

AF Ablation is a Not a Complex Procedure

Jack McCready
The Heart Hospital

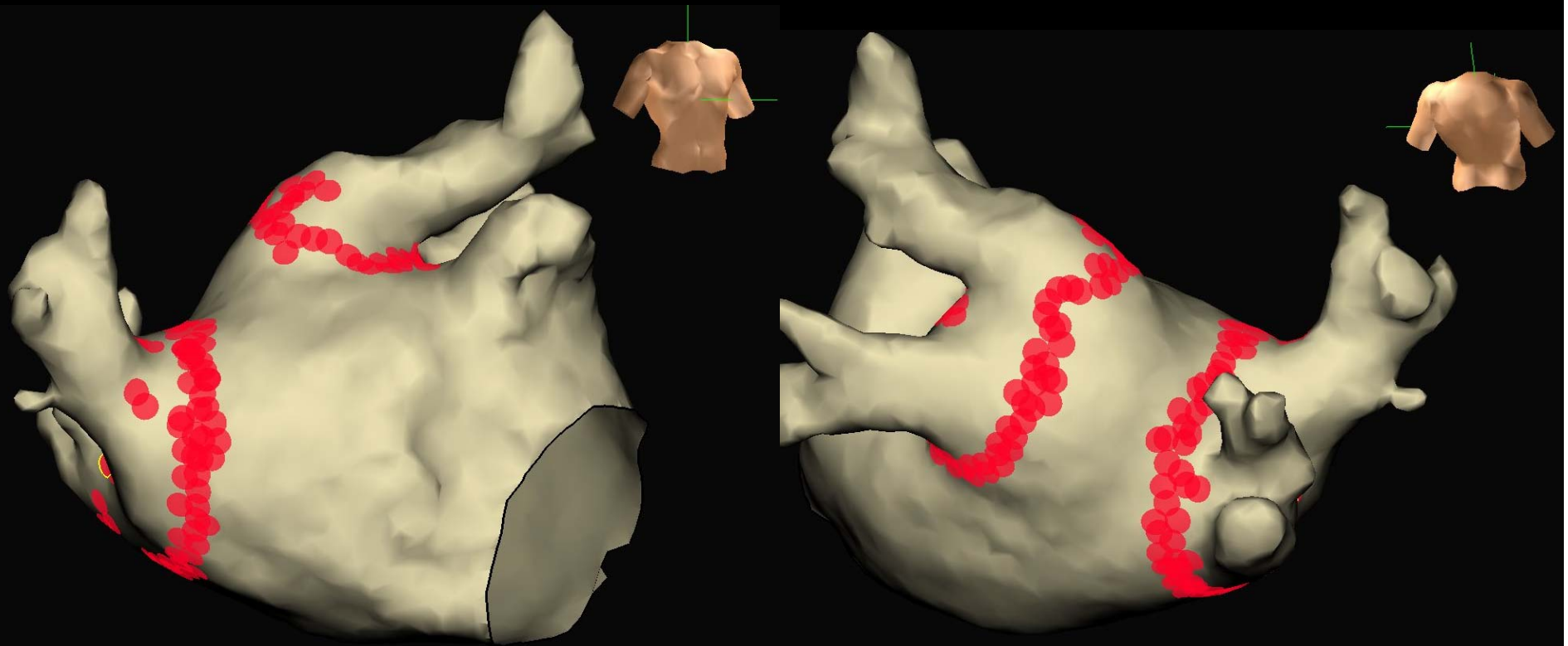
Overview

- AF Ablation:
 - Can be a complex procedure
 - Needs to be a simple procedure
 - Can be a simple procedure

AF Ablation can be Complex

- A Case:
 - 55 year old man
 - Paroxysmal AF
 - Structurally normal heart

First Procedure



First Procedure

- Procedure time 4 hours
- Screening time 59 min

Recurrence

- Organised rhythm
- Severe symptoms with fast ventricular response
- Begging for redo procedure

Cardioversion

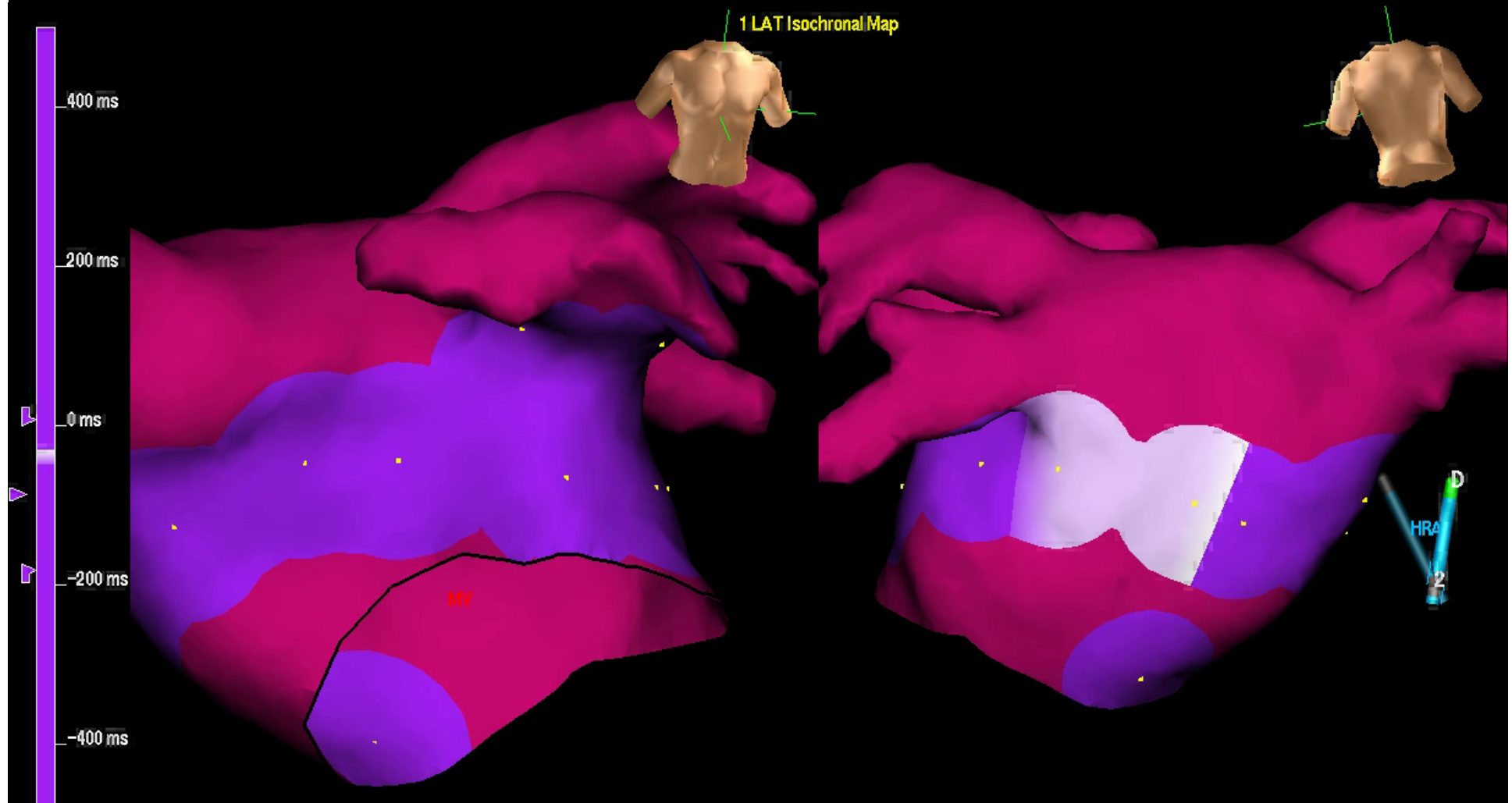
- Successful
- Recurred

Redo Procedure

- MRI Scan
- In organised rhythm
- PVs Re-isolated with no effect

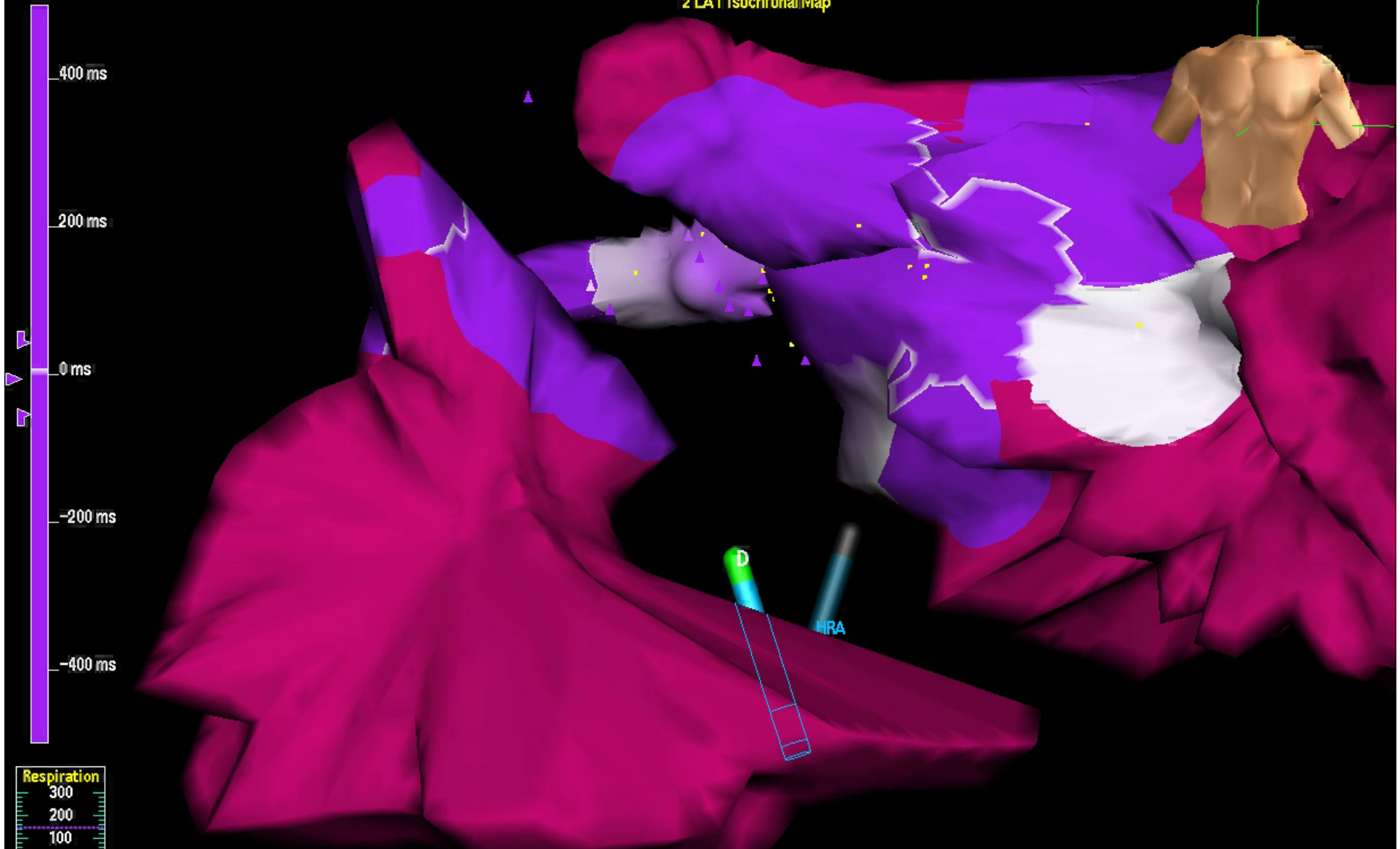
Tachy 1

1 LAT Isochronal Map



Tachy 2

2 LAT Isochronal Map



Ablation of PAF is Meant to be Easy?

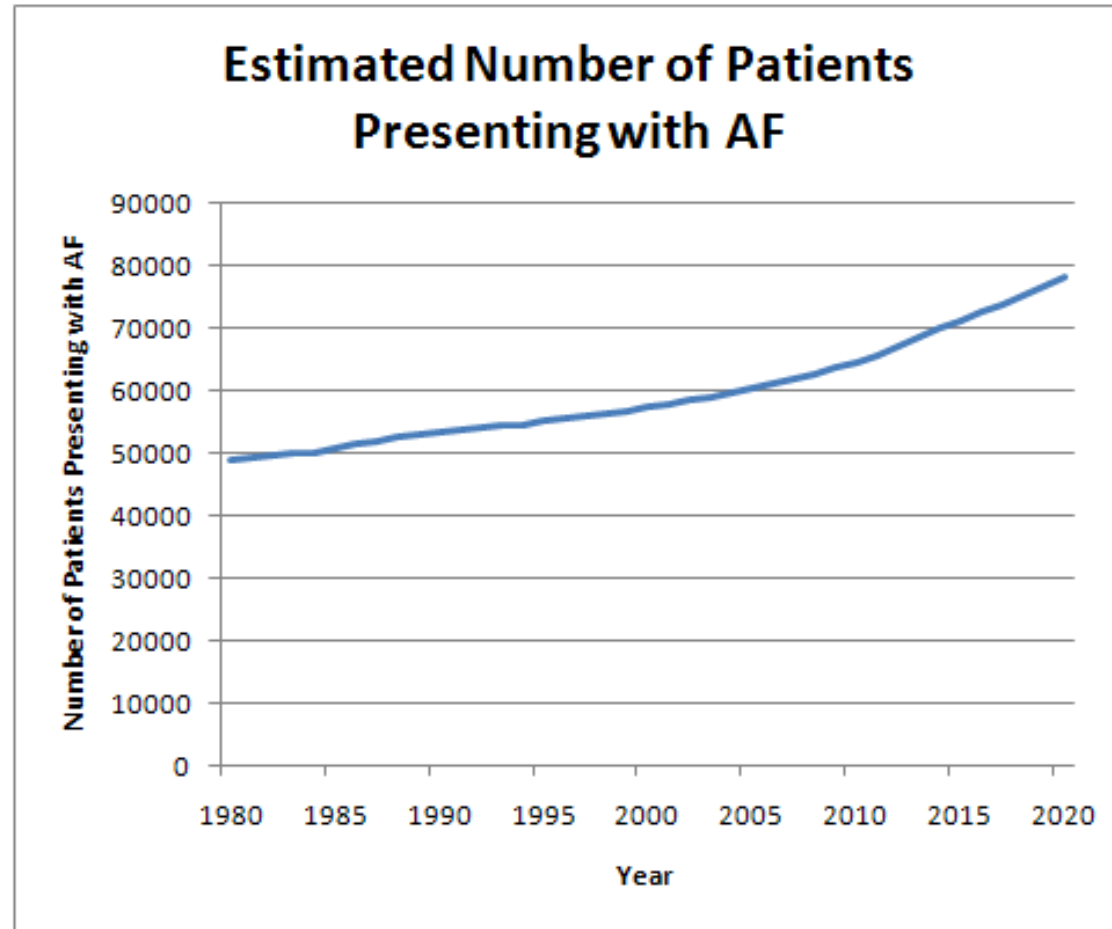
- Total procedure time 9 hours 50 minutes
- Total radiation time 3 hours
- Cardioversion x1
- Hospital Attendances ... many

Persistent AF Ablation

Persistent AF Ablation

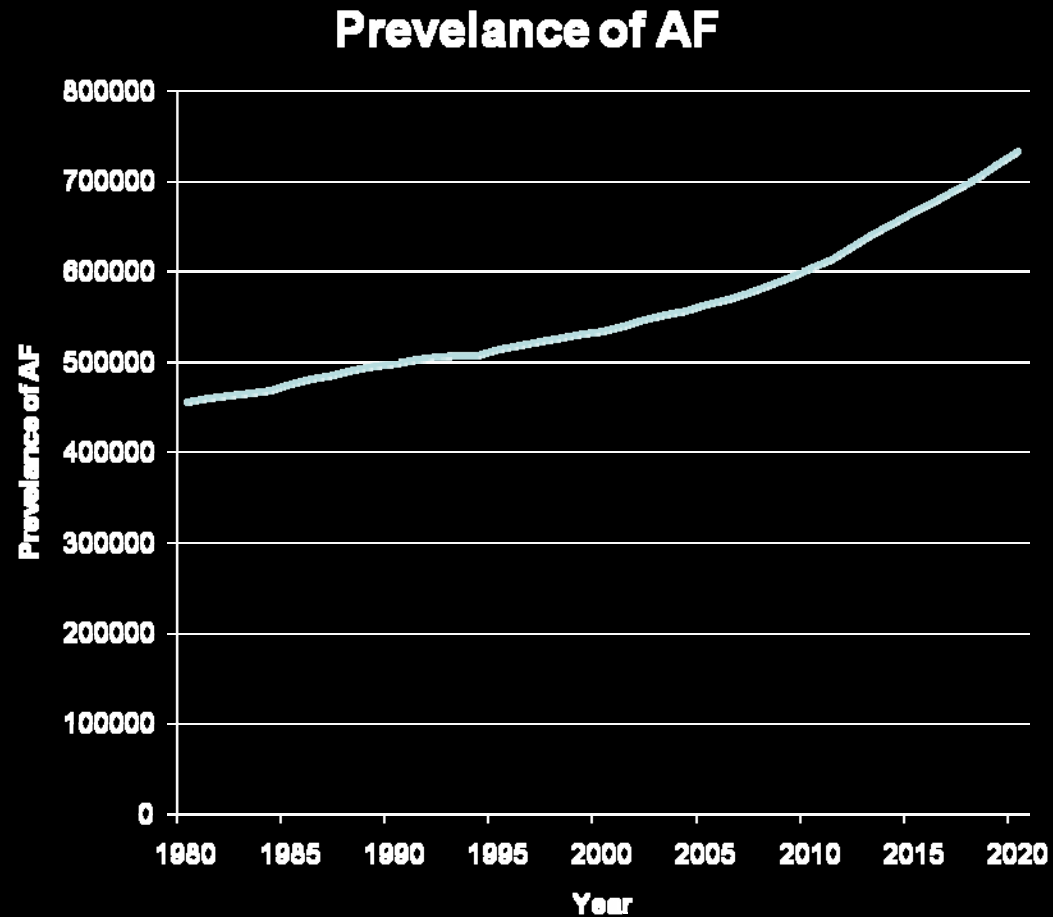
- 79/153 (52%) had repeat procedures
 - Mean procedure time 4¼ hours ± 69 min
 - Fluoroscopy 1½ hours ± 28 min
 - Ablation time 1½ hours ± 27 min
- This is Not Simple**

1st Presentation of AF in UK



http://www.statistics.gov.uk/populationestimates/svg_pyramid/default.htm
Murphy et al Heart 2007

Incidence of AF in UK



http://www.statistics.gov.uk/populationestimates/svg_pyramid/default.htm
Murphy et al Heart 2007

Current UK AF Ablation

- Approximately 25 UK AF centres

To Treat 1st Presentation of AF

- 60,000 patients
- Treating 1/5 of them
 - 12,000 patients a year
- 480 procedures 1st time procedures a year each
- At The Heart 2008:
 - 91/246 (37%) were re-do procedures
- 762 procedures / centre / year

762 Procedures per year??

- 240 working days per year
- About 3 AF Ablations a day, every day
- In every current AF centre
- To simply treat 1/5 new cases

Incidence is x10

What This Means

- To effectively ablate AF on a larger scale
- The procedure must be:
 - Quick
 - And most importantly

Simple

Can AF Ablation be a Simple
Procedure?

Novel Techniques to Simplify AF Ablation

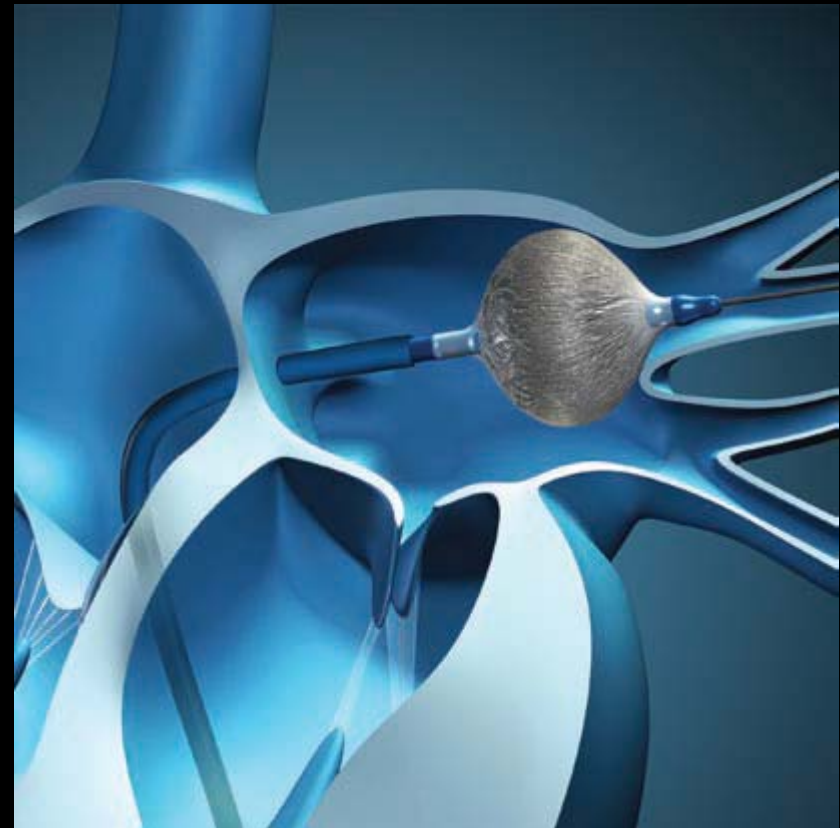
- Requirements:
 - Be Effective in both PAF and Persistent AF
 - Quick and Easy
 - Proven
 - Safe

Cryoballoon

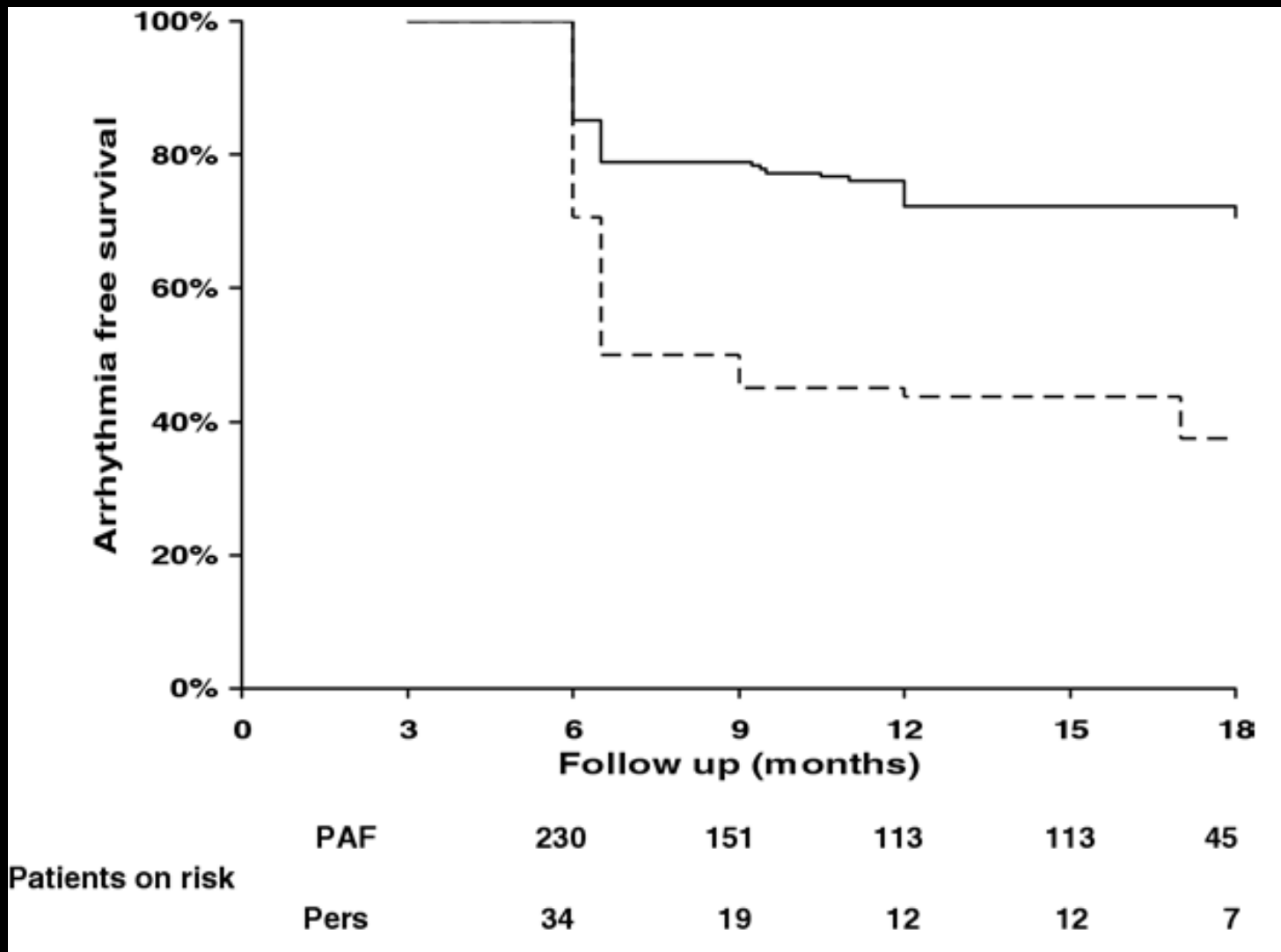
Multi-Electrode Ablation Catheters

Cryoballoon

- Freezing balloon
- “Stop Arrhythmias Cold”



Results Persistent AF and PAF



n=346
Multicentre

Procedure

- Phrenic Nerve Palsy:
 - 26/346 (7%) Phrenic Nerve Palsy with 23 mm Balloon
 - Only 2 with 28 mm Balloon
- No PV stenosis
- Procedure time 2 hours 50 minutes

Cryoballoon

- Requirements:
 - Be Effective in both PAF and Persistent AF
 - Quick and Easy
 - Proven
 - Safe

Multi-Electrode Ablation Catheters

For PV Isolation in PAF

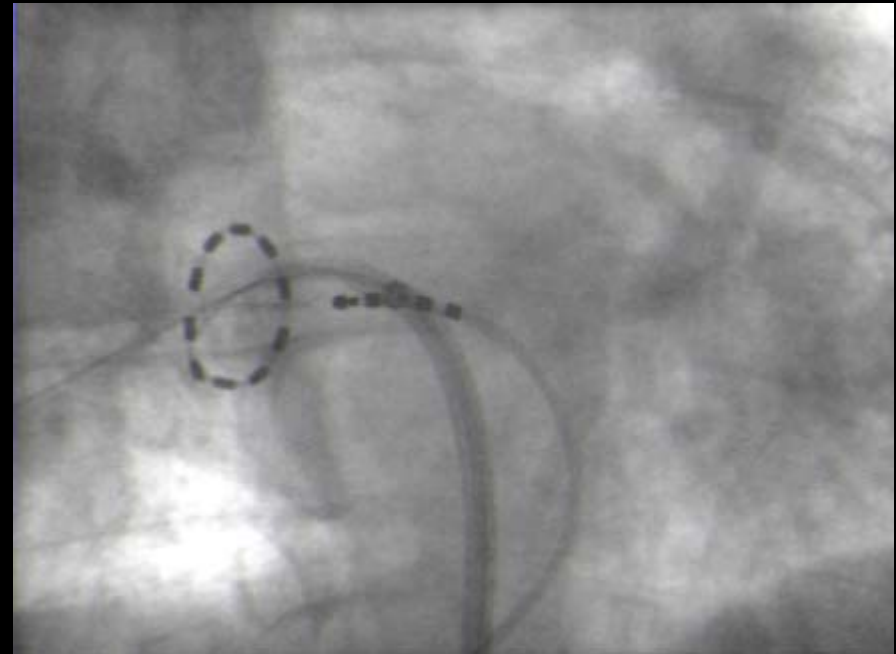
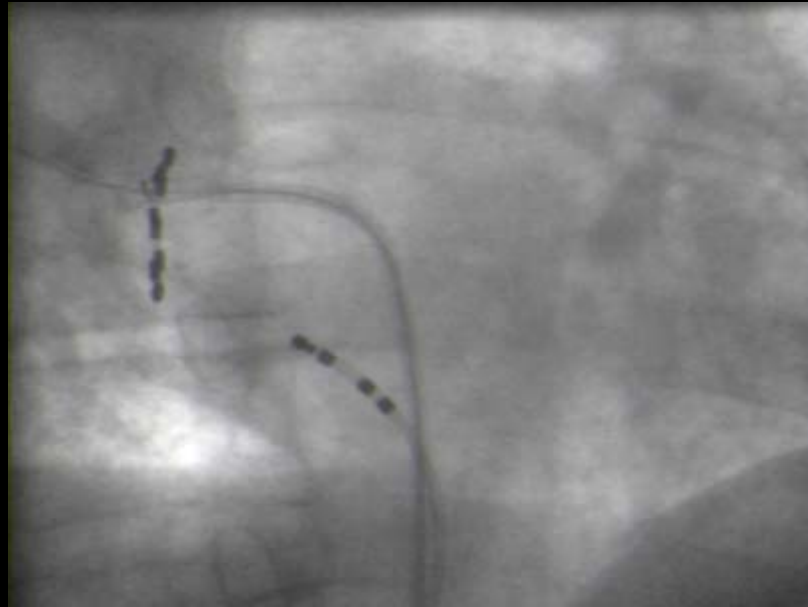
- Ablation Frontiers PVAC
- Both unipolar RF energy from each pole and bipolar RF energy between adjacent poles
- Thermocouple in each electrode
- 4:1 bipolar to unipolar RF



Generator



PVAC in RUPV and RIPV



Results in PAF

- Single Centre 98 patients
- Procedural time Total time 84 ± 29 min
- Fluoroscopy time 18 ± 9 min
- Freedom from AF 7-day Holter at 6 months: 44/53 (83%)

Persistent AF

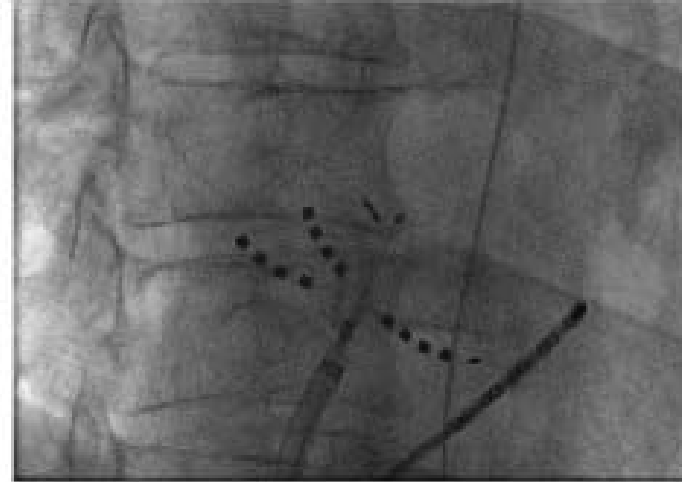


MASC

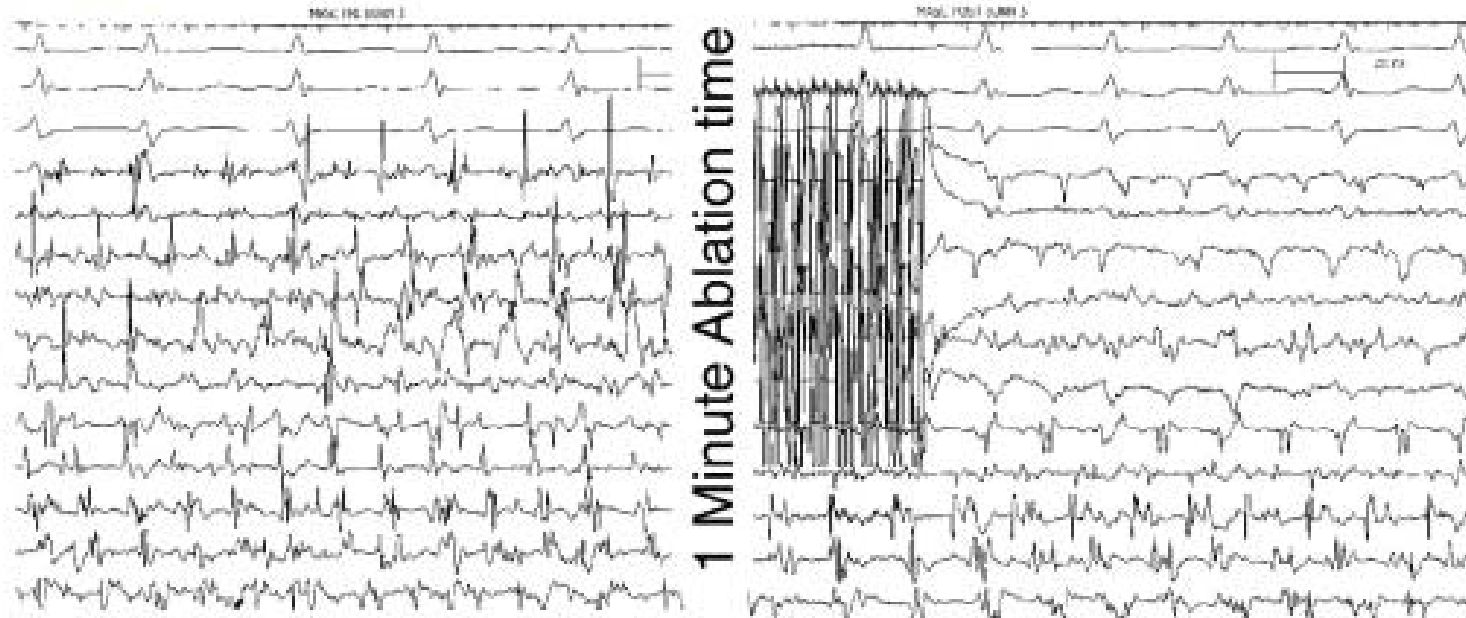


MAC

MASC



I
III
V1
MASC1
MASC2
MASC3
MASC4
MASC 5
MASC 6
CS prox
CS dist



MAC



Success Rates

- 50 patients
- Single Procedure Success Rate 46%
- Procedure Time 2 hours 35 minutes
- No PV stenosis reported, 1 tamponade

Ablation Frontiers

- Requirements:
 - Be Effective in both PAF and Persistent AF
 - Quick and Easy
 - Proven
 - Safe

We Have Seen...

- AF Ablation:
 - Can be a complex procedure
 - Needs to be a simple procedure
 - Can be a simple procedure