

# The management of atrial tachyarrhythmias post AF ablation

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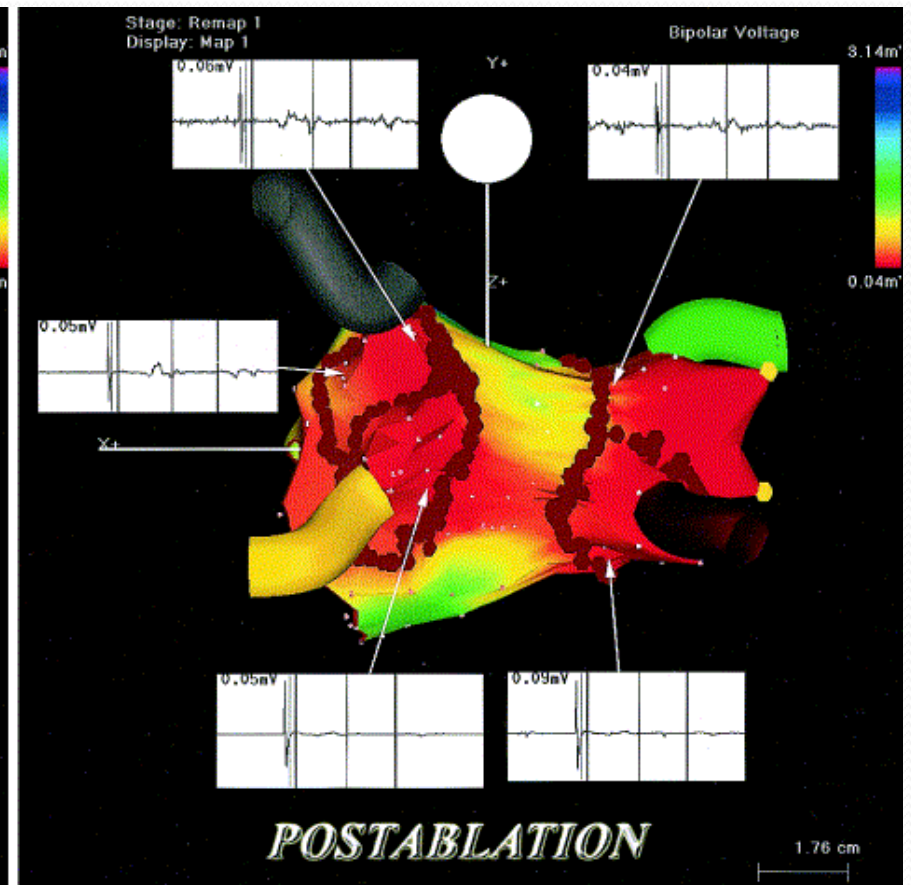
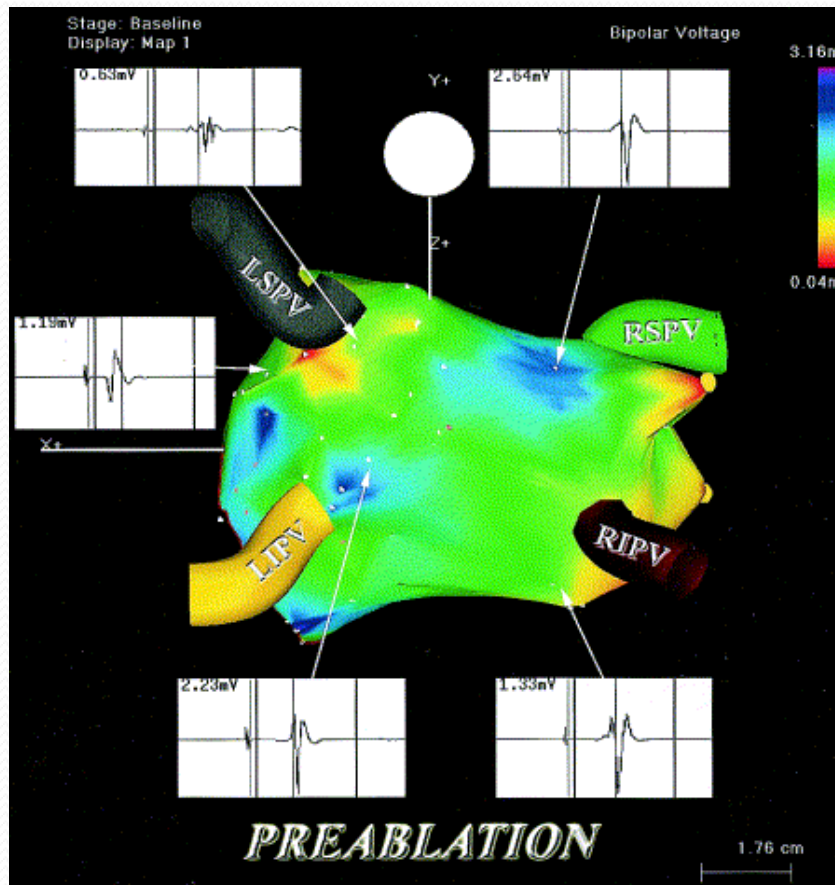
# Declaration of interests

- Member of BHRS Exam Committee
- Member of AFA Medical Advisory Committee
- Member of Arrhythmia Alliance Executive Committee
- Consultant to BMS
- Sponsorship from Boston Scientific, St Jude Medical, Biosense Webster, Medtronic, BMS, Boeringer Ingleheim

# Aim of this talk

- Definition & Incidence
- Characteristics
- Mechanisms
- Context
  - type of procedure
  - timing post procedure
- ECG interpretation
- What does it mean for the patient?
- Management

# Left atrial circumferential ablation



# Definition & incidence

- Early recurrence of AF (ERAF) is common (up to 40% of patients)
- In the first 3 months its is called the “blanking period” (Oral 2002)
- Reasons for recurrence: inflammation, reconnection of PVs
- Late recurrence may be up to 50% (in persistent AF)

# Characteristics & context

- Patient education before any ablation is critical
- Atrial Tachyarrhythmias are common post AF ablation
- 12 lead ECG to document symptoms is crucial
- Timing and context are important in management
- Need to achieve ventricular rate control
- Won't always need another ablation
- Mechanism not too important until you get to the lab

# Characteristics

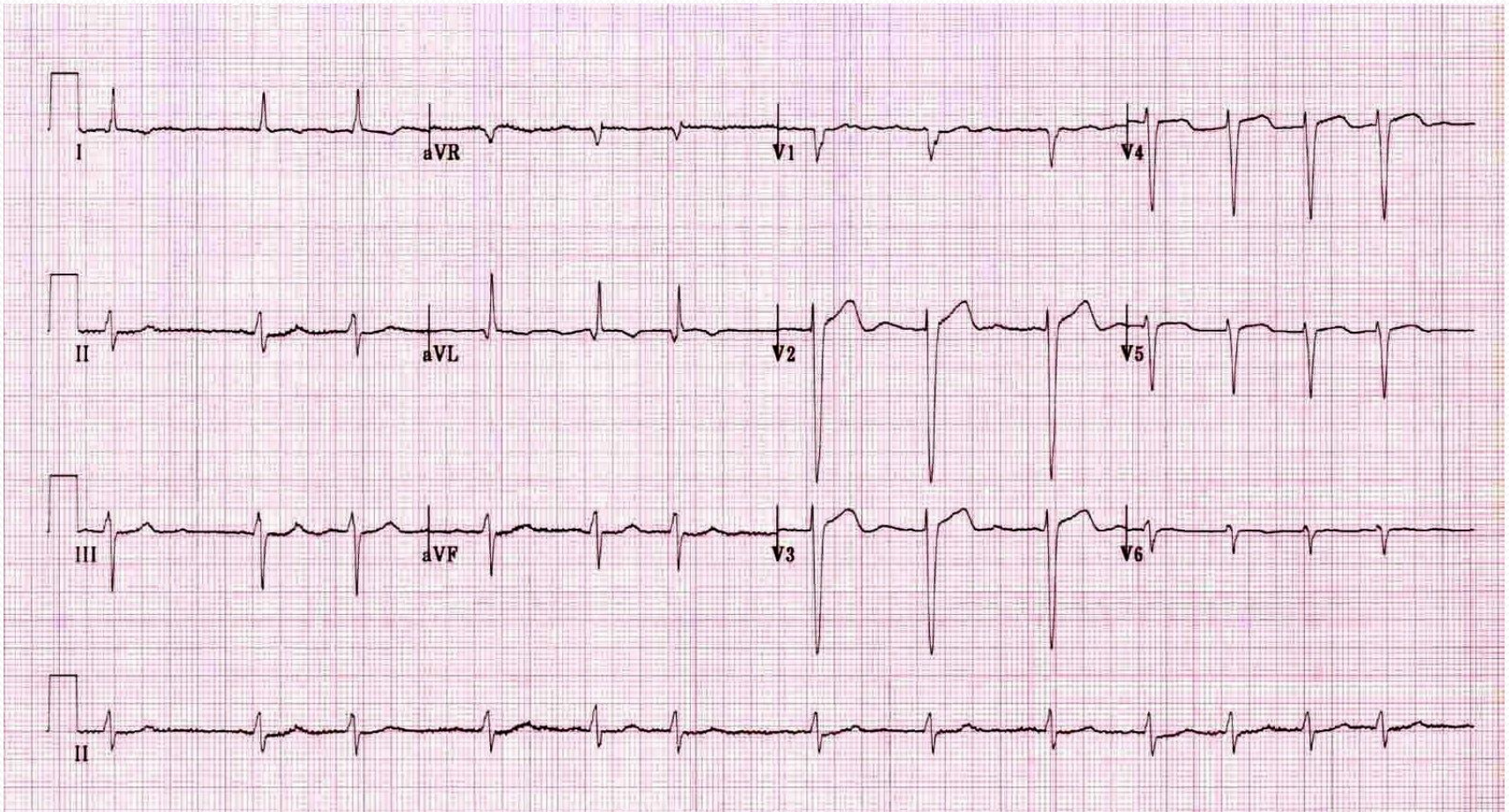
- Atrial fibrillation- multi-mechanism
- Typical right atrial flutter –macro-reentry
- Perimitral (atypical) flutter – macro-reentry
- Atrial tachycardia- focal

# Management

- Diagnosis is crucial
  - is it persistent or paroxysmal
  - Look at V<sub>1</sub>
  - Are there more P waves ?
  - Does it look a bit weird ?
  - Does the morphology look odd ?
  - Induce AV block – adenosine, CSM
  - Do a 24 hour tape to look at heart rate variability



# Atrial fibrillation



# Early recurrence of AF

- Paroxysmal

- ECG diagnosis, either 12 lead during symptoms, or ambulatory
- Prescribe rate control drugs
- Prescribe rhythm control drugs
- Reassure patient

- Persistent

- 12 lead ECG
- Rate control initially
- Prompt cardioversion
- Reassure patient
- Then wait & see

# Late recurrence of AF

- Paroxysmal

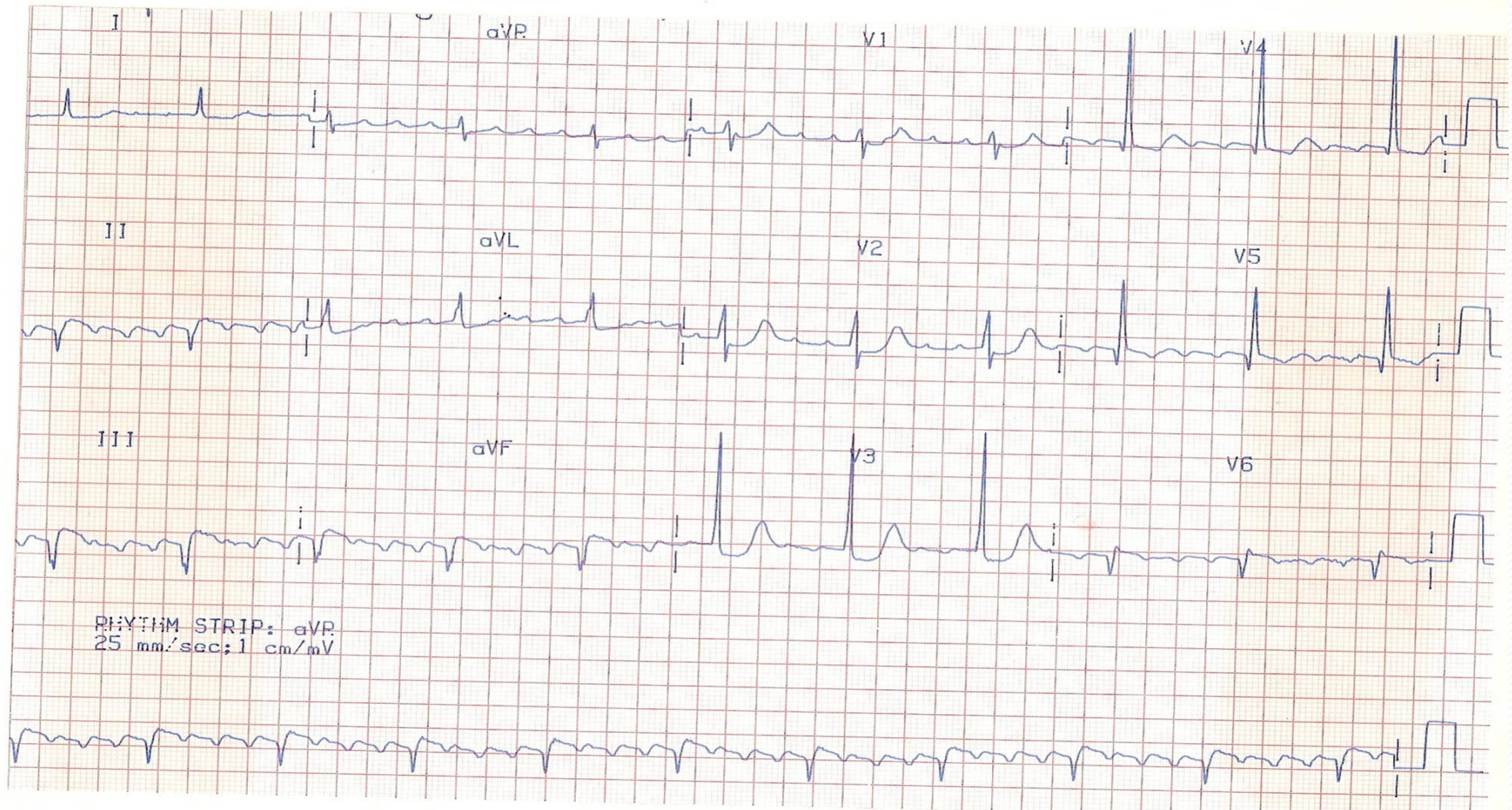
- ECG diagnosis
- Rhythm control drugs
- Further ablation in 30% of patients

- Persistent

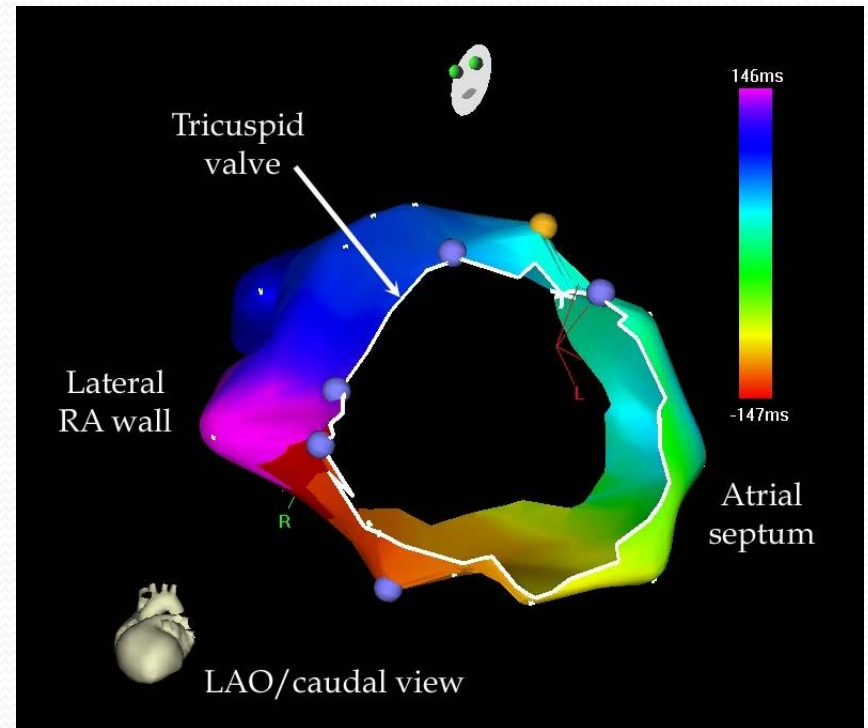
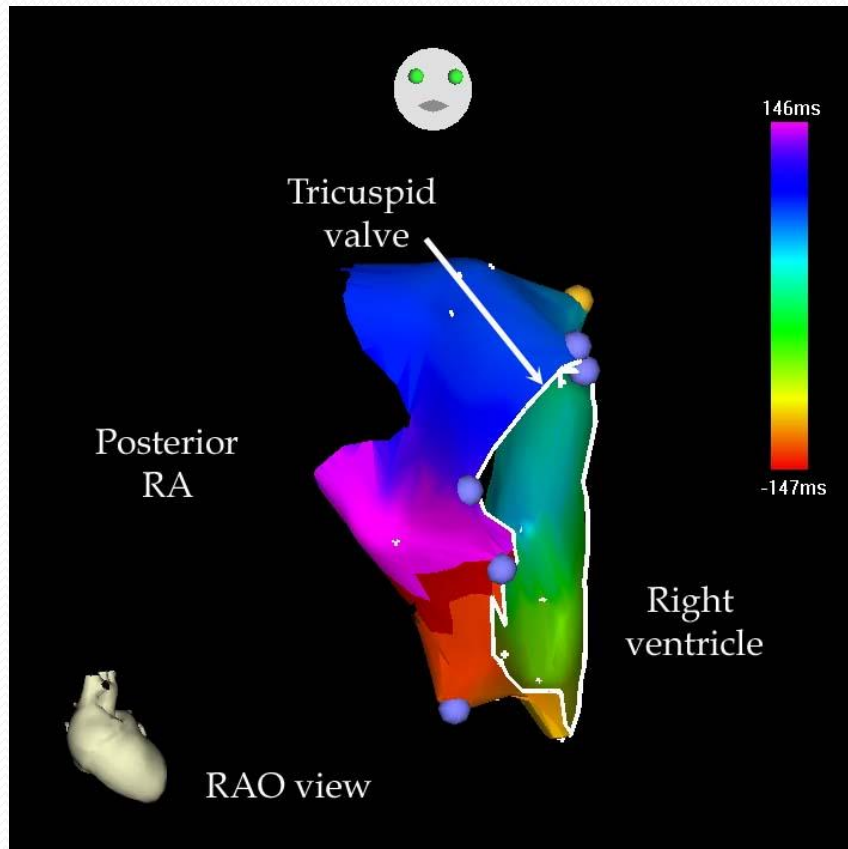
- ECG diagnosis
- Offer further ablation, in 50% of patients
- Cardiovert in meantime
- Consider short term Amiodarone
- AF may become paroxysmal



# Typical right atrial flutter



# Typical right atrial flutter





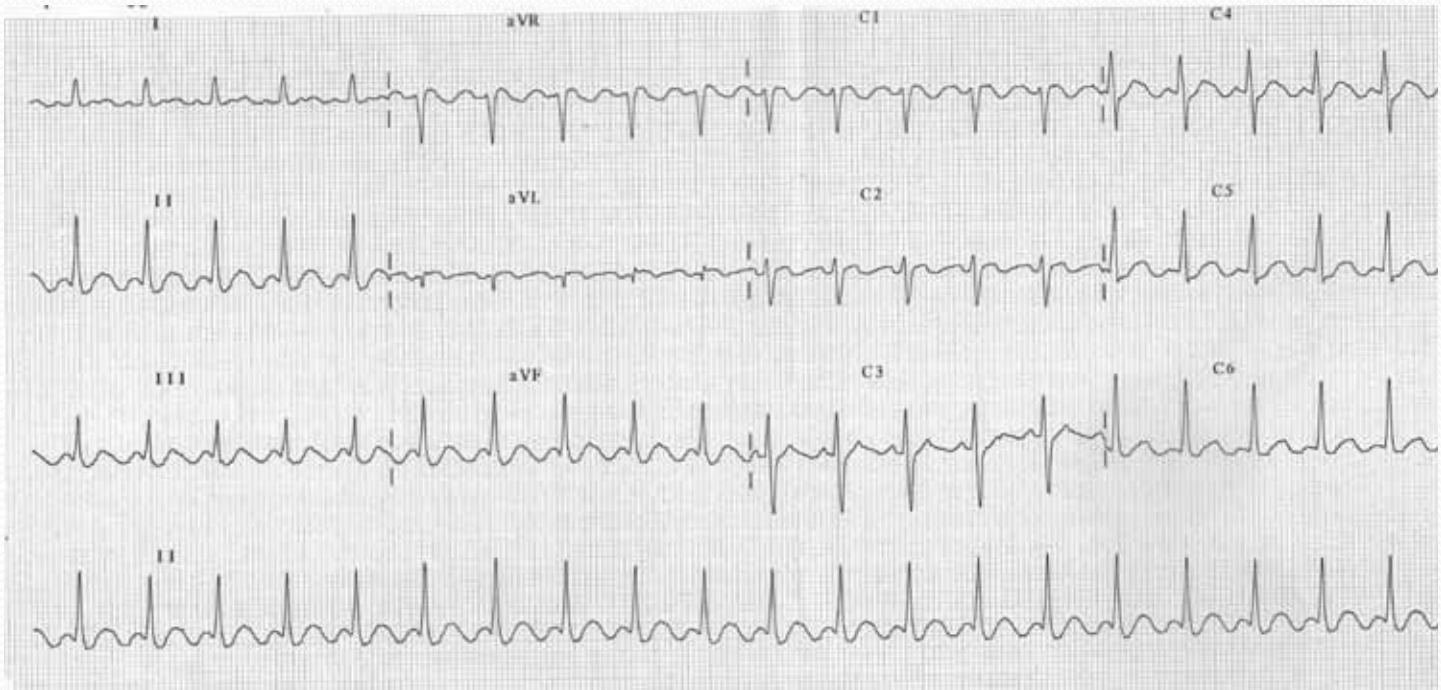
# Typical Right Atrial Flutter



# Early or late recurrence of typical atrial flutter

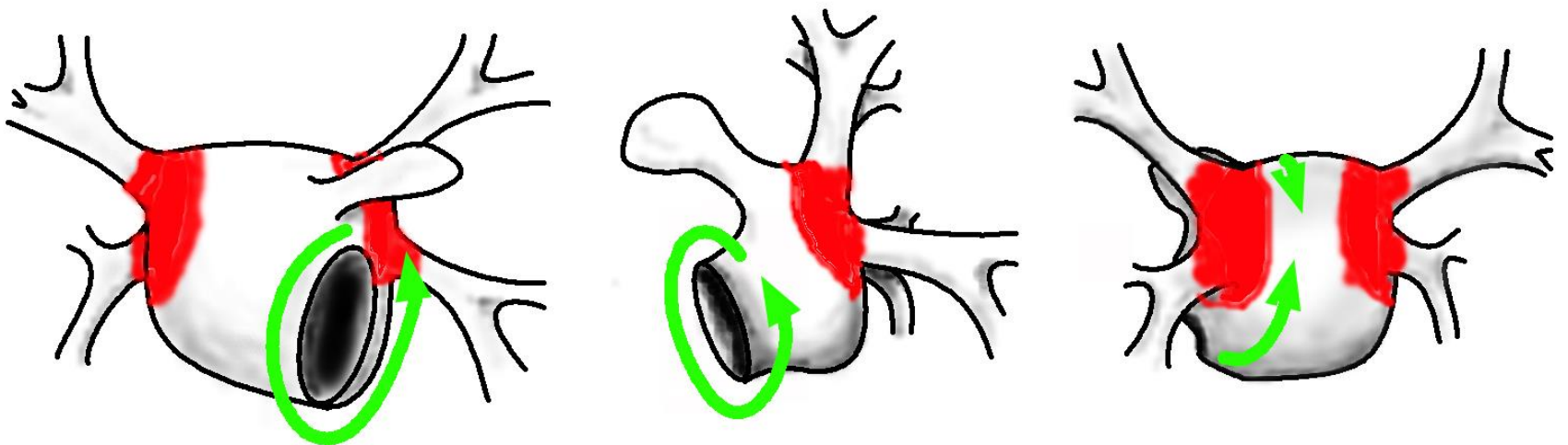
- ECG: “Sawtooth” pattern in leads II, III, and AVF
- Counterclockwise macro-reentry in right atrium
- Ablate an “isthmus” between tricuspid annulus and IVC
- Efficacy >90%
- Recurrence <10%
- Complications: 0.5% risk of AV block, requiring pacemaker, 1 in 200 mortality risk

# Atypical/perimitral flutter

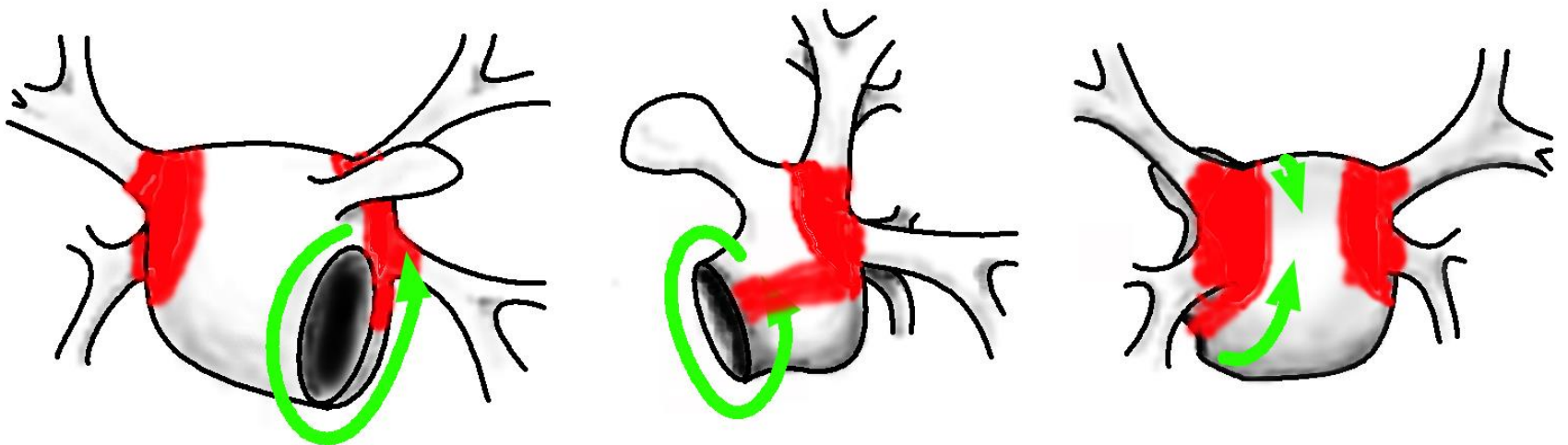




# Perimitral flutter



## Mitral isthmus line to interrupt perimitral flutter

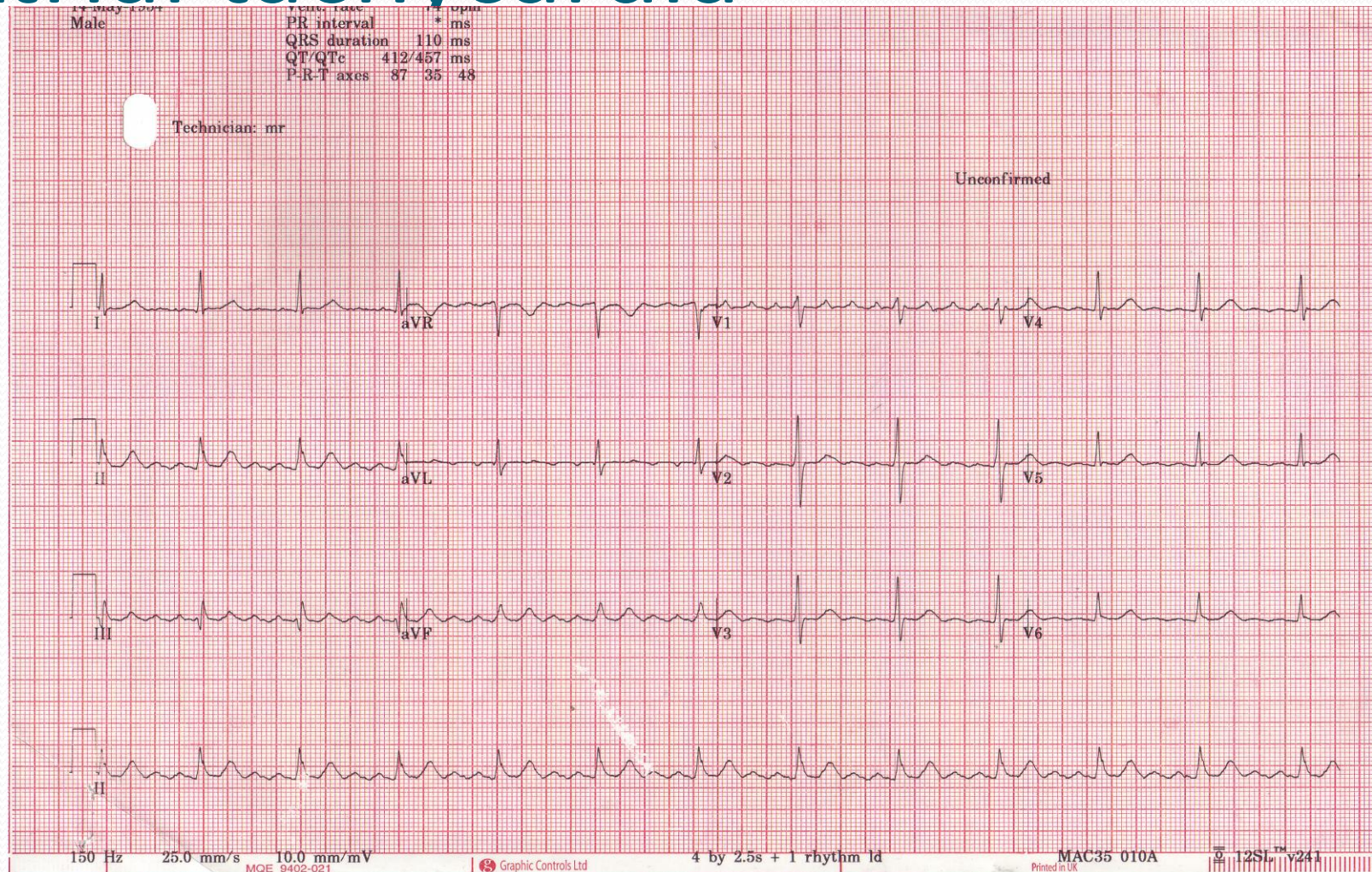


# Recurrence of perimitral flutter

- **Early**
- Rate control with beta blockers and/or Ca channel blockers
- Amiodarone or high dose Sotalol may be useful in short term
- Cardioversion
- Consider anticoagulation issues
- **Late**
- Rate control
- Check anticoagulation status
- Redo ablation

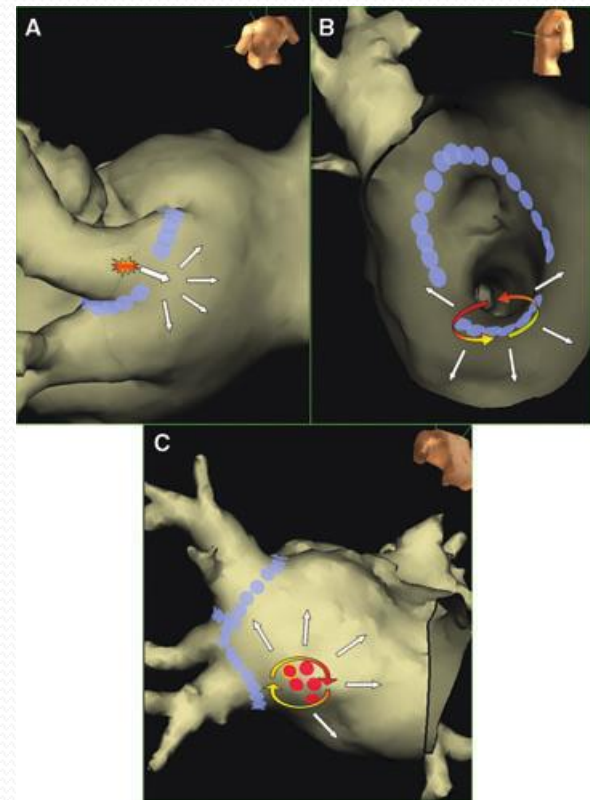


# Atrial tachycardia



# Focal or Micro Re-entry

- Maps to a single area of
- early activation
- More common:
  - Post PVI
  - Post CFEs



Heck, Rosso & Kistler JCE 2011; 22: 832-8

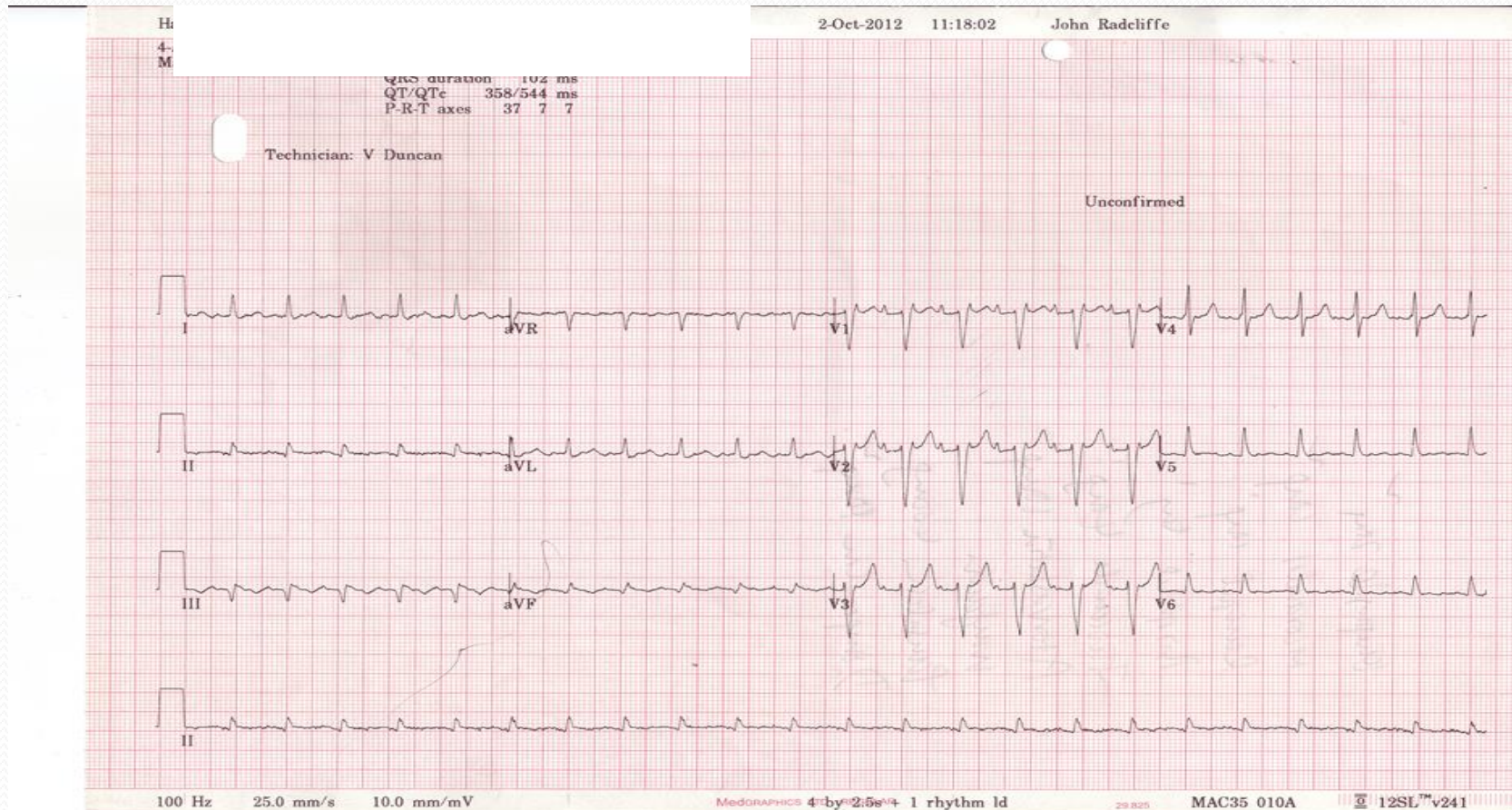


# Atrial tachycardia





# Atrial tachycardia

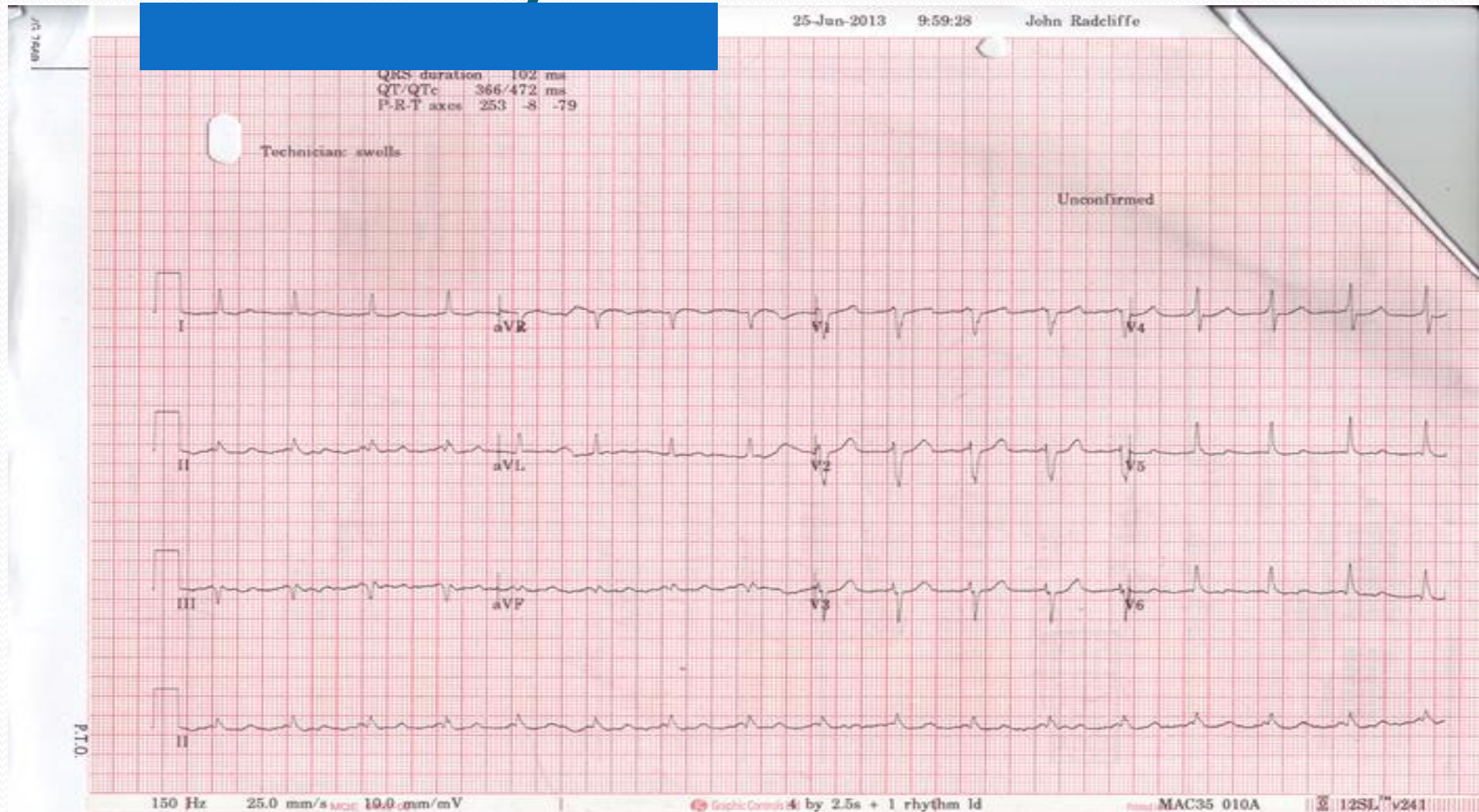


# Early recurrence of atrial tachycardia

- **Paroxysmal**
  - ECG diagnosis
  - May need ambulatory monitoring
  - Rate control +\ - rhythm control drugs
  - Avoid Flecainide due to risk of 1:1 conduction
- **Persistent**
  - ECG diagnosis
  - If difficult, 24 hour tape or give adenosine
  - Rate control if tolerable
  - Cardiovert promptly if highly symptomatic or impaired LV function



# Atrial tachycardia

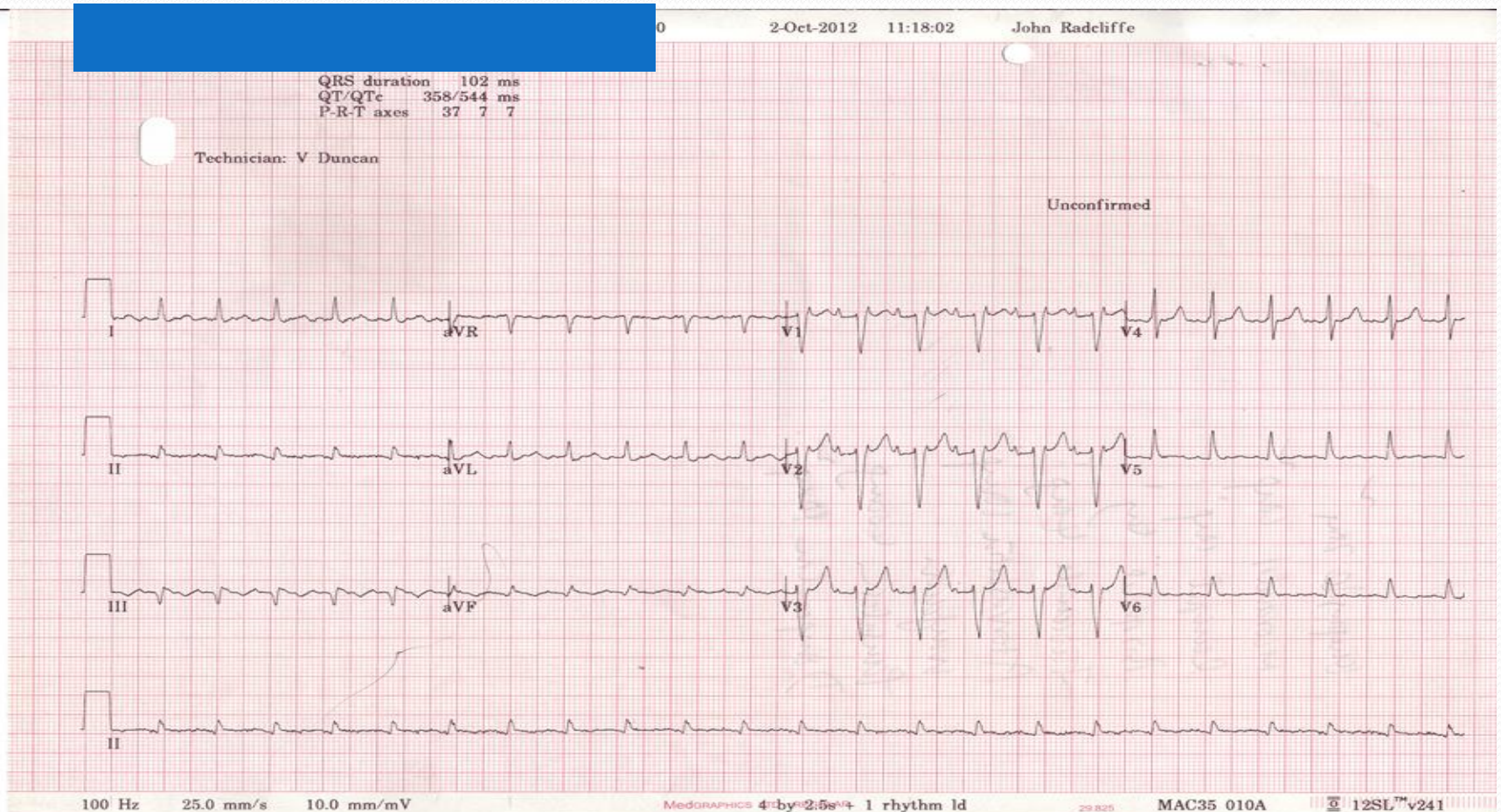


# Late recurrence of atrial tachycardia

- **Paroxysmal**
  - Assess patient's symptom burden
  - Further monitoring
  - Check rate control
  - Consider rhythm control
  - Consider further ablation
- **Persistent**
  - If possible, leave in AT, but rate control
  - Use of CARTO or Precision and ablate focus using activation mapping



# An example of an AT



# Advice to patients

- Manage expectations before the procedure
  - Inform the patient about the blanking period
  - Ensure they have a first point of contact
  - Obtain ECG of symptoms (either 12 lead or ambulatory/AliveCor)
  - Keep in contact with the patient
  - Close liaison with primary care colleagues

# Advice to healthcare professionals

- Obtain ablation report
- Be aware of LV function, as prompt CV may be required
- Instigate rate control initially
- Consider short-term use of AADs, including Amiodarone
- Check anti-coagulation status
- Rhythm control may be necessary

# When to switch to permanent rate control

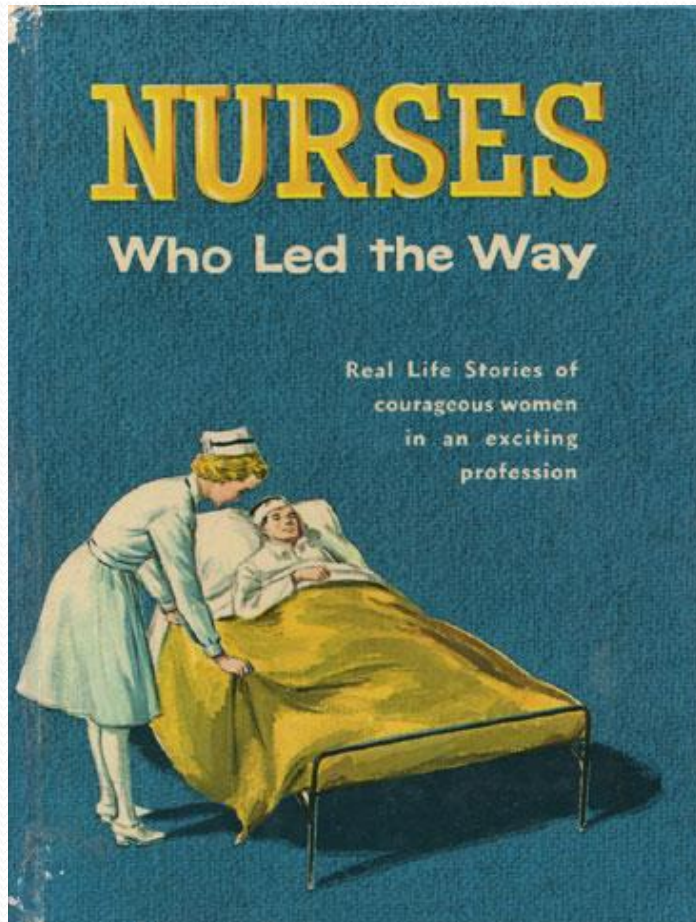
- If ongoing atrial tachyarrhythmias, with multiple procedures
- Check rate control is optimised
- Consider AV node ablation + pacemaker
- Manage expectations
- Informed consent

# Conclusion

- Atrial tachyarrhythmias are common post AF ablation
- Most will be left atrial in origin
- AT/AFL may be less well tolerated than AF
- Rate control of atypical flutter & ATs can be difficult with AADs
- It is common to need more than one ablation procedure
- Local contacts in primary and secondary care are crucial
- Close communication and reassurance of the patient is often required



For further advice



- Arrhythmia Advanced Nurse Practitioners
  - Angela Griffiths  
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  - Mike Sturgess  
Arrhythmia Specialist Nurse Practitioner
  - Leigh Buck



# Any questions ?



## Ablation for atrial fibrillation (AF)



Providing information, support and access to established,  
new or innovative treatments for Atrial Fibrillation

[www.afa.org.uk](http://www.afa.org.uk)

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