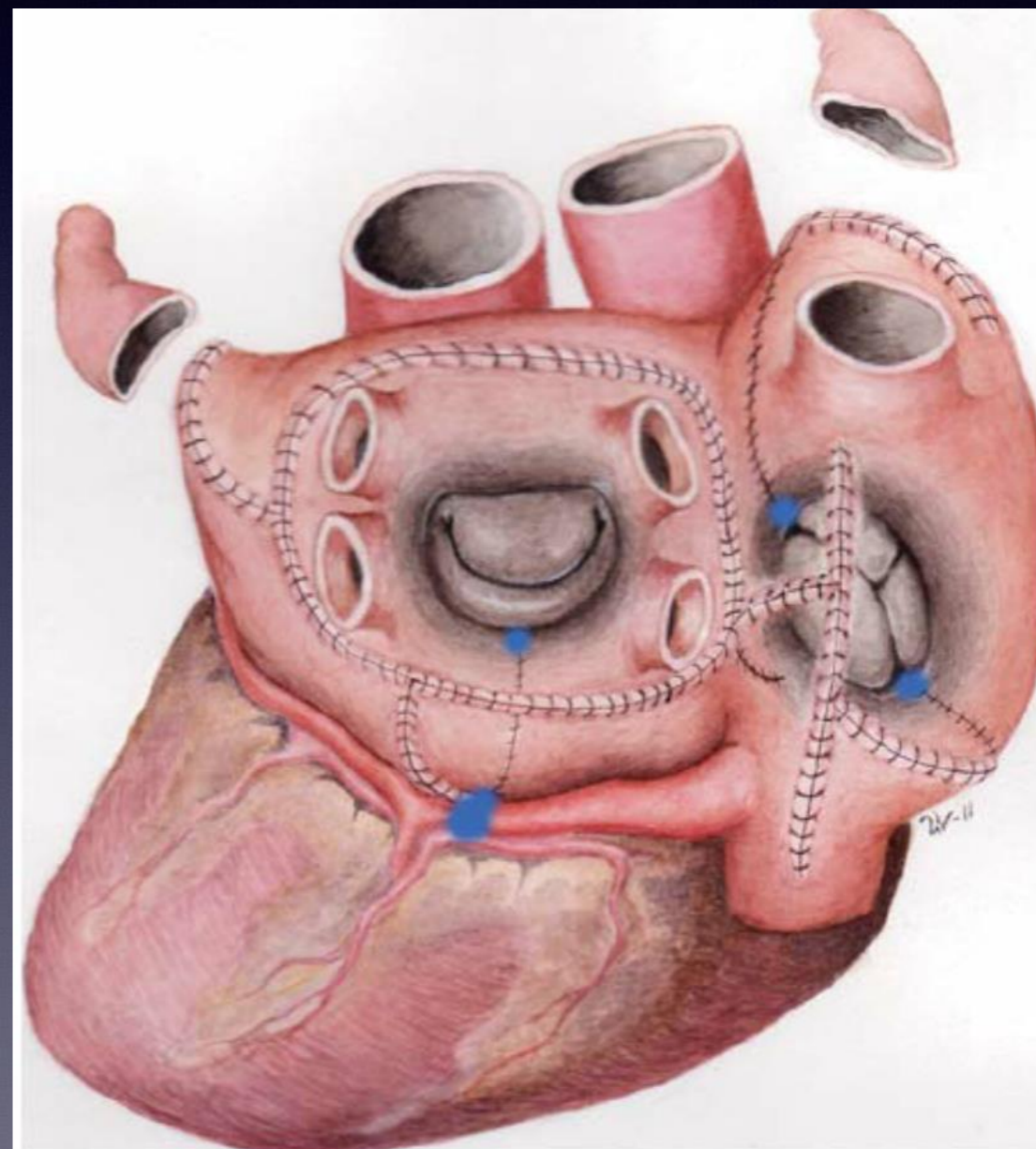




# Surgery!

- Is there a place for lone AF surgery?
- The « philosophical approach » and special characteristics of « surgical » patients.
- Results







	Lone Maze procedure	Concomitant maze procedure	<i>P</i> value		Lone maze procedure	Concomitant maze procedure	<i>P</i> value
Age (y)	51.3 ± 10.5	58.8 ± 9.9	<.001	Reoperations for bleeding	3/112, 2.7%	6/86, 7.0%	.18
Sex (M:F)	90:22	53:33	.003	Renal failure	2/112, 1.8%	1/86, 1.2%	.99
PAF:PTAF	72:40	45:41	.08	Intra-aortic balloon pump	4/112, 3.8%	3/86, 3.5%	.99
Pump time (min)	162 ± 35	201 ± 42	<.001	Mediastinitis	1/112, 0.9%	1/86, 1.2%	.99
Crossclamp time (min)	93 ± 34	122 ± 37	<.001	Stroke	2/112, 1.8%	1/86, 1.2%	.99
Mortality	2/112, 1.8%	1/86, 1.2%	.99	Postoperative pacemaker	9/112, 8.0%	20/86, 23.3%	.004
Median ICU stay (d)	2	3	.007				
Median LOS (d)	9	12	.01				

*PAF*, Paroxysmal atrial fibrillation; *PTAF*, persistent atrial fibrillation; *LOS*, length of stay.

- Atrial fibrillation (AF) is the most frequent cardiac arrhythmia, concerning about 800 000 patients in France
- Prevalence and incidence of AF increase with age
- AF cost in France is about 3200 euros per year per patient
- Isolation strategies are an excellent solution for paroxysmal AF  
BUT
- 5-year arrhythmia free survival after a single procedure for long standing persistent AF cath. abl. = 29%



7:30

Patient 48 aa

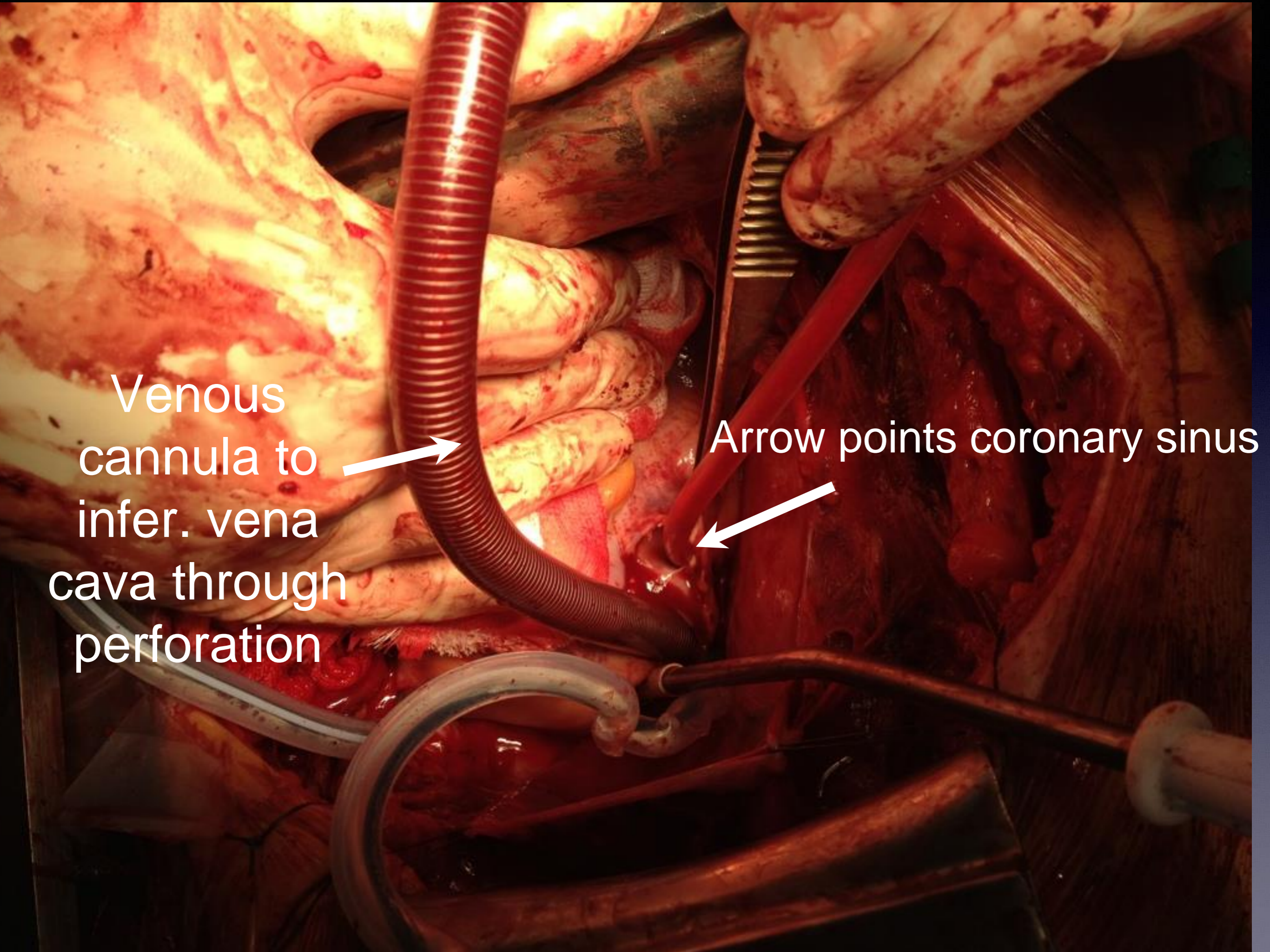
Shock 150 J

INR=3, 86

Tamponade

They Forgot to add Two months after his 5th ablation

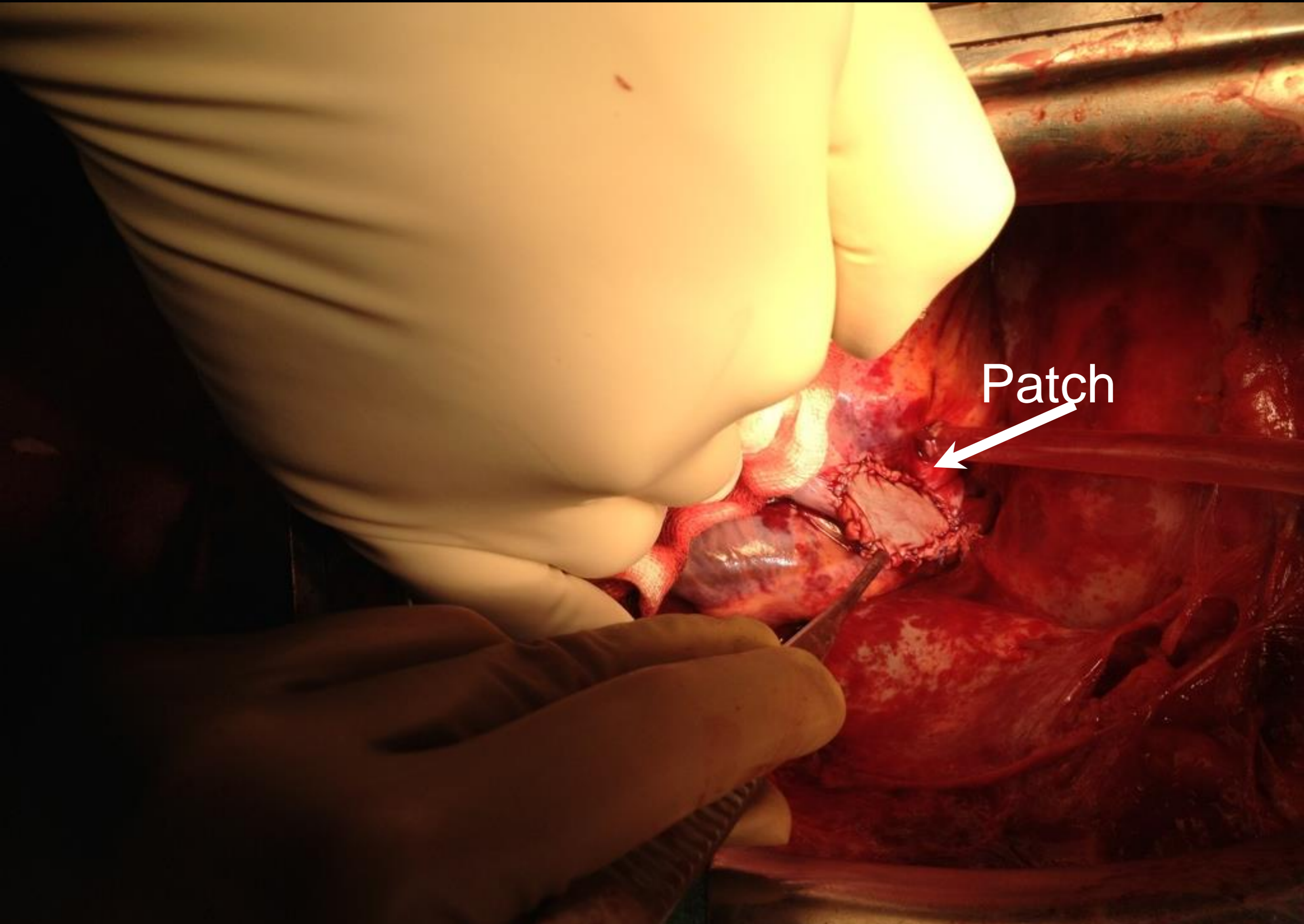




Venous  
cannula to  
infer. vena  
cava through  
perforation

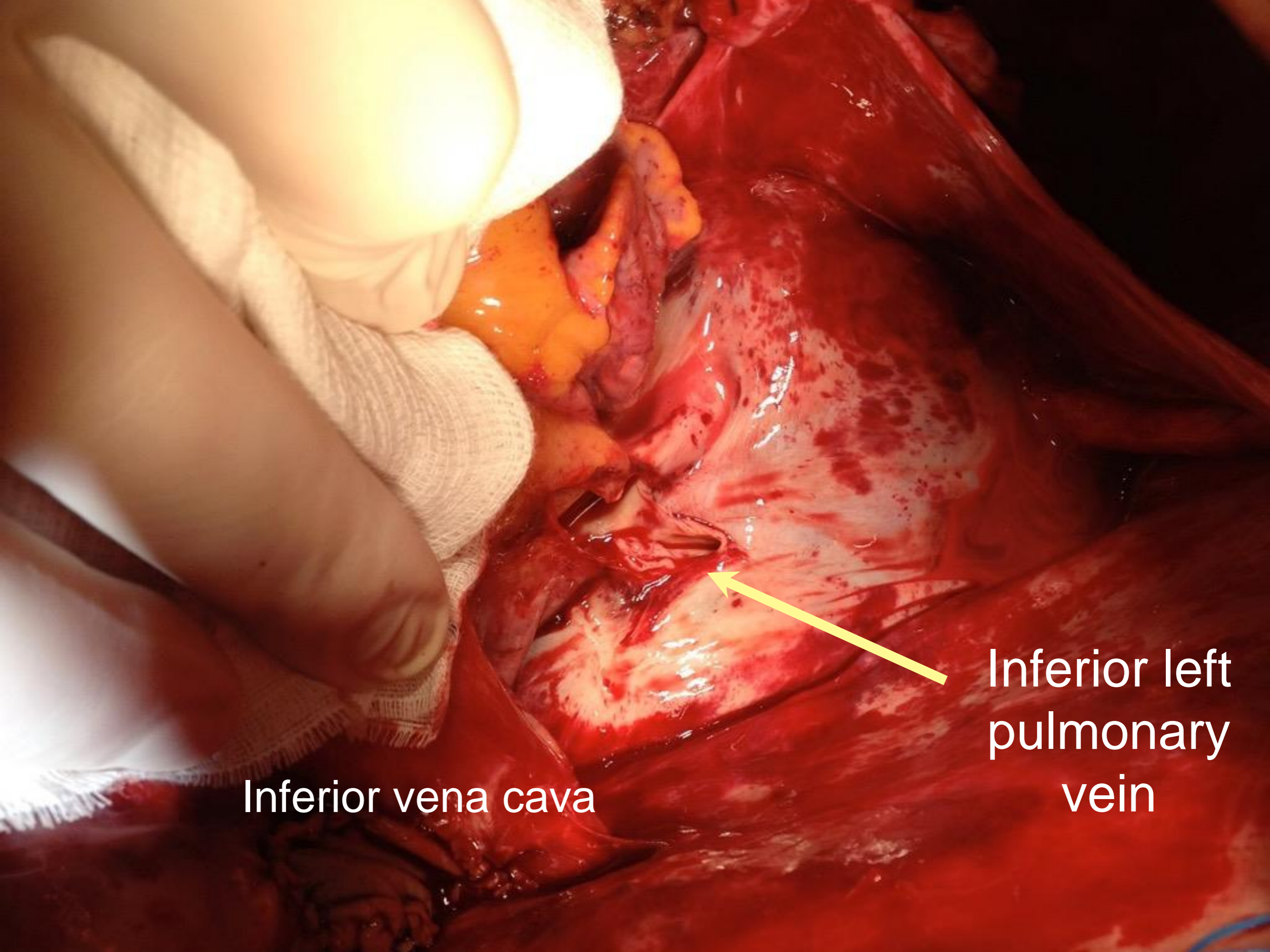
Arrow points coronary sinus





Patch





Inferior vena cava

Inferior left  
pulmonary  
vein

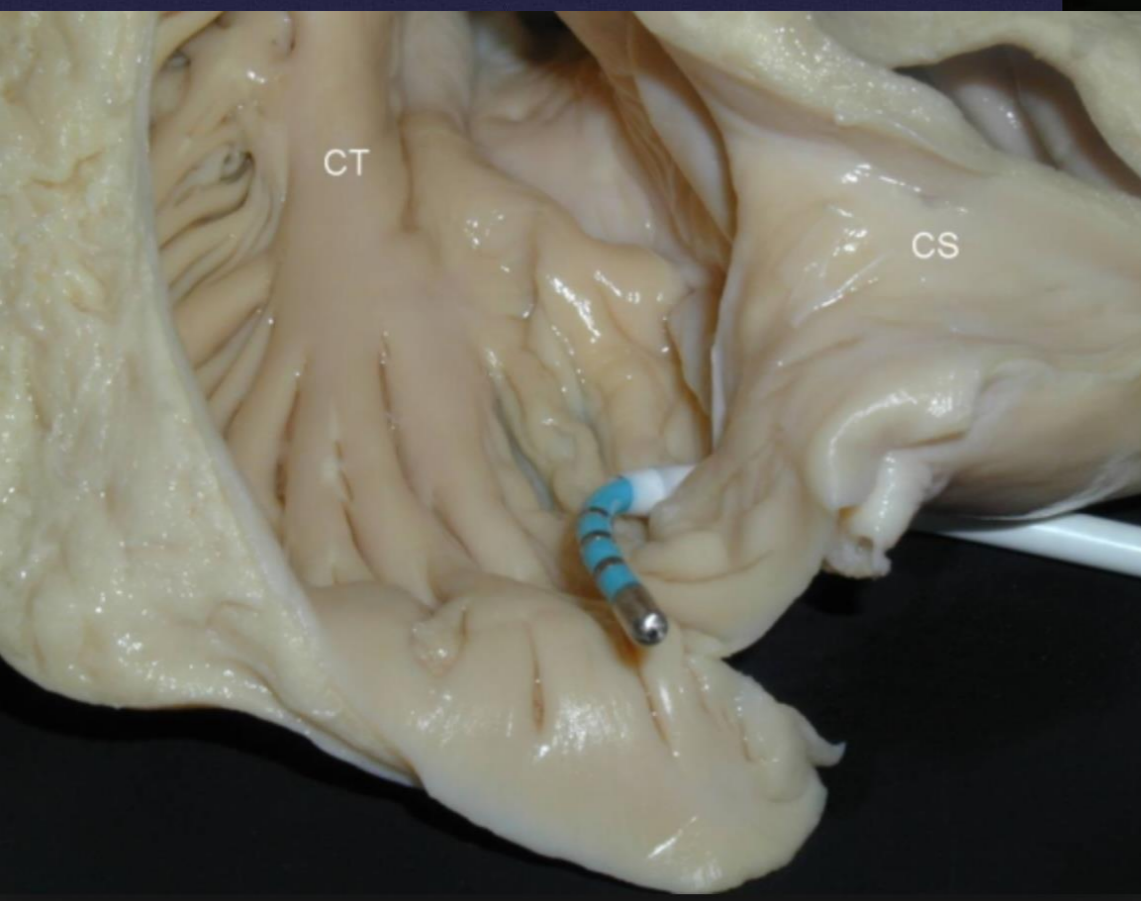
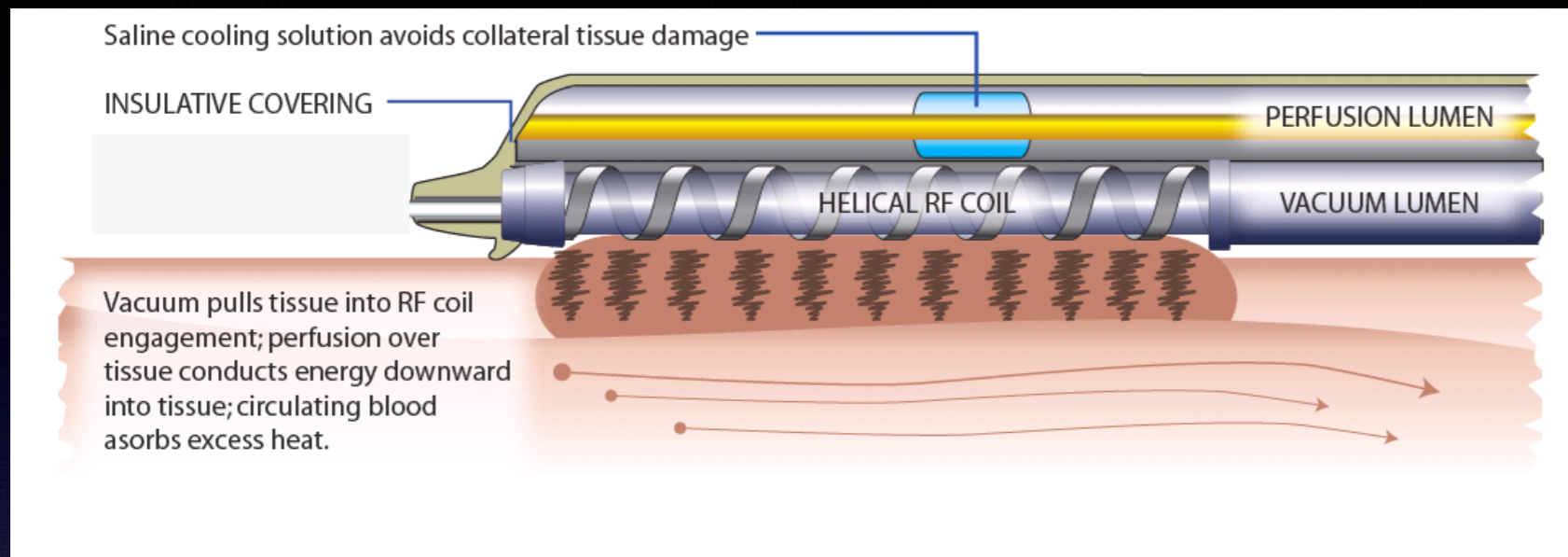




What if we combine forces?







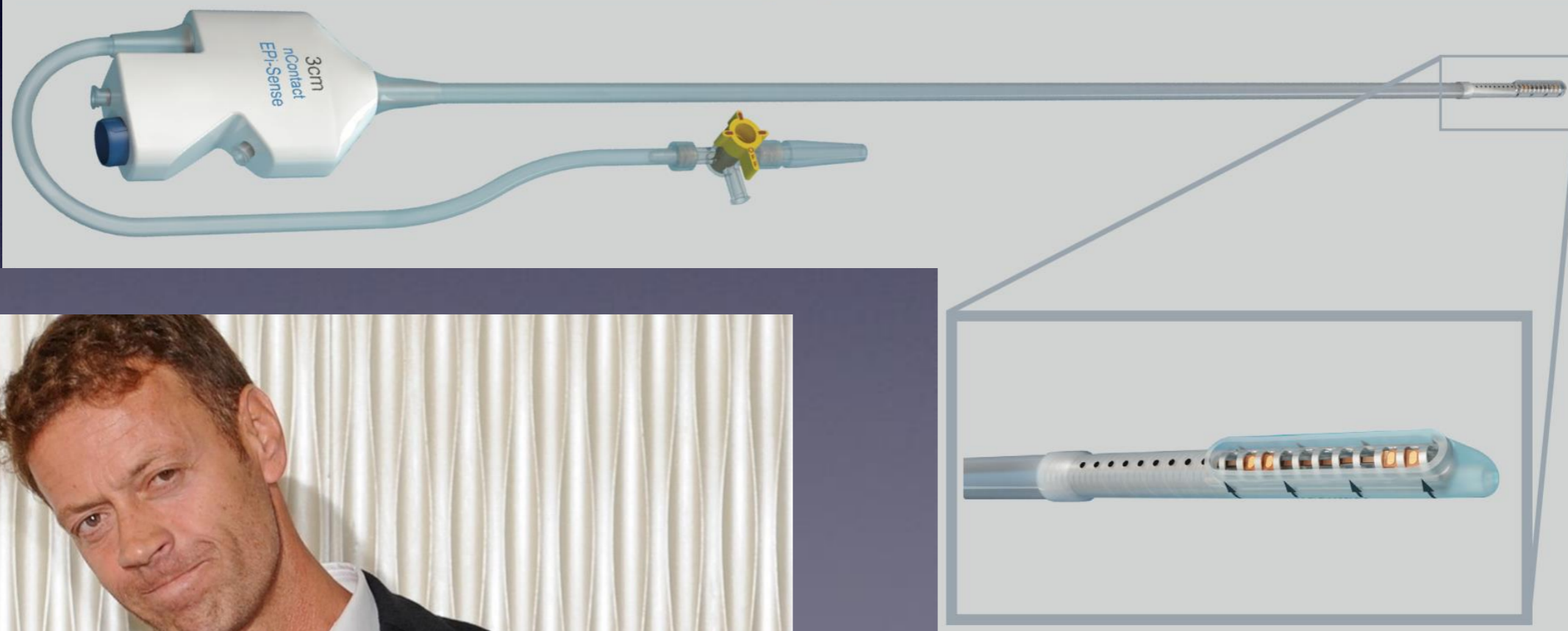


## Features

- 3 cm device electrode length
- 2 distal and proximal sensing electrode pairs
- Irrigation/perfusion lumen
- Integrated suction

## Benefits

- Enables the physician to view epicardial electrograms before, during, and after ablation
- Provides additional information regarding lesion creation and completeness
- VisiTrax provides comprehensive long linear lesions



« *Some times size matters* »  
Rocco Sifredi







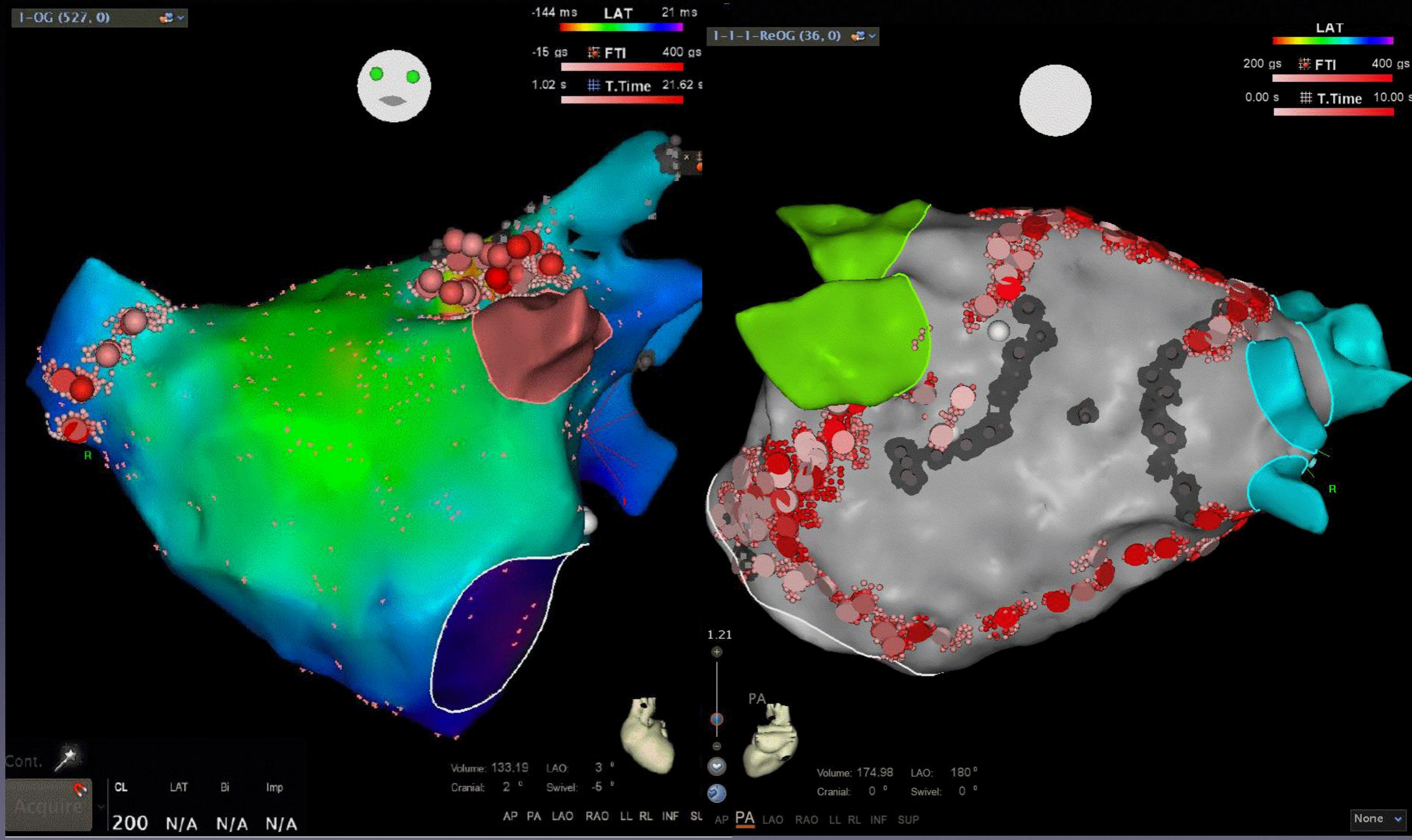






- 84% of patients underwent ablation during two separate hospital stays
- CARTO V3 ®mapping and imaging technology was used to guide procedure
- An external shock was given to convert the patient to normal sinus rhythm





Time of percutaneous procedure considerably diminished



	% Persistent / Longstanding AF	Monitoring Level	Procedure Efficacy	Redos	Serious Adverse Event Rate <sup>5</sup>
Gilligan D, et al <sup>E</sup> <i>JICRM</i> Oct 2013. In Press N=42	81%	Med 72h Holter	95% @ 1 yr <sup>1</sup> 81% @ 1 yr <sup>2</sup>	6%	4.7%
Civello K, et al <sup>E</sup> <i>JICRM</i> Sept 2013:1-7. Epub. N=104	73%	Med 72h Holter	88% @ 1 yr <sup>1</sup> 72% @ 1 yr <sup>3</sup>	2.8%	0% < 7d (5.8% > 7d)
Gersak B, et al <sup>E</sup> <i>JTCVS</i> Nov 2013:1-6. Epub N=73	100%	High Reveals or 7d Holters	80% @ 1 yr <sup>1</sup> 76% @ 1 yr <sup>4</sup>	4%	11.0%
Thosani AJ, et al <sup>A</sup> <i>AER</i> 2013;2(1):65-8. N=43	86%	Med 2wk Monitors	89% @ 6 mo <sup>1</sup>	NR	0%
Robinson MC, et al <sup>A</sup> <i>EP Lab Digest</i> 2012;13(6):34-36. N=42	100%	Med EKG & Holter Monitors	89% @ Avg 13 mo <sup>1</sup> 69% @ Avg 13 mo <sup>3</sup>	4.8%	7%
Gersak B, et al <sup>A</sup> <i>JCE</i> . 2012;23:1059-66. N=50	94%	High All Reveals	88% @ 1 yr <sup>1</sup> 75% @ 1 yr <sup>3</sup>	2%	10.0%
Gehi AK, et al <sup>A</sup> <i>Heart Rhythm</i> 2013;10:22-28. N=101	83% (Avg CHADS = 2.1)	Med Reveal & Holter	79.7% @ 1 yr <sup>1</sup> 70.5% @ 1 yr <sup>1</sup> (Survival Analysis)	6%	6%
Olson J, et al <sup>B</sup> <i>Boston AF</i> 2012 N=115	83.5%	Med 72h Holter	84% @ Avg 11.4 mo <sup>1</sup> 77% @ Avg 11.4 mo <sup>2</sup> 64% @ Avg 11.4 mo <sup>3</sup>	4%	6.1%
Golden K, et al <sup>B</sup> <i>HRS</i> 2012 N=61	88%	Med 72h Holter	79% @ Avg 11 mo <sup>1</sup> 66% @ Avg 11 mo <sup>3</sup>	8%	3.3%
Kiser AC, et al <sup>A</sup> <i>Innovations</i> 2011;6:243-247. N=65	92%	Med/High Reveal or 24h Holter	88% @ 1 yr <sup>1</sup> 83% @ 1 yr <sup>3</sup>	NR	7.7%

<sup>1</sup>Efficacy = Sinus Rhythm; <sup>2</sup>Sinus Rhythm & No AAD Tx; <sup>3</sup>Sinus Rhythm & Off AADs; <sup>4</sup>Sinus Rhythm & No Interventions; <sup>5</sup>Safety = 30-Day Adverse Events

<sup>A</sup>Published Article; <sup>B</sup>Published/Presented Abstract; <sup>C</sup>Accepted Abstract; <sup>D</sup>Submitted Article; <sup>E</sup>Accepted Article



### Reveal Monitoring AF Burden at 6, 12, and 24 months

<b>AF Burden Threshold</b>	<b>6 month</b>	<b>12 month</b>	<b>24 month</b>
$\leq 0.2\%$	72% (31/43)	56% (18/32)	53% (8/15)
$\leq 0.5\%^\dagger$	74% (32/43)	66% (21/32)	60% (9/15)
$\leq 1.0\%^\ddagger$	77% (33/43)	75% (24/32)	73% (11/15)
$\leq 2.1\%^\S$	79% (34/43)	73% (24/32)	80% (12/15)
$\leq 3.0\%^\P$	81% (35/43)	81% (26/32)	87% (13/15)
$\leq 4.2\%^\ddagger\ddagger$	81% (35/43)	84% (27/32)	87% (13/15)



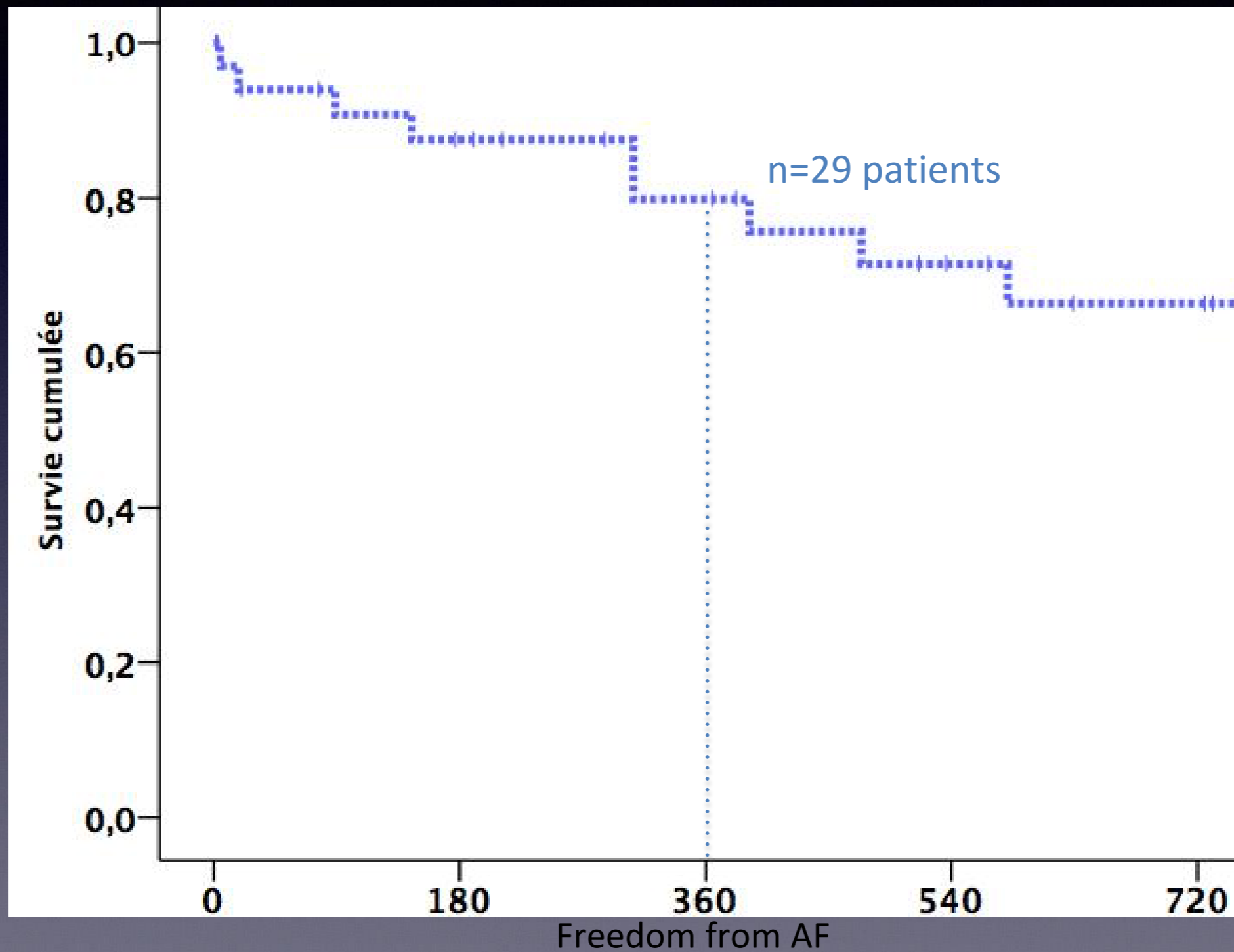
## Clinical data

*n* = 48

Age: years	60.8 (± 11)
Male: n (%)	45 (94)
BMI (Kg/m <sup>2</sup> )	28.7 (± 4)
High blood pressure: n (%)	21 (51)
Diabete mellitus :n (%)	1(2.4)
Congestive heart failure: n (%)	21 (51)
AF duration: years (± SD)	7.4 (± 5.7)
CHA2DS2 Vasc (± SD)	2 (±2)
LA surface :cm <sup>2</sup> (± SD)	28 (± 5)
LVEF : % (± SD)	52 (±14)
Anti arhythmics drug after hybrid ablation:	
- Class I AADs (flécaine)	15 (37%)
- Class II AADs (B-)	30 (73%)
- Class III AADs (Cordarone)	21 (51%)
- Class IV AADs (Isoptine/ tildiem)	1 (3.4%)
Anticoagulants n (%)	41 (100)



- 39% required a supplementary ablation



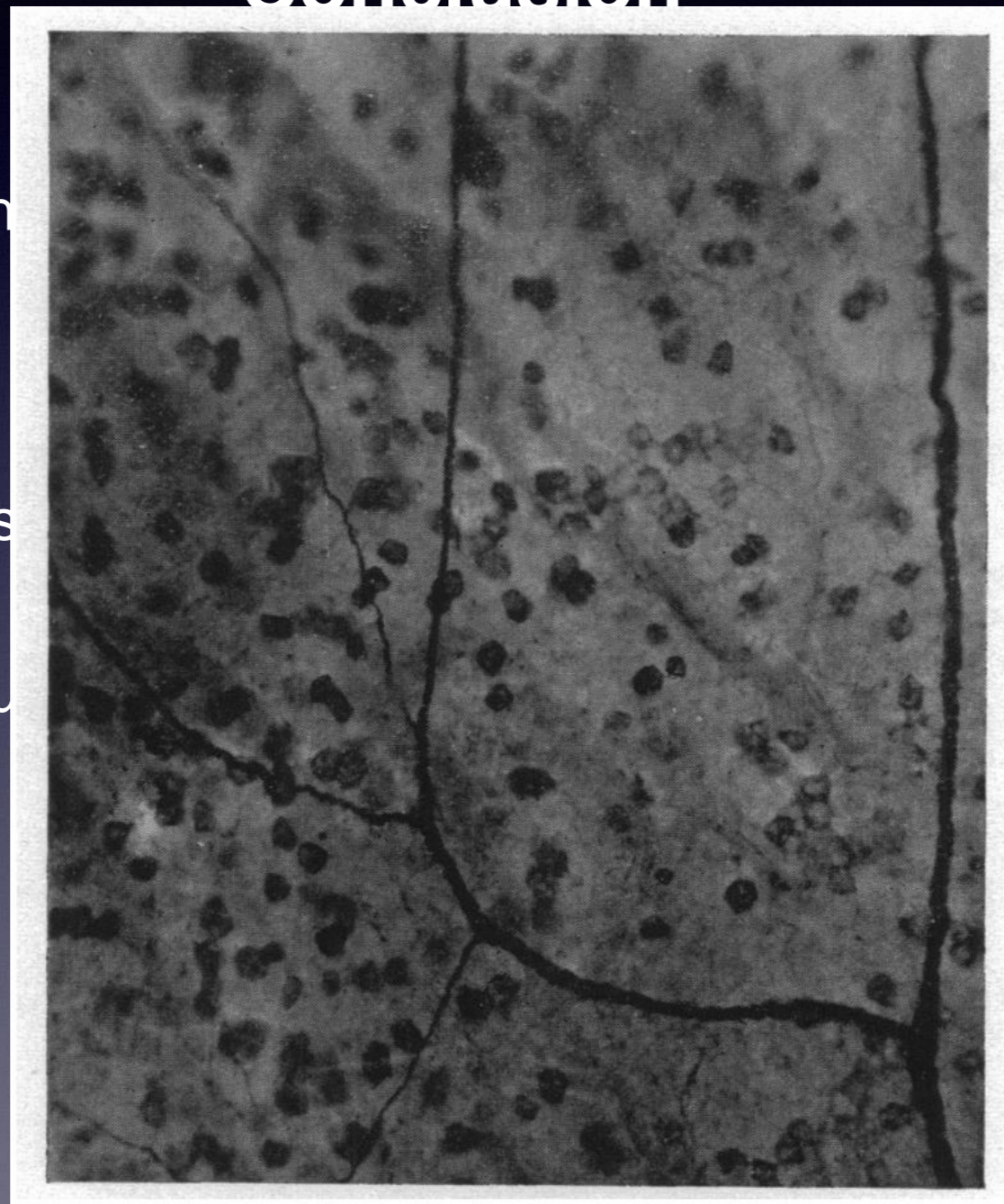


Complications	<i>n</i> (%)
Mortality	0 (0)
Stroke or Transient ischemic attack	0 (0)
Tamponade	0 (0)
Pericardial effusion	0 (0)
Phrenic nerve palsy	0 (0)
Myocardial infarction	0 (0)
Newly developed 3rd degree AV block	0 (0)
Bleeding requiring trasfusion	1 (2)
Chest pain	1 (2)
Diaphragmatic Hernia	1 (2)



## Conclusion

- With the convergen... t long standing persistent AFb.
- 1-Year efficacy was... n sinus rhythm.
- Although initial resu... ave to be determined.





**RHYTHM** 2017

Arrhythmias & Heart Failure

New Insights & Technological Advances

**March 2-3**

9<sup>th</sup> Congress Edition

Novotel PARIS Tour Eiffel

# Heart Failure and Surgical AF Ablation

Service de Pathologie Cardiaque

Konstantinos Zannis

Patrice Dervanian, Emmanuel Lansac, Suzana Salvi

Mathieu Debauchez



L'INSTITUT  
MUTUALISTE  
MONTSOURIS