

AF ablation is not a complex
procedure?
- Antagonist

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Who am I? Who are you? Who is he?

- My background
 - 14 years qualified
 - Been around
 - Final year SpR in EP and devices in Liverpool
 - ... But I'm actually a Manc so let the jokes roll on!
 - Done over 100 AF ablations
 - Done over 350 other ablations
 - I'm not a seasoned pro, but in same breath I'm not a novice!
 - The protagonist...not complex? Dr McCready-Haissaguerre? Clearly is talking about AV node ablations for AF rather than PV or LA ablation!
 - Audience Show of hands?



Not complex...

- Complex (käm-pleks)
 - *complicated in structure; consisting of interconnected parts* - wordreference.com
 - *Involved or intricate; complicated* - freedictionary.com
 - *consisting of many different and connected parts; not easy to understand; complicated* – Oxford English dictionary
- From the Latin *complexus*
 - past participle of *complecti*, comprise (a multitude of objects)
- “Complex” can be a relative thing
 - Vs drug prescription for AF, DC cardioversion for AF, AVNA for AF



To defeat terrorism we have no choice but to invade Afriganist
Afgan- Aphghanis Afgah Iraq.

A handwritten signature in black ink, appearing to read 'George W. Bush'.

So what might be complex about AF ablation...?

- Start from the beginning of a case A walk through
 - Patient selection
 - Persistent, paroxysmal or permanent? Do you do all, or only paroxysmal?
 - Are they going to benefit? Fine if they have palpitations, but what if they are “fatigued”, “short of breath”, “dizzy” – how can you really be that sure? Maybe they’re somatizing!
 - Too old? Do you want to appear ageist?
 - Do you do previous stroke patients or are they too high risk? Might you reduce their long term stroke risk if you do them and cure the AF?
 - What do you consent them? Figures banded from 50%-90% in some centres? What is your own success rate? How do you evaluate success?



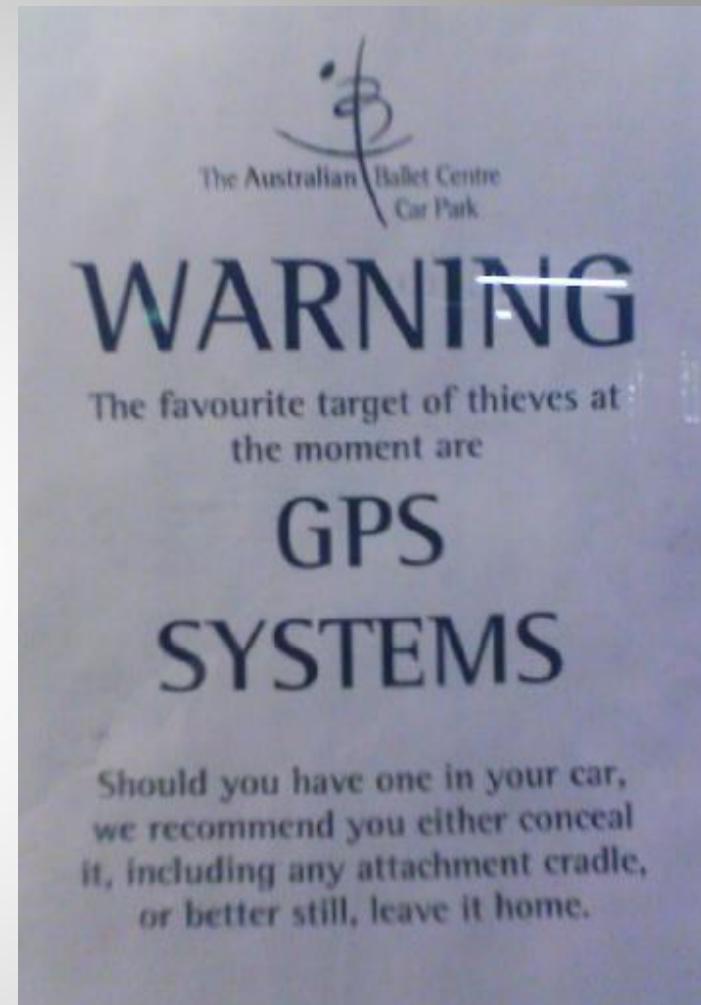
Complex



- Pre-admission and anticoagulation?
 - Anticoagulation and TOEs, what to do?
 - Do you simply stop the warfarin? Do they need to be on warfarin? Do they get clexane bridging? Do they need a TOE?
 - At what INR level do you accept a transeptal risk?

Complex?

- The procedural navigation systems
 - Do you use a navigation system at all?
 - CARTO, NAVX, simple fluoroscopy?
 - If you use navigational software, do you Merge or Fuse?
 - Has the CT or MRI been done?
 - Do you create geometry yourself?
 - Do you simply do a pulmonary vein angiogram?



Complex.....?

- The transeptal puncture?
 - So you've setup, you then have to use a medieval instrument to puncture the heart!
 - Risk of tamponade, risk of aortic perforation.
 - Even if you don't tamponade but enter the pericardium do you carry on with the procedure knowing that forced anticoagulation is around the corner?
 - And when you've done it once, you have to do it again!



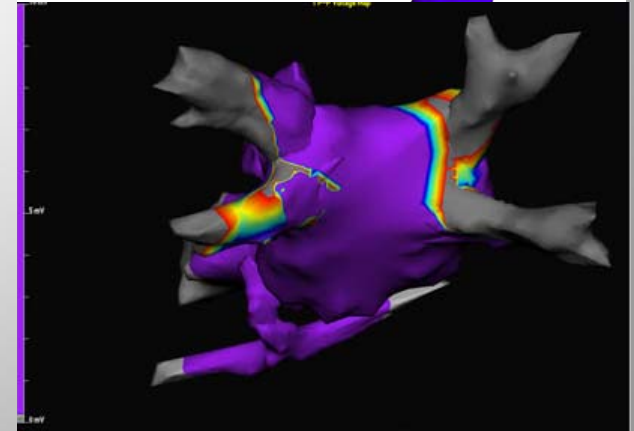
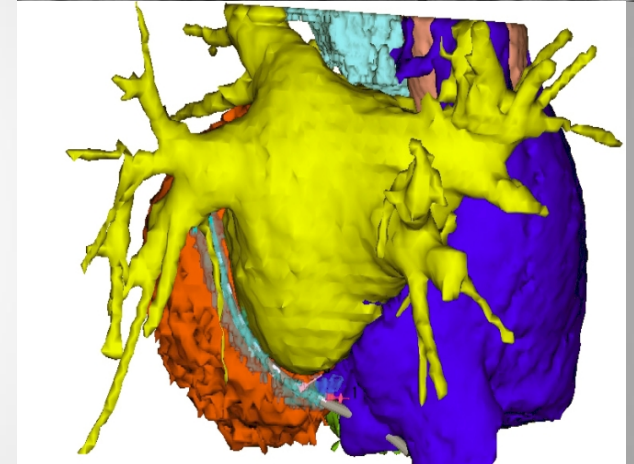
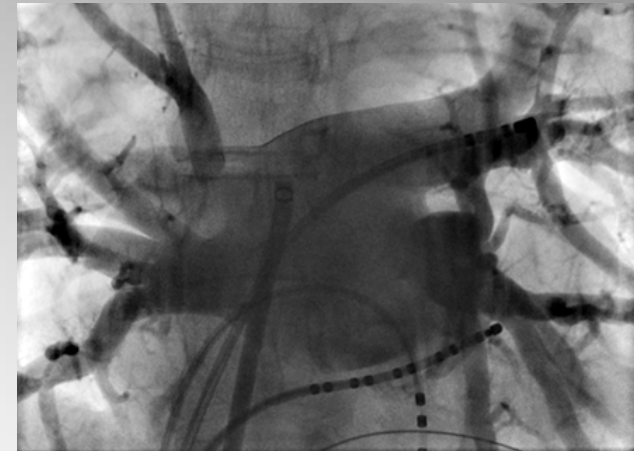
Complex

- The anticoagulation
 - Do you bolus?
 - Do you give the heparin or do you trust someone else to do it?
 - Do you infuse or do you check ACTs regularly
 - Or do you do both?



Complex?

- So you're in the left atrium!
 - How do you image the veins
 - Adenosine pulmonary angiogram?
 - Selective pulmonary vein angio?
 - And then you Merge/Fuse?
 - Do you use ICE?
 - Are the points you are merging actually where you think they are?
 - If you don't merge, are you missing any of the atrium in the geometry you've created?



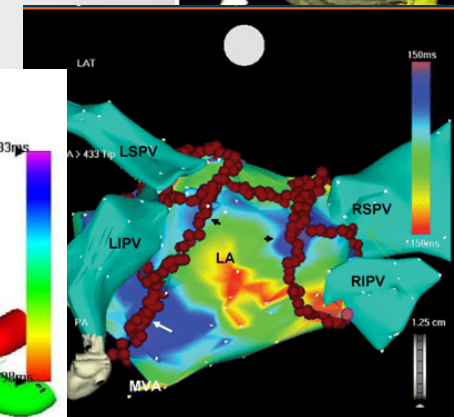
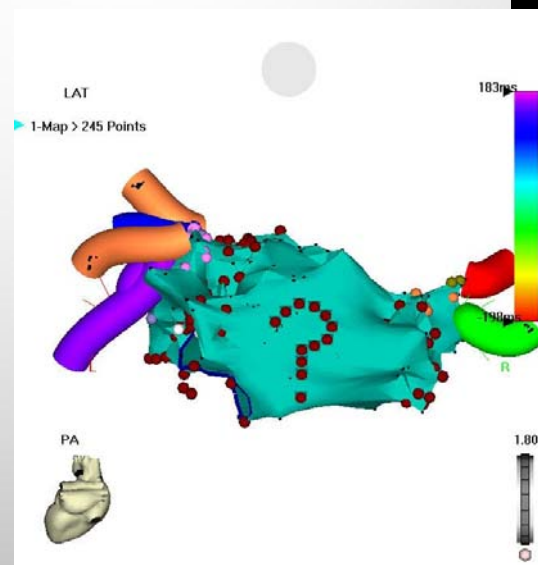
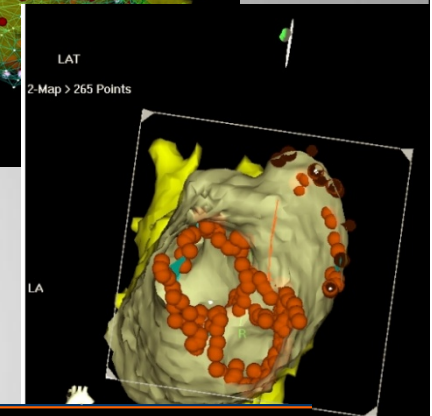
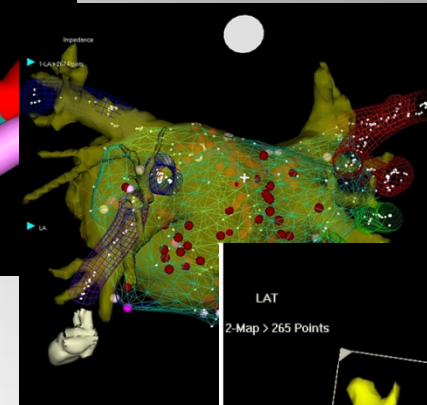
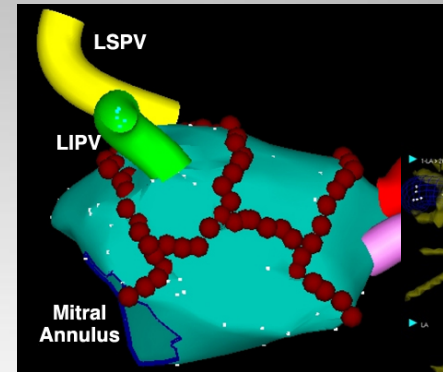
Complex?



- Do you provoke AF?
 - Should you attempt to find arrhythmogenic veins with isoprenaline/adrenaline?
 - Should you attempt to provoke AF with adenosine?
 - Does it really make any difference which veins are irritable?
 - Do you concentrate more on those?

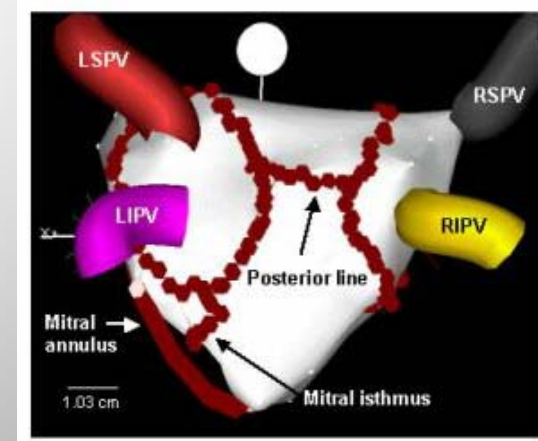
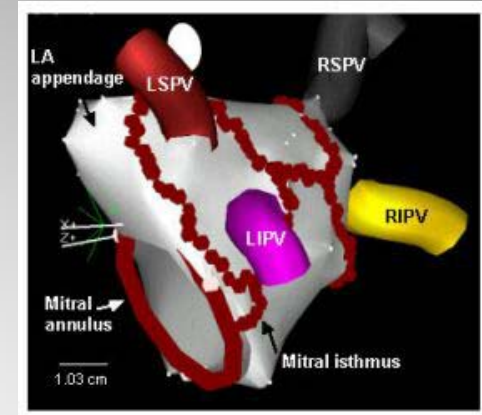
Complex?

- So you are getting close to ablating and its nearly 2 hours in!
- What lesion set are you going to do?
 - Antrum isolation only?
 - Wide area circumferential?
 - Box lesions?
 - SVC?
 - IVC?
 - CS?
 - Appendage?



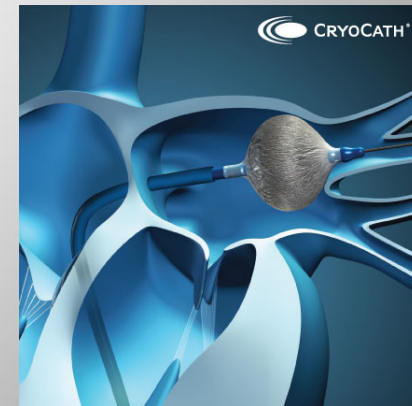
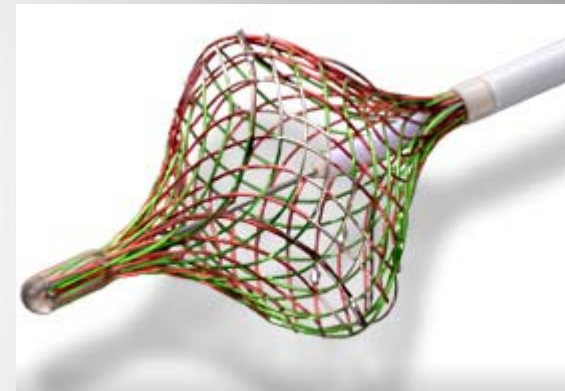
Complex?

- Do you do linear lesions?
 - Roof lines?
 - CS lines?
 - MIG lines?
 - TI lines?
 - Do you test the linear lesions?
 - How do you test the linear lesions?
- Do you look at ganglionic plexi ablation?
- Do you ablate epicardially?



Complex?

- And how do you ablate in the left atrium?
 - Standard irrigated catheter?
 - Do you mesh?
 - Do you cryo?



Complex

- So we say ablate the veins
 - Is it really that easy to navigate inside the left atrium
 - Nooks and crannys
 - Ridges
 - Holes
 - Pits
 - Dropping off the vein antrum
 - Accessing the right lower pulmonary vein
 - Avoiding the appendage
 - Geometry shift!!!!
 - This isn't just ablating a slow pathway, or an AP!



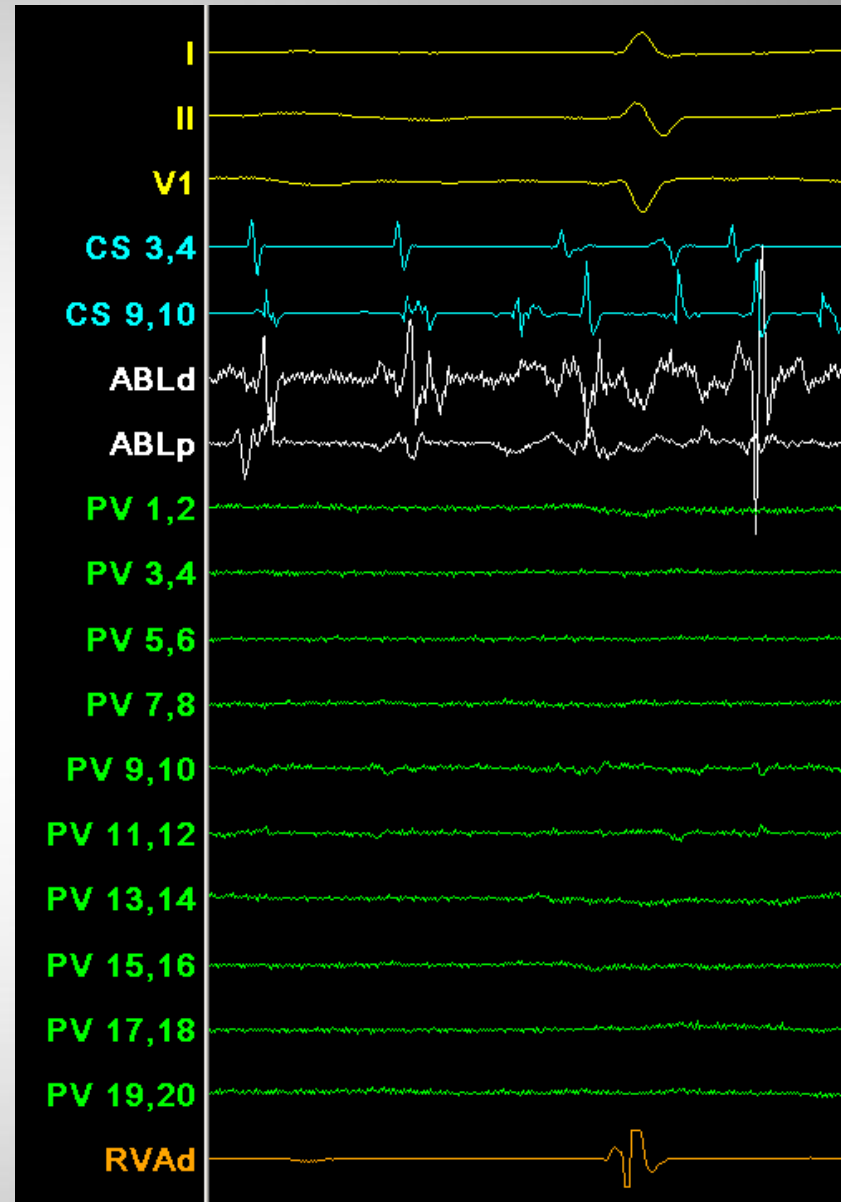
Complex

- And then there's the signals?
 - So the AF signal might just look the same?
 - Are there periods of regularity?
 - Is it organising?
 - Are you seeing vein double potentials?
 - Are those signals actually appendage far field signals?
 - Are you looking at CFAE?
 - Does CFAE really exist or do all areas of the atrium have complex fractionated electrograms if you watch for long enough?
 - Are you creating an atypical left atrial flutter, if so how are you going to tackle it?
 - Do you move onto an activation map of the LA if you think flutter is developing?



Complex

- When do you stop?
 - Do you ablate to SR?
 - Do you cardiovert if not terminated?
 - Do you give antiarrhythmic drugs?
 - Do you ever accept defeat!!?



Complex?

- So, 3-8 hours later ...
You finish!!!!
- Post procedure?
 - You anticoagulate ...
They bleed
 - What do you do now?
 - Do you keep anticoagulating?
 - Do you stop?
 - And then they revert to AF? ... Do you cardiovert?
... Do you use drugs?



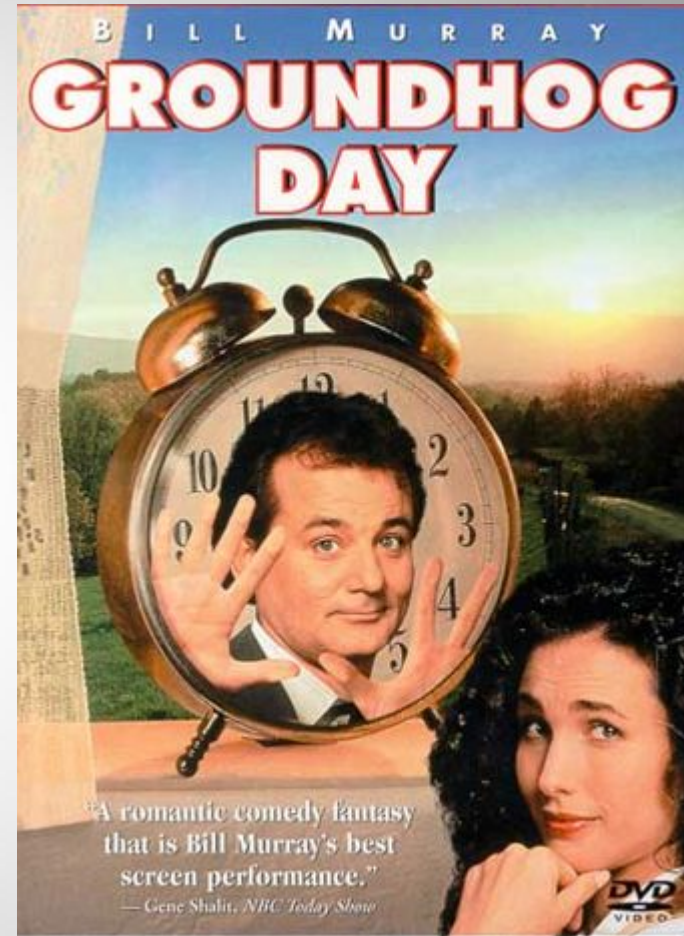
Complex

- Eventually they're discharged
 - They return at 3 months
 - Still some occasional symptoms
 - But heightened anxiety over palpitations?
 - Do you reassure?
 - Do you stop warfarin?
 - Do you stop AADs?



Complex?

- They return 1 year later
 - Back in AF
 - All over again



Summary

- Is AF a **complex** procedure?

YES it is if it's done properly!

- Quotation
- Talking about the complex atrial arrhythmias derived as a result of AF linear lesions
 - “are often **multiple, complex**, and frequently more symptomatic than AF, they constitute the last and frequently the most **difficult step in ablation for patients with persistent AF**” – Hassaigurre, PACE 2009
- “Catheter ablation of AF is one of the most **complex** interventional electrophysiologic procedures”
- “Catheter ablation of AF is often a **complex** and long procedure”
- “Management of patients after hospital discharge (from AF ablation) can be **complex** and requires commitment from the following physician” - HRS/EHRA/ECAS Expert Consensus Statement on Catheter and Surgical Ablation of Atrial Fibrillation, 2007

Thank you for listening!

