

## **Atrial Fibrillation Surgery:** **The Past, the Present and the Future**



There are two short guest lectures to commence the programme.

There are then six interactive sessions which will run with three 45 minute parallel sessions for each time slot before lunch, and three 30 minute parallel sessions for each time slot after lunch. Groups will be allocated and sessions will be repeated three times as detailed in the final pages of this document.

The 75 minutes for the trainee's lunch will allow time for trainees to take food boxes and attend the working lunch in a timely fashion, whilst other delegates can take a more leisurely lunch.

### **Why intervene with Atrial Fibrillation?**

20 minutes

**Steve Furniss**

#### **The Incidence of AF - The Size of the problem**

**Steve Furniss**

[steve.furniss@esht.nhs.uk](mailto:steve.furniss@esht.nhs.uk)

#### **The Health Economic argument for intervention**

#### **Optimal Medical Therapy**

Anticoagulation

CHAD Scores

GRASP-AF

The Auricle Software - Connecting for Health

BAFTA - Birmingham Atrial Fibrillation Treatment of the Aged

Antiarrhythmics

#### **Evaluation of the Rate vs Rhythm Studies**

Lessons Learnt / Study Limitations

How does this data influence clinical practice?

### **Understanding Atrial Fibrillation**

20 minutes

**Maurits Allessie**

#### **What is Atrial Fibrillation?**

**Maurits Allessie**

[m.allessie@fys.unimaas.nl](mailto:m.allessie@fys.unimaas.nl)

#### **Standardized classification of Atrial Fibrillation**

PAF

Persistent

Permanent / Longstanding Persistent

#### **Substrate promoting initiation of AF**

Pulmonary venous tissue

The role of the Autonomic Gangliae

#### **Natural History of AF**

Electrical and Physical Remodelling

#### **Understanding the electropathological substrate of AF**

Influences on treatment algorithms

Impact on potential therapeutic success

**The Logic behind Maze surgery**

**Professor James Cox**

**Evolution of Maze surgery**

History of changes

Seminal lessons learnt

**Steve Large**

[stephen.large@papworth.nhs.uk](mailto:stephen.large@papworth.nhs.uk)

**Defining the Generic Lesions:**

**Left-sided lesion set**

Pulmonary vein isolation

Posterior box lesions

Atrial appendage and connecting lesions

The mitral isthmus lesion

Posterior isthmus lesion

Edgerton lesion

**Right-sided lesion set**

The critical lesions

Should right sided lesions be performed in all patients?

The cavo-tricuspid isthmus lesion

When to use, and how best to achieve

**Avoiding collateral damage**

**The Importance of the atrial appendages**

Role in hormonal homeostasis

Role in cardiac output

Potential for systemic embolization

Importance in surgical management of AF

**Left Atrial Size Reduction Techniques**

Does left atrial reduction increase the chance of successful AF surgery?

**Summary defining the critical components of AF surgery in 2010**

**"Hands-On" Station**

Surgical techniques in Cox Maze III

**Paul Ridley**

[paul.ridley@uhns.nhs.uk](mailto:paul.ridley@uhns.nhs.uk)

**Understanding the spectrum of energy sources:**

Ultrasound

Radiofrequency

Microwave

Cryotherapy

**Nicolas Doll**

[n.doll@sana-herzchirurgie.de](mailto:n.doll@sana-herzchirurgie.de)

**Energy delivery and collateral damage**

**The importance of Transmurality**

Measuring transmural depth

Time to achieve a transmural lesion

Peroperative time

Delayed progression of lesions initiated in theatre

Is it important to measure the efficacy of lesions peroperatively?

Is a transmural lesion essential to achieve successful restoration of sinus rhythm?

**Mike Lewis**

[Michael.Lewis@bsuh.nhs.uk](mailto:Michael.Lewis@bsuh.nhs.uk)

**Maurits Alessie**

[m.alessie@fys.unimaas.nl](mailto:m.alessie@fys.unimaas.nl)

**The Role of Autonomic Gangliae in Atrial Fibrillation**

Anatomy of Autonomic Ganglia

The importance of vagal tone in development of AF

Surgical autonomic gangliae ablation

**"Hands-On" / "Minds-On" Station**

Explore the probes and energy delivery sources

Debate the importance of transmural lesion generation

Debate the role for intraoperative lesion testing

Identify autonomic gangliae and explore ablation techniques

**Urban Lonn**

[ulonn@sjm.com](mailto:ulonn@sjm.com)

**Patient Choice**

Inclusion and exclusion criteria

**Sam Nashef**

[sam.nashef@papworth.nhs.uk](mailto:sam.nashef@papworth.nhs.uk)

**The lesion sets**

Surgical Approaches

Left-sided lesion set

Right-sided lesion set

**Management of autonomic gangliae**

**Lesion testing for transmural**

**Management of left atrial appendage – a brief overview**

**Michael Mack**

[mmack@csant.com](mailto:mmack@csant.com)

**Varying procedures sets for specific operations**

Mitral valve surgery

Aortic valve Surgery

Coronary artery surgery

Redo cardiac surgery

**“Hands-On” Station**

Surgical techniques in Cox Maze IV

**Doug Aitchison**

[doug.aitchison@btuh.nhs.uk](mailto:doug.aitchison@btuh.nhs.uk)

**Catheter-Based Technology**

Procedures

- Approaches and Lesion Sets
- Management of autonomic gangliae
- Testing lesion transmuralità
- Management of left atrial appendage

Complication Profiles

**Lone AF Surgery**

Procedures

- Approaches and Lesion Sets
- Management of autonomic gangliae
- Testing lesion transmuralità
- Management of left atrial appendage

Complication Profiles

**Minimally Invasive Approaches**

- Totally VATS approach
- Small thoracotomy approach
- Do we compromise optimal lesion sets in the name of cosmesis?

**Hybrid Intervention**

The role of combined catheter-based and minimally invasive surgical techniques

**Establishing a MDT approach to AF intervention**

**“Hands-On” / “Minds-On” Station**

- Explore the technology available for lone AF intervention
- Video demonstration of surgical techniques
- Discuss the establishment of MDT management of AF
- Discuss the requirements in hybrid theatres

**Per Blomström**

[per.blomstrom@akademiska.se](mailto:per.blomstrom@akademiska.se)

**Nicolas Doll**

[n.doll@sana-herzchirurgie.de](mailto:n.doll@sana-herzchirurgie.de)

**Steve Hunter**

[steve.hunter@stees.nhs.uk](mailto:steve.hunter@stees.nhs.uk)

## Surgical management of the left atrial appendage

**Peter Braidley**

### Is it necessary to intervene in all cases?

[Peter.braidley@sth.nhs.uk](mailto:Peter.braidley@sth.nhs.uk)

Does poor LV function influence decision making?

Is atrial appendage shape important in decision making?

Is intervention altered by class of atrial fibrillation, age or concomitant procedure?

### How to intervene

**Michael Mack**

Left atrial appendage amputation – “cut and sew”

[mmack@csant.com](mailto:mmack@csant.com)

Oversewing left atrial appendage

Outside left atrium

Inside left atrium

Stapling left atrial appendage

Closure devices

**Steve Large**

[stephen.large@papworth.nhs.uk](mailto:stephen.large@papworth.nhs.uk)

### Complications associated with left atrial appendage surgery

Collateral damage

Bleeding

Neurohormonal homeostasis

Impact on cardiac output

Persistent risk of cerebrovascular accident

**Maurits Alessie**

[m.alessie@fys.unimaas.nl](mailto:m.alessie@fys.unimaas.nl)

### Varying success of different approaches

Persistent communication

Complete appendage removal of left atrial musculi pectinati

### Impact of left atrial appendage surgery on long-term risk of cerebrovascular accident

Should left atrial amputation influence CHAD score interpretation?

Is it ever safe to discontinue anticoagulation therapy?

### “Hands-On Minds-On”

Examine stapling devices and surgical techniques

Examine closure devices and application techniques

Discuss views on discontinuation of anticoagulation

**Post operative Care**

**Malcolm Dalrymple-Hay**

[malcolm@dalrymple-hay.com](mailto:malcolm@dalrymple-hay.com)

**Immediate postoperative management**

- Antiarrhythmics
- Anticoagulation
- DC Cardioversion
- Indications for permanent pacing

**Professor James Cox**

**Management in initial six months**

- Serial Investigations:
  - 12 Lead ECG
  - Holter Monitoring – How long?
  - REVEAL / Permanent Pacemaker interrogation
  - TTE valuation of atrial contraction

**Sam Nashef**

[sam.nashef@papworth.nhs.uk](mailto:sam.nashef@papworth.nhs.uk)

- Discontinuation of Antiarrhythmics
- Discontinuation of Anticoagulation
- DC Cardioversion

**Long-term follow-up and care**

**Steve Furniss**

[s.s.furniss@nd.ac.uk](mailto:s.s.furniss@nd.ac.uk)

**Procedural Results**

**How should success be measured?**

**Restoration of Sinus Rhythm**

- Is AF for 30 seconds really an indicator of treatment failure?
- What is the evidence of increased complication profile with short bursts of AF?
- What is the incidence of short burst of atrial fibrillation in the “normal population”?

**Discontinuation of antiarrhythmics**

**Discontinuation of anticoagulation**

**Quality of life evaluation**

**Why was Cox Maze III not more widely adopted?**

- Is Cox Maze III The Gold Standard?
- Understanding the limits to follow-up

**Results of Intervention**

- Catheter-Based AF Ablation
  - Lone Atrial Fibrillation
  - Concomitant Atrial Fibrillation
- Adjunctive Techniques

**“Minds-On” Station**

- Discuss optimal postoperative care
- Explore timing of discontinuation of medical therapy
- Discuss the implications of left atrial amputation on anticoagulation management
- Develop understanding for the factors that influence results

## **Discussion**

## **Full Faculty Panel**

**A golden opportunity to unify opinions in areas of controversy with the assistance of a panel of experienced clinicians involved in contemporary practices of atrial fibrillation surgery.**

**Summary culminating in the presentation of a "Gold Standard Rx Algorithm"**

## **TIMINGS**

08:00-08:30 Registration and Croissants

08:30 Formal Opening

Sir Bruce Keogh  
Maura Buchanan

**Session Chairs: Malcolm Dalrymple-Hay and Peter Braidley**

**09:00-09:20**

**Why intervene with Atrial Fibrillation?**

**Steve Furniss**

**09:20-09:40**

**Understanding Atrial Fibrillation**

**Maurits Allessie**

**09:40-09:45 Discussion**

**09:45-10:30**

**The History of Intervention - "Setting the Gold Standard"**

Setting the Scene - 15 minutes

**Professor James Cox**

"Hands-On" 30 minutes

**Alternative Energy Sources**

Setting the Scene - 15 minutes

**Nicolas Doll**

"Hands-On" 30 minutes

**Concomitant Atrial Fibrillation Surgery**

Setting the Scene - 15 minutes

**Sam Nashef**

"Hands-On" 30 minutes

**10:30-10:45 Coffee**

**10:45-11:30**

**The History of Intervention - "Setting the Gold Standard"**

Setting the Scene - 15 minutes

**Professor James Cox**

"Hands-On" 30 minutes

**Alternative Energy Sources**

Setting the Scene - 15 minutes

**Nicolas Doll**

"Hands-On" 30 minutes

**Concomitant Atrial Fibrillation Surgery**

Setting the Scene - 15 minutes

**Sam Nashef**

"Hands-On" 30 minutes

**11:30-12:15**

**The History of Intervention - "Setting the Gold Standard"**

Setting the Scene - 15 minutes

**Professor James Cox**

"Hands-On" 30 minutes

**Alternative Energy Sources**

Setting the Scene - 15 minutes

**Nicolas Doll**

"Hands-On" 30 minutes

**Concomitant Atrial Fibrillation Surgery**

Setting the Scene - 15 minutes

**Sam Nashef**

"Hands-On" 30 minutes

**12:15-13:30 Lunch**

**13:30-14:00**

**Lone AF Intervention**  
Setting the Scene - 15 minutes

**Steve Hunter / Per Blomström**  
“Hands-On” 15 minutes

**Management of Left Atrial Appendage**

**Peter Braidley**

Setting the Scene - 15 minutes

“Minds-On” / “Hands-On” 15 minutes

**Postoperative Care and Procedural Results**

**Malcolm Dalrymple-Hay**

Setting the Scene - 15 minutes

“Minds-On” 15 minutes

**14:00-14:30**

**Lone AF Intervention**  
Setting the Scene - 15 minutes

**Steve Hunter / Per Blomström**  
“Hands-On” 15 minutes

**Management of Left Atrial Appendage**

**Peter Braidley**

Setting the Scene - 15 minutes

“Minds-On” / “Hands-On” 15 minutes

**Postoperative Care and Procedural Results**

**Malcolm Dalrymple-Hay**

Setting the Scene - 15 minutes

“Minds-On” 15 minutes

**14:30-15:00**

**Lone AF Intervention**  
Setting the Scene - 15 minutes

**Steve Hunter / Per Blomström**  
“Hands-On” 15 minutes

**Management of Left Atrial Appendage**

**Peter Braidley**

Setting the Scene - 15 minutes

“Minds-On” / “Hands-On” 15 minutes

**Postoperative Care and Procedural Results**

**Malcolm Dalrymple-Hay**

Setting the Scene - 15 minutes

“Minds-On” 15 minutes

**15:00-15:30**

**Discussion**

**Professor James Cox**  
**Full Faculty Panel**