

Heart Rhythm Congress 2011

Atrial Fibrillation:

When is Catheter Ablation an option?

Dr Glyn Thomas

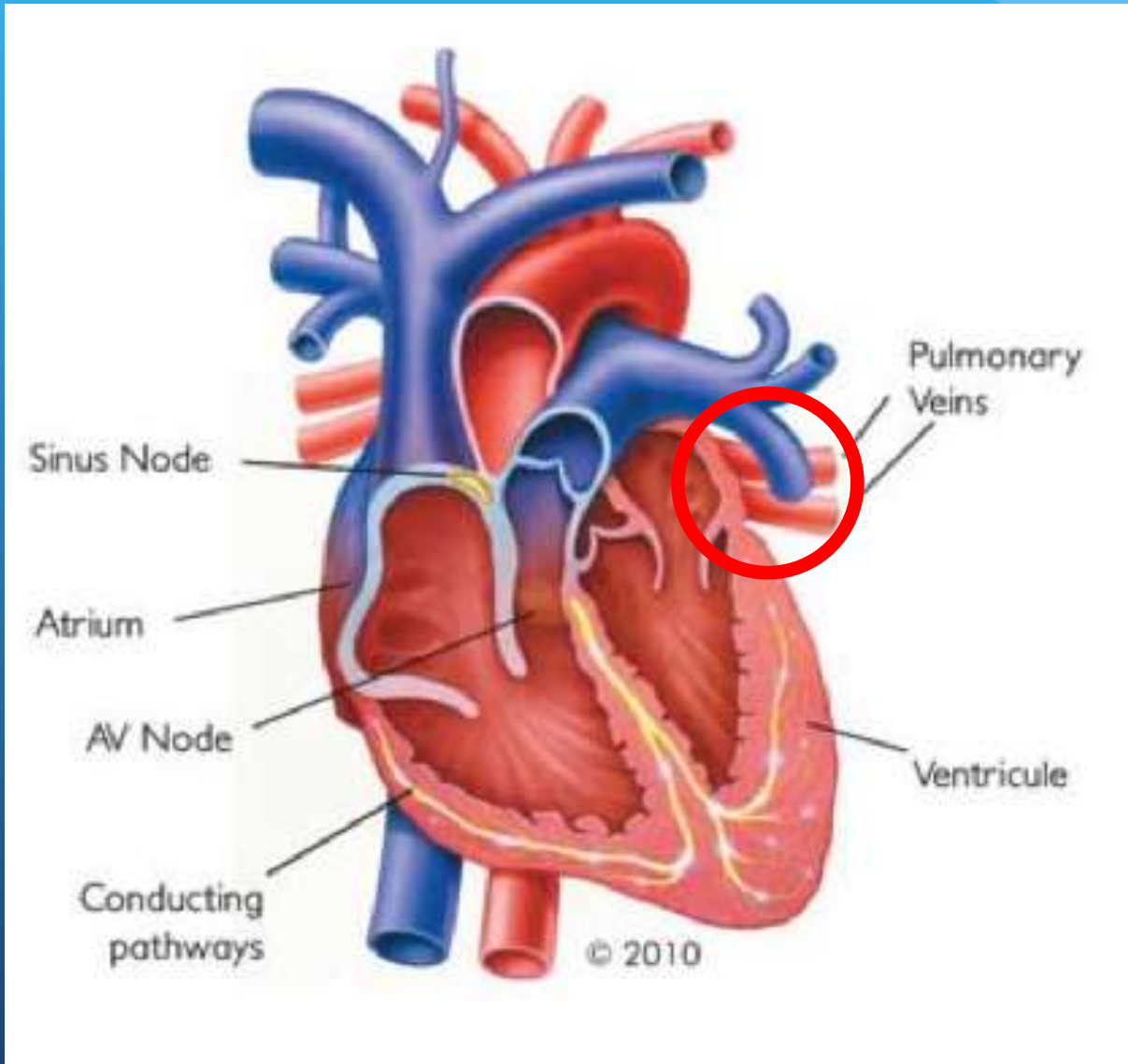
Consultant Cardiologist & Electrophysiologist

www.drglynthomas.co.uk

Outline

- The Basics
 - What is AF?
 - Why is it a problem
- What is catheter ablation?
 - Is it safe?
 - Is it effective?
- When is catheter ablation an option?

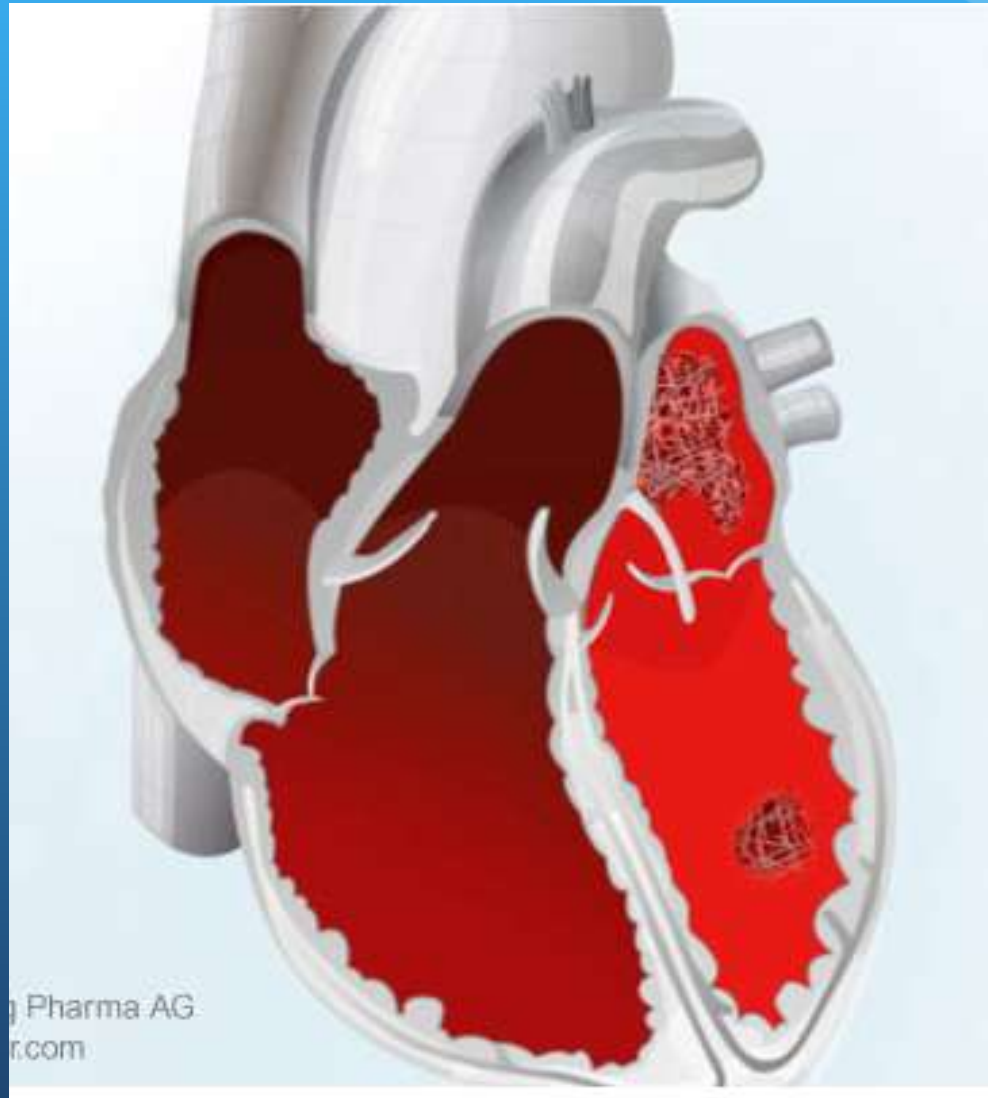
The Basics



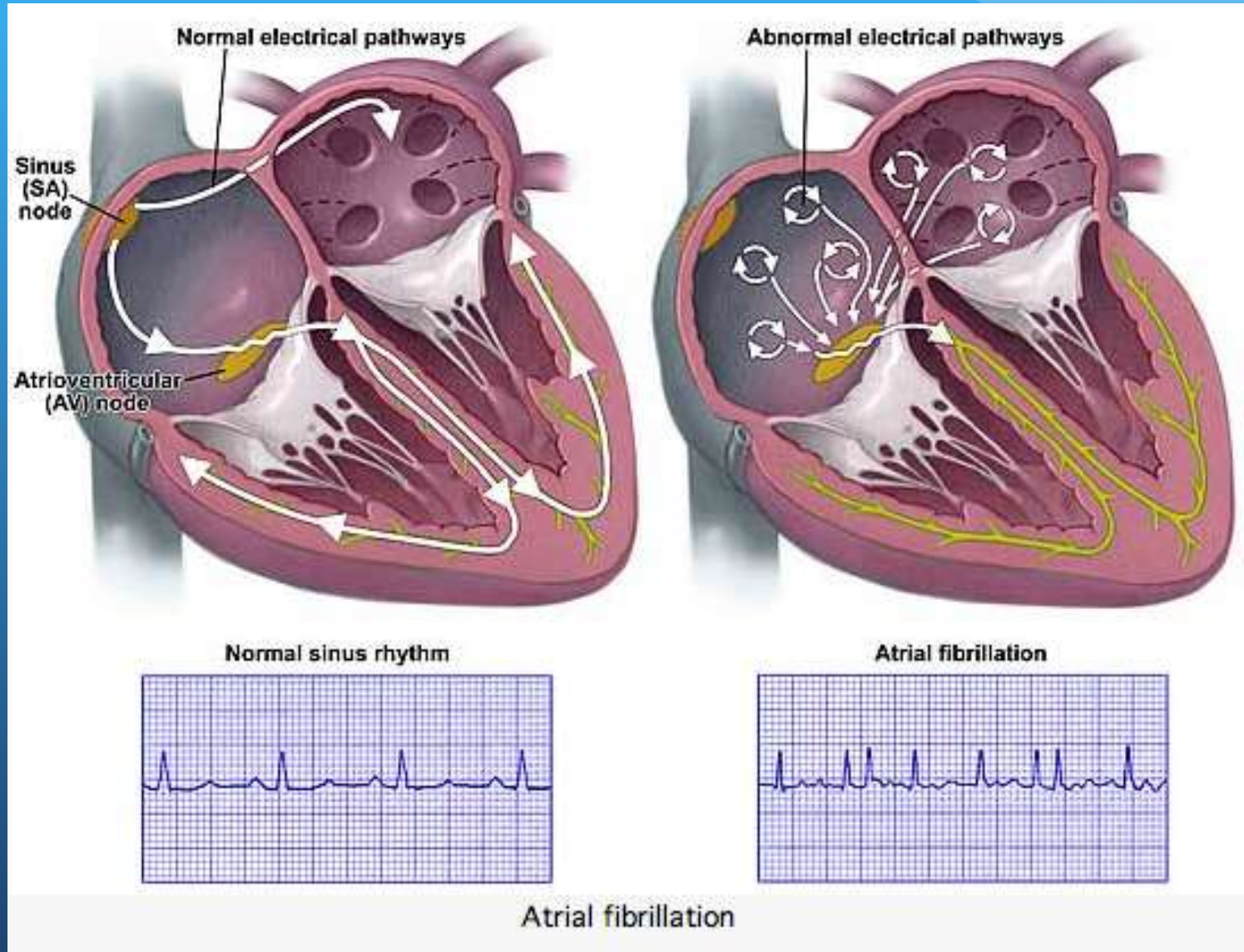
The Basics

- Atrial Fibrillation (AF) affects affects the top 2 chambers of the heart causing an irregular pulse
- AF affects 1-2% of general population
- Increasingly common with age:
 - 0.5% at 40-50 years
 - 5-15% at 80 years
- Lifetime risk of developing AF is 25% in those who have reached the age of 40

What is the problem with AF?



What is the problem with AF?



What is the problem with AF?

Outcome parameter	Relative change in AF patients
1. [REDACTED]	Death rate doubled.
2. Stroke (includes haemorrhagic stroke and cerebral bleeds)	Stroke risk increased; AF is associated with more severe stroke
3. Hospitalisations	Hospitalisations are frequent in AF patients and may contribute to reduced quality of life.
4. Quality of life and exercise capacity	Wide variation from no effect to major reduction. AF can cause marked distress through palpitations and other AF-related symptoms
5. [REDACTED]	Wide variation from no change to tachycardiomyopathy with acute heart failure.

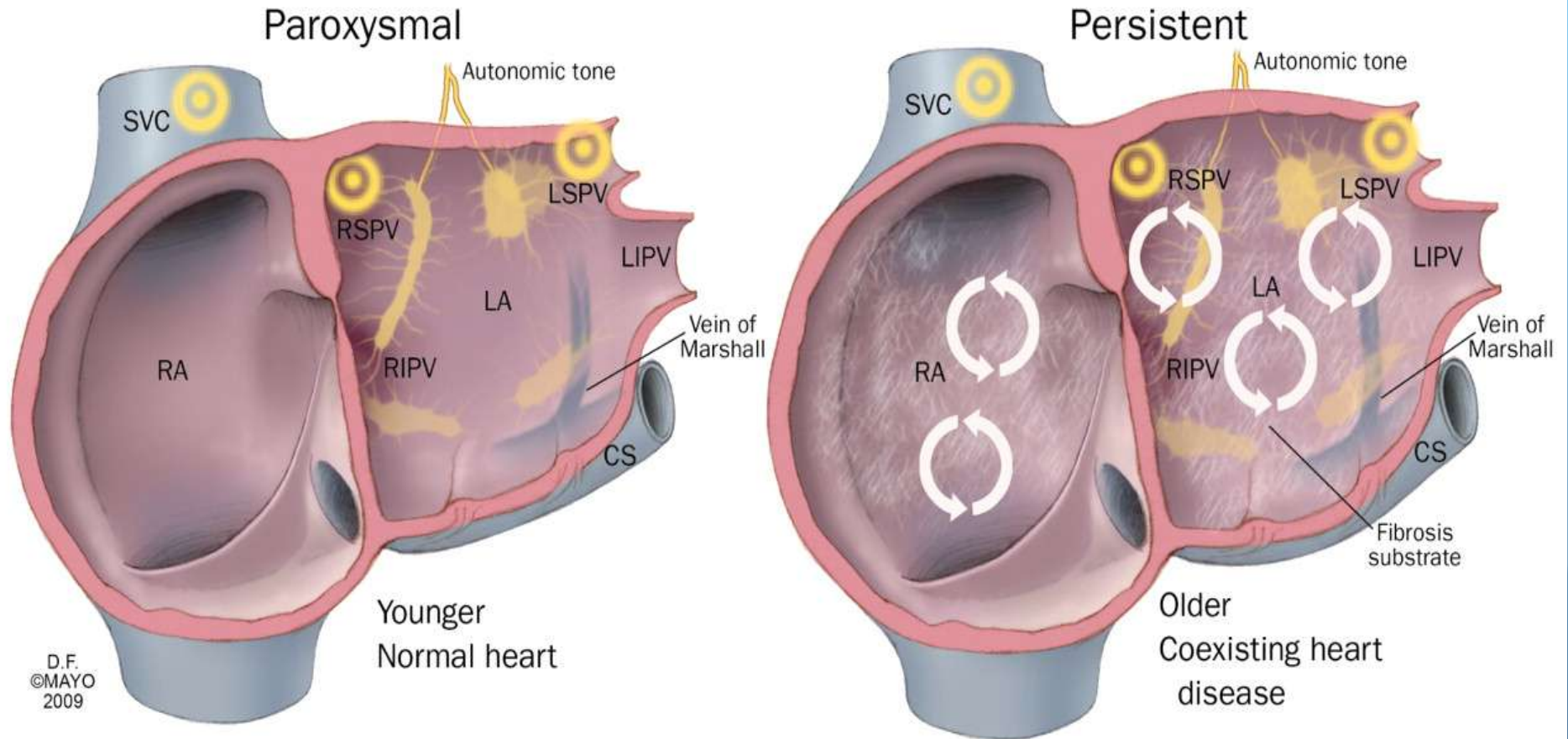
AF (can be) miserable...

“I was ill and in terrible health... unable to do anything”

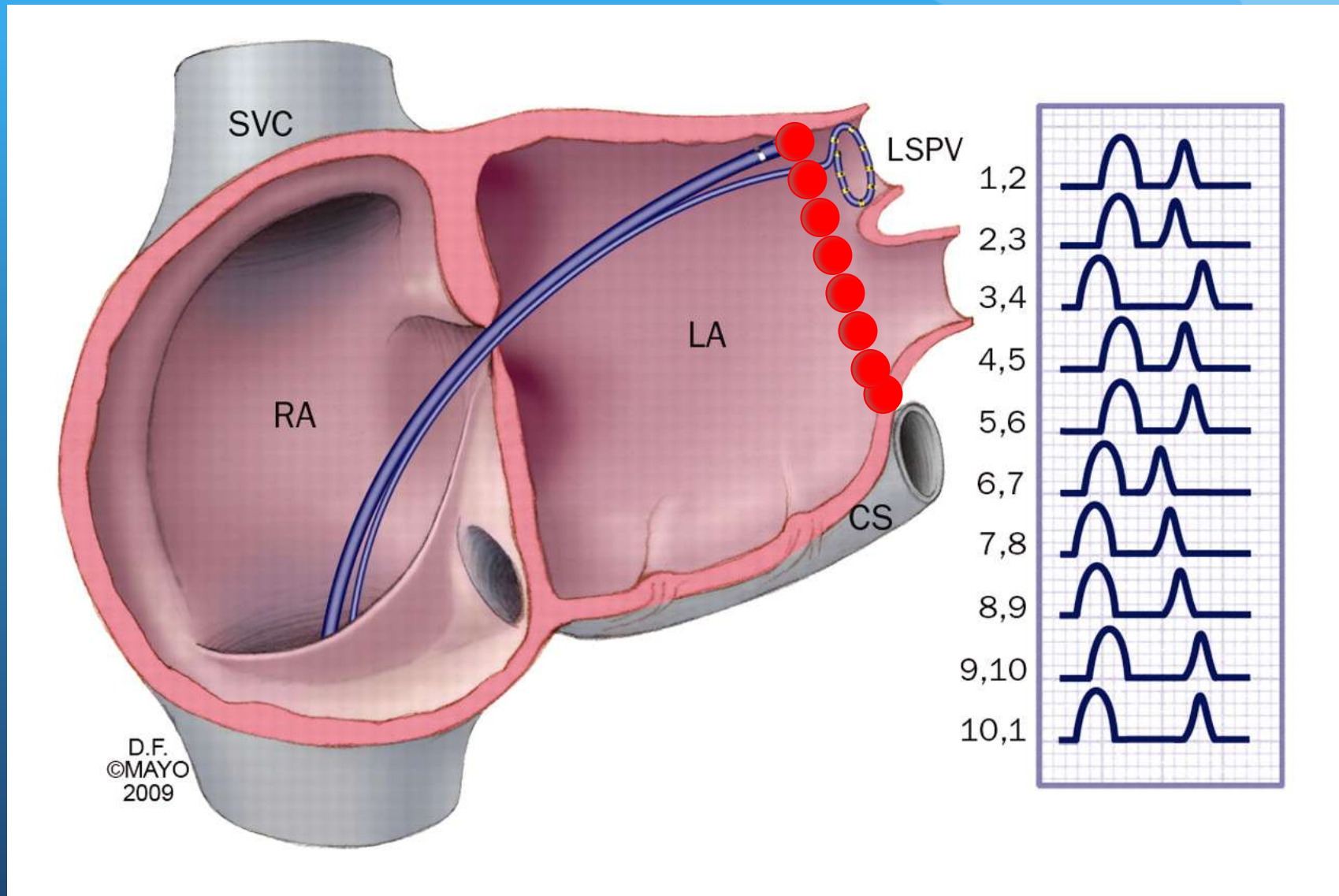
“...suffering something like a perpetual hangover and its resulting grumpiness noted by family and friends.”

“ I felt out of breath going upstairs, I couldn't run as I used to but it did affect me mentally. Thoughts of how it would impact my later life haunted me; worrying about strokes & constantly taking my pulse was taking over my life. “

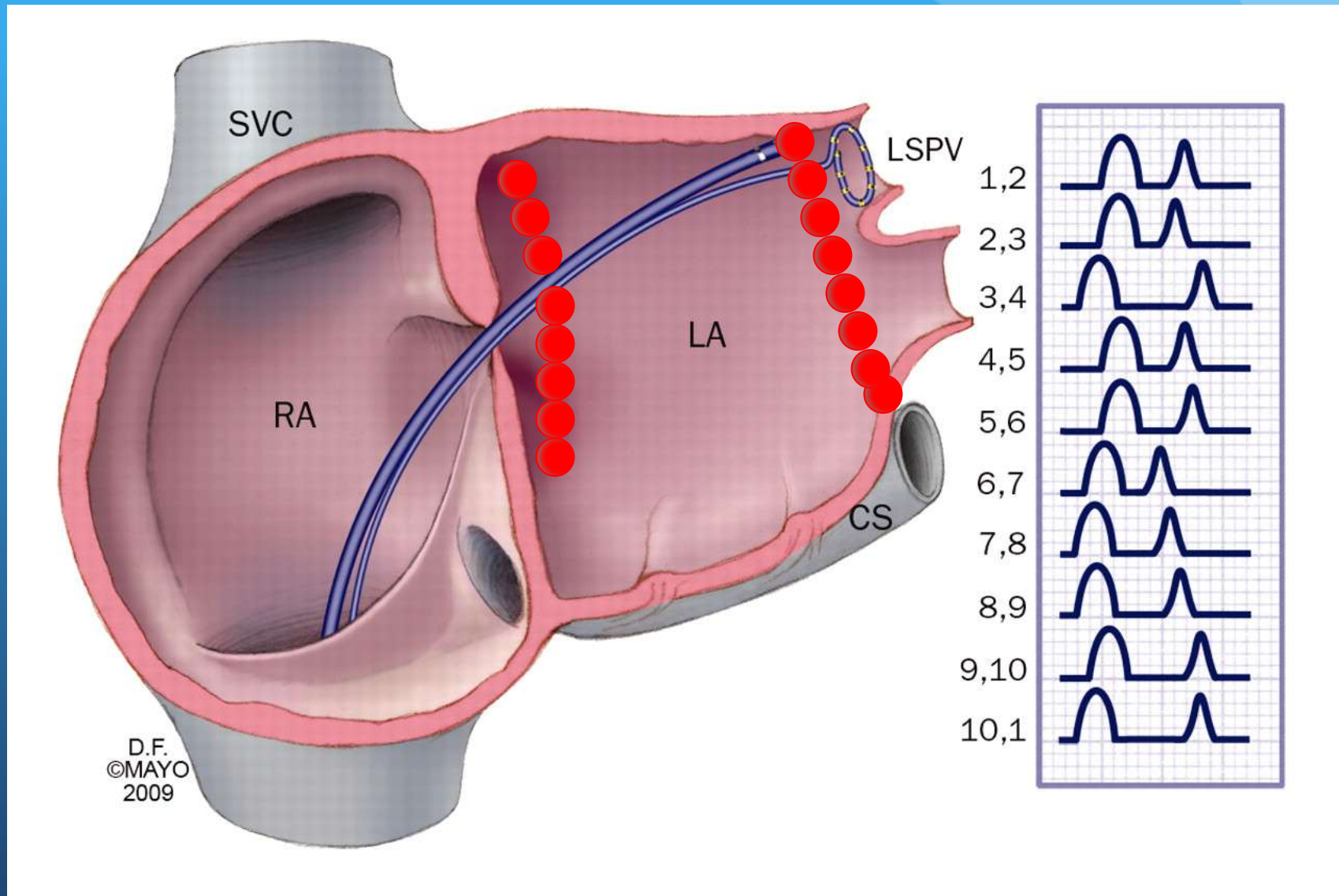
What causes AF ?



Pulmonary vein isolation



Pulmonary vein isolation



3-Dimensional Navigation

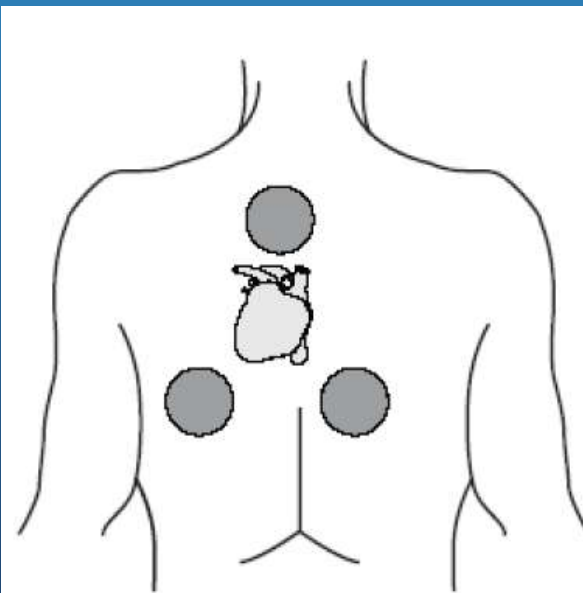
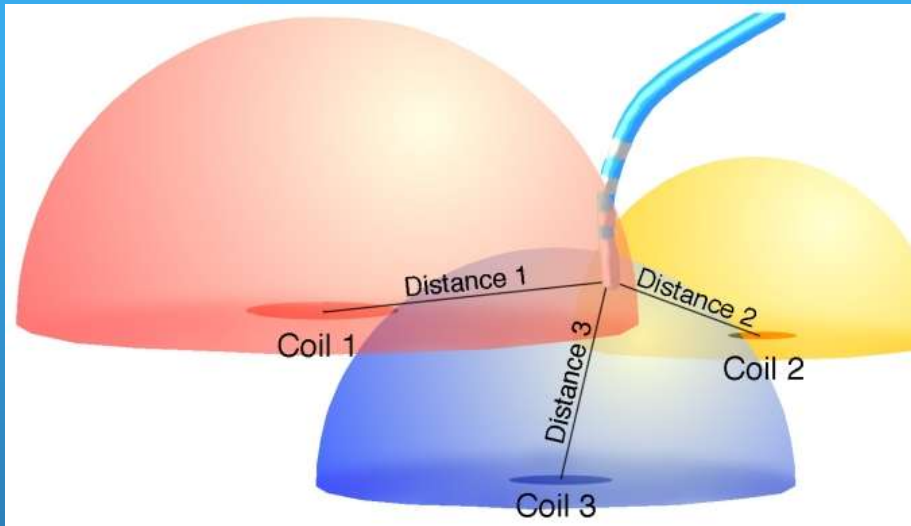


Figure 1: Back Patch Placement

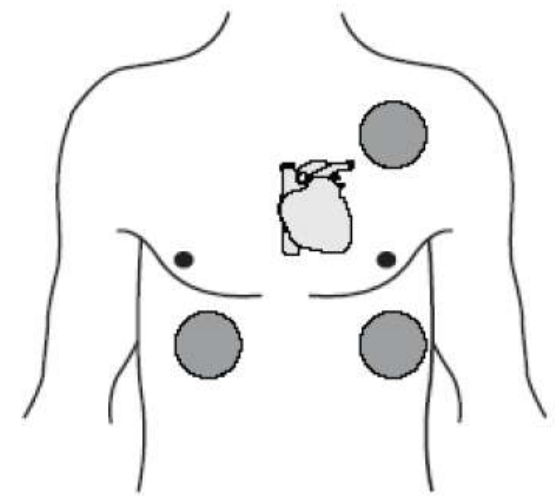
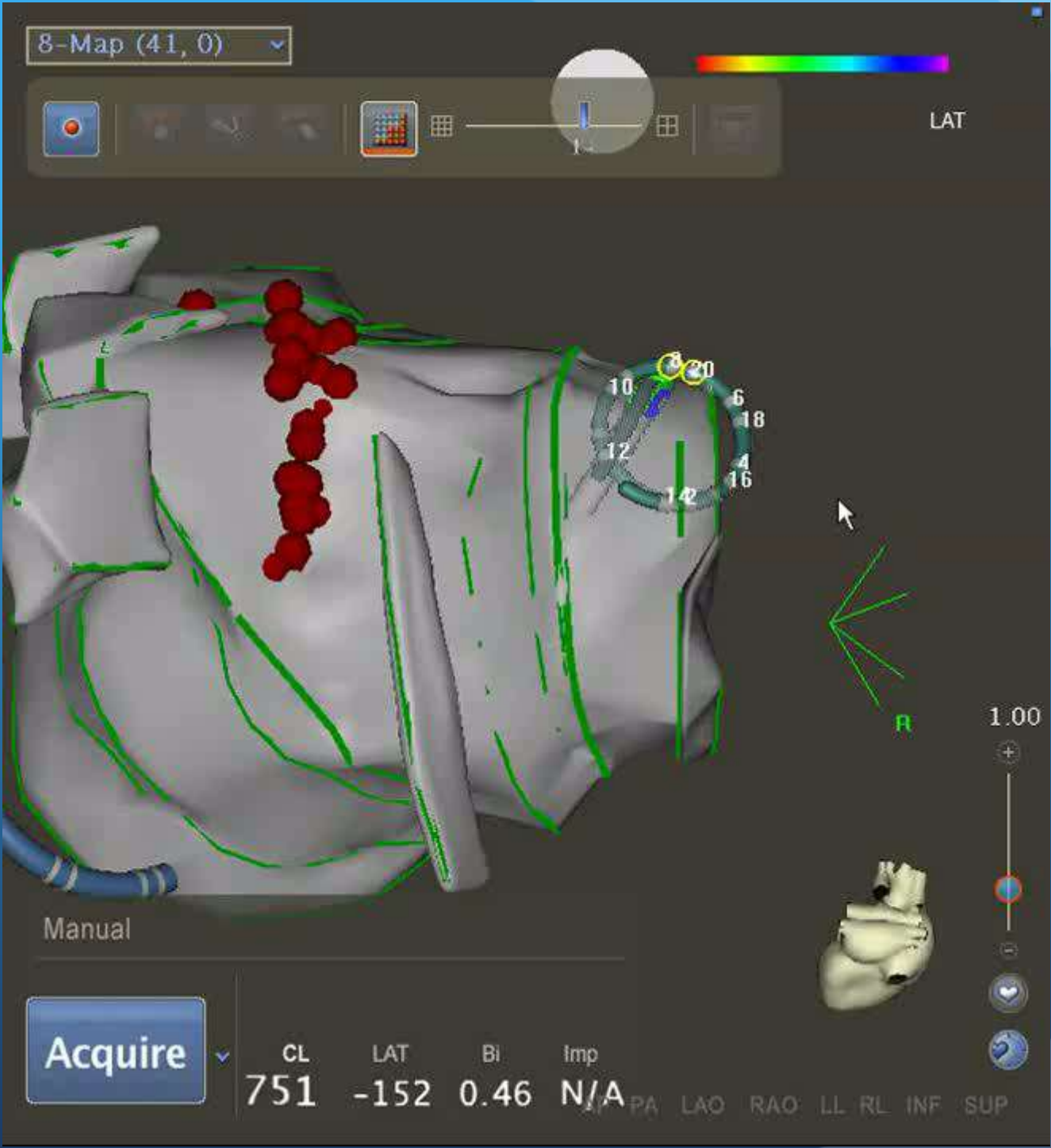
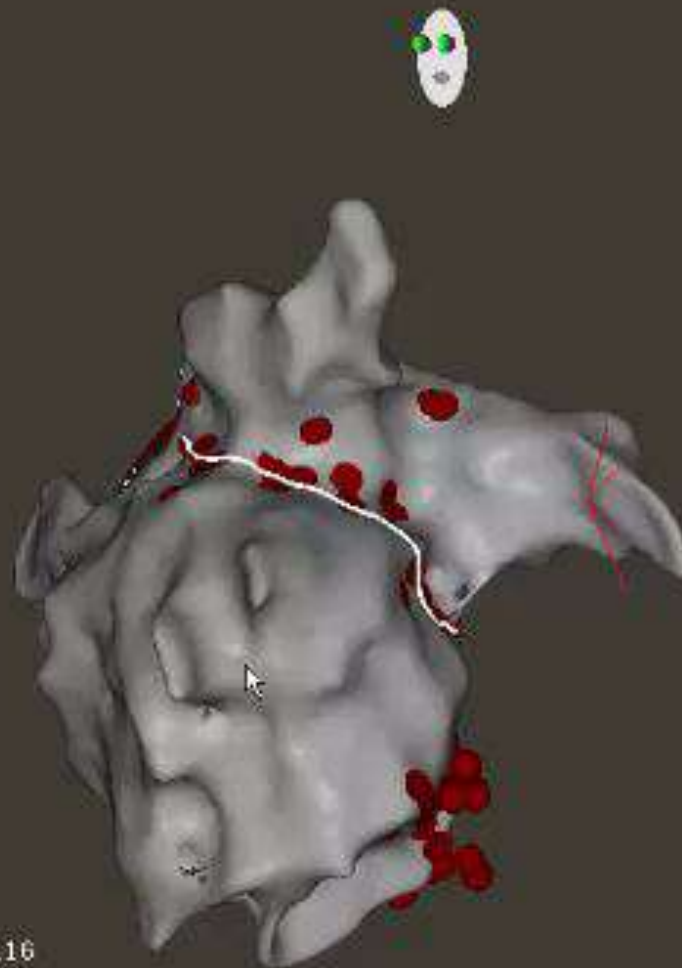
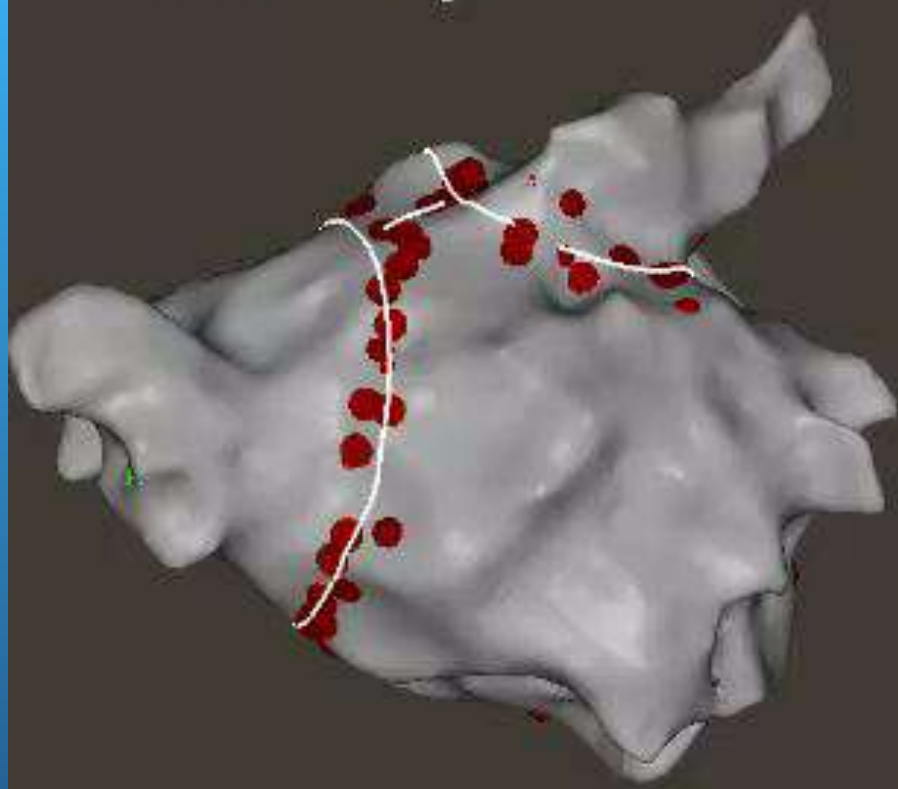
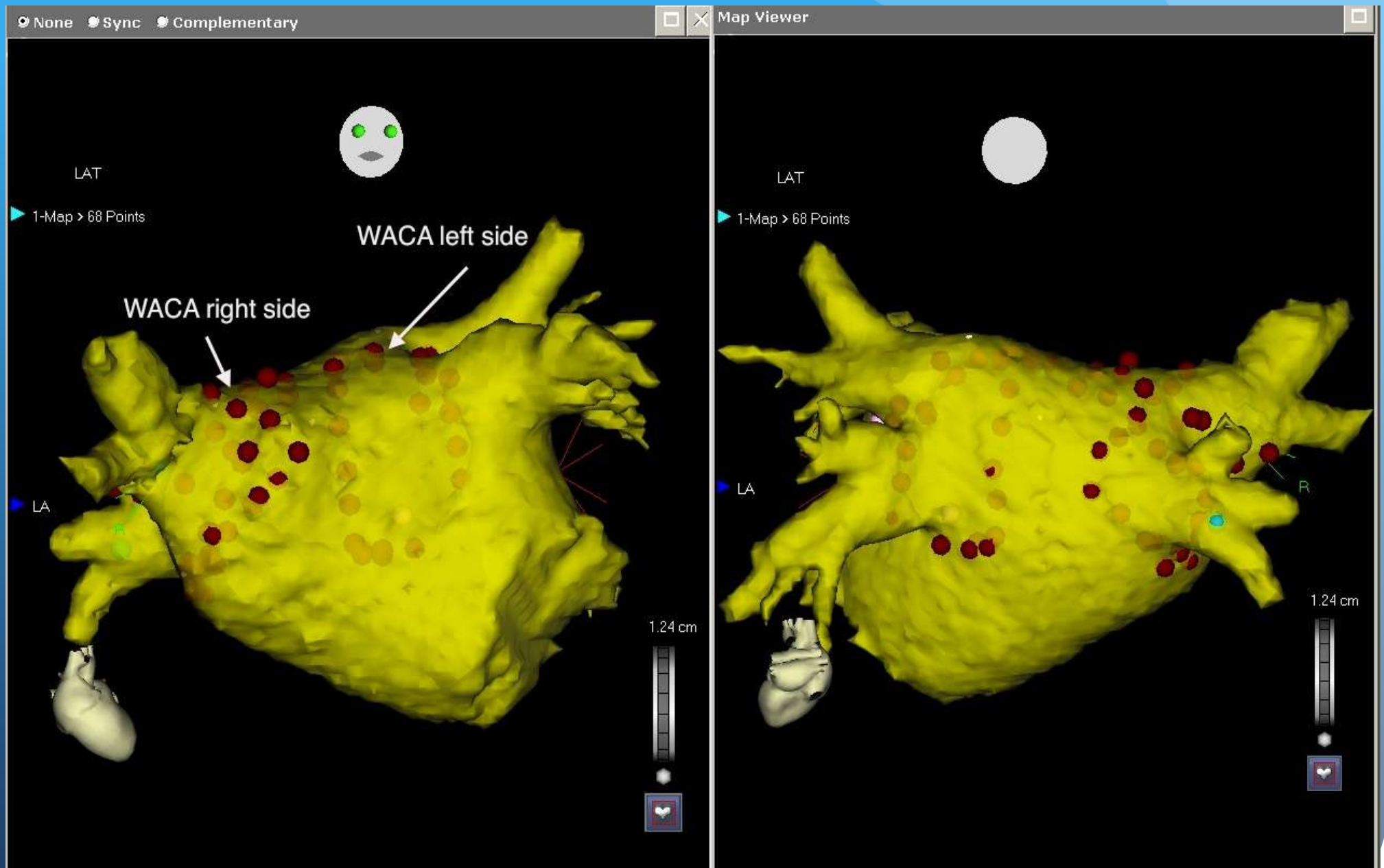


Figure 2: Chest Patch Placement

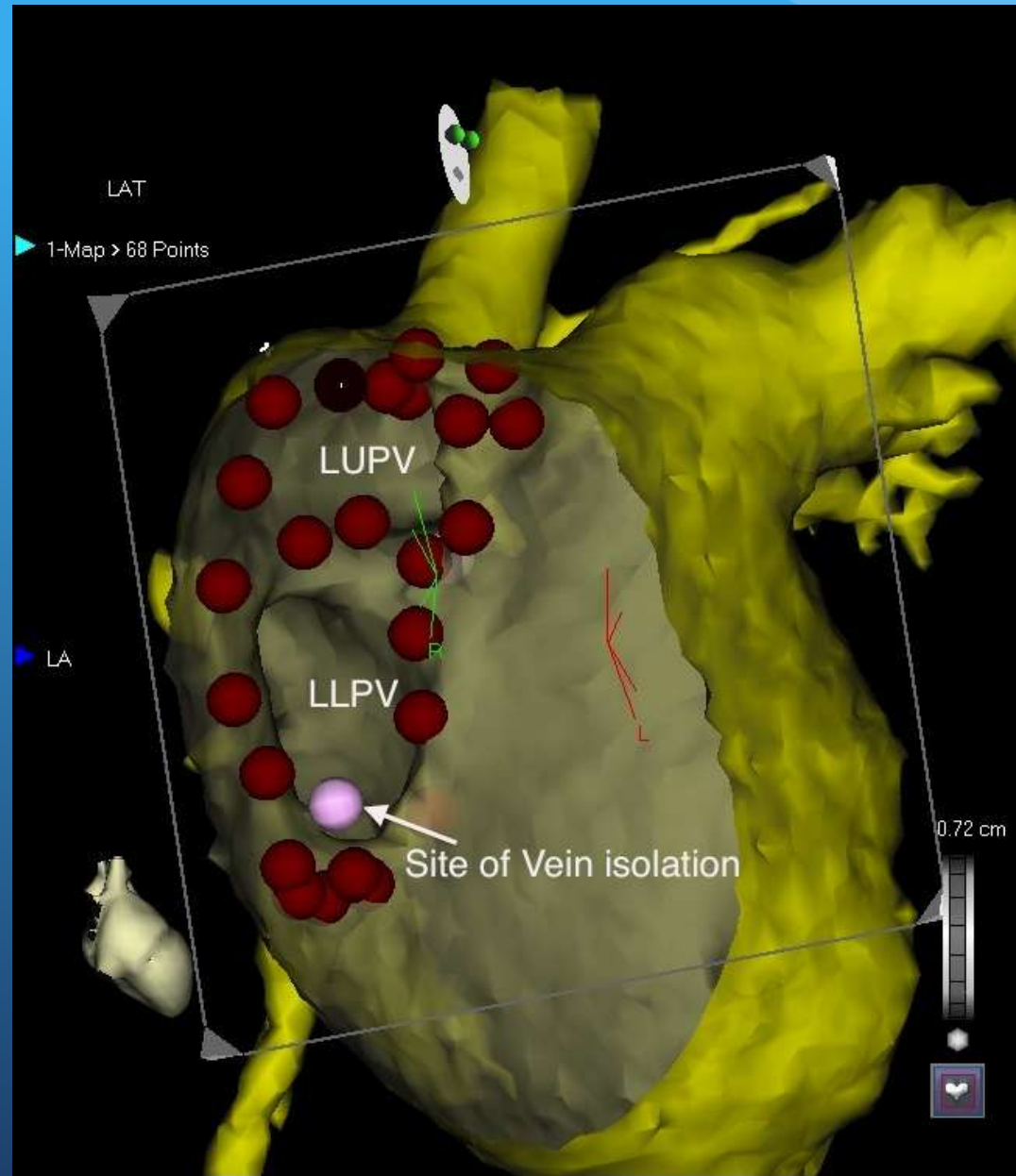




WACA for PAF



WACA for PAF



AF Ablation Procedure

- Admitted (NBM) on morning of procedure (INR 2-3.5)
- Transferred to EP lab; sedated midazolam & diamorphine



AF Ablation Procedure

- 3 vein punctures
- Heparin
- 2 - 6 hours
- (DVD specs)

- Home next day
- Warfarin 3 months



Is it painful?

“The first ablation procedure was not without discomfort, but not to the extent that I had any hesitation in having it a second time. On the second occasion the discomfort was minimal”.

“..waiting for the op I was still very apprehensive but strangely resigned to it all. The next few hours passed in a haze, I was never in pain just slight discomfort. I recovered well with some very impressive bruising”

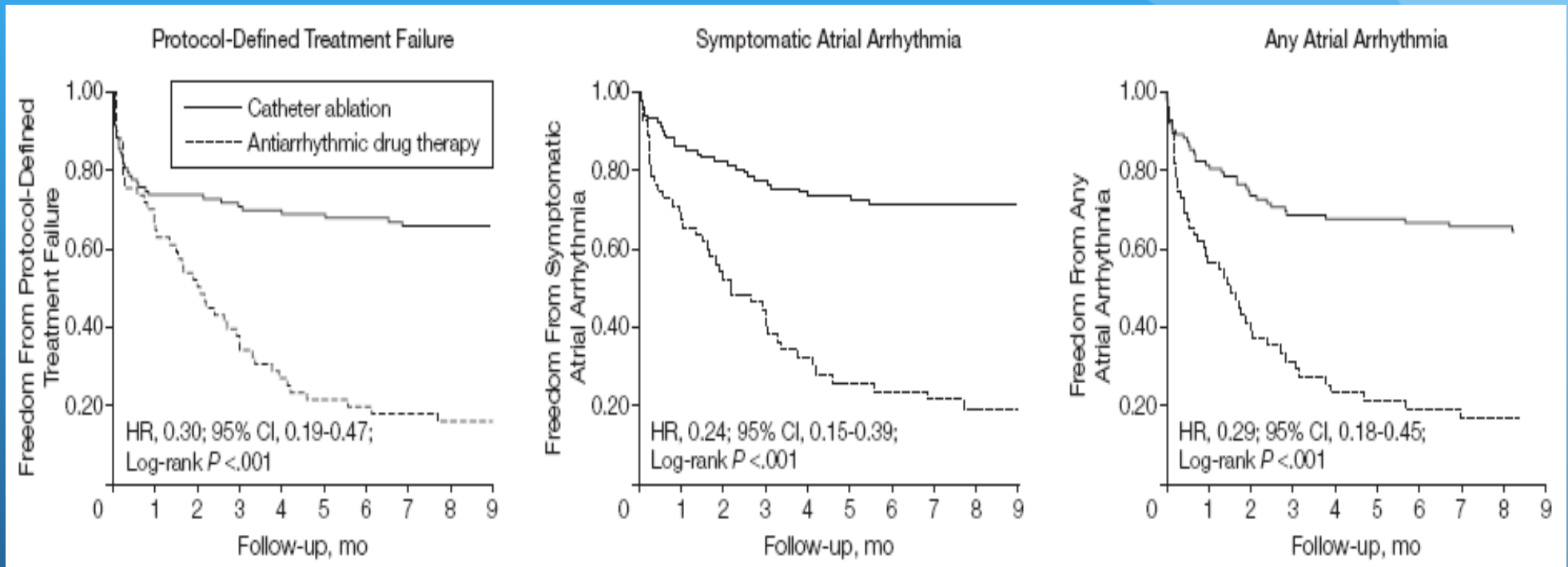
“There was some sizeable bruising on the inside of my right thigh where the catheters were inserted but this disappeared after a couple of weeks.”

“I am writing this message having just arrived home from Hospital in Bristol,i live in Swindon.I just know i am going to be ok,im hoping to play Golf on Saturday if i can get a tee time”

Does AF Ablation work? Is it safe?



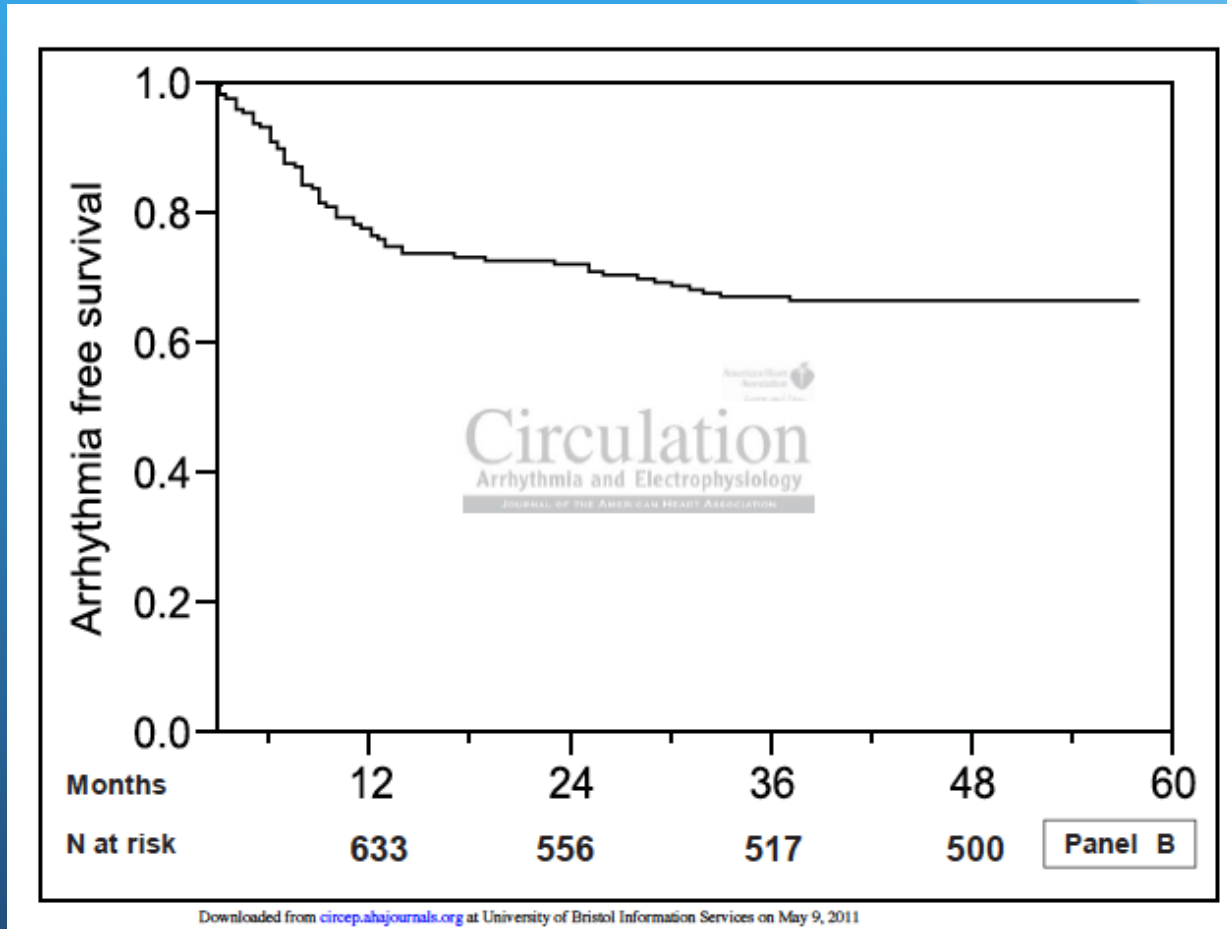
Ablation versus AAD



Wilber, D. J., C. Pappone, et al. (2010). "Comparison of antiarrhythmic drug therapy and radiofrequency catheter ablation in patients with paroxysmal atrial fibrillation: a randomized controlled trial." Jama **303(4): 333-40**.

Outcome Data

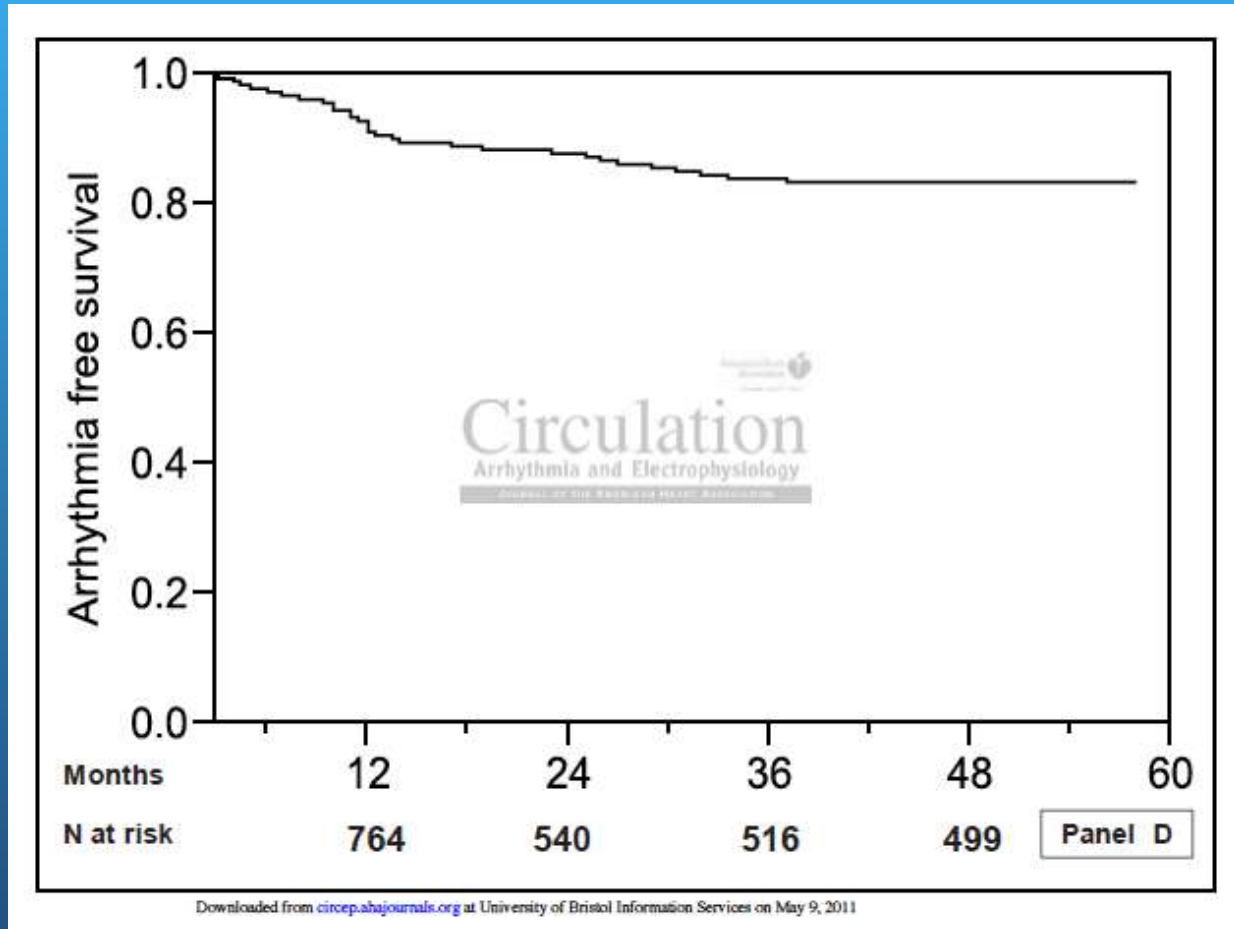
All recurrences (early and late) after a single ablation



Natural History and Long Term Outcomes of Ablated Atrial Fibrillation. Hussein AA, Saliba WI, Martin DO, Bhargava M, Sherman M, Magnelli-Reyes C, Chamsi-Pasha M, John S, Williams-Adrews M, Baranowski B, Dresing T, Callahan T, Kanj M, Tchou P, Lindsay BD, Natale A, Wazni O. *Circ Arrhythm Electrophysiol.* 2011 Apr 14.

Outcome Data

All recurrences after last ablation (831 patients underwent 1019 ablations)



79.4% AF Free/off AAD
1.2 ±0.4 ablations per patient

Natural History and Long Term Outcomes of Ablated Atrial Fibrillation. Hussein AA, Saliba WI, Martin DO, Bhargava M, Sherman M, Magnelli-Reyes C, Chamsi-Pasha M, John S, Williams-Adrews M, Baranowski B, Dresing T, Callahan T, Kanj M, Tchou P, Lindsay BD, Natale A, Wazni O. *Circ Arrhythm Electrophysiol.* 2011 Apr 14.

Is Ablation really that safe in the real world?

Table 7. Major Complications in the Overall Population

Type of Complication	No. of Patients	Rate, %
Death	25	0.15
Tamponade	213	1.31
Pneumothorax	15	0.09
Hemothorax	4	0.02
Sepsis, abscesses, or endocarditis	2	0.01
Permanent diaphragmatic paralysis	28	0.17
Total femoral pseudoaneurysm	152	0.93
Total artero-venous fistulae	88	0.54
Valve damage/requiring surgery	11/7	0.07
Atrium-esophageal fistulae	6	0.04
Stroke	37	0.23
Transient Ischemic attack	115	0.71
PV stenoses requiring intervention	48	0.29
Total	741	4.54

- Questionnaire sent to 521 centres from 24 countries
- Completed in 182
- 85 of which reported 20, 825 ablation procedures on 16, 309 AF patients between 2003-2006
- Major complication 4.5%

Cappato, R., H. Calkins, et al. (2009). "Updated worldwide survey on the methods, efficacy, and safety of catheter ablation for human atrial fibrillation." Circ Arrhythm Electrophysiol **3(1): 32-8.**

So when is Ablation an option?

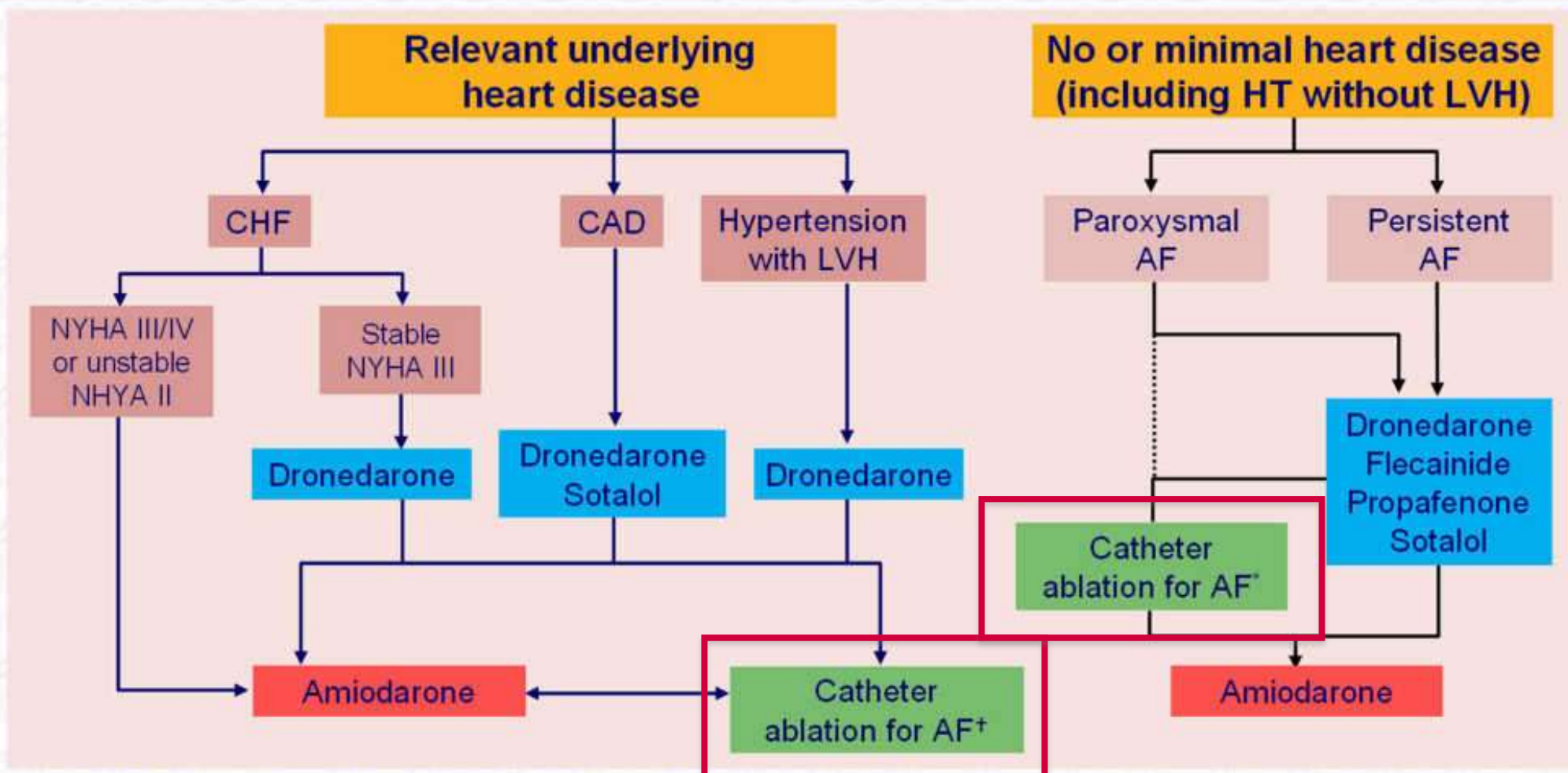


ESC Guidelines 2010 on the management of Atrial Fibrillation

European Heart Journal 2010

**European Heart Rhythm Association (EHRA);
Endorsed by the European Association for Cardio-Thoracic Surgery (EACTS)**

Choice between ablation and antiarrhythmic drug therapy for patients with and without structural heart disease



†More extensive LA ablation may be needed; *usually PVI is appropriate.

AF = atrial fibrillation; CAD = coronary artery disease; CHF = congestive heart failure; HT = hypertension; LVH = left ventricular hypertrophy; NYHA = New York Heart Association; PVI = pulmonary vein isolation. Antiarrhythmic agents are listed in alphabetical order within each treatment box.

Who *shouldn't* have catheter ablation?*

- Asymptomatic/minimally symptomatic AF
 - Anticoagulated if required
 - Rate/rhythm controlled
- 'Dislike' of anticoagulation
 - Not intolerance of anticoagulation
- Presence of left atrial clot
- Morbid obesity
- Presence of factors likely to predict increased risk or treatment failure
 - Cost of procedure(s) £10k/healthcare rationing

* In my opinion

Predictors of treatment failure*

- Very dilated left atria (>5cm)
- Long duration of persistent AF (> 2 years)
- Severe structural heart disease (HCM)
- Severe high blood pressure
- Diabetes

* Not absolute exclusions; HRUK position statement in preparation

So *who* should ablate my AF?



How to choose a cardiologist*

- Yes, you do have a choice!
- Someone you feel comfortable with
- Ask to see recent audit of results
 - (PAF > 70% Persistent > 50% for first procedure guide)
 - How is success defined? (7 day Holter recorder)
- Ask complication rates (Most centres around 5%-10%)
- Are there arrhythmia nurses available?
- Does the hospital publish research?
- Patient feedback is invaluable

* In my opinion

Thank you



Would I have an AF ablation...?

FLECAINIDE

SIMVASTATIN



DECONDITIONING