



ACTACC Annual Scientific Meeting Crewe Hall Hotel, Crewe

Thursday 13th & Friday 14th June 2019



**SPEAKERS BIOGRAPHIES
&
EXHIBITOR INFORMATION**

PRESIDENTS WELCOME

On behalf of the Association, I would like to thank the organisers and welcome all the delegates to our annual scientific meeting in Crewe. I hope you enjoy the conference and the city.

Dr Moyna Bill

SPEAKER INFORMATION

Dr Aamer Ahmed

Biography: Consultant in Cardiothoracic Anaesthesia and Critical Care, Glenfield Hospital, University Hospitals of Leicester NHS Trust, Leicester UK.
Honorary Associate Professor, Department of Cardiovascular Sciences, University of Leicester UK

Aamer has been a consultant anaesthetist at Glenfield Hospital in Leicester UK since 2000. He graduated from Nottingham and then undertook training in the East Midlands and specialist training at Papworth Hospital in Cambridge. He is the co-author of "Sonoanatomy for Anaesthetists", a successful textbook. He was previously Deputy Chair of the UHL Transfusion Committee and Chair of the Patient Blood Management Committee of the East Midlands Regional Transfusion Committee. He is the elected UK representative to the ESA Council and has been elected to serve on the UK ACTACC Council.

His research interests include haemostasis in cardiac and high-risk surgery and cerebral monitoring in cardiac surgery. He is Chair of the Communications Committee of the European Society of Anaesthesiology (ESA) and a member of the ESA Transfusion and Haemostasis Committee. He is also a member of the European Association of Cardiothoracic Anaesthesiologists (EACTA) where he serves on the Haemostasis and Thrombosis Committee. He has run several phase II and III clinical trials as principal investigator and is one of the authors of Europe's first Patient Blood Management Guidelines. He is a reviewer for the Cochrane Collaboration and a Fellow of the American College of Cardiology and was appointed Honorary Associate Professor in 2018 at the University of Leicester. He is a member of UHL Clinical Senate and has served on the NHS East Midlands Clinical Senate Council since 2017.



Mr Enoch Akowuah

Biography: Enoch is one of the UK's leading cardiac surgeons. His initial medical training was at the University of Leicester where he graduated with an honours degree. He then completed a doctorate thesis at the University of Sheffield where he performed ground breaking research into the use of gene therapy to treat conditions of the heart. This research was funded by the British Heart Foundation. Enoch underwent specialist cardiac surgery training in a number of UK cardiac surgery units including Papworth Hospital in Cambridge, Sheffield, Bristol and Plymouth before moving to Melbourne Australia, for a one-year advanced cardiac surgery fellowship. An award from the Society of Cardiothoracic Surgeons for Great Britain and Ireland funded this fellowship. During this period Enoch gained specialist expertise in beating heart surgery for patients needing heart bypass surgery and keyhole techniques for patients needing a variety of heart surgery procedures.



Mr Lognathen Balacumaraswami

Biography: Mr Balacumaraswami's areas of expertise include minimally invasive heart surgery, beating heart off-pump coronary artery bypass grafting surgery, heart valve repair surgery, thoracic aortic root and arch surgery including surgery for aortic dissection. His areas of interest are hybrid coronary revascularisation with PCI and minimally invasive coronary surgery, sutureless valve technology, hybrid thoracic endovascular and surgical treatment for aortic aneurysms. Mr Balacumaraswami trained at The John Radcliffe Hospital, Oxford and completed his clinical and basic science research at the University of Oxford to obtain his Postgraduate Doctorate in Medicine. He spent a year in Cambridge training in heart and lung transplantation and mechanical circulatory support. He undertook an Advanced Heart Surgery Fellowship in the USA for one year at Lenox Hill Hospital, New York. Mr Swami is a Consultant Cardiothoracic Surgeon at the University Hospital of North Midlands, Stoke-on-Trent since 2009 where he developed beating heart (off-pump) and minimally invasive Coronary Artery Bypass Grafting using keyhole instruments to perform heart surgery.



Dr Jonathan Brand

Biography: Dr Jonathan Brand is a Consultant in adult Cardiothoracic Anaesthesia and Critical Care at James Cook University Hospital, Middlesbrough where he is the FICM Faculty Tutor for CICU and is the departments educational co-lead. He qualified from Leicester-Warwick medical schools (graduate entry) in 2006 following a degree in molecular pharmacology awarded from Leeds University in 2002. Dr Brand trained in the Northern Deanery, working in both cardiac units in Middlesbrough and Newcastle, and was awarded a joint CCT in Anaesthesia and Intensive Care Medicine in 2016. He undertook post-CCT training in cardiothoracic anaesthesia in both Middlesbrough and Papworth Hospital, Cambridge and was appointed as a Consultant in 2017. He served on the ACTACC committee as trainee representative between 2016 – 2017.



Dr Brand has a strong background in medical education and simulation, having developed the interest during his undergraduate training. He has further developed this throughout his career to date. Dr Brand holds postgraduate qualifications in medical education and is a Fellow of the higher education academy. He has been involved in all aspects of education programme planning, development and delivery during his career at both undergraduate and postgraduate levels. He is a finals examiner and SSC supervisor (cardiac anaesthesia) for Newcastle Medical School and is the course director for the 'One Heart' simulation course in Middlesbrough. He is also active faculty on a number of local and National examination, simulation and resuscitation courses. His professional clinical interests include anaesthesia for aortic surgery, cardiac critical care and resuscitation.

Abstract: My intention for this presentation is to briefly discuss the evolution of cardiac anaesthesia to date, and in addition, highlight the current scope of clinical work we as clinicians encounter on a daily basis. I will discuss the current training pathway for a consultant in cardiothoracic anaesthesia and critical care and will focus in detail on the RCoA training curriculum and the opportunities that affords by way of cardiothoracic experience for our trainees. I will also explore the future changes to the curriculum structure within anaesthesia and intensive care and will discuss any potential impact on the current way we train our cardiothoracic anaesthetists. I will also outline future potential training directions and how we as a speciality may be in an ideal situation to oversee training for our future generations to ensure our training is fit for UK service delivery.

Dr Amit Chawla

Biography:

- I have been a consultant cardiothoracic & vascular anaesthetist at Guys & St Thomas' Hospital NHS Foundation Trust since 2006.
- I did my training at St Thomas' Hospital and University of Michigan Hospital and Medical Center, Ann Arbor, USA, between 2003-05.

- My areas of clinical interest are: Complex thoraco-abdominal aortic surgery, aortic arch surgery, cerebral and spinal cord protection, minimally invasive cardiac surgery and transcatheter valvular procedures.
- I have been closely involved in setting up the Transcatheter Aortic Valve Implantation (TAVI) service at St Thomas' Hospital since 2008.

Abstract:

- Cardiac Catheterisation Laboratory is one of the most challenging working environments for anaesthetists.
- The spectrum of interventional cardiology cases, their technical complexity and patients' co-morbidities as well as increase in hybrid-surgical procedures, have necessitated greater involvement of anaesthetists.
- Cardiac anaesthetists are the natural choice for this role by virtue of their familiarity in managing patients with complex cardiovascular diseases, advance cardiovascular support and skill in managing complications including rapidly converting to open heart surgery, if required.
- However, for the anaesthetist to be able to 'survive' in this remote and demanding environment it is essential to understand the logistical limitations, patient & procedure related risk-factors, radiation hazards (and protection), needs of the cardiologists and the ever present danger of serious complication inherent to any minimal access intervention.
- Our main objective is to provide safe cardio-stable anaesthetic with appropriate level of invasive monitoring and airway management.
- Ensure appropriate heparinisation for the procedure.
- It is imperative to identify the critical steps in the interventional procedure where the risks of complications are high (e.g. trans-septal puncture, rapid pacing, stent or valve deployment etc.)
- Always have a back-up plan to deal with these complications in advance.
- For most cardiac anaesthetists the catheterisation laboratory may not be their favourite working environment. But as the complexity of interventional cardiology procedures increases, we will increasingly find ourselves working in this environment. It is our duty to rise to these challenges and provide the highest standard of care for our patients.

Dr Anna Dennis

Biography: Anna graduated from Imperial College and went on to train in anaesthesia and critical care in London and Birmingham. She has been a consultant at the University Birmingham Hospital Trust since 2013. Her specialist interests include the legal and ethical aspects of critical care. She has recently contributed to the upcoming end of life guidance published by the Faculty of Intensive Care Medicine.

Abstract: My lecture will cover the legal and ethical aspects of withdrawal of treatment in the cardiac ICU. I will touch on the concept of futility, best interest decision making and conflict resolution.



Mr John Edwards

Biography: Mr John Edwards was appointed Consultant Thoracic Surgeon in Sheffield in 2006. He was awarded a PhD in Oncology from the University of Leicester for mesothelioma research. Current committee memberships include the IASLC, EORTC BTOG and NCRI. He is a devoted recruiter to many clinical trials, with particular experience in those comparing surgery to no surgery. By accident, he found himself establishing a programme of Surgical Stabilisation of Rib Fractures in 2006. He is a member of the Board of Directors of the Chest Wall Injury Society and has collaborators around the world in blunt thoracic trauma research.

Dr Simon Gardner

Biography: Consultant in Cardiothoracic Anaesthesia & Critical Care - James Cook University Hospital, Middlesbrough | HEE North Chair of Faculty of Advanced Clinical Practice | FICM Chair of National ACCP Steering Group | ACTACC Committee Member and Lead for Critical Care and Workforce Matters

Consultant for 15 years with particular clinical interests in Cardiothoracic Critical Care and Anaesthesia for Minimally Invasive Cardiac and Thoracic surgery. A longstanding



interest in workforce matters and advanced healthcare roles led to me developing the first ACCP training program in England together with Teesside University. I designed and conducted the first ACTACC National Workforce survey in 2016 and continue to lobby RCoA and FICM on behalf of ACTACC. I was recently appointed to HEE North Chair of Faculty of Advanced Practice, in order to instigate and oversee the rolling out of advanced healthcare training programs across the entire gamut of medical and healthcare specialties.

Abstract: Medical recruitment within the increasingly advanced and “separate” specialty of Intensive Care Medicine has been recognised as being problematic since 2011, when the specialty gained an independent CCT. These problems are amplified within Cardiothoracic Critical Care units across the UK. This talk will examine some of the reasons for this and discuss potential solutions and new workforce developments.

Dr Jane Graham

Biography: Dr Jane Graham (MBChB, MRCP, FRCPath, PGCMedEd) is a haematology consultant at Royal Stoke University Hospital and honorary clinical lecturer at Keele University. Having completed her training in the Manchester region, she joined the University Hospitals of North Midlands (UHNH) NHS Trust in 2016, with a remit to improve anaemia management and transfusion practice across the trust. Her clinical interests include transfusion medicine, obstetric haematology, thrombosis and red cell disorders. She is chair of the sub-regional immunoglobulin assessment panel. Her research has focused on transfusion medicine education. She represents hospital clinicians on the National Blood Transfusion Committee (NBTC) education group and is a Royal College of Pathologists examiner.



Abstract: Across all types of surgery, pre-operative anaemia is associated with increased morbidity, mortality, length of stay and transfusion rate. Patient Blood Management (PBM) aims to improve patient outcome through the optimal management of both anaemia and bleeding; with implementation of PBM requiring close collaboration across disciplines. This session explores the evidence base behind peri-operative anaemia management in the cardiac surgery setting.

Learning Outcomes:

- A haemoglobin <130g/L pre-cardiac surgery represents increased risk - for both men and women
- Serum ferritin <100ng/mL reflects insufficient iron stores for surgery with moderate-high blood loss – ferritin <30ng/mL demonstrates absolute iron deficiency
- Anaemia should be identified early and the underlying cause treated – alternate day oral iron likely increases iron absorption
- In non-bleeding cardiac surgery patients, transfuse single units of red cells to uphold a restrictive transfusion threshold of 75g/L, where clinically appropriate – transfusion associated circulatory overload (TACO) has the biggest risk of mortality

Suggested Reading:

Mazer et al. Restrictive or Liberal Red-Cell Transfusion for Cardiac Surgery. N Engl J Med 2017; 377:2133-2144 <https://www.nejm.org/doi/full/10.1056/NEJMoa1711818> (TRICS III)

Munoz et al. International consensus statement on the peri-operative management of anaemia and iron deficiency. Anaesthesia 2017;72(2):233-247 <https://onlinelibrary.wiley.com/doi/full/10.1111/anae.13773>

Stephen Green

Biography: Stephen Green is a Director of Miles-Green Associates and of the National Cardiac Benchmarking Collaborative (NCBC). From 2005 to 2011 he worked as a consultant for the English Department of Health with the national cardiovascular team providing public health, planning, statistical and analytical support for the different elements of the CVD programme, under Sir Roger Boyle. He was previously an Executive Director of three different strategic or local Health Authorities in England. He was a member of the West Midlands Region Cancer Implementation Team – developing new ways of commissioning for cancer, performance measures and undertaking peer-review assessments. Before working for the NHS, he was a lecturer at St Thomas's Hospital Medical School. His doctorate was awarded by Glasgow University on involving doctors in the management of health services.

Dr Ulf Guenther

Biography: Dr Ulf Guenther, MHBA, DESA, EDIC, is a Consultant in Critical Care and the Director of Adult Surgical Critical Care of the University Clinic of Anaesthesiology, Intensive Care, Emergency Medicine and Pain Therapy in Oldenburg / Germany. He is a board-certified anaesthesiologist, intensivist and emergency physician. His research interests involve the neural control of spontaneous breathing and mechanisms of respiratory depression, as well as the clinical and socio-economic consequences of acute brain dysfunction in cardiothoracic intensive care.

Abstract: Weaning from the ventilator in cardiac surgery patients is often complicated by agitation or delirium. Delirium monitoring tools facilitate identification of reasons for agitation; modern sedation techniques offer lower risks of delirium.



Dr Mark Gunning

Biography: Consultant Cardiologist and Divisional Chair CWD, Royal Stoke Hospital. Clinical interests include complex PCI, concomitant cardiac and renal disease, hypertrophic cardiomyopathy and TAVI. Previous posts held include British Cardiovascular Society Council, British Cardiovascular Intervention Society (BCIS) Council, Chair BCIS Training and Education Group, Vice Chair Staffordshire REC.

Mr Mark Hackett

Biography: Mark worked in the NHS for 33 years entering the National Graduate Training Scheme in 1984 after gaining a degree from the London School of Economics and Political Science. He worked extensively in the acute sector and was a CEO in four trusts - Birmingham Women's, Royal Wolverhampton, University Hospital Southampton and North Midlands University Hospitals. He now runs The Hackett Consultancy Partnership Limited which provides strategic and operational support to trusts resolving the issues they face including working to develop clinical teams towards excellence.

Mark as a NHS CEO was known for his strategic acumen, leadership of large scale organisational and system change, extensive service and financial turnaround, and academic and organisational development approaches which created world class services, research and education. His leadership style was seen as inspiring, politically astute, commercially focussed, results focussed and innovative which was ultimately secured by an approach based on deep staff and clinical engagement and a strong belief in achieving one's goals through partnerships and alliances.



He developed his interest in Cardiac services in three tertiary centres which were at very different stages of development embracing each of them to become rated in the top 5 units in the UK over a number of years.

Harefield Hospital ECMO Team

Faculty:

Dr Alex Rosenberg, Consultant Intensivist and ECMO lead, Harefield Hospital
Mr Brad Pates, Perfusionist and ECMO lead, Harefield Hospital
Mrs Cindy Dutton lead ECMO nurse, Harefield Hospital
Dr Matt Bell, Consultant Anaesthetist, Bristol Heart Institute

Workshop Summary: Come and find out about the latest advances in the use of ECMO. We will be running a high fidelity Extracorporeal Cardiopulmonary Resuscitation (eCPR) simulation. Join us for some hands-on experience with the Maquet Cardiohelp.



Dr Mohammed Haris

Biography: After completing specialty training in respiratory medicine in Merseyside, he undertook 1-year clinical fellowship in interventional pulmonology and pleural diseases at the Royal Preston Hospital. He took up the consultant post at University Hospital of North Midlands in March 2012. He has developed and led several services including the award-winning endobronchial ultrasound and the comprehensive 5 day pleural service; Thoracoscopy under local anaesthesia, central airway management and hyperinflation services. He is the deputy lung cancer lead. He is the core member of West Midlands respiratory specialist training committee and simulation training for respiratory trainees. Faculty member, Keele Clinical Leadership Academy and Liverpool Pleural Diseases Course. He is a chief investigator for joint UHNM and Keele studies and also principal/co-investigator for several national portfolio studies.



Workshop Summary: Advanced Bronchoscopy – Diagnostic and Therapeutic Techniques

- Endobronchial ultrasound (EBUS) convex probe
 - Nodal and mass sampling
- EBUS mini-probe – radial with guide sheath
 - Peripheral lung lesions
- Virtual bronchoscopy navigation
- Foreign body removal
- Balloon dilatation
- Argon plasma coagulation, diathermy, cryotherapy
 - Tumour debulking; haemostasis
- Tracheo-bronchial stent placement
 - Self-expanding metallic stents, silicone 'Dumon' stent
- Bronchoscopic lung volume reduction techniques

Dr Sandeep Hothi

Biography: Dr Sandeep Hothi (MA, PHD, MB, BChir, MRCP(UK), FACC, FESC) is a Consultant Cardiologist with expertise in adult cardiology and advanced non-invasive cardiac imaging. He studied at the University of Cambridge for his undergraduate and postgraduate medical and scientific degrees: 1st Class BA(Hons) degree, clinical medical and surgical degrees (MB BChir) and a higher research degree (PhD) in cardiology. More recently he was awarded Fellowship of the American College of Cardiology (FACC) and European Society of Cardiology (FESC). Clinical training posts included house officer posts in medicine and surgery (Addenbrooke's Hospital, Cambridge, Queen Elizabeth Hospital, King's Lynn) and senior house officer training in cardiology (Royal Brompton Hospital, London) and core medical training (Addenbrooke's and Papworth Hospitals, Cambridge). He was awarded membership of the Royal College of Physicians, UK and appointed to a national training number in cardiology (Leicester/Northampton). He was then successfully appointed as a Consultant Cardiologist at New Cross Hospital, Wolverhampton, a tertiary/specialist cardiac centre.



His clinical expertise is in the diagnosis and treatment of adult cardiac conditions with additional expertise and accreditation (SCMR, BSE, SCCT) in three modes of advanced cardiac imaging:

- 1) Cardiac MRI
- 2) Echocardiography: transthoracic, transoesophageal, stress echo, peri-procedural echo
- 3) Cardiac CT

Beyond his clinical roles he holds national training and education roles with the British Society of Echocardiography for whom he examines candidates and is a member of their Clinical Standards Committee.

Workshop Summary: Advanced TOE including tips and tricks for pre-, peri- and post-operative mitral and aortic valve assessment including 2-D and 3D assessment, grading of disease severity for the intensivist and anaesthetist.

Dr Simon Hughes

Biography: Simon joined the RAF as a medical student and subsequently served 16 years, leaving as a Wing Commander in 2011. Two extremely busy tours of duty in Afghanistan and one during the Iraq conflict plus around 70 aeromedical missions with critically ill polytrauma patients back to the UK nurtured an ongoing interest in major trauma. He was appointed Consultant at John Radcliffe Hospital Oxford in 2008 but moved to University Hospital Southampton (UHS) in 2012 when it started as a Major Trauma Centre. He was Anaesthetic Major Trauma Lead from 2012-2015 and UHS Director of Major Trauma 2015-16. His job plan includes anaesthesia for Thoracics, Vascular and CEPOD lists.

His other main interest is prehospital care having been involved in Helicopter Emergency Medical Service (HEMS) work since 2006, working on helicopters in Sydney, Afghanistan, Thames Valley and since 2012 the Hampshire & Isle of Wight Air Ambulance.

Outside of work he is married with two children and enjoys flying (private pilot) and skiing.



Abstract: I am going to cover the following:

- Background to major trauma developments in England & Wales
- Changes to prehospital management of trauma and thoracic trauma
- NICE Guidelines
- Common types of thoracic trauma
- Surgical considerations
- Role of Emergency Department (or prehospital) Thoracotomy
- Management of major haemorrhage in trauma
- Pitfalls of management and Issues with chest drains
- Anaesthetic and ICU management
- Regional and systemic analgesia

Dr Khalid Khan

Biography: Dr Khalid Khan is a Consultant Cardiothoracic Anaesthetist at James Cook University Hospital, South Tees NHS Foundation Trust, Middlesbrough, since 1995. His previous cardiac experience had been gained at QE Hospital, Birmingham; Children's Hospital, Birmingham and Freeman Hospital, Newcastle-upon-Tyne

He has vast experience in anaesthesia for adult cardiac surgery and intensive care, with particular interest in minimally invasive cardiac surgery. He has been the lead anaesthetic contributor to the minimally invasive aortic and mitral valve surgical programme at James Cook Hospital and has published in this field.

He has a keen interest in Echocardiography, both TOE and TTE. He is a FICE mentor. He has keen interest in teaching and training and has been honorary clinical lecturer at Durham, Newcastle and Teesside universities.



Abstract: Minimally Invasive Cardiac Surgery (MICS) involving mainly valvular surgery but also coronary artery bypass grafting is increasingly being undertaken since 1990. In the expectation that it being less invasive and traumatic, with less transfusion requirements and faster recovery and therefore potentially better outcomes, it is being undertaken in elderly and frail, high risk patients. The technique demands unique expertise and considerations in surgical, anaesthetic, perfusion and theatre teams.

This trend in MICS is likely to continue and requires better assessment tools, scoring systems, patient selection, informed consent, training and research to guide better management and use of resources.

This presentation covers aspects of anaesthetic challenges that are posed in addition to existing techniques and skill sets. They are mainly clinical, philosophical and logistic in nature.

It also provides some useful clinically relevant practical tips.

Dr Jonathan Kendall

Biography: Dr Jonathan Kendall is a Consultant in Cardiothoracic Anaesthesia at Liverpool Heart and Chest Hospital with a particular interest in Thoracic Aortic anaesthesia and Transoesophageal Echocardiography. He is currently an examiner for British Society of Echocardiography and has previously served on the ACTACC committee with responsibility for meetings, audit and research.

Abstract: This talk will focus on a wide range of measurements that can be made using transoesophageal echocardiography including chamber sizes, ventricular and valvular function. The limitations of various techniques will be discussed, and suggestions made to prioritise the focus of attention, particularly when time is short, as is often the case in the operating theatre.



Prof Mamas Mamas

Biography: Professor Mamas Mamas trained in Medicine at the University of Oxford, completing his clinical training in 2000. He subsequently completed his specialist training in Interventional Cardiology in 2012 and was appointed as a Senior Clinical Lecturer and Honorary Consultant Interventional Cardiologist at the University of Manchester. In 2015 he was appointed to his current post, as Professor of Cardiology at Keele University. He retains a position of Honorary Professor of Population Health at the University of Manchester.

Professor Mamas is an Associate Editor of [Circulation Cardiovascular Interventions](https://www.bjui.com/) and a member of the E-Cardiology working group of the European Society of Cardiology. He is also a member of the NIHR interventional procedures review panel as well as sitting on several safety endpoint committees of several national randomised controlled trials. He is the Clinical Director of the Centre for Prognosis Research at Keele University, and leads a group of clinicians, data scientists and statisticians whose research interests focus around the use of routinely collected electronic healthcare data to inform the diagnosis, treatment and clinical outcomes of real-world patients with cardiovascular disease. His group uses national audit data derived from the national cardiovascular societies at the National Institute of Cardiovascular Outcomes Research (NICOR; <https://www.ucl.ac.uk/nicor>), data derived from primary care (Clinical Practice Research Datalink; <https://www.cprd.com/intro.asp>) as well as large datasets from the US such as the Nationwide Inpatient Sample and National Readmissions Dataset to study outcomes in patients with cardiovascular diseases. His work focuses around studying clinical outcomes, complications and assessment of treatment efficacy of interventions / medical treatments using real world “Big Data” derived from the national electronic healthcare records of patients with cardiovascular disease, as well as prognostic modelling leading development of risk stratification tools used for national reporting in PCI and TAVR. He has published over 300 peer-reviewed papers using big data in populations with cardiovascular disease.



Dr Guillermo Martinez

Biography: Dr Guillermo Martinez completed his training in Anaesthesia and Intensive Care in Madrid, Spain 2008. Subsequently, he undertook a Cardiothoracic Anaesthesia Fellowship at Papworth NHS Foundation Trust, Cambridgeshire UK.

Dr Martinez is currently a consultant anaesthetist and clinical lead for theatres at Papworth hospital. He has special interest in thoracic anaesthesia and enhanced recovery programme for thoracic surgery. Dr Martinez area of research includes non-intubated thoracic anaesthesia, regional anaesthesia of the trunk and high flow oxygen for enhance recovery in thoracic surgery and opioid free anaesthesia for cardiothoracic surgery. He provides anaesthetic care for cardiothoracic surgery patients, including anaesthesia for heart and lung transplantation, pulmonary endarterectomy, TAVI and tracheal resection surgery.

Dr Martinez has also developed a special interest in pulmonary hypertension and balloon pulmonary angioplasty for patient with chronic thromboembolic pulmonary hypertension.

Abstract: The traditional ventilation for general anaesthesia for tracheal surgery has traditionally been provided through cross-field ventilation, however that approach does not provide the best surgical conditions to grant the best possible anastomosis of the remaining trachea. Most patients undergo rigid bronchoscopy for debulky and biopsy before the tracheal resection, which despite being a short and mostly an uneventful procedure, it is an associated with a significant risk of severe hypoxemia, brain damage and death.

Recent tools have been introduced to facilitate effective oxygenation before, during and after induction of anaesthesia, but the right selection of those tools remain uncertain. High flow nasal oxygen to prolong apneic ventilation seems to be safe and easy to implement. However, other method of oxygenation such as ECMO or CPB require more training and institutional readiness. In this short lecture we will review the strategies available to deal with the common tracheal tumours and their presentation and hopefully take home some tips to consider in your daily practice as a cardiothoracic anesthetist.

Suggested Reading

1. Cheng et al. [Ann Thorac Cardiovasc Surg](#). 2015; 21(6): 517–522
2. Auchincos H et al . [J Thorac Dis](#). 2016 Mar; 8(Suppl 2): S160–S167.
3. Madariaga et al. [Ann Cardiothorac Surg](#). 2018 Mar;7(2):244-254. doi: 10.21037/acs.2018.03.04

Learning Objectives:

After the session the attendee should be able to:

1. Describe the anatomy of the tracheal its adaptability to intraluminal obstruction
2. Name the main features to consider ensuring an appropriate risk assessment in patients undergoing tracheal procedures such as rigid bronch and debulky.
3. Demonstrate a good understanding of ECMO support to facilitate tracheal surgery.
4. Discuss other novel approach to thoracic surgery that may be included in the airway management for tracheal obstruction

Dr Yatin Mehta

Biography:

- Current Position(s): Chairman, Institute of Critical Care and Anaesthesia
- Affiliations: Medanta The Medicity, Gurgaon, Haryana
- Immediate past President ISCCM (2018-19)
- Area of Expertise: Critical Care, Cardiac Anaesthesia
- Other Highlights:
 - Teacher for DNB & FNB for the last 20 years
 - He has edited 'Textbook of Critical Care', MCQ's in Critical Care and Atlas of Critical Care published by Jaypee, Delhi. He has approximately 25 chapters in books approximately 450 presentations in conferences and many orations. He is on editorial board of many journals. More than 275 indexed publications (national and international)
 - President – The Simulation Society (India).



- He is National Co-ordinator for Dr Rosenthal's International Nosocomial Infection Control Consortium (INICC) and has many international publications in ICU sepsis.
- He has received several awards for his contribution to his field.
- Adjunct Professor – NBE

Abstract: Anaesthesia for off pump coronary artery bypass grafting surgery

The management of Coronary artery disease (CAD) is both pharmacological or interventional that includes percutaneous catheter intervention (PCI) or coronary artery bypass grafting (CABG). Severe coronary artery disease such as three-vessel disease and left main disease is considered as a good indication of CABG.

Traditionally CABG is performed with the use of cardiopulmonary bypass (CPB). In 1967, first successful CABG with saphenous vein was performed using CPB.¹ Major disadvantages of conventional CABG are neuropsychiatric dysfunction, acute renal failure, coagulopathy, platelet dysfunction, systemic inflammatory response syndrome (SIRS), and post-pump syndrome, and postoperative pain, expensive and longer convalescence.²

OPCAB surgery is performed without the use of CPB on the beating heart, with the help of specially designed epicardial wall stabilizers. Kolessov performed OPCAB in 1964 through a left thoracotomy incision on a beating heart, successfully grafted the internal mammary artery to branches of the left coronary artery.³ Initially considered as alternate technique in high risk patients now considered as good alternative in lower risk subgroup also.

Anaesthetic Management during OPCAB is challenging. Anaesthetist has to understand the coronary anatomy, sequence of anastomosis, anticipation of hemodynamic derangements during coronary anastomosis and manoeuvres required to manage the same. Moreover, the management of inotropes, vasopressors and intra-aortic balloon counter pulsation during manipulation of heart is also crucial. Anaesthetist should be well versed with invasive haemodynamic monitoring and transoesophageal echocardiography (TOE) also. Most important is the communication between the surgeon and the anaesthetist during the procedure.

Another important aspect in the conversion to conventional CABG. Anaesthetist should know the threshold of haemodynamic instability leading to initiation of CPB. Sustained hemodynamic instability i.e. Cardiac index <1.5 litre $\text{min}^{-1} \text{m}^{-2}$, $\text{SvO}_2 < 60\%$, MAP < 50 mmHg, ST-segment elevation > 2 mm, new RWMA or deterioration of LV function assessed by TOE or malignant arrhythmias warrants conversion.

“Fast tracking” protocol is another important aspect in patients undergoing OPCAB surgery. It may lead to decrease stay in ICU and hospital leading cost effectiveness.⁴ Regional anaesthesia techniques are also extensively practiced at our centre for fast tracking.⁵

OPCAB is the preferred technique in high risk CAD patients having renal or hepatic disease, atheromatous disease of aorta or poor left ventricular function. Anaesthetic management during OPCAB is challenging due to frequent manipulation leading to haemodynamic instability.

Reference

1. Favaloro RG. Landmarks in the development of coronary artery bypass surgery. Circulation 1998;98: 466-78
2. Menasché P. The systemic factor: the comparative roles of cardiopulmonary bypass and off-pump surgery in the genesis of patient injury during and following cardiac surgery. Ann Thorac Surg 2001; 72: S2260–S2266

3. Kolessov VI: Mammary artery-coronary artery anastomosis as a method of treatment for angina pectoris. J Thorac Cardiovasc Surg 1967;54: 535–544
4. Myles P S et al. A systematic review of the safety and effectiveness of fast-track cardiac anesthesia. Anesthesiology 2003; 99:982–987
5. Arora D, Mehta Y. Benefits and Risk of Epidural Analgesia in Cardiac Surgery. Journal of Cardiothoracic and Vascular Anesthesia 2014; 28 (4): 1057-106

Rebecca Miles

Biography: Rebecca Miles is a Director of Miles-Green Associates (previously called Oxford Healthcare Associates - and of the National Cardiac Benchmarking Collaborative (NCBC). She has held number of senior management and public-health roles in the NHS, responsible for large-scale service regional and national improvement clinical programmes, including cancer, cardiovascular, diagnostics, screening and others. In xx she co-authored the study and report on the UK Burden of Disease study for the combined UK Departments of Health. She was the Head of Policy, Planning and Development, and prior to that Head of Modernisation Performance and Service Development for Thames Valley Strategic Health Authority (2002-2006). From 1996-2002 she was the Regional Cancer Coordinator for the West Midlands Region, and a Senior Fellow in the department of Public Health at University of Birmingham. From 1993-2002 she was also the Chief Executive of the National Cancer Alliance (NCA) - an alliance of patients and health professional working together to improve cancer services. She was awarded her doctorate in 2006 (Oxford Brookes University).

Dr Adrian Morley-Davies

Biography: Dr Adrian Morley-Davies is a Consultant Cardiologist with expertise in electrophysiology, cardiac device implantation, syncope and inherited cardiac conditions. He is the Lead Consultant for Electrophysiology, and for the Inherited Cardiac Conditions Service at University Hospitals of North Midlands. Nationally Dr Morley-Davies is the device representative on Heart Rhythm UK, the national professional body for physicians and allied professionals with an interest in heart rhythm disorders. He is a regular invited speaker at local and national meetings.



Dr Mahesh Prabhu MD, FRCA, FFICM

Biography: Dr Prabhu is a Consultant in Cardiothoracic Anaesthesia and Intensive care and Cardiothoracic ICU Director at the Freeman Hospital, Newcastle upon Tyne, UK. He is an echo enthusiast and a member of the ACTACC TOE Sub-committee, EACTA TOE Committee, EACTA VAD & Transplant Committee and BSE Accreditation committee.

He is the TOE Lead for ACTACC/BSE TOE accreditation.

He serves on the editorial board of Annals of Cardiac anaesthesia. His interests include Transoesophageal Echocardiography, Thoracic organ transplantation and teaching.



Abstract: TOE assessment in Mechanical circulatory support

Introduction

Mechanical circulatory support (MCS) devices are useful in providing short and long term support for patients with refractory heart failure. Extra corporeal membrane oxygenation (ECMO) and ventricular assist device (VAD) can decrease mortality, improve quality of life and end organ function in these patients.

Echocardiography is a valuable imaging modality used in the perioperative period of MCS implantation. A systematic approach is needed for echocardiographic assessment of MCS implantation, post-implantation cardiac morphology and physiology, including long-term follow up.

Echocardiography for ECMO

ECMO offers temporary haemodynamic and oxygenation support by partial CPB in critically ill patients, thereby permitting recovery from multi-organ injury. While venovenous (VV) ECMO can provide complete respiratory support, central or peripheral venoarterial (VA) ECMO is used to stabilise patients with decompensated cardiac failure, to allow time for recovery, decision-making, and bridging to either VAD implantation or heart transplantation.

Echocardiography assists in patient and ECMO selection, guides the insertion and placement of cannulae, monitors progress, detects complications or cardiac recovery, and helps weaning of ECMO support. Echocardiographic monitoring on ECMO should include atrial/ventricular size and function, follow up of pre-existing pathology, cannula position, presence of MR/AR, opening of aortic valve, intracavitary spontaneous echo contrast/ thrombus, and pericardial effusion. Weaning from ECMO can be guided by improvement in cardiorespiratory function including echo parameters such as LVEF > 20-25%, Sa at tricuspid annulus > 6 cm/s and LVOTVTI > 10 cm.

Echocardiography for VADs

Pre-operative echocardiographic examination during LVAD surgery should include the assessment of the structure and function of heart chambers, degree of aortic/tricuspid regurgitation, and presence of intracardiac clots and shunts. Potential red flags before implantation include structural and functional abnormalities such as small LV size, LV thrombus/apical aneurysm, RV dilatation/dysfunction, moderate MS/TS, moderate TR/PR and congenital heart disease. Echocardiographic parameters of RV function should be integrated with clinical presentation to determine the impact of RV dysfunction. Aortic regurgitation (AR) deserves particular consideration as it worsens after LVAD activation, impairs LV unloading and may need mechanical valve replacement. Acute endocarditis is an absolute contraindication to LVAD implantation.

Intraoperative TOE is used to assess the inflow and outflow cannula position, flow and direction, deairing, weaning off CPB, RV dysfunction, chamber filling and optimization of LVAD function.

Postoperative echo is used to assess pericardial effusion/tamponade, RV failure, inadequate LV filling and size, continuous aortic insufficiency, intracardiac thrombus, inflow/outflow cannula obstruction and malposition, worsening MR, troubleshooting of LVAD alarms and screening for pulmonary hypertension and myocardial recovery.

LVAD surveillance echocardiography at scheduled intervals after LVAD implantation is used to assess the patients' response to MCS therapy and screen for complications such as aortic root thrombus and cannula obstruction/thrombosis. Speed-change echocardiography may be added to the surveillance exam to assess the heart at varying LVAD speeds and identify pump malfunction.

Low-flow LVAD alarms are caused by "suction events", RV failure, hypovolemia, cardiac tamponade, inflow-cannula/outflow-graft obstruction, malignant hypertension, and arrhythmias. High-flow/high-power alarms are triggered by pump thrombosis, systemic arterial vasodilation, significant AR, and/or recovery of native LV function. Differentiation between possible causes requires evaluation of both clinical and echocardiographic parameters.

Echocardiography is the imaging modality of choice for pre-operative risk stratification, perioperative assessment, haemodynamic optimisation, troubleshooting of complications, and surveillance monitoring in the MCS population. Understanding the changes in the circulatory system due to MCS and its impact on the body is valuable in preventing complications. A standardised approach will aid clinicians to study, monitor, and care for this increasing patient population.

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Dr Niall O'Keefe

Abstract: Present guidelines specifically for perioperative TOE can really be traced back to 2013 with a couple of publications in that year by the ASE. However, the ASE alone has published over 40 guidelines over the last 10 years, most of which have relevance to the perioperative period. There have been two sets of guidelines published this year have relevance one set on paediatric and congenital and the second on evaluation of regurgitation following percutaneous valve repair or replacement. While the recommendations for children and congenital heart disease will not impact many, although all should probably read, the evaluation of regurgitation following percutaneous repair or replacement will be of interest to most cardiac anaesthetists who practice TOE. The fact that there are so many guidelines reflects the fact that these are primarily education tools and should not define practice. We need to resist the temptation to make guidelines standards, as they are often based on opinion rather than evidence. Some of these documents do include standards. Standards are used to define practice and are used for benchmarking to determine the quality of practice.

Current standards in TOE are primarily concerned with education. Echocardiography remains operator dependent. This is why there are so many guidelines and so few standards. It is also the reason that the certification process is so important. Good educational foundations allow the appropriate application and interpretation of guidelines. The accreditation system is the main national benchmarking currently being carried out in the UK – British, European and American accreditation processes are all recognised and are broadly similar. All include a written examination and the submission for assessment of a logbook of study reports. Integral to all the processes is the concept of re-accreditation This recognises that echocardiography is a skill which needs to be maintained.

The other main benchmarking processes in the UK is the departmental accreditation. Just like college accreditation this sets standards for departments. Equipment is the other key element in a good echo study and this process ensures that departmental equipment is up to date and fit for purpose. Departments can use this process as leverage to implement change.

Going forward it is likely that echo machines will continue to develop, and it seems likely eventually machines will take on more of the study acquisition and interpretation, and the echocardiographer will be less important. Currently using 3D all the data for a full exam can be taken in a single multi-beat loop, although this will not include Doppler. In theory this loop would contain all the information for myocardial dimensions and function. Newer technologies, which include border detection will mean machines will also be able to assist with data interpretation.



Dr Andrew Roscoe

Biography: Dr Andrew Roscoe completed his anaesthetic training in Leicester in 2004. He completed fellowships in both cardiac and thoracic anaesthesia at Papworth and Toronto. He previously worked as Assistant Professor in Toronto General Hospital, and now works as a consultant in cardiothoracic anaesthesia at Royal Papworth Hospital. He is currently the Lead for Thoracic Anaesthesia at Papworth.

Abstract: The development of enhanced recovery after thoracic surgery has brought new challenges for the anaesthetist. The ideal anaesthetic suppresses the stress response, whilst promoting rapid recovery with minimal side effects. Consequently, the requirement for endotracheal & endobronchial intubation has been revisited, with a non-intubated, spontaneous breathing patient being advocated for certain thoracic procedures.

This lecture will review the evidence for non-intubated techniques, discuss the pros and the cons, and explain the practicalities of performing non-intubated thoracic anaesthesia.

Dr Sue Sinclair

Biography: Graduated UCL 1985. CCT in Anaesthesia, then North London SR in ICM. Appointed Consultant in ITU and Anaesthesia at University Hospitals Birmingham in 1998. Current roles in addition to ICM include Anaesthesia for Sarcoma and Interventional Radiology, Co-ordinating Trauma Consultant for Major Trauma Service, Medical Examiner and Chair of the Clinical Ethics Group.

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