



# Teaching Thoracoabdominal Aortic Surgery

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Aortovascular Service

St Bartholomew's Hospital, London





# Disclosure

- Terumo Aortic - Educational grant, Research grant
- Artivion - Educational grant



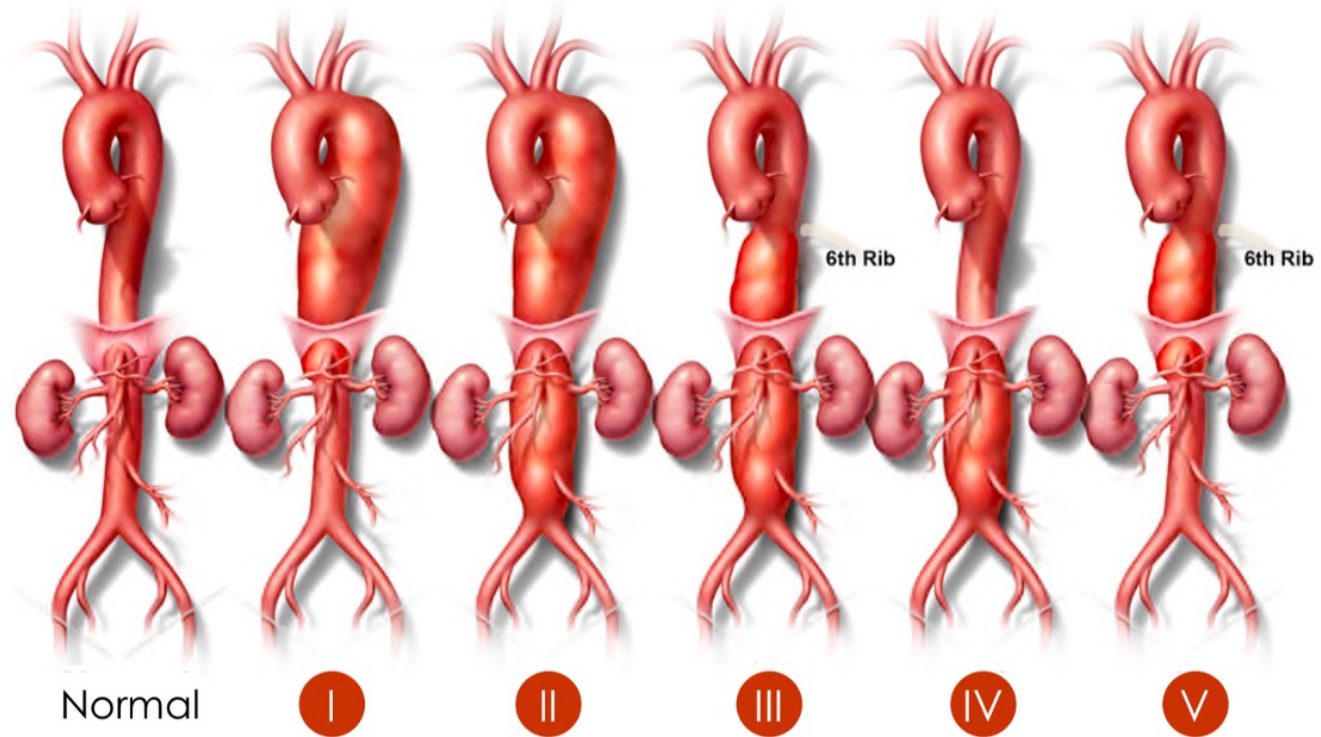


# Incidence and Natural History

- Incidence 2.2/100,000 (Webb 1999)
  - UK 1491 (67.8 Millions population in 2020)
- 5 Year survival 7 - 20% if not operated (Davies 2002, Webb 1999, Bickerstaff 1982)



# Modified Crawford Classification





# UK Perspectives



- Incidence
- Management by various specialties
- No accurate pre-treatment data and post-treatment data
- Outcome variable



# UK TAAA Activity and Outcomes

All TAA	Elective	Urgent	Emergency	Total
Number	93	45	14	152
Mortality	28 (30.1%)	9 (20%)	6 (42.8%)	43 (28.2%)

Aneurysms	Number	Mortality(%)	CVA (%)	Renal Failure(%)
Elective	62	22 (35.5%)	11/57 (19.3%)	16/55 (29%)
Urgent	31	6 (19.4%)	5/31 (16.1%)	7/28 (25%)
Emergency	12	6 (50%)	3/12 (25%)	8/11 (66.7%)
Total	105	34 (32.4%)	19/100 (19%)	31/94 (32.9%)

CCAD database 1<sup>st</sup> April 2004 – 15<sup>th</sup> February 2012





# Challenges



- UK NHS
- Independent Consultant Practice
- No attractive reward
- Cardiac Surgical Outcomes Monitoring



## Unwarranted Variation in the Quality of Care for Patients With Diseases of the Thoracic Aorta

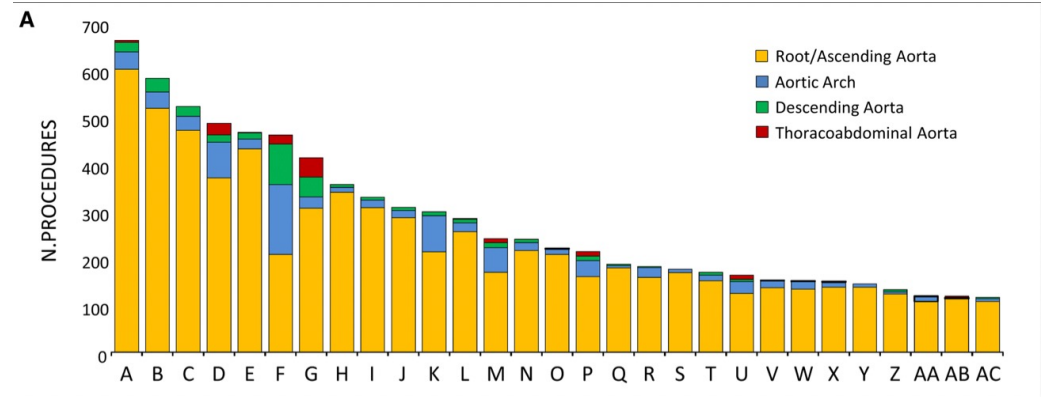
Alex Bottle, MSc, PhD;\* Giovanni Mariscalco, MD, PhD;\* Matthew A. Shaw, MA; Umberto Benedetto, MD; Athanasios Saratzis, MD; Silvia Mariani, MD; Mohamad Bashir, MD, MRCS, PhD; Paul Aylin, FFPH; David Jenkins, BSc, MBBS, FRCS, MS; Aung Y. Oo, FRCS; Gavin J. Murphy, MD, FRCS; on behalf of the UK Aortic Forum<sup>†</sup>

2004 - 2011

Treatment rate – 7.6% - 31.5%

6-month mortality in treated patients – 17.7%

6-month mortality in untreated patients - 30%

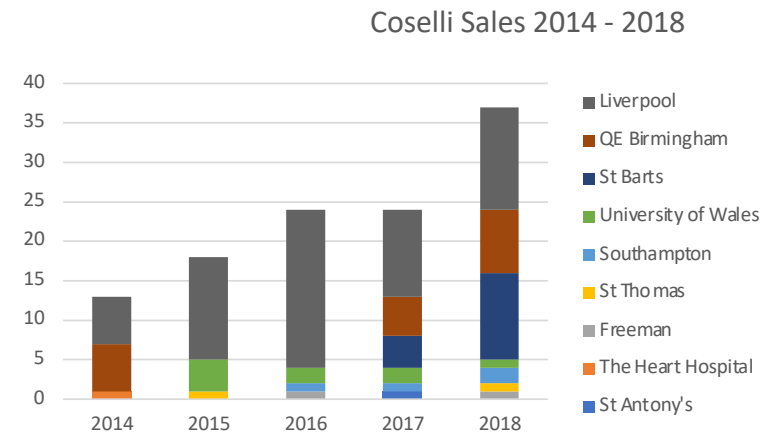






# UK Trumo Aortic Coselli Sale 2014-18

	2014	2015	2016	2017	2018	Grand Total
St Antony's					1	1
The Heart Hospital	1					1
Freeman				1	1	2
St Thomas			1		1	2
Southampton	0			1	1	2
University of Wales			4	2	2	6
St Barts					4	11
QE Birmingham	6	0			5	8
Liverpool	6	13	20	11	13	63
<b>Total by Year</b>	<b>13</b>	<b>18</b>	<b>24</b>	<b>24</b>	<b>37</b>	<b>112</b>



## NATIONAL VASCULAR REGISTRY



2017 Annual Report

November 2017



Table 3.2: Postoperative details of complex AAA repairs undertaken between January 2014 and December 2016

		Open AAA (n=217)	Endovascular (n=1,838)		
Admitted to	Ward	2.3%	19.9%		
	Level 2	47.5%	58.6%		
	Level 3	50.2%	21.4%		
	Died in theatre	0.0%	0.1%		
Days in critical care:		<b>Median</b>	<b>IQR</b>	<b>Median</b>	<b>IQR</b>
	Level 2	3	0 to 4	1	0 to 3
	Level 3	4	3 to 10	2	1 to 3
Hospital length of stay (days)		9	7 to 16	5	3 to 9
		<b>Rate</b>	<b>95% CI</b>	<b>Rate</b>	<b>95% CI</b>
In-hospital postoperative mortality		18.4	13.5 to 24.2	3.5	2.7 to 4.5
Re-admission to critical care		10.6	6.8 to 15.5	3.2	2.5 to 4.1
Return to theatre		17.1	12.3 to 22.7	7.1	6.0 to 8.4
30 day readmission rate		6.0	2.8 to 11.0	7.6	6.3 to 9.2

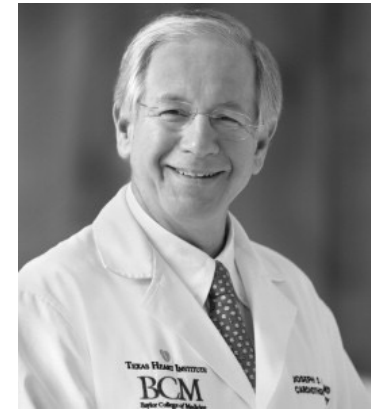
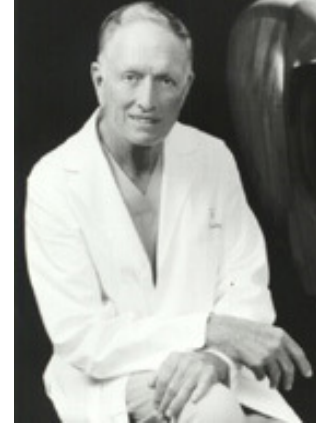
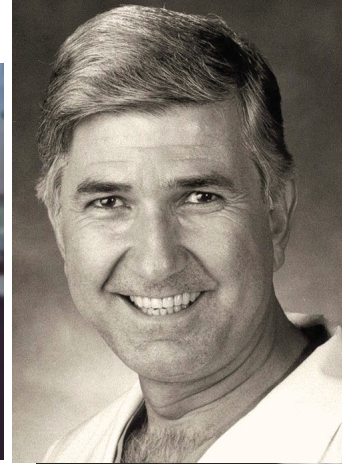




## Development of Aortic Surgery

Standing on the shoulders of the giants





# Giants in Aortic Surgery



# Supervision, Coaching and Mentoring



# Mentor





# Attributes of a good mentor

- Listen and question with empathy
- Sharing experience and learning
- Developing insight through reflection
- Being a sounding board and confidant
- Professional and/or critical friendship





# Influence from Myanmar



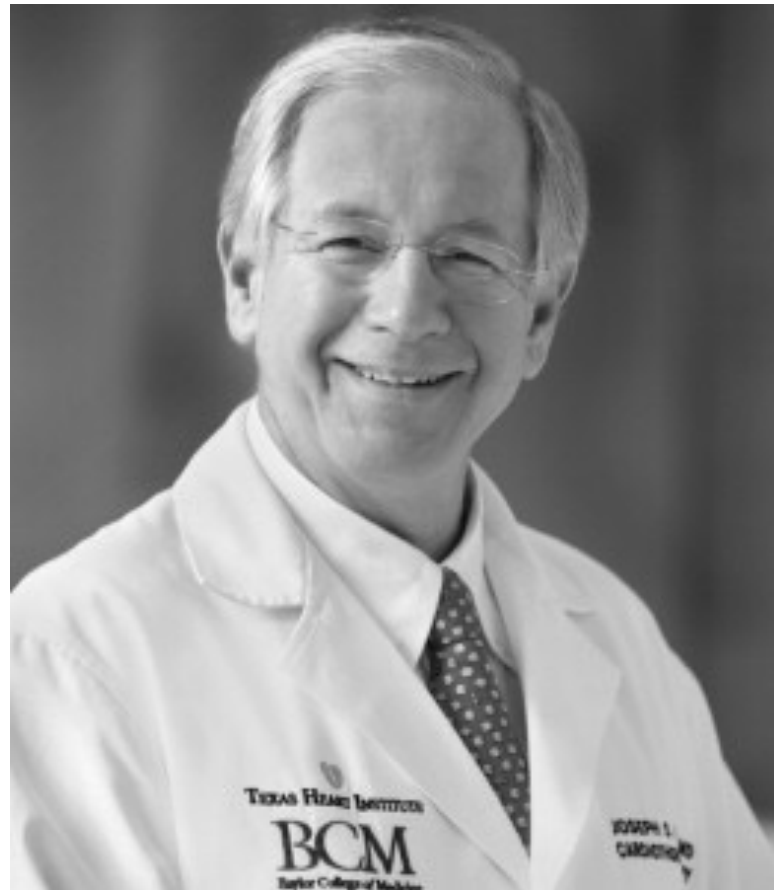
# Abbas Rashid



# Hazim J Safi



# Joseph Coselli

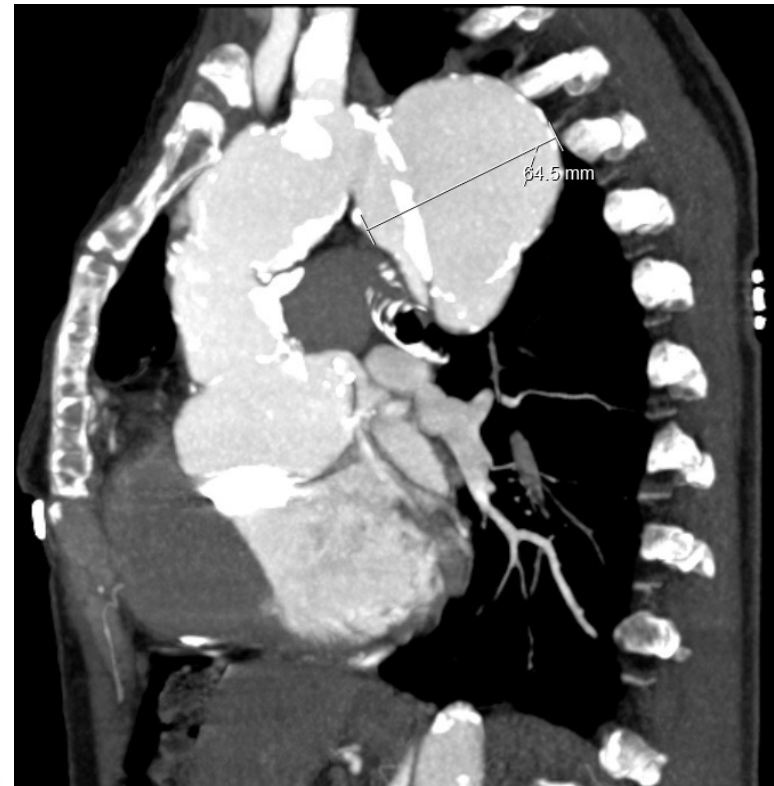
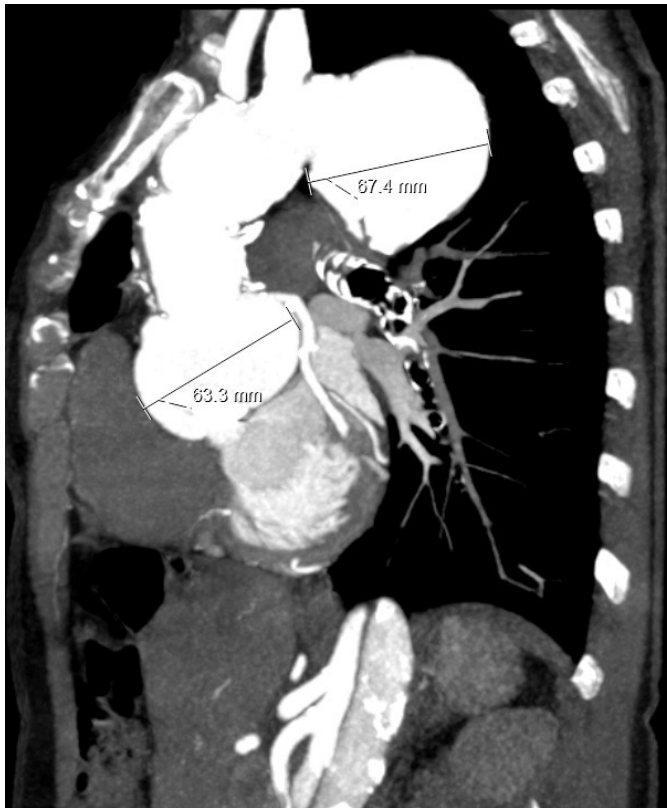


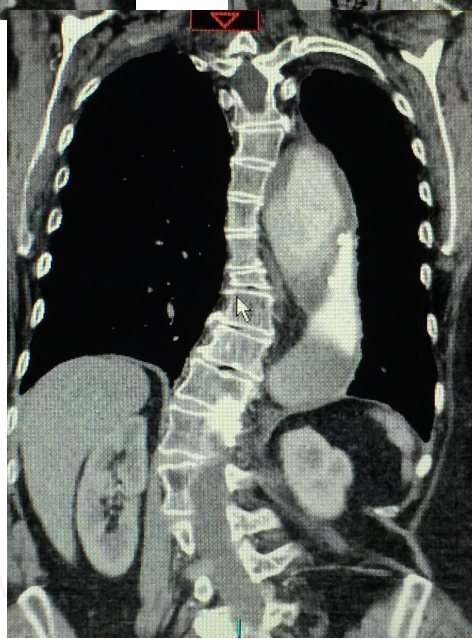
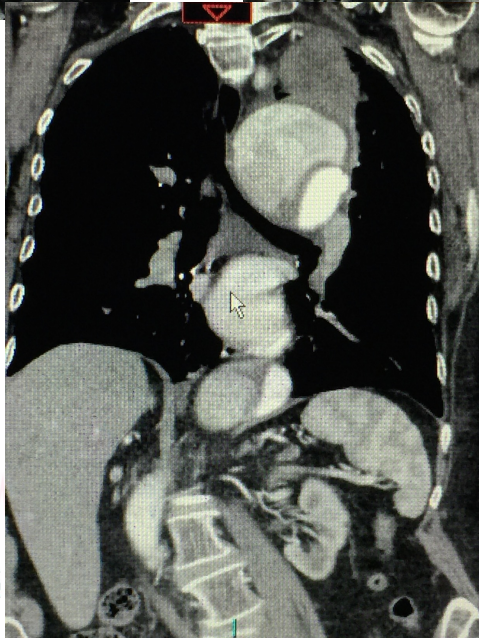
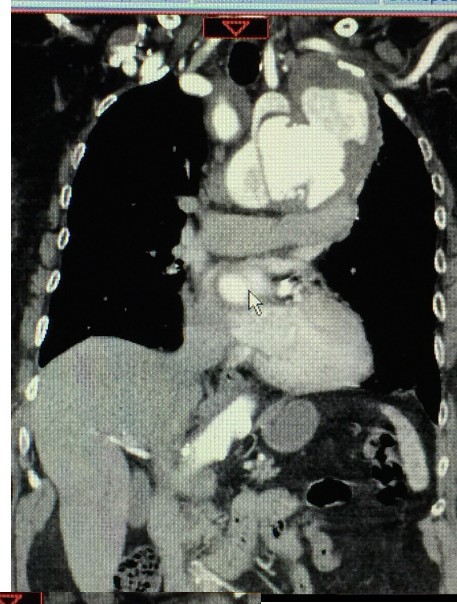
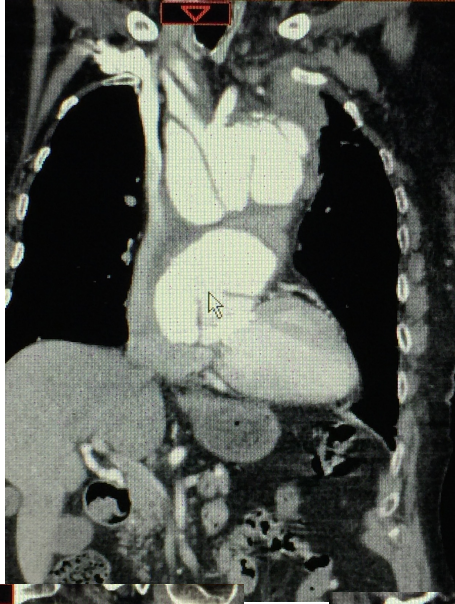
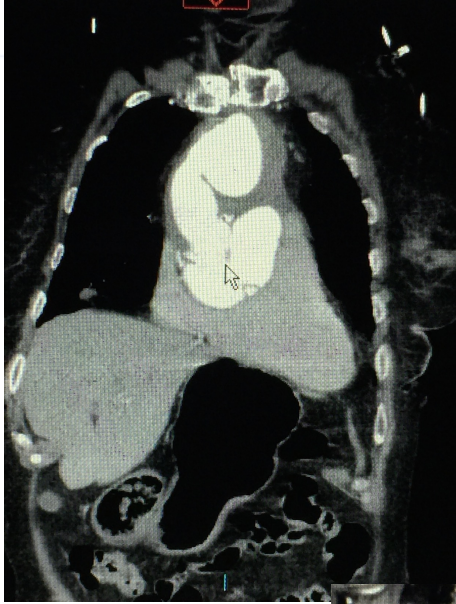
[Terms and Conditions](#)

# Open Surgery vs. Endovascular Therapy



# Previous Type A Repair







# Aortic Team



- Cardiac surgeons with specialist interest in aortic surgery
- Vascular surgeons with interest in major aortic intervention
- Interventional Radiologists
- Cardiothoracic Radiologists
- Interventional Cardiologists
- Anaesthetists with specialist interest in aortic surgery
- Intensive Care Consultants
- Clinical geneticist
- Clinician with interest in vasculitis







# Aortic Team



- Perfusionists
- Neuromonitoring technicians
- Advanced nurse practitioners
- Physiotherapists
- Aortic clinical fellow
- Aortic research fellow
- Research nurse
- Service coordinator/Operational service line manager
- Audit/data analyst
- IT support business partner
- Industrial partners



# Understand Individual's Strengths and Weaknesses



# Know your trainee



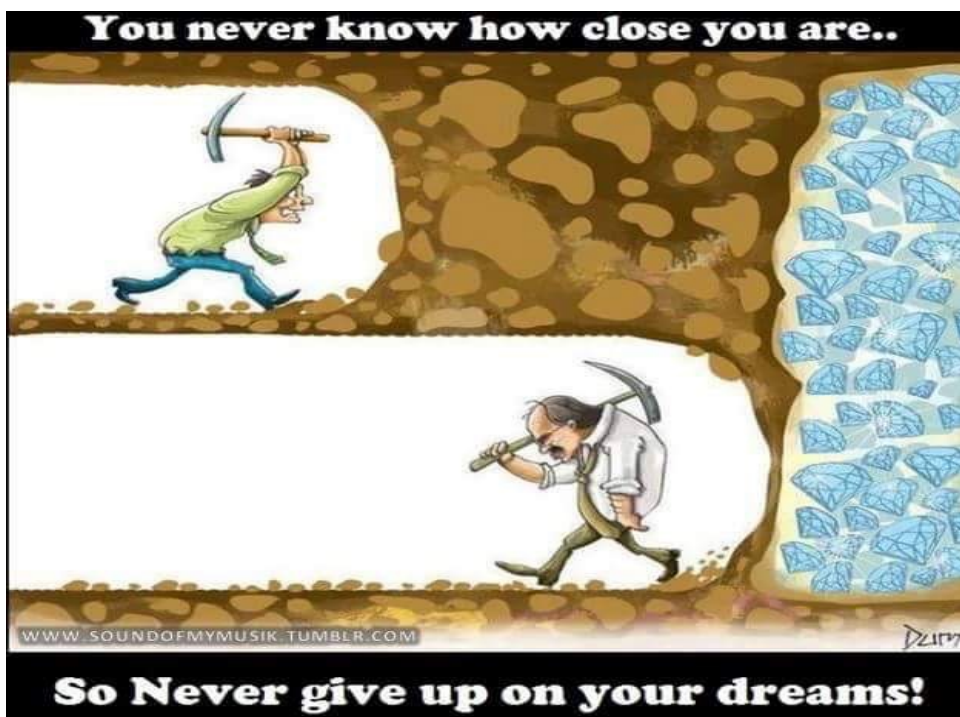
# Dream vs Reality



# Which Team?



# Surgical Training



# Bring trainers to home

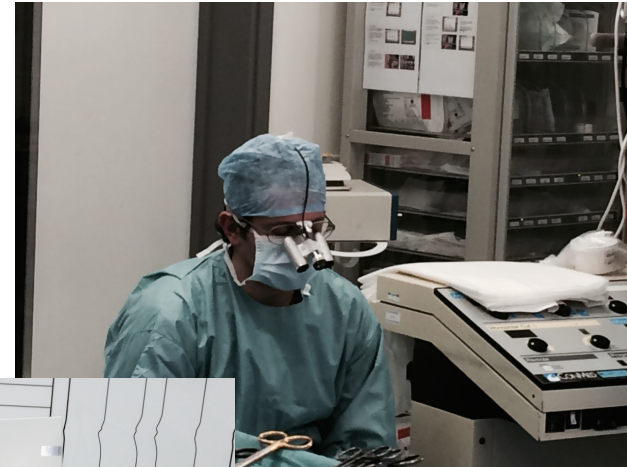
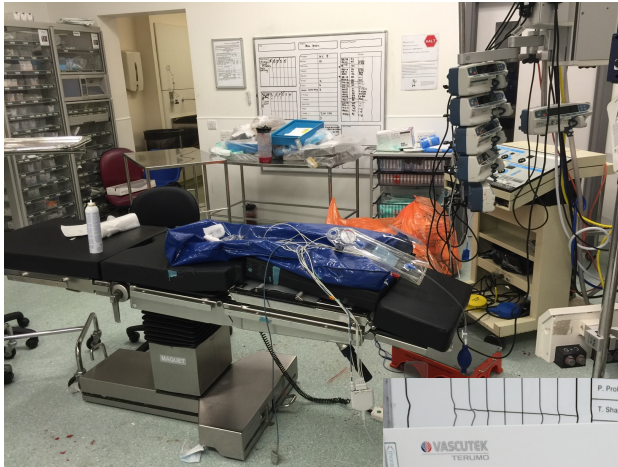


# Teaching





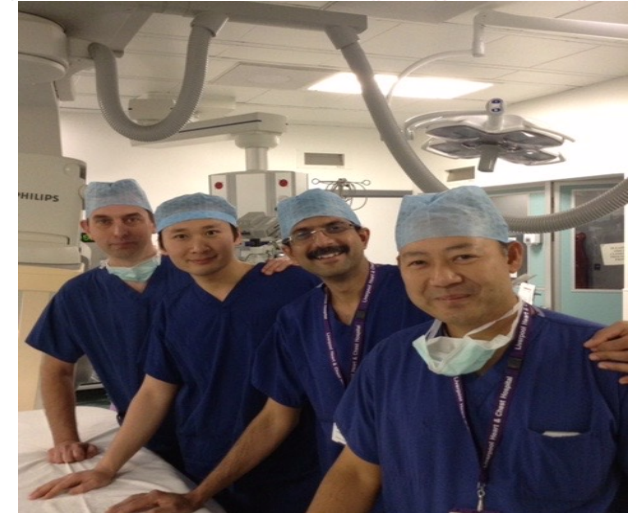
# Nature of Aortic Surgery



# Teamwork



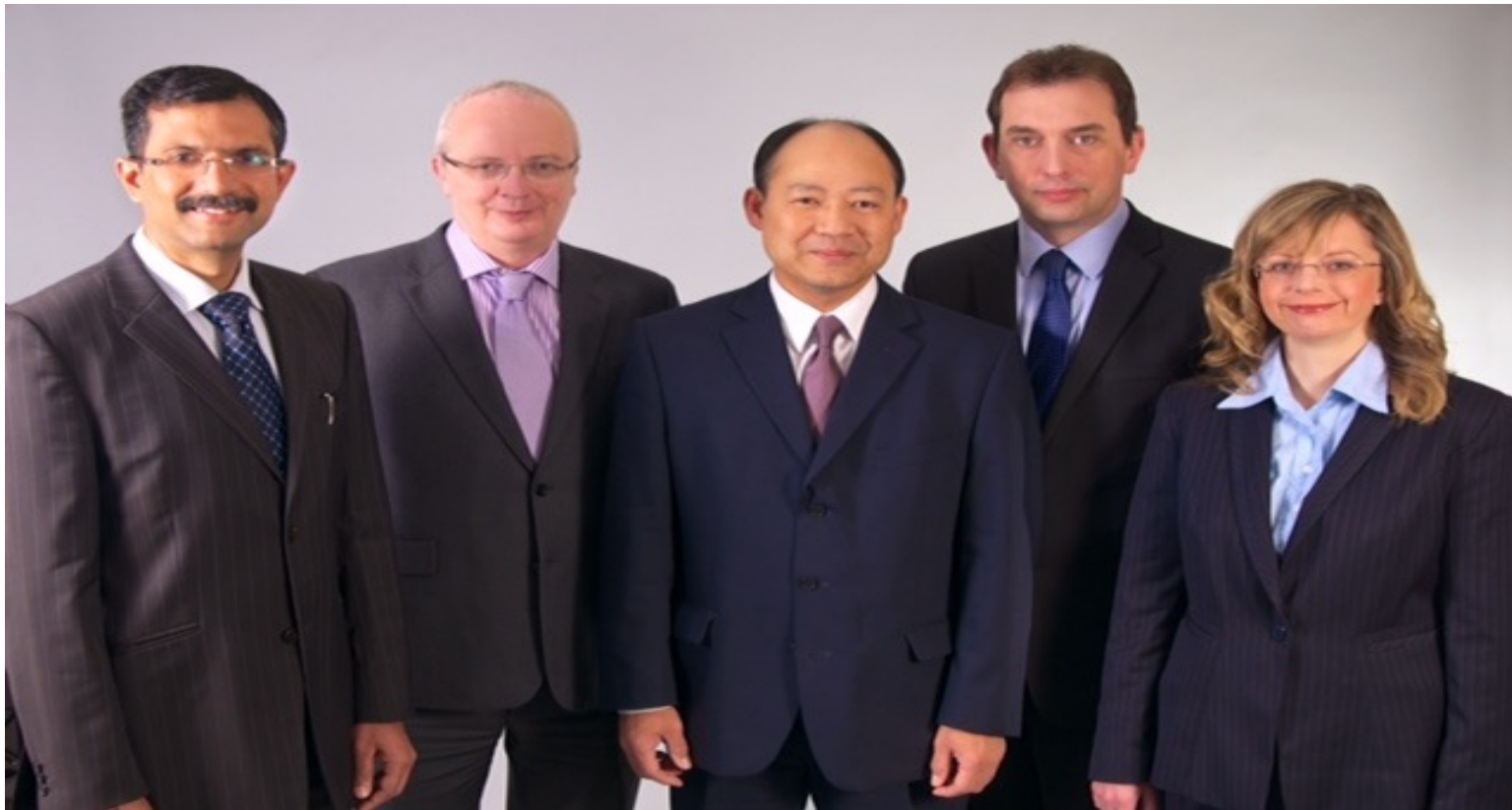
# Liverpool Aortic Team



# Barts Aortic Team



# Core Team



# Core Team



# First TAAA at Barts September 2017



# Mandalay





# Anaesthetic Preparation

- Proximal arterial monitoring line(Right Radial Artery)
- Distal arterial monitoring line(Right Femoral Artery)
- Intubation to isolate left lung
- CVP line
- HF line
- NIRS for cerebral, spinal and lower limb perfusion monitoring
- CSF drain insertion
- Setting up MEP monitoring
- Harvest blood for PRP preparation



When the surgeon is scrubbed and  
Is waiting for the anesthetist

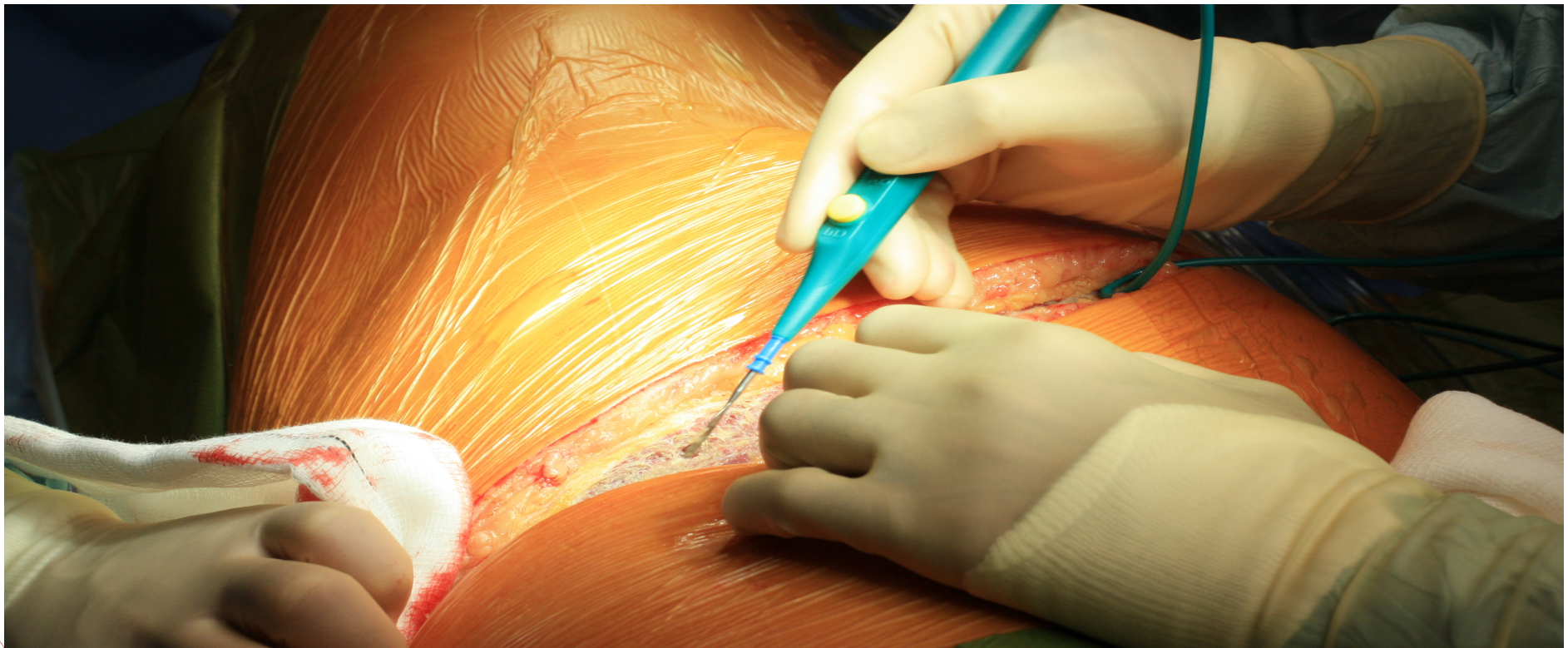


#Ahmed anter

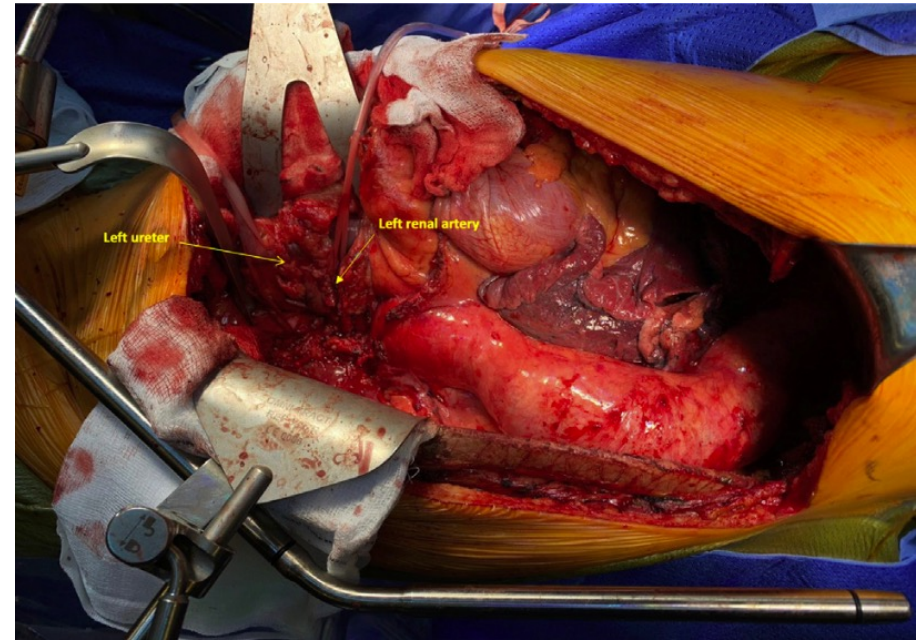
# Shwedagon



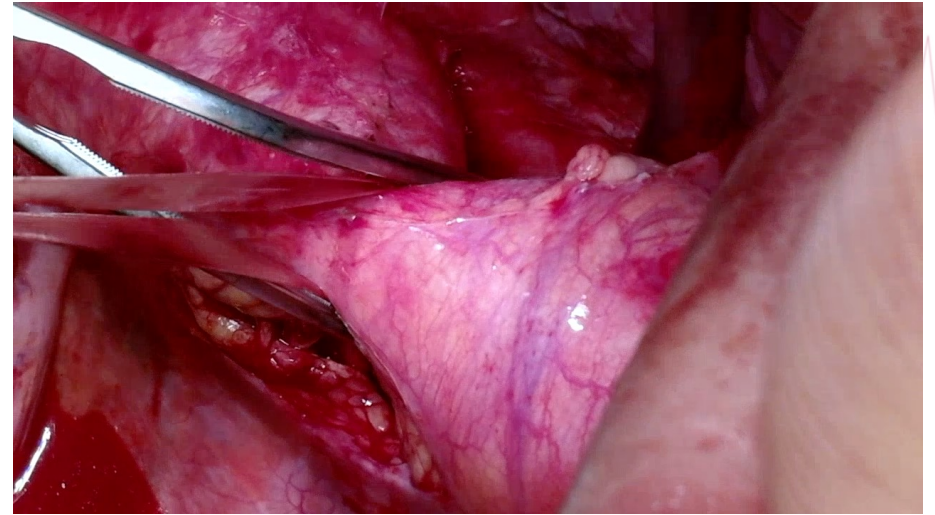
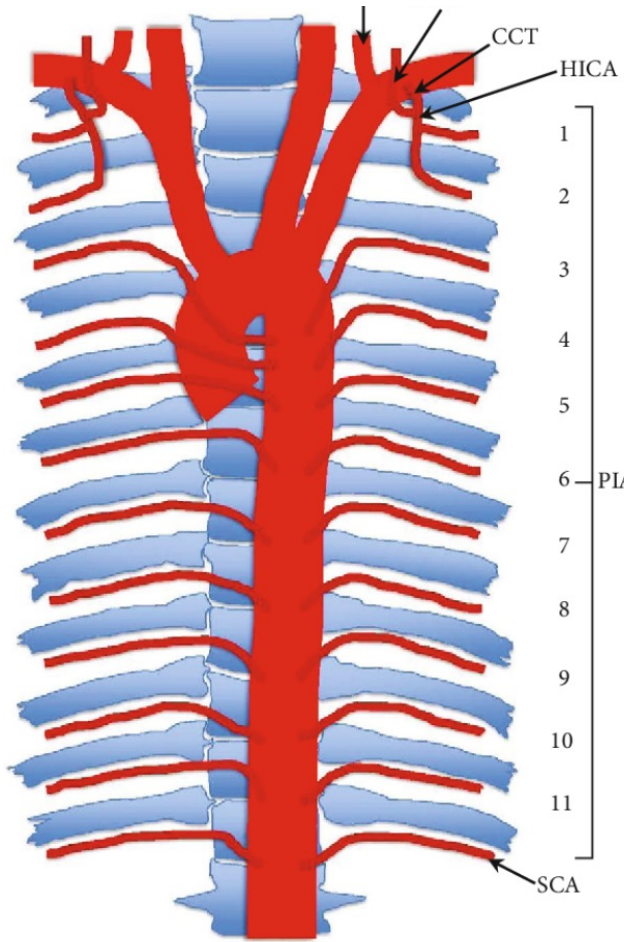
# Left Thoracolaparotomy



# Exposure

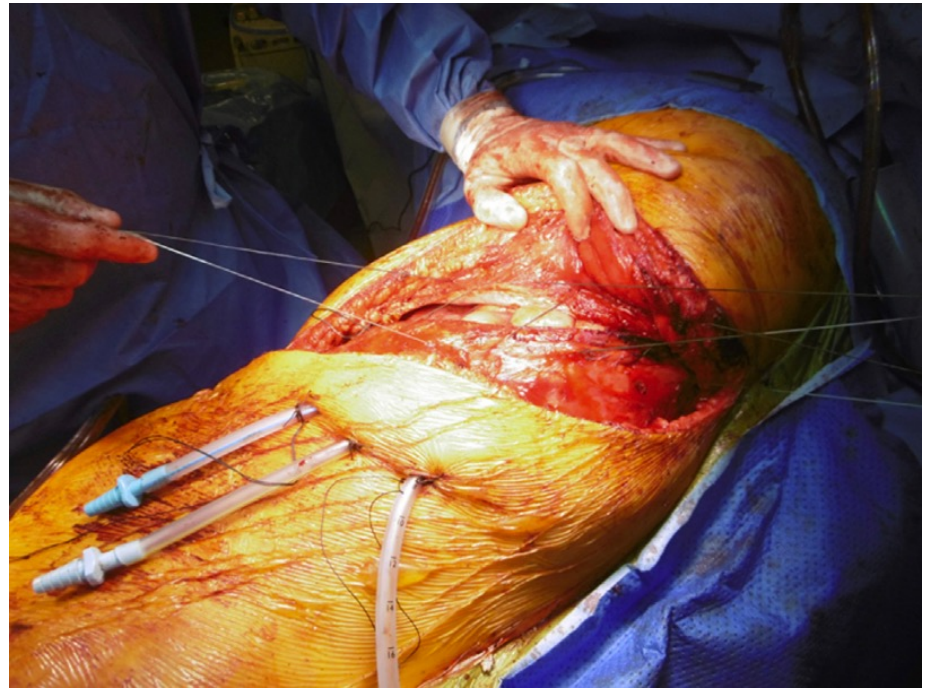
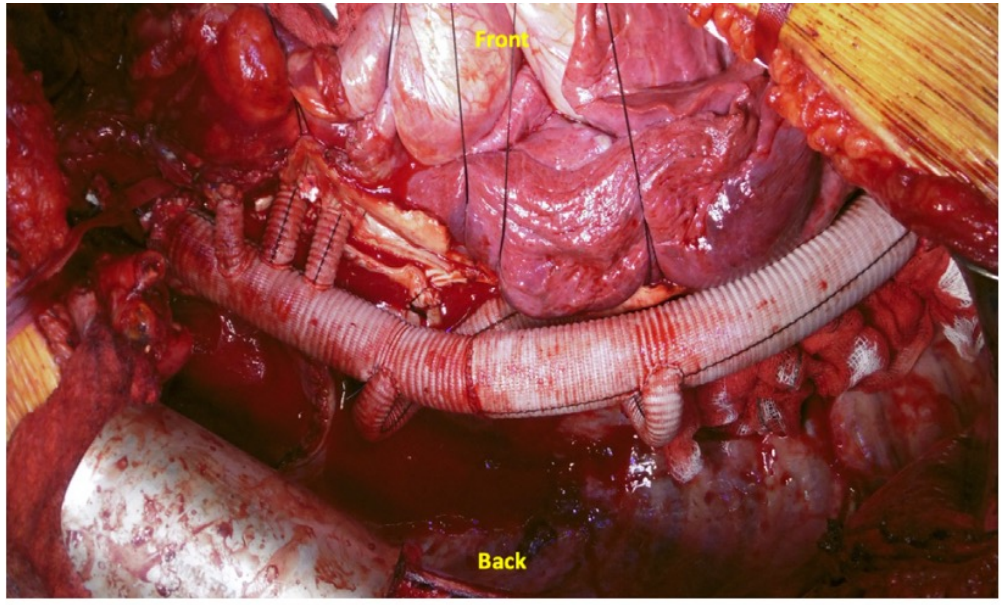


Intercostal arteries are one of the many sources of misery in thoracoabdominal surgery



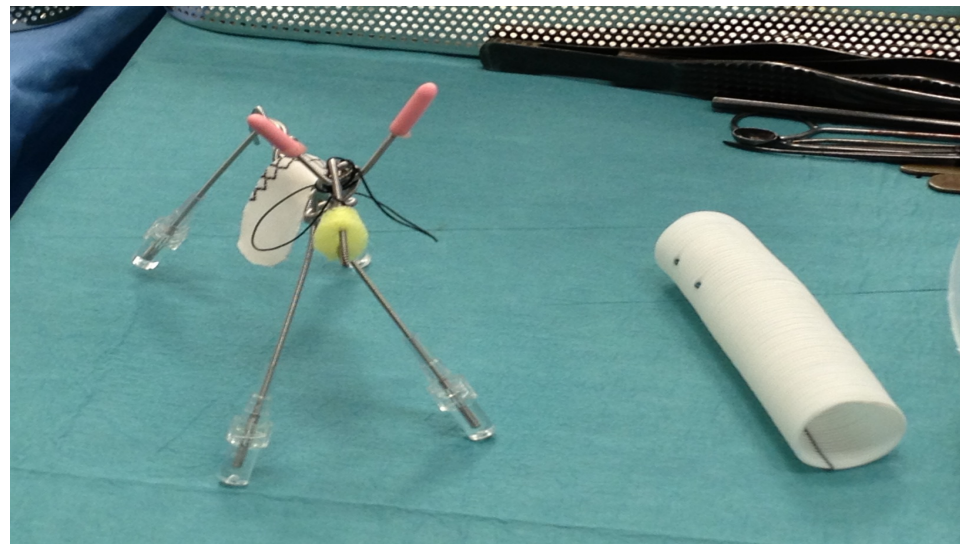


# Completion

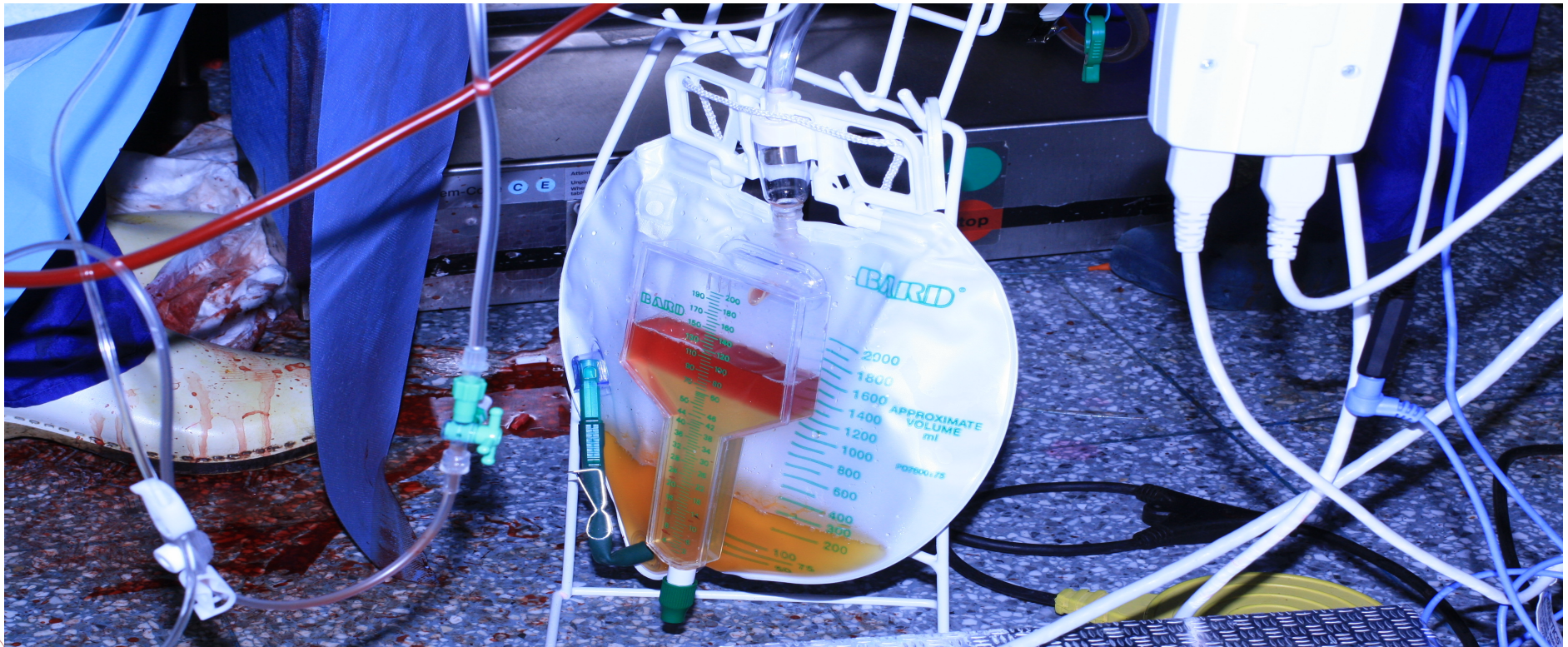




# Happy Team



# Renal Dysfunction



# Bagan



# Postoperative Management



# Postoperative Management



Sedation hold after 1 hr on ICU

MAP >85mmHg

Fluid Balance + 2L

Aim to extubate day 1 on NIV

SBP > 140 mmHg

PA Catheter

CSF 10-12 mmHg



Dexmedetomidine

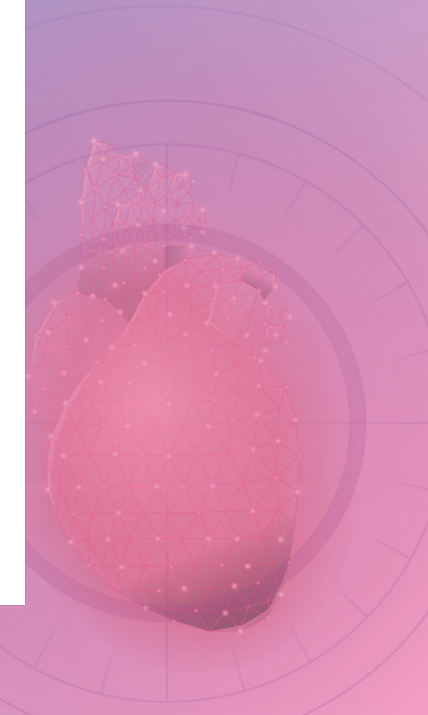
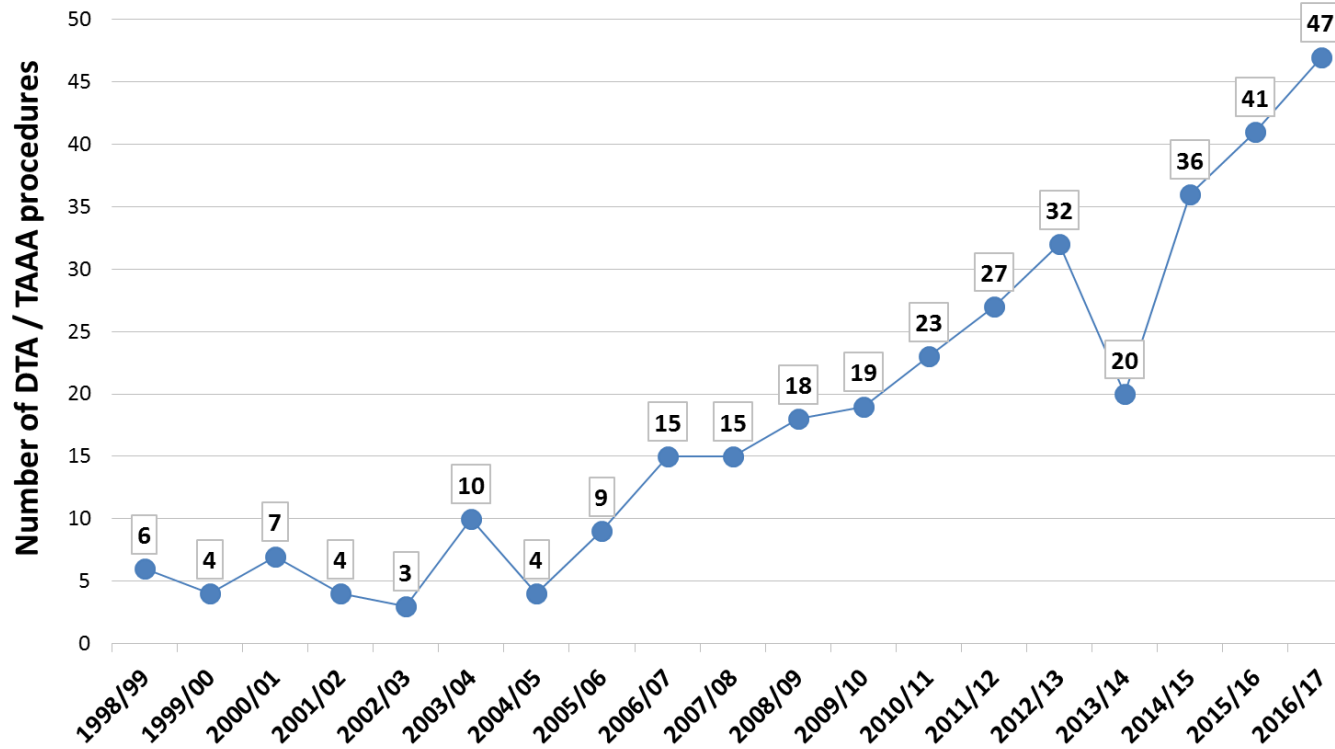
# Team Learning



# Team Learning



### DTA / TAAA Activity by Financial Year (n=340)



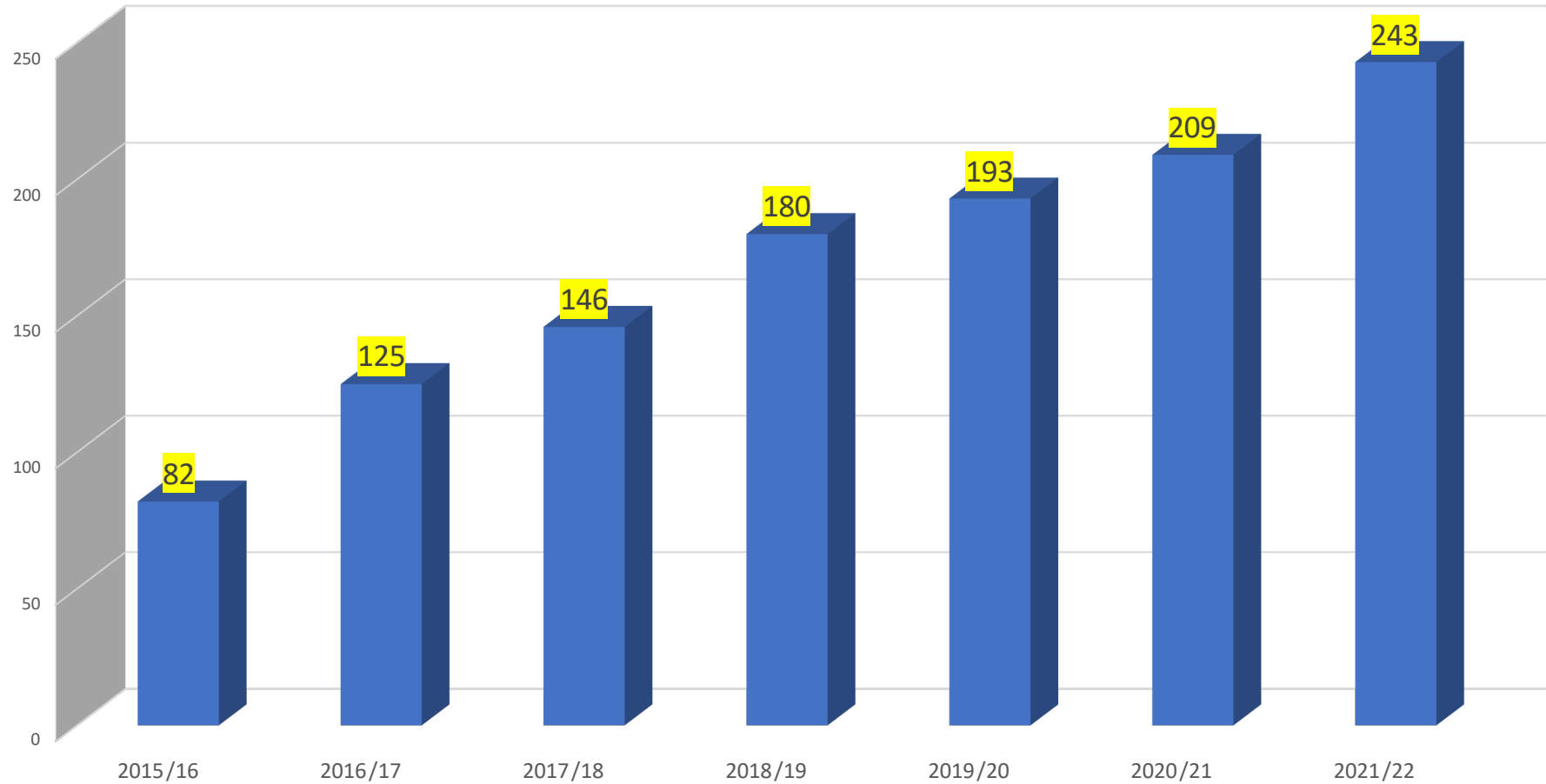


# Stepwise Introduction of QI Measures (Barts)

- Left Heart Bypass
- Spinal Drainage
- Cerebral, paraspinal and lower limb NIRS and MEP
- Anaesthetic Support (2 consultants)
- Surgical Support (2 more consultants)
- Perfusion support
- Custodiol
- Communication SOP including detailed team brief, heparin time out, noise reduction and situation awareness
- ITU team training

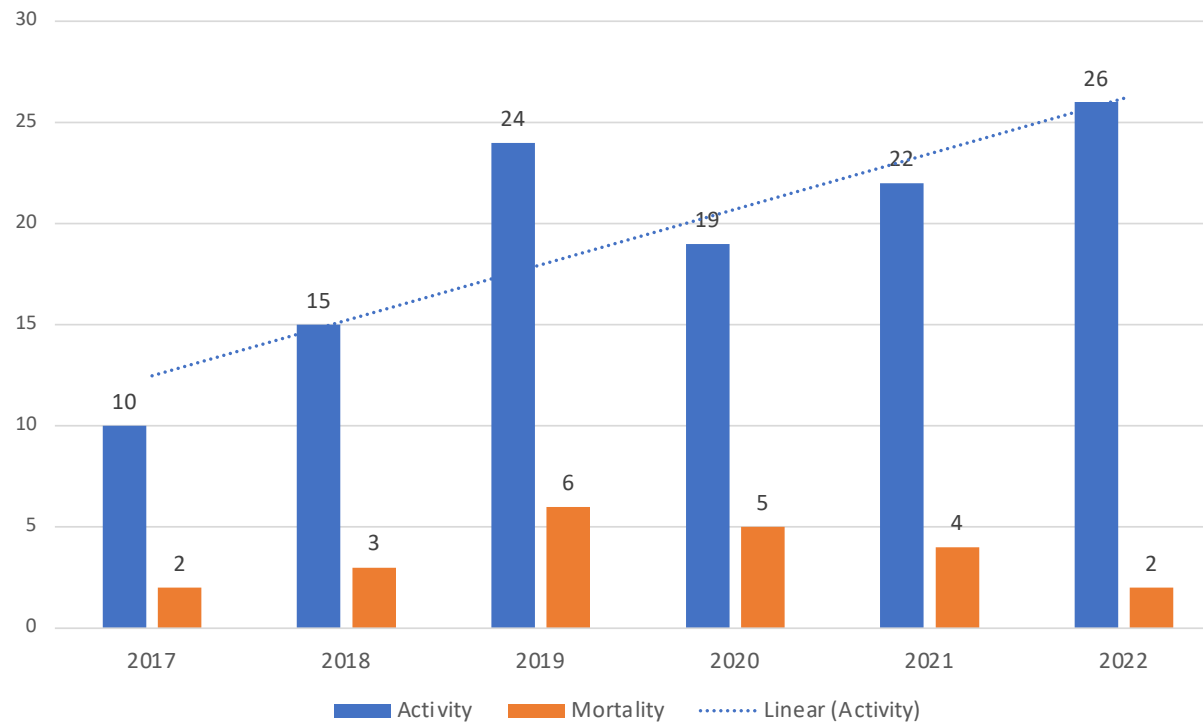


# Barts Total Aortic Activity

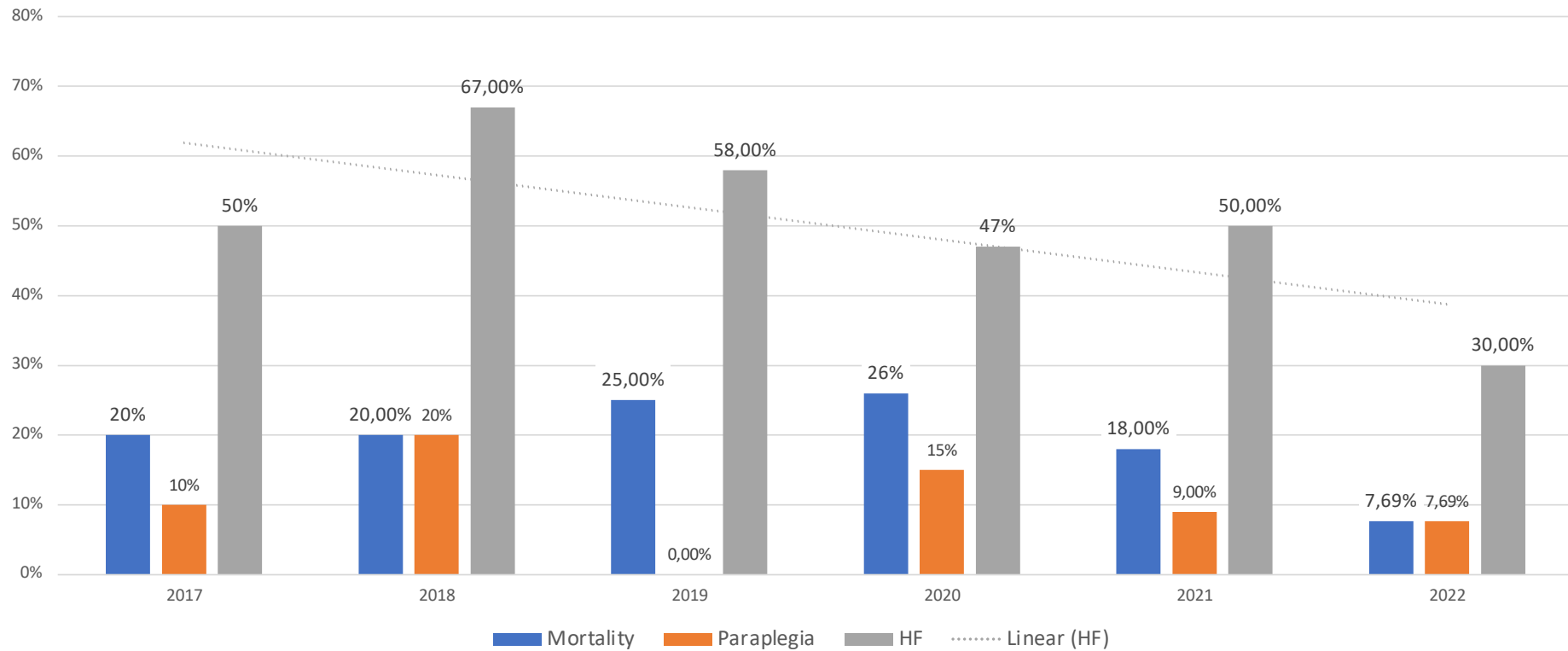


# Barts TAAA Activity and Outcomes

Activity and Mortality



# Barts TAAA Activity and Outcomes



Thank You

