The role of SmartTouch and Visitag in AF ablation: can we foresee a new predictor of procedural success?

Giuseppe Augello, MD
Cardiac Arrhythmia Unit, Head
Istituto Clinico Città Studi, Milano

Outline

- ✓ Aim of this preliminary study
- ✓ SmartTouch catheter technology and features
- ✓ Carto3 Visitag Module
- ✓ Clinical work flow
- ✓ Results and discussion
- ✓ Conclusions

CARTO® 3
SMARTTOUCH™ Module

VISITAG
MODULE

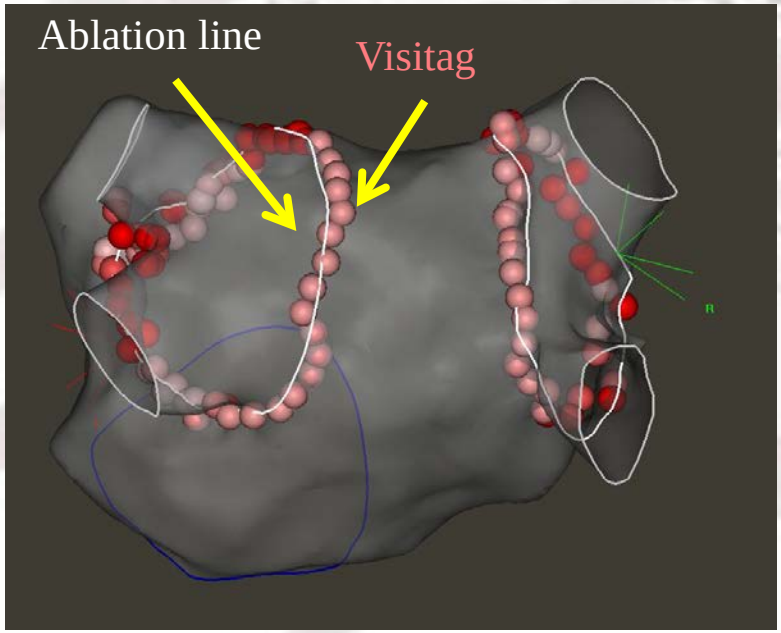
Preliminary study

GOAL

The purpose of this study is to evaluate the efficency of Carto3 VISITAG Module associated with SmartTouch catheter in guiding efficient **low-energy** deployment of lesions to isolate PVs as judged by Lasso validation

Can we foresee lesion completeness through the use of the Visitag Tool and Smart Touch catheter?

Visitag Module
catheter stability and contact force



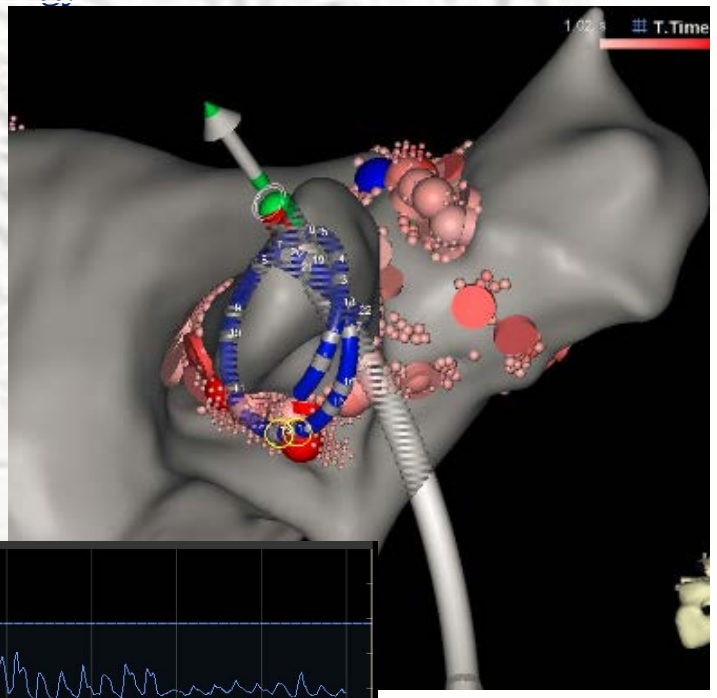
Catheter positions and EP parameters during RF applications are continuously stored, tracked and quantified, enabling the user to evaluate the RF efficacy

SmartTouch technology ...

The ThermoCool® SmartTouch® Catheter measures the contact force (CF) continuously, providing the data in real time and allowing electrophysiologists to have an objective measure of tissue contact

- Integrated Catheter and SW platform
- Contact Force Measurement (grams)
- Sensor based ThermoCool™ technology

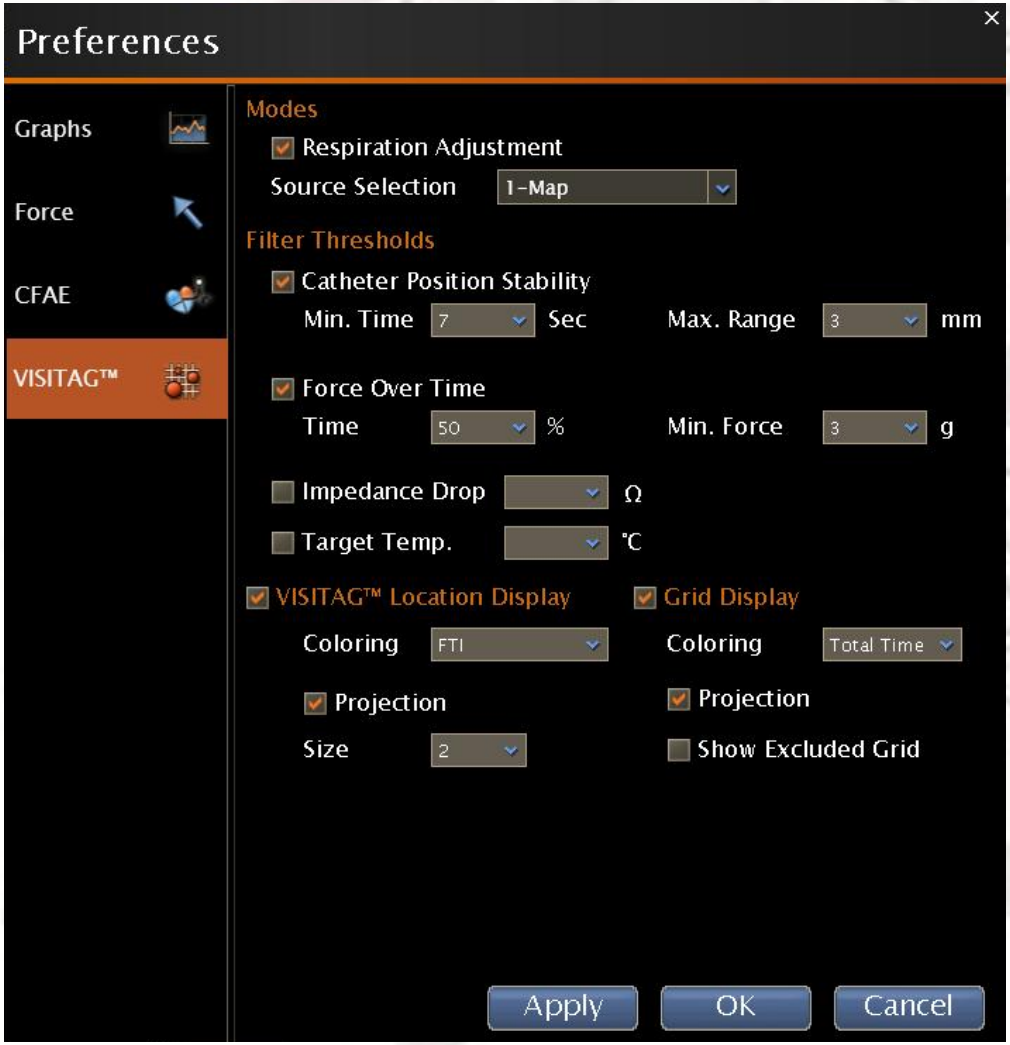
... and features



- Force map - Possibility to create homogenous maps
- Vector - Force direction and visual idea; possibility to reduce fluoroscopy (combined with shaft visualization)
- Graph - Real Time Force visualization

Visitag Module

First technology to incorporate parameters of lesion formation that can be indexed by the user, according to their ablation strategy

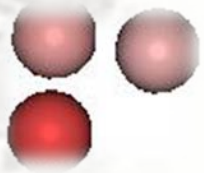


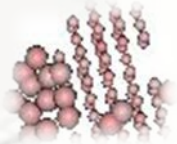
STABILITY Parameters

- **Catheter stability position:** TIME and SPACE
- **Filter threshold:** Force over time

VISITAG visualization mode

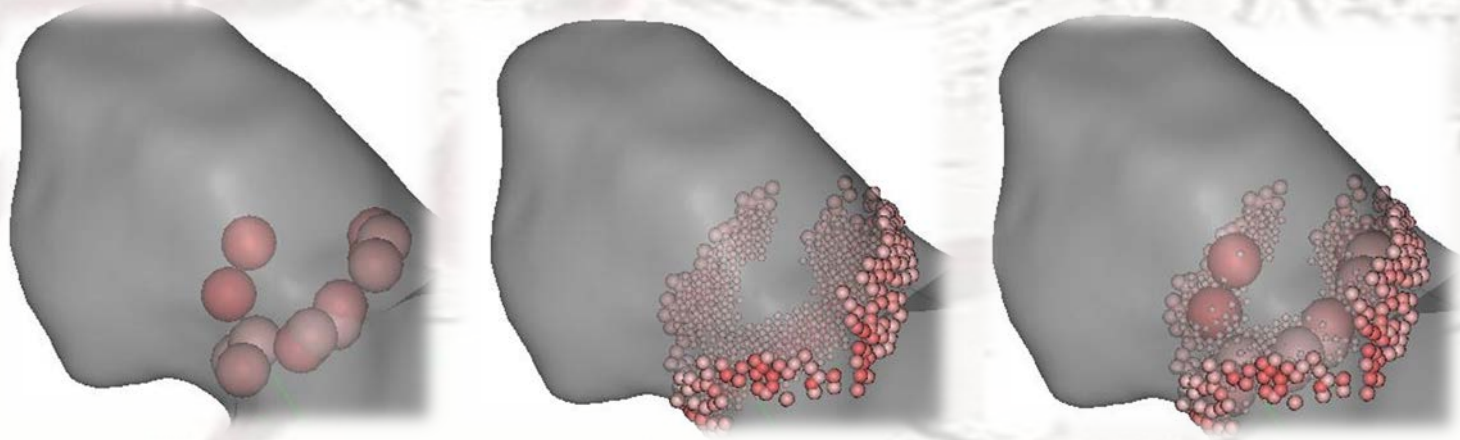
- **Location:** Force Integral Time (FTI)
- **Grid:** Total Time





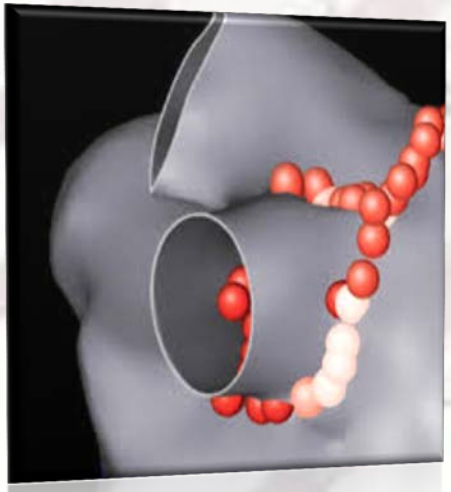
Mapping Protocol

- The Map was reconstructed initially with Lasso in order to assess baseline PV potential and to tag up to which level PV potential were still present
- Thereafter, the regions of the map in which lesions are to be deployed were revisited with ablation catheter to confirm absence of “excessive” interpolation
- At the end of the procedure Lasso was reintroduced in the Left Atrium
- First 3 cases to select best parameters -> 7 sec, 3 mm, 3 g, 50%



Study Endpoint

Can we predict successful PV isolation through the use of VISISTAG tool + Smart Touch catheter ?



We compare Ablation line through

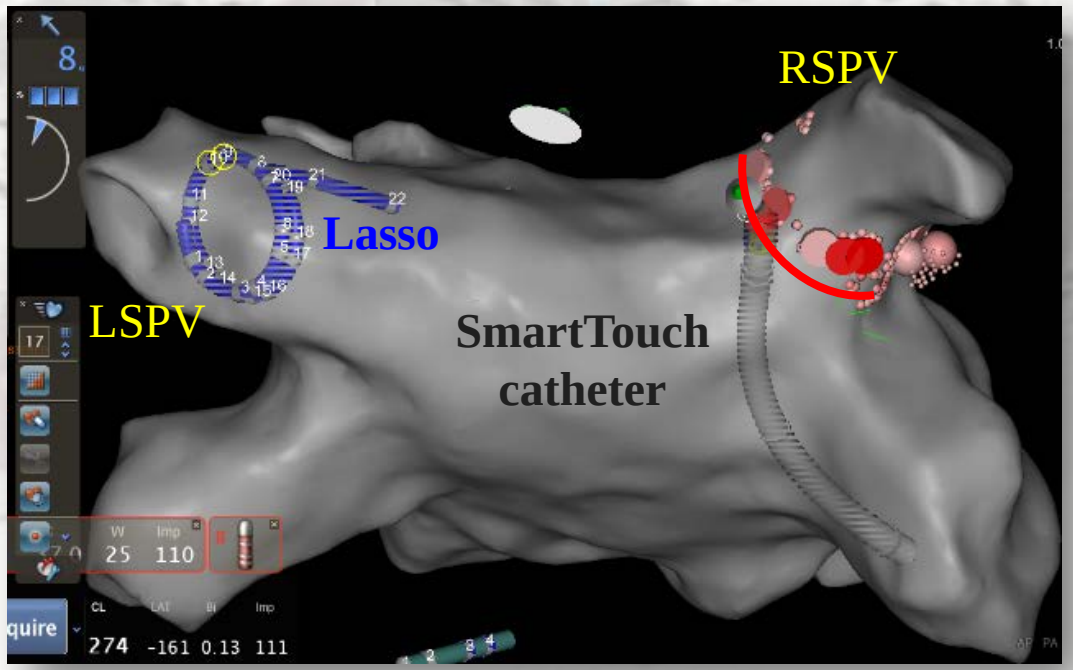
VISITAG Tool
Smart Touch

Vein potentials
Lasso catheter

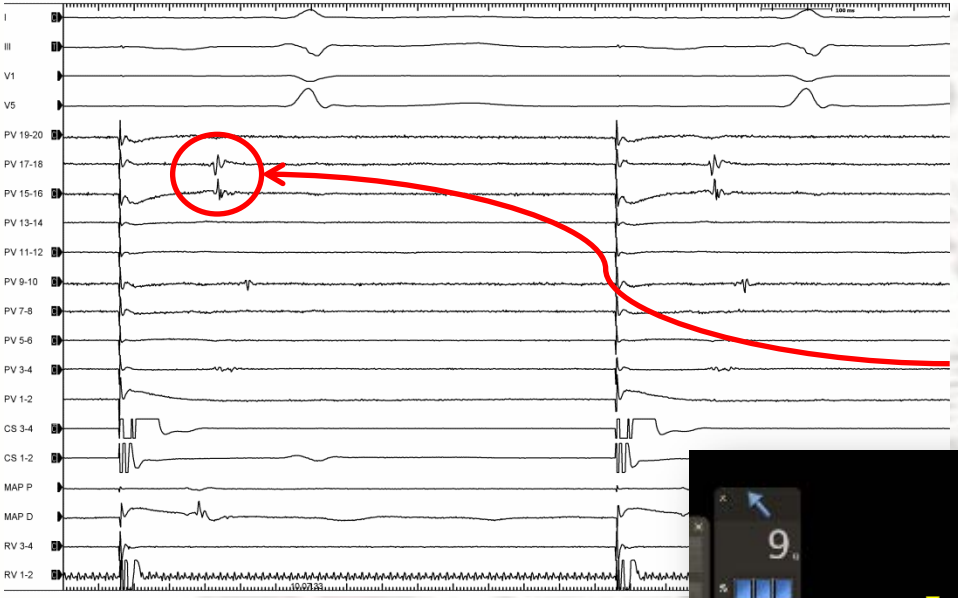
Results

Right Superior Polmonary Vein (RSPV) base

Catheter dragging technique
Anatomical ablation line around the RSPV ostium drawed by Visitag Tool



Right Superior Polmonary Vein (RSPV) base

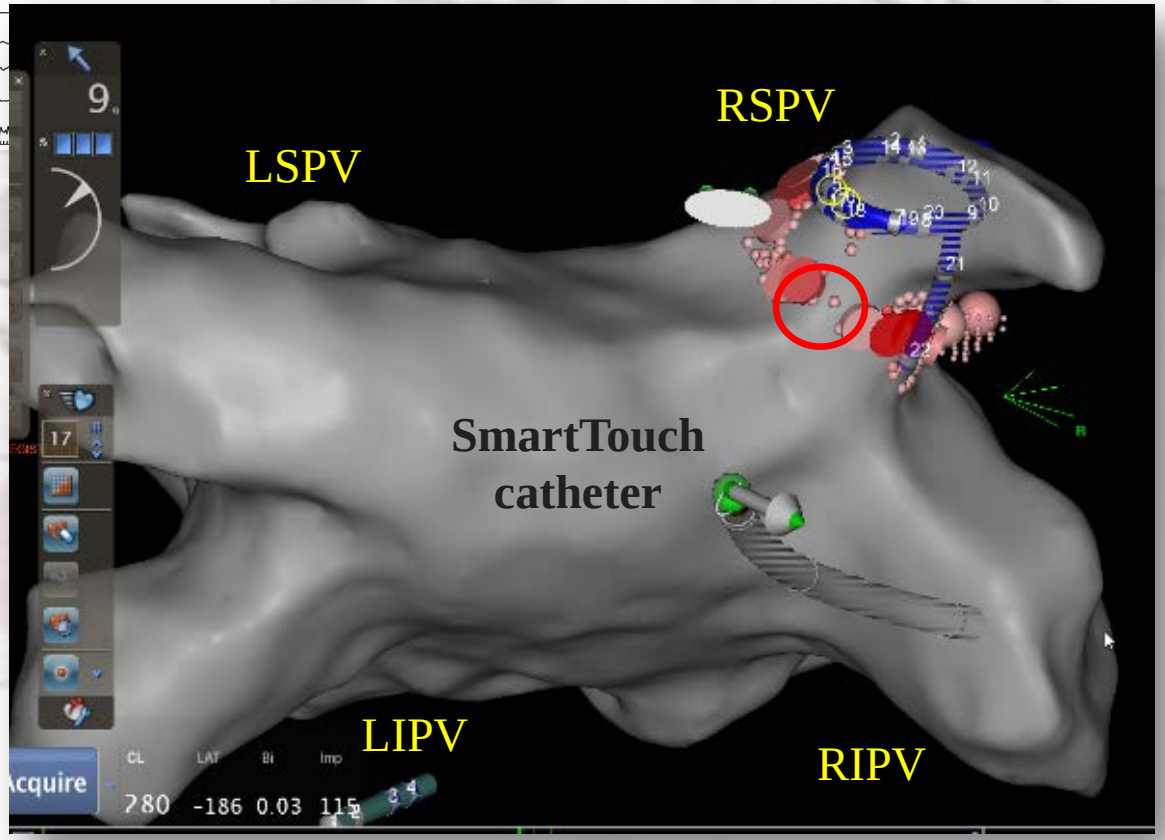


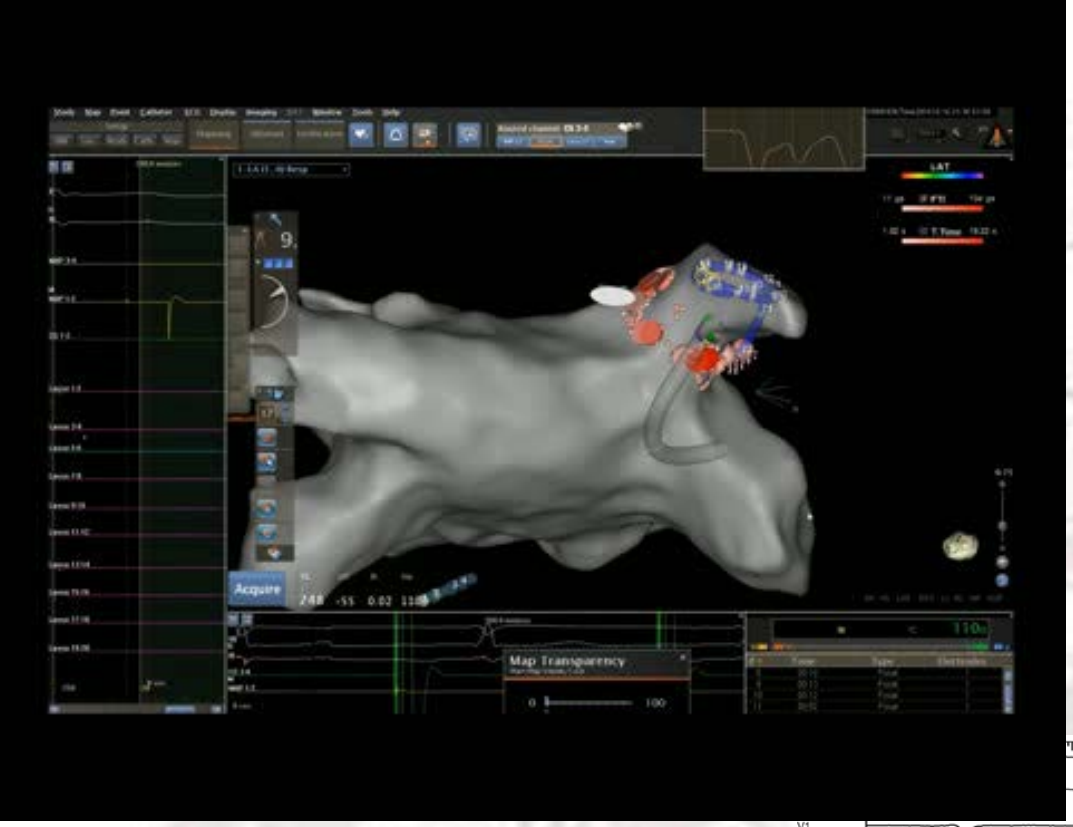
Lasso catheter placed in RSPV after anatomical ablation

Conduction GAP
Lasso 17-18 electrodes

Visitag line confirms conduction gap presence

Radio frequency application to consolidate the conduction gap

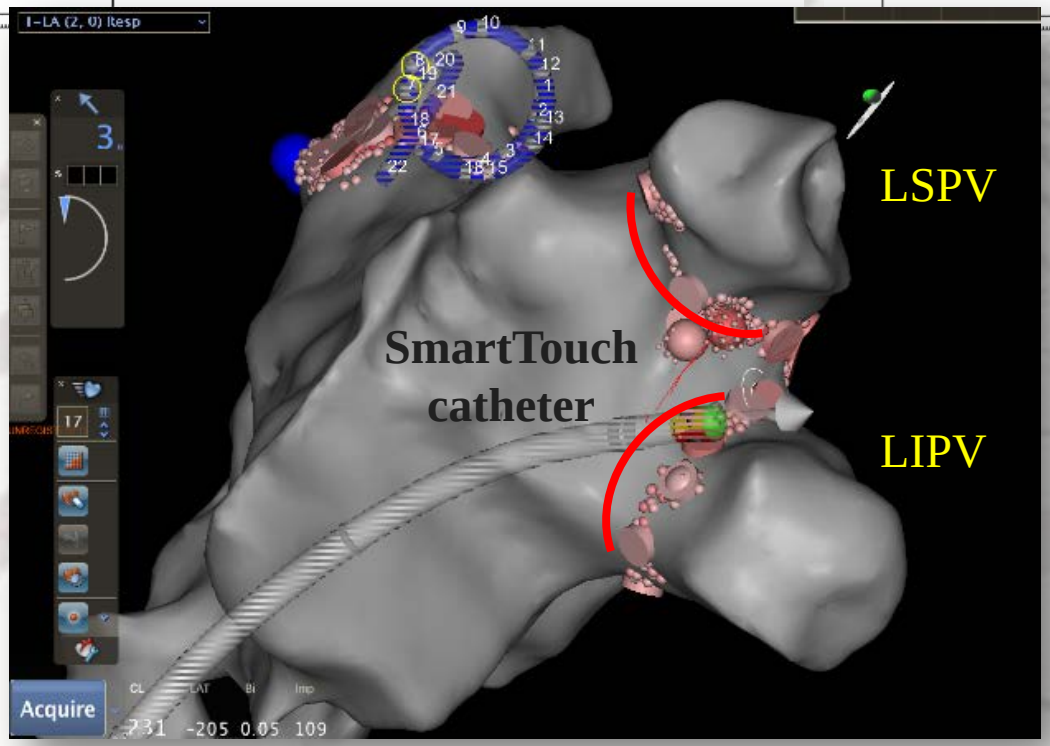




RSPV during RF consolidation of the GAP

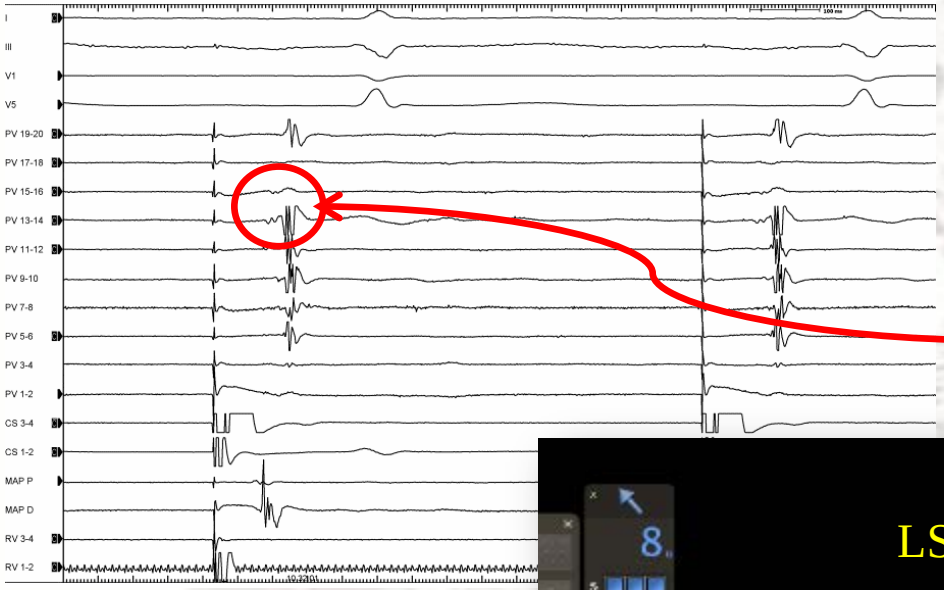
Left Superior Polmonary Vein (LSPV) base

Left Inferior Polmonary Vein (LIPV) base



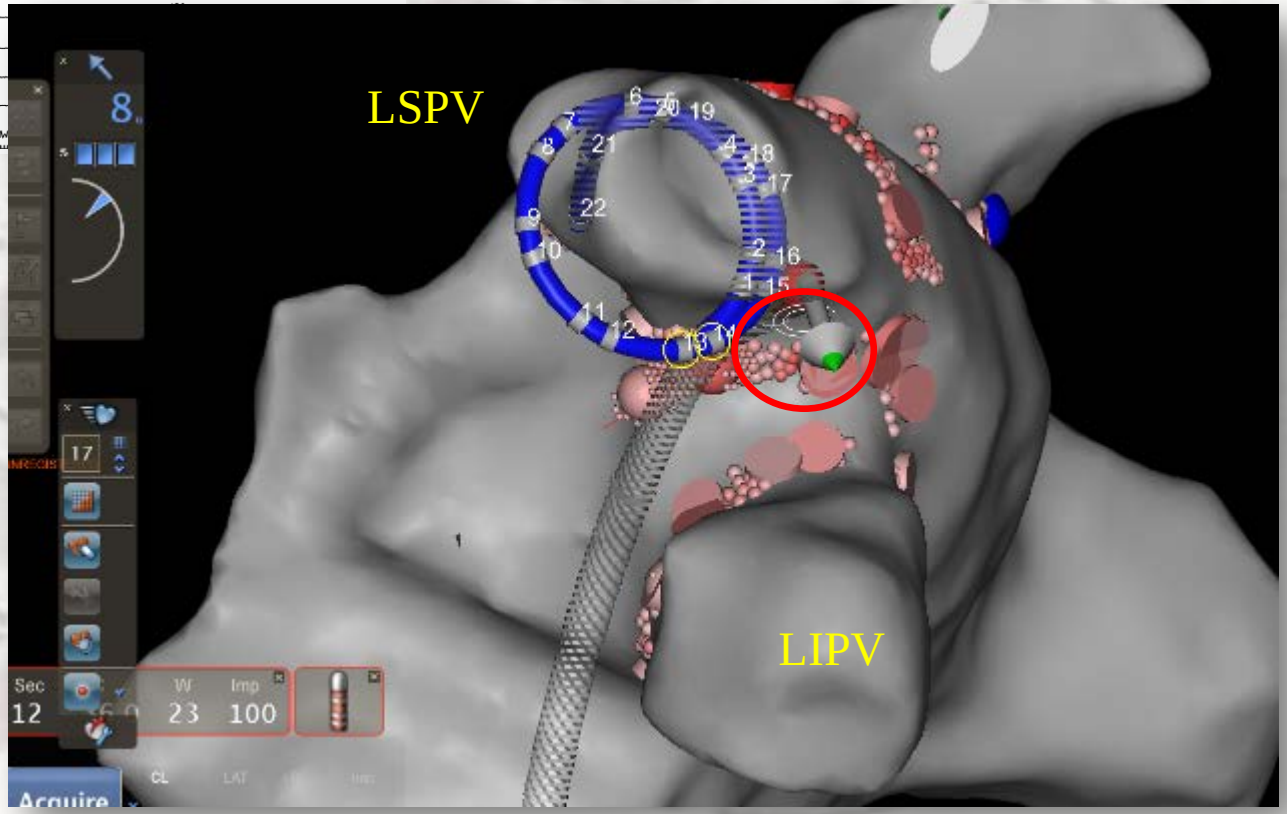
Catheter dragging technique
Anatomical ablation line around the LSPV/LIPV ostium drawed by Visitag Tool

Left Superior Polmonary Vein (LSPV)



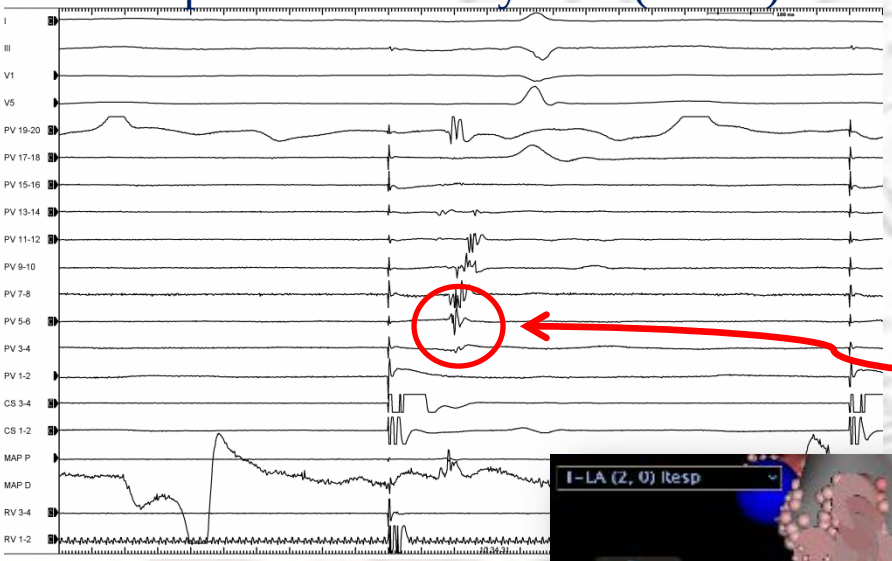
Lasso catheter placed in LSPV
after anatomical ablation

Conduction GAP 1
Lasso 13-14 electrodes



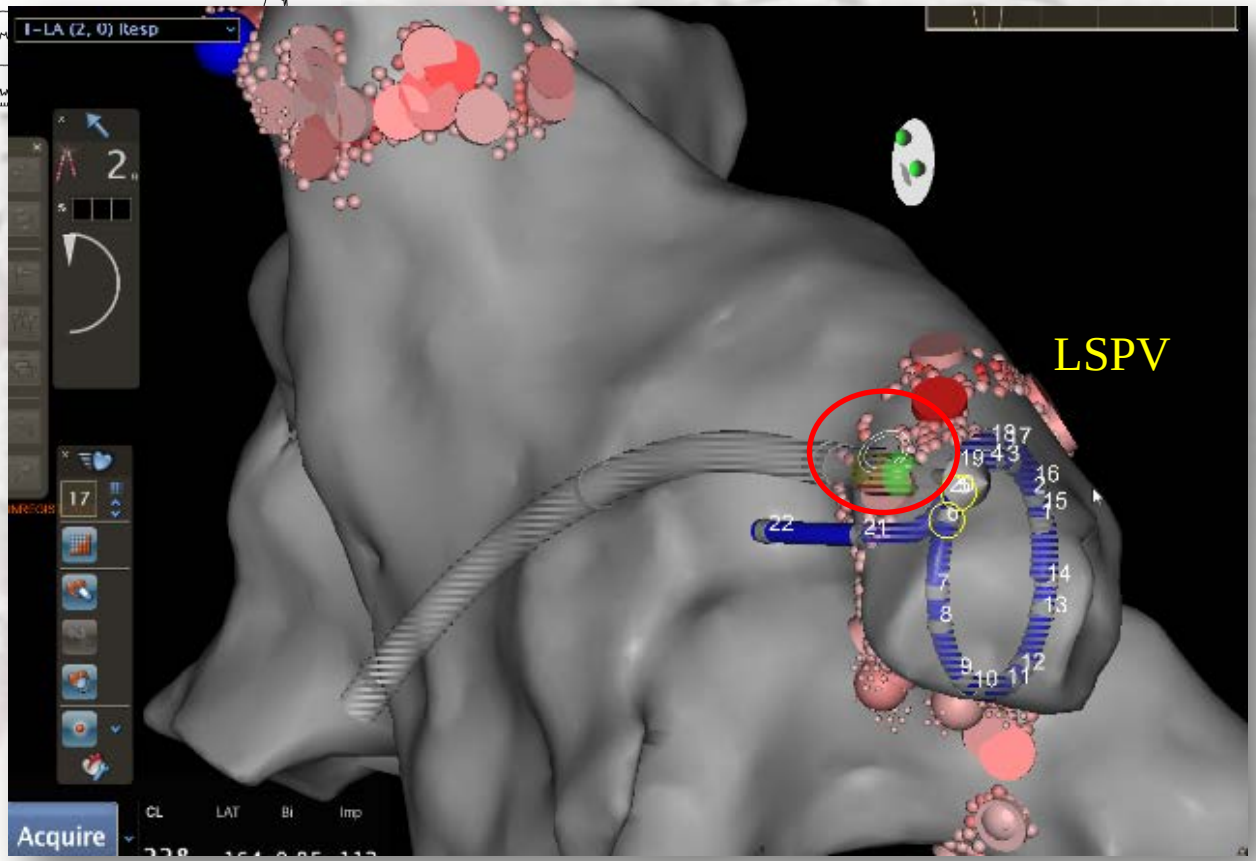
LSPV during RF consolidation of the GAP 1

Left Superior Polmonary Vein (LSPV)



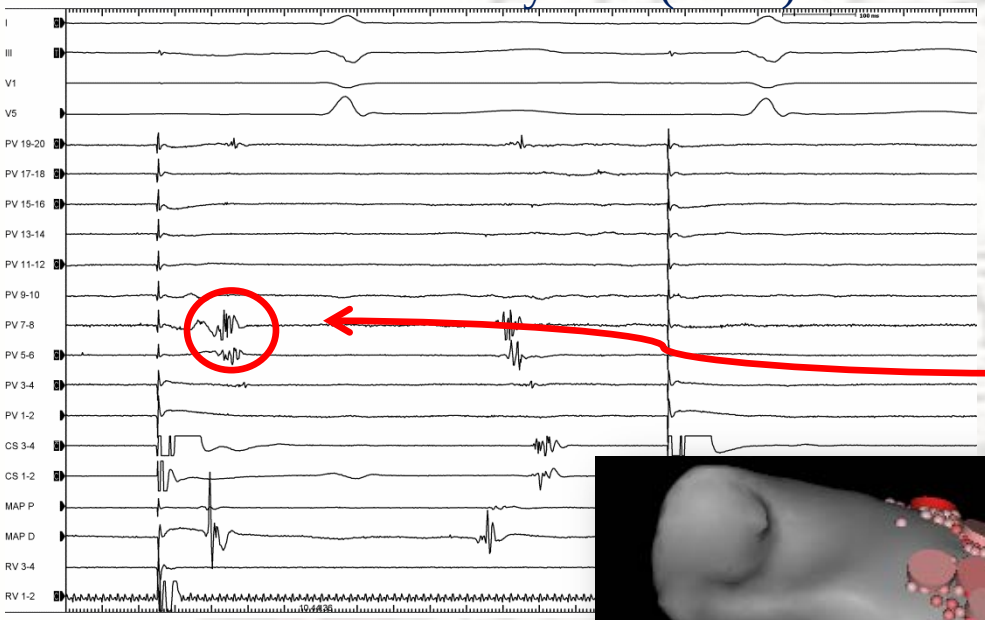
Lasso catheter placed in LSPV
after anatomical ablation

Conduction GAP 2
Lasso 5-6 electrodes



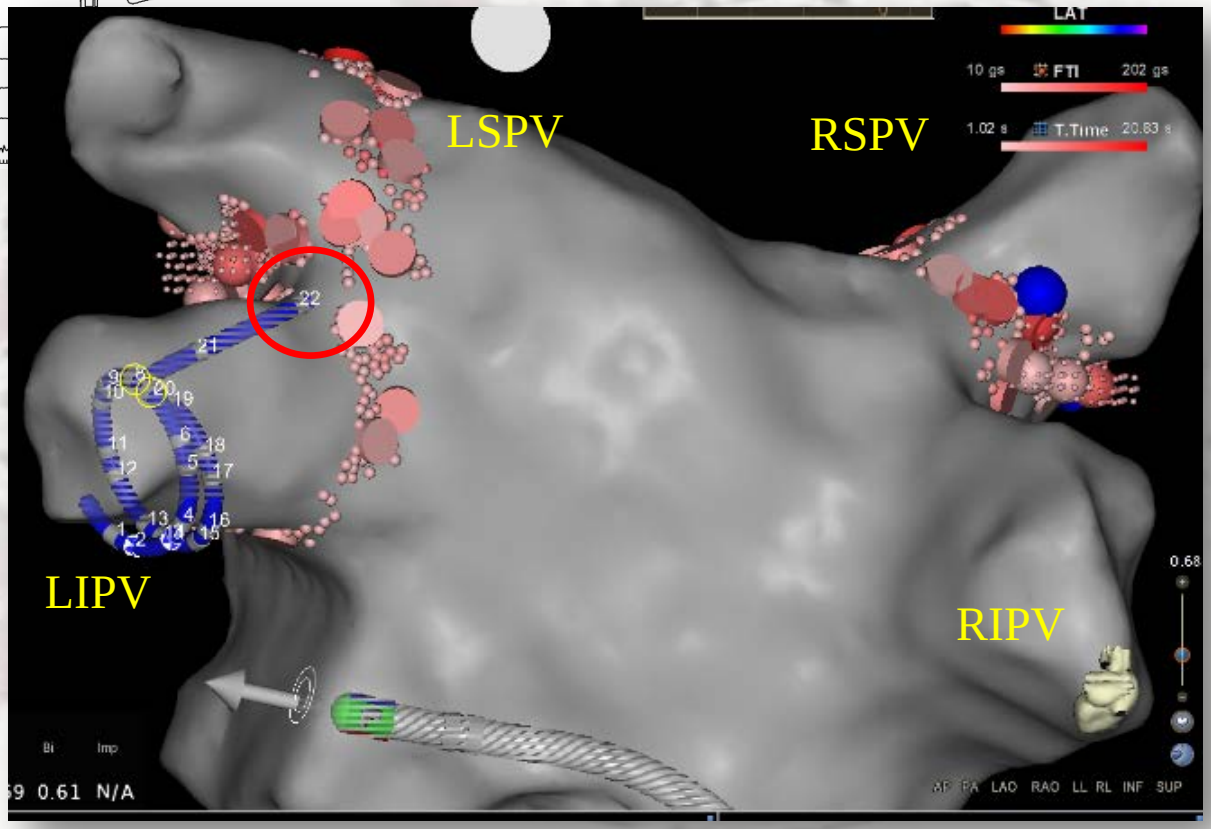
LSPV during RF consolidation of the GAP 2

Left Inferior Polmonary Vein (LIPV)



Lasso catheter placed in LIPV after anatomical ablation

Conduction gap
Lasso 7-8 electrodes



Results ...

Settings seems to be appropriate

1. In all patients the parameters chosen permitted to guide deployment of RF lesions

2. In cases of apparent no contact catheter-surface or lesion not appearing, the map was checked for “excessive interpolation”

3. The avarage RF time is 10 min, 25W

Visitag – Lasso Correlation

4. After the first 3 cases, in 85% of PV targeted (n=28) and ablated using Visitag tool, effective isolation was confirmed with Lasso

Discussion...

- In the cases shown it’s demonstrated that Visitag can predict the conduction GAP in the ablation line
- This means that the creation of a complete Visi-Tag line could have an impact on the clinical outcome
- The visitag points are an objective tool to determinate the real position where the ablation is delivered

Limitations

- All the process depends on map stability and, most of all, quality of 3D reconstruction

Implications

- In the future Lasso could be used just to confirm PVI in difficult cases
- 25W could be sufficient to deploy stable lesion

Conclusions...

- ✓ We can foresee the success of the clinical procedure through the Visitag module and the Smart Touch catheter technology regardless the Lasso catheter employment
- ✓ Such a methodology can guide the operator toward a more efficay and efficienty clinical outcome
- ✓ The operator can choose objective parameters before and during the clinical procedure


Thanks for your attention ...