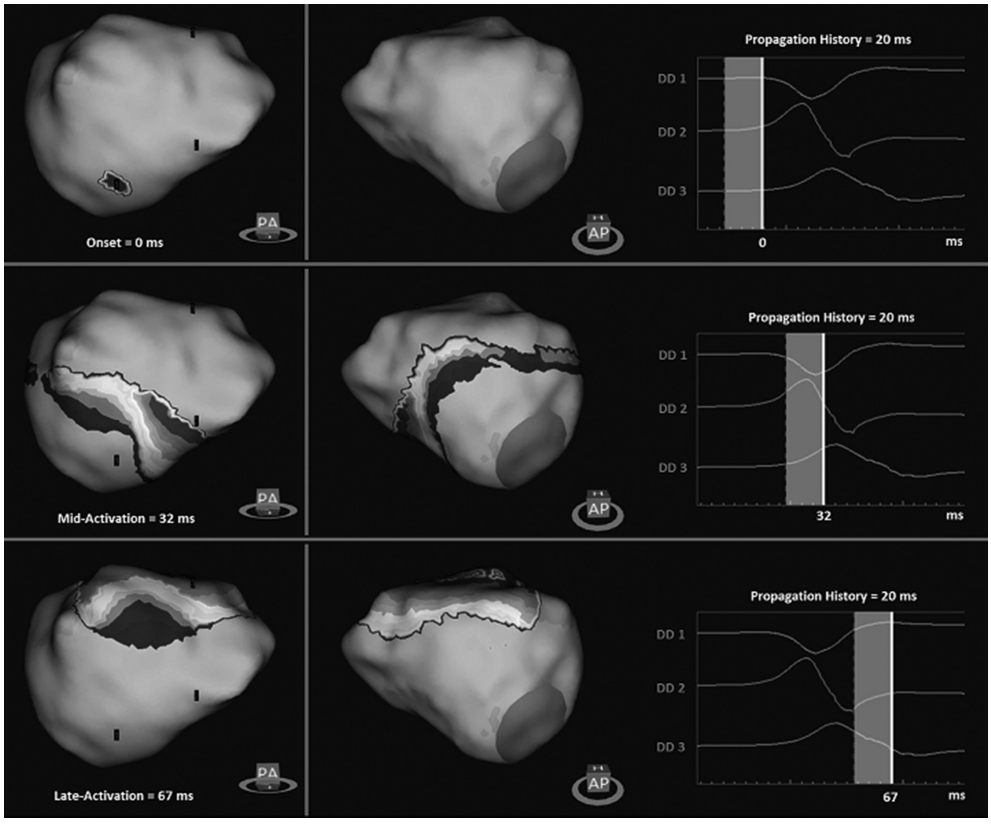

Abstract 33 Figure 2

to map cardiac activity. The 3D surface is algorithmically reconstructed from the US point-set with mesh-density comparable to a segmented CT.[1] Inverse and forward algorithms are applied on intracardiac voltage to derive and display electrical activation as dipole density™ (DD) and unipolar voltage maps respectively, upon the US-constructed 3D anatomy.

Results Data were collected from three patients booked for a first PeAF ablation (2 male, age 48±13 years, time in PerAF 1.7±1.2 years) who also demonstrated AT/AFl either before or during the procedure. All patients had previously failed DCCV and were receiving amiodarone. The AcQMap system was used to measure cardiac voltage, apply its DD algorithm and display electrical activation on the US constructed 3D anatomy to demonstrate the AFl/AT circuit. The circuit was validated using contact mapping and response to ablation. Left atrial (LA) and (right atrial) RA surface acquisition times were 296±20 s and 209±88 s respectively.

The maps demonstrated a macro-reentrant circuit in all patients and were used to guide ablation at the isthmus of the circuit. Procedural end point was bidirectional block. Patient 1 presented in typical right AFl (figure 1); Patient 2 presented in SR but with an easily inducible AT around the right upper PV; Patient 3 presented in AF which organised to an AT around the LA posterior wall, and after ablation and termination of this, subsequently to a typical right AFl. Figure 2 shows a Dd-based isochronal plot of the initial AT activation sequence from Patient 3, with breakout at the inferior aspect of the LA posterior wall. All AT/AFl terminated during formation of the ablation line. Maps were then created in SR, and during pacing to demonstrate bidirectional block.

Conclusions Real-time US and DD based LA and RA reconstructions using the AcQMap system provide high resolution electro-anatomical maps, allowing rapid and accurate targeting of critical isthmuses for ablation of macro-reentrant AT/AFl. This technique also raises the possibility of mapping AF with more precision to identify areas of interest as potential ablation targets.

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34 USE OF GENERAL ANAESTHESIA IN CATHETER ABLATION OF PERSISTENT AF: IMPROVED OUTCOME AND COST EFFECTIVENESS

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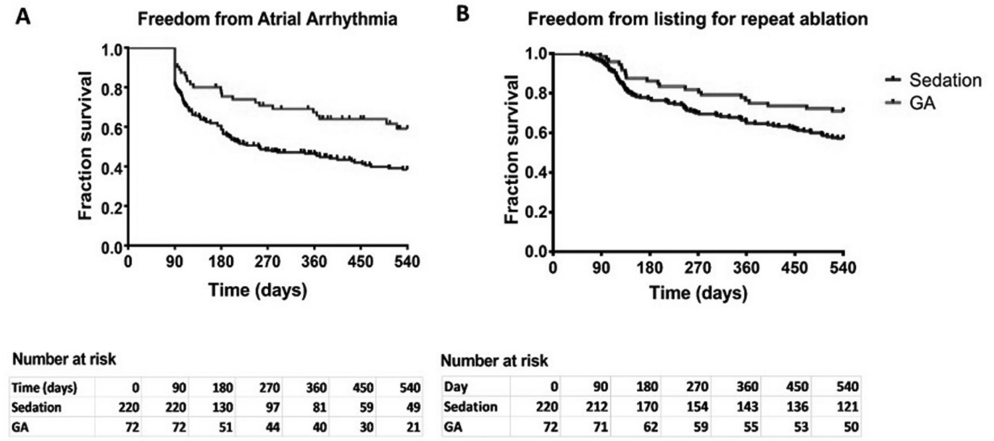
Introduction The outcome of persistent atrial fibrillation (PeAF) ablation remains suboptimal and procedures may be long and painful. Little evidence is available on outcome for procedures under general anaesthetic (GA) compared to conscious sedation (CS). We performed a single-centre observational study to assess whether use of GA in PeAF ablation improved outcome and was cost-effective.

Methods 292 patients undergoing first ablation procedures for PeAF by radio-frequency point-by-point technique under CS (n=220) or GA (n=72) were followed. End points were



Abstract 34 Figure 1

freedom from recurrence of atrial arrhythmia and freedom from listing for repeat ablation at 18 months. Clinical assessments, 12 lead ECGs and 24 hour Holter monitors were obtained at baseline and at 3, 6, 12 and 18 months.

Results Baseline characteristics were not significantly different between groups. Freedom from atrial arrhythmia was higher in patients under GA rather than CS (63.9% vs 42.3%, HR 1.87, 95% CI: 1.23 to 2.86, p=0.002) (figure 1A). There was no difference in procedure time and ablation time between groups. There were no complications resulting from use of GA; 5 cases under CS were hindered by airway problems, agitation or pain.

Significantly fewer GA patients were listed for repeat procedures (29.2% vs 42.7%, HR 1.62, 95% CI: 1.01 to 2.60, p=0.044 (figure 1B)). Of patients who had arrhythmia recurrence but did not undergo repeat ablation, main reasons were: only occasional recurrences of paroxysmal AF (PAF) (39%), feeling subjectively better despite continuing AF (20%), or low chance of success from further procedures (17%) (figure 2).

Multivariate Cox regression analysis found a higher freedom from atrial arrhythmia with use of GA, as well as for decreasing age, normal LA size and decreasing time in AF pre-procedure. Decreasing age and use of GA increased the likelihood of freedom from listing for repeat ablation. A PeAF procedure under GA in our institution is slightly more expensive than under CS (£4406.68 vs £4115.15), but due to lower redo rates, the cost after a maximum of two procedures is lower with GA, with an average saving of £178.88 per patient.

Conclusions Using GA to perform PeAF ablation is both clinically and financially effective.

Patient immobility leads to improved accuracy of mapping and catheter stability, and optimises lesion quality. Ablating during apnoea has been shown to improve contact force (1) and a single previous study has demonstrated better outcomes for paroxysmal AF ablation under GA (2). However GA may be of particular use for PeAF, where more extensive substrate ablation may be employed, procedures last longer and DCCV is often required.

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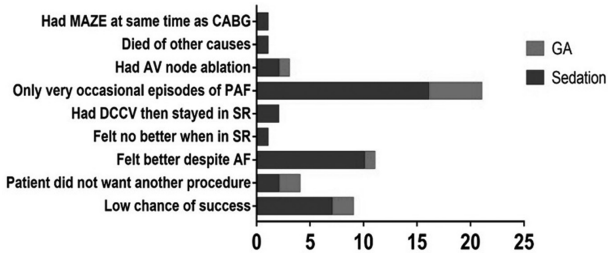

Abstract 34 Figure 2

35 UK MULTI-CENTRE REGISTRY OF TRANSVENOUS LEAD EXTRACTION: CLINICAL OUTCOME USING DIFFERENT TECHNIQUES

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10.1136/heartjnl-2017-311726.35

Introduction With increasing numbers and complexity of implantable devices, the need for lead extraction is also increasing. There is little UK data available on clinical outcomes. We compiled a multi-centre registry of patients undergoing lead extraction to investigate predictors of success and complications.

Methods Data on all cases at three UK tertiary centres (St. Barts and The Heart Hospital London and Papworth Hospital Cambridge) were collected over 18 months. Cases where leads were >1 year in age or where specialist extraction equipment was used were included (cases=137, leads=268).

Results 69% of patients were male, age 66±16 years (mean ±SD). Devices extracted were single chamber PPMs (5%), dual chamber PPMs (42%), CRTPs (6%), single chamber ICDs (6%), dual chamber ICDs (17%) and CRTDs (24%). 76% of ICD leads were dual coil. Number of leads extracted per patient was 2.0±1.0 and time from implantation was 8.3 ±11.1 years. Leads were extracted using simple traction (39%), traction with locking stylets alone (8%) or dilator