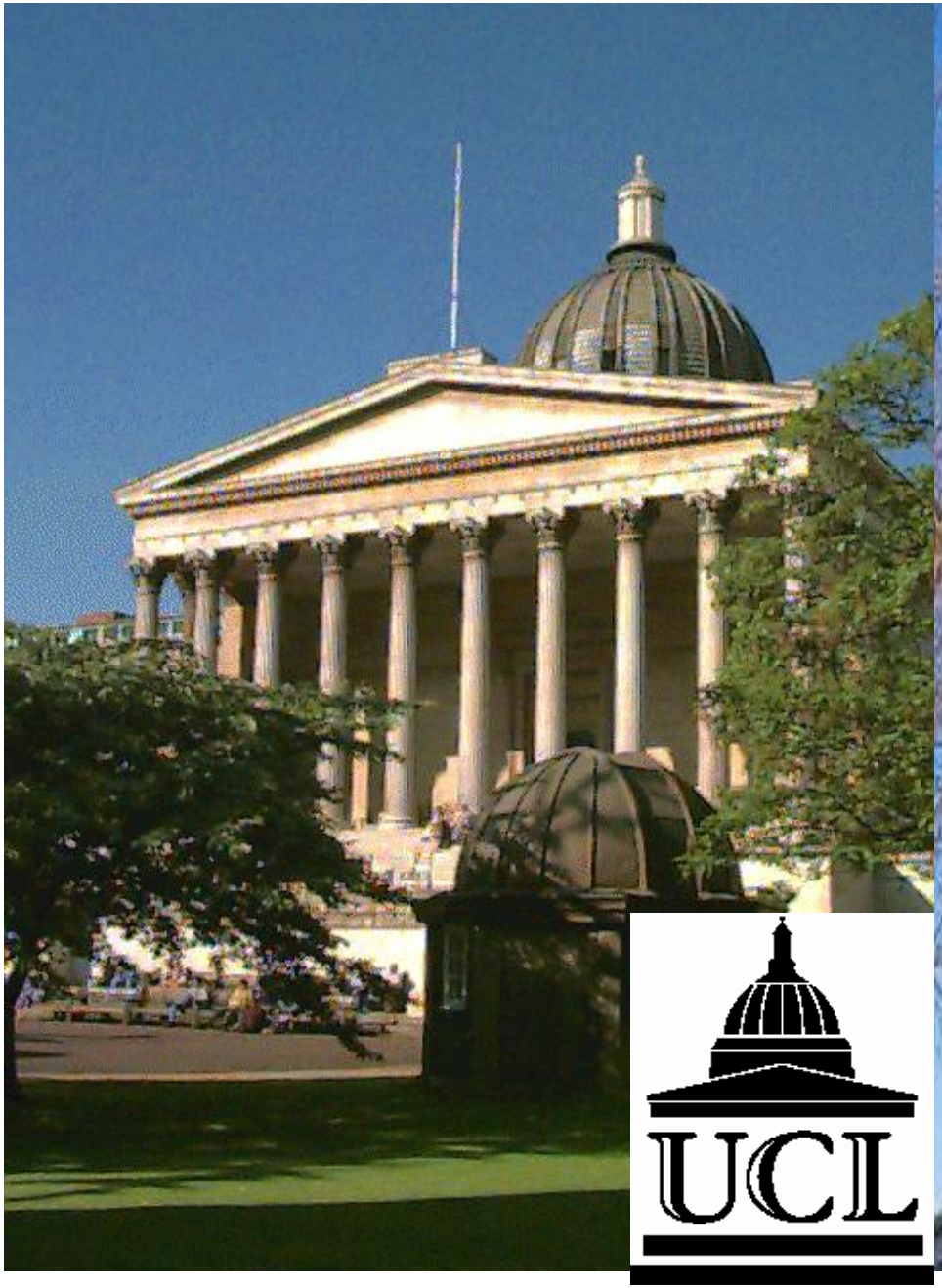
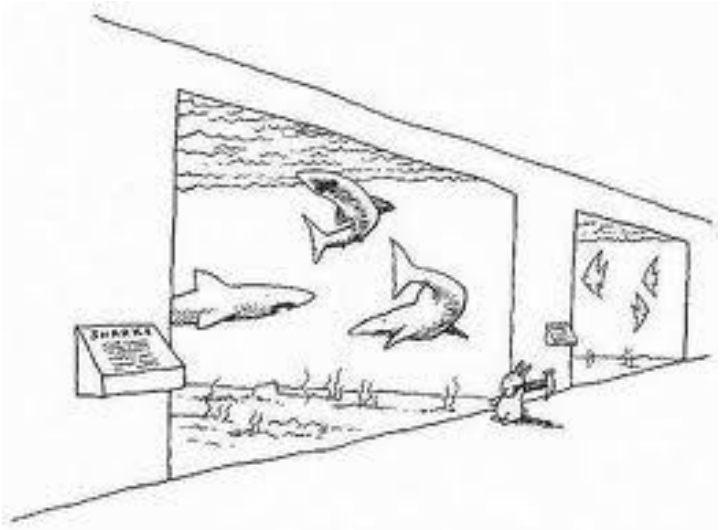
Major Vascular Anaesthesia where is the challenge

Dr B Brandner
Consultant in Anaesthesia and
Pain Management
UCLH, London



UCL


SHARKS

Preoperative challenge

- Patient selection
- Patient optimisation
- Effective multidisciplinary team meeting

Elective Abdominal Aortic Aneurysm – Preoperative Safe for Intervention Checklist

PATIENT DETAILS	
Patient Name: D.O.B:	NHS Number: Hospital Number:

Questions	Y	N
1. Has the patient had a myocardial infarct or unstable angina/ angina at rest in the last 3 months?		
2. Has the patient had new onset of angina in the last 3 months?		
3. Does the patient have a history of poorly controlled heart failure? (*nocturnal dyspnoea or inability to climb one flight of stairs due to SOB*)		
4. Does the patient have severe or symptomatic cardiac valve disease? (e.g. Aortic stenosis with gradient >60mmHg or requiring valve replacement, drop attacks)		
5. Does the patient have significant arrhythmia? (*Symptomatic, ventricular, severe bradyarrhythmias or uncontrolled supraventricular tachycardia*)		
6*. **If available,*** does the patient have any of:- 1. FEV1 < 1.0 L or <80% of predicted value ; 2. PO2 < 8.0 kPa; 3. PCO2 > 6.5 kPa		

If the answer to any of 1 – 6 is yes, the patient is coded RED and is very high risk for surgery

Questions	Y	N
7. Does the patient get SOBOE climbing one flight of stairs? *(short slope if lives on one floor)*		
8. Does the patient have evidence of moderate renal impairment (creatinine >180 micromol/l) or previous renal transplant ?		
9. Has the patient had treatment for cancer in last 6 months, or has life threatening tumour?		
10. Does the patient have poorly controlled diabetes mellitus? (*HbAlc > 7.5%, blood sugar usually >10 mmol/l)*		
11. Does the patient have uncontrolled hypertension (i.e. SBP >190; DBP >105)		
12. Has the patient had a TIA or CVA within the last 6 months?		

If the answer to any of 7-12 is yes, the patient is coded AMBER and is higher risk for intervention.

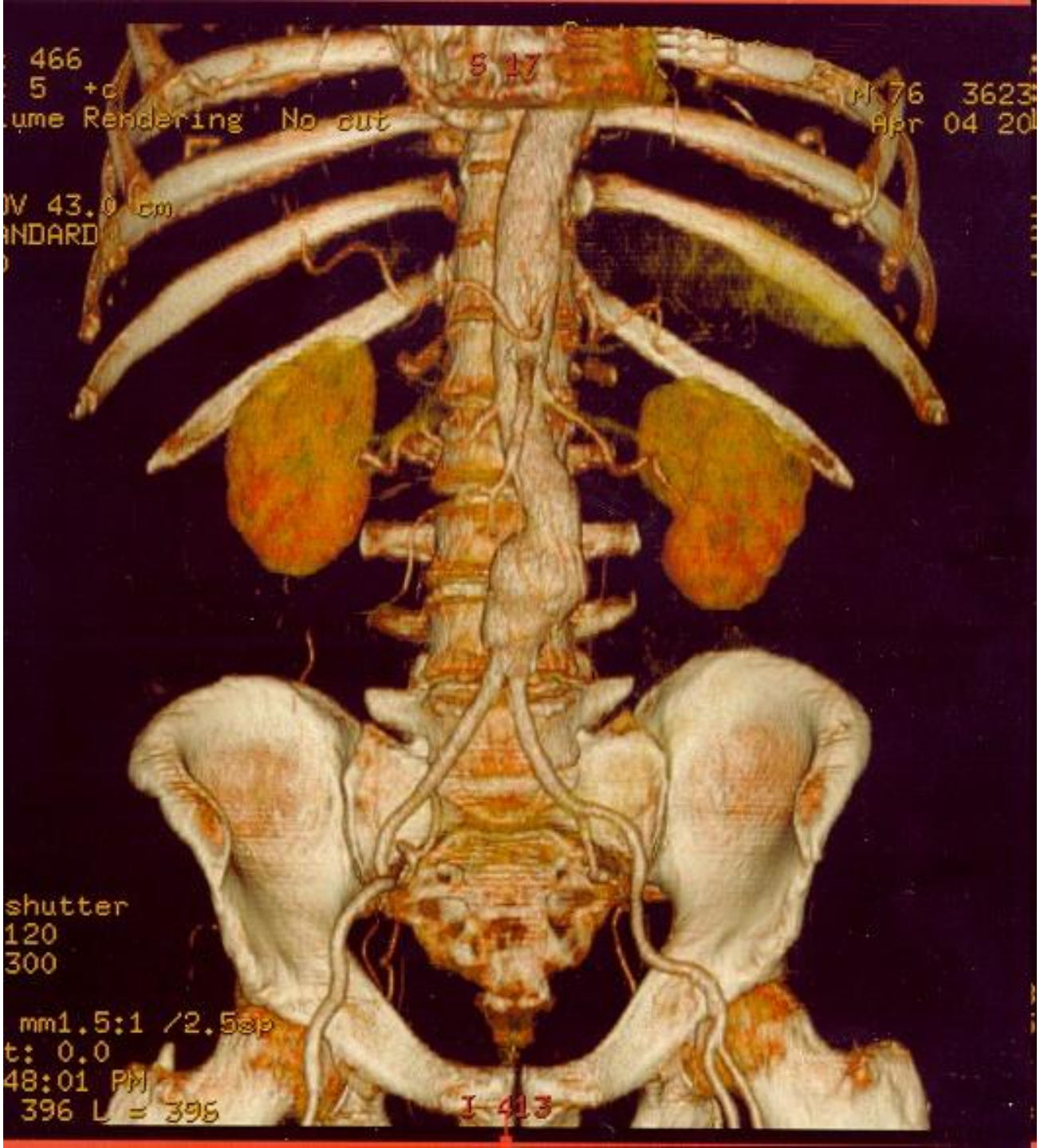
Questions
If the answers to <u>all</u> of the above are no, the patient is coded GREEN and is fit to proceed, provided they are on appropriate preoperative medication

Please Tick

Patient is coded:		Proposed Action:	
Red		Not recommended for immediate intervention – Specialist review required if surgical treatment still to be considered.	
Amber		Significant comorbidity requiring preoperative optimisation.	
Green		Fit to proceed to further stage of formal assessment	

N.B. It is recommended that all patients scoring red or amber should be reviewed by an Anaesthetist with experience in Vascular anaesthesia prior to listing for intervention.

Name:_____ Grade:_____ Date:_____


466
5 +c
ume Rendering No cut
S 17
M 76 3623
Apr 04 20
V 43.0 cm
NDARD
shutter
120
300
mm1.5:1 /2.5ap
t: 0.0
48:01 PM
396 L = 395
I 413

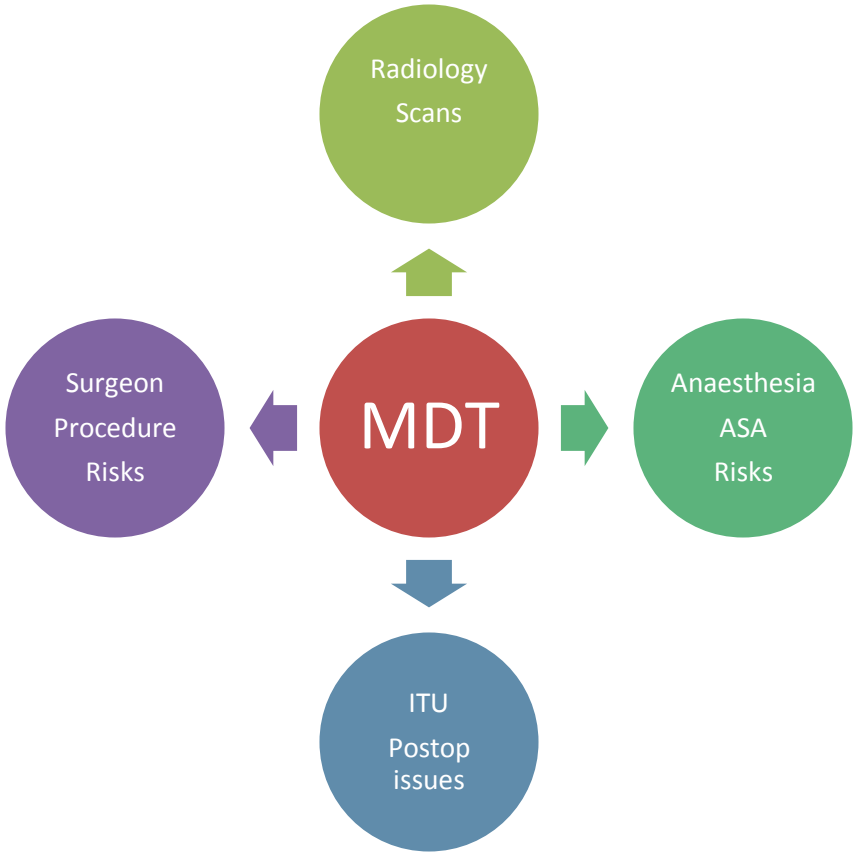
Ivancec classification 2010

Protocol on the degree of complexity of EVARs:

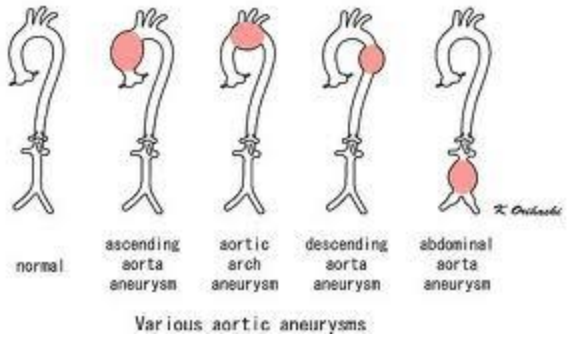
Complexity, being dependant on multiple factors, cannot be limited only to anatomical locations such as only infrarenal stentgrafting, or only thoracic stentgrafting distal to the subclavian artery. For this reason complexity is divided into three levels.

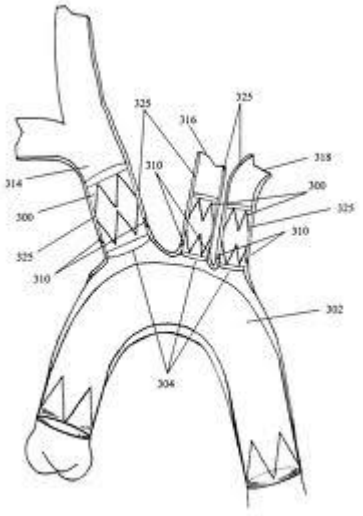
1. Green - a straight forward procedure to be performed within 1-2 hours
2. Amber – a more complex procedure which may require 2-4 hours
3. Red - a procedure that may require 5-6 hours, or longer

Complex EVAR



Challenges and solutions





Intraoperative

- Briefing and WHO checklist
- Layout and risks
- Length of procedure
- Blood loss
- Temperature
- Monitoring

Surgical Safety Checklist

World Health Organization | Patient Safety
A World Alliance for Safer Health Care

Before induction of anaesthesia

(with at least nurse and anaesthetist)

Has the patient confirmed his/her identity, site, procedure, and consent?
- ☐ Yes

Is the site marked?
- ☐ Yes
- ☐ Not applicable

Is the anaesthesia machine and medication check complete?
- ☐ Yes

Is the pulse oximeter on the patient and functioning?
- ☐ Yes

Does the patient have a:

Known allergy?
- ☐ No
- ☐ Yes

Difficult airway or aspiration risk?
- ☐ No
- ☐ Yes, and equipment/assistance available

Risk of >500ml blood loss (7ml/kg in children)?
- ☐ No
- ☐ Yes, and two IVs/central access and fluids planned

Before skin incision

(with nurse, anaesthetist and surgeon)

- ☐ **Confirm all team members have introduced themselves by name and role.**
- ☐ **Confirm the patient's name, procedure, and where the incision will be made.**

Has antibiotic prophylaxis been given within the last 60 minutes?
- ☐ Yes
- ☐ Not applicable

Anticipated Critical Events

To Surgeon:
- ☐ What are the critical or non-routine steps?
- ☐ How long will the case take?
- ☐ What is the anticipated blood loss?

To Anaesthetist:
- ☐ Are there any patient-specific concerns?

To Nursing Team:
- ☐ Has sterility (including indicator results) been confirmed?
- ☐ Are there equipment issues or any concerns?

Is essential imaging displayed?
- ☐ Yes
- ☐ Not applicable

Before patient leaves operating room

(with nurse, anaesthetist and surgeon)

Nurse Verbally Confirms:
- ☐ The name of the procedure
- ☐ Completion of instrument, sponge and needle counts
- ☐ Specimen labelling (read specimen labels aloud, including patient name)
- ☐ Whether there are any equipment problems to be addressed

To Surgeon, Anaesthetist and Nurse:
- ☐ What are the key concerns for recovery and management of this patient?

This checklist is not intended to be comprehensive. Additions and modifications to fit local practice are encouraged.

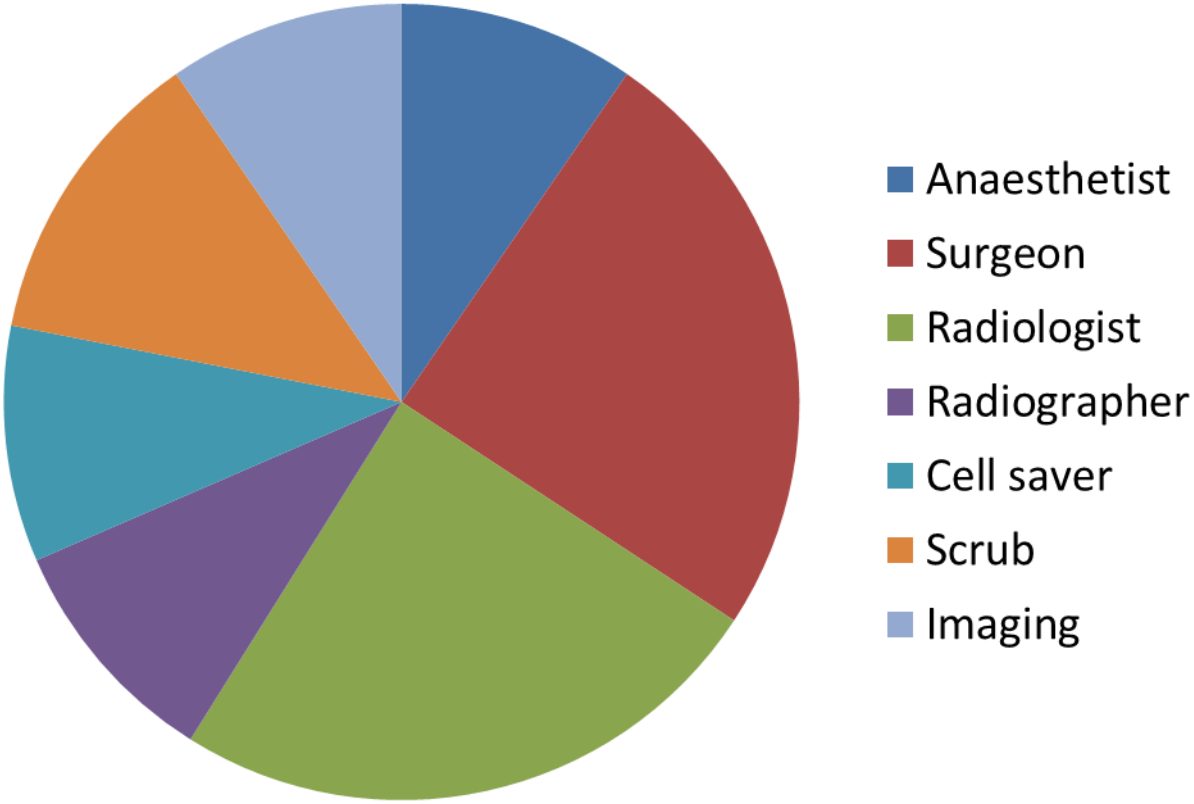
Revised 1 / 2009


Innova


UCLH. MET
Avance


53
109/61
18/14
97
34.7

Access to patient



Eur J Vasc Endovasc Surg. 2011 Jun 19. [Epub ahead of print]

Local Anaesthesia for Endovascular Repair of Infrarenal Aortic Aneurysms.

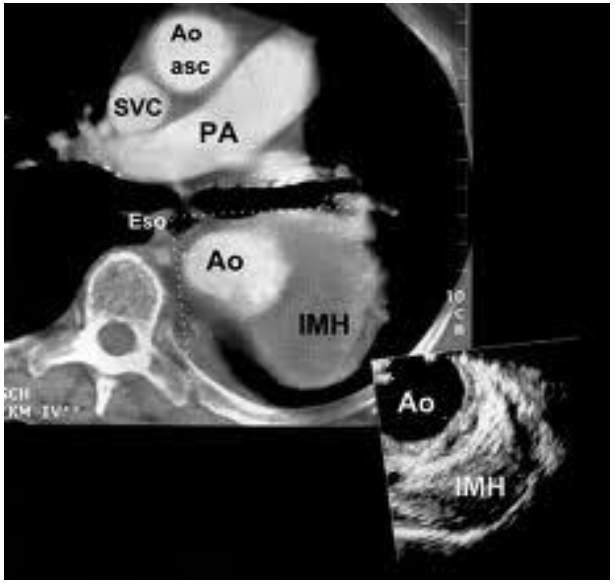
Geisbüsch P, Katzen BT, Machado R, Benenati JF, Pena C, Tsoukas AI.

	EVAR <4hr Simple thoracic	FEVAR	TEVAR Dissection	Emergency
Preoperative				
MDT Meeting		x	x	
Preassessment	x	x	x	
CPEX		x	x	
Stress echo		x	x	
MUGA	x	x	x	
	Thallium			
Anaesthesia				
GA	GA/Local/ Epidural	GA	GA	GA/ Local / Epidural
Regional	? sedation Midazolam remifentanil	remifentanil	remifentanil	remifentanil
Local	ASA III-IV			ASA IV-V
Gases		Desflurane	Desflurane	
Monitoring		Spinal drain (discuss with surgeon)	Spinal drainTOE	
ECG,inv BP,Urin	Inv BP	CVP Doppler Inv BP	CVP Lidco (if avail) TOE (if avail) Inv BP	CVP Can wait Inv BP
Cell saver		x	x	x
Inotrop BP	Noradrenaline Labetolol	Avoid GTN		
Postoperative	Ward/HDU	ITU/HDU	ITU/HDU	ITU/HDU
		Spinal drain 10ml/hr 48 hours		
Discharge	24-48hr	4-5 days		

Monitoring for FEVAR

- ECG, BP,SpO2, CO2 Invasive BP, Urin
- CVP
- Temperature
- TOE (Dissection)
- Spinal drain
- Cardiac output: Doppler, LiDCO
- Transcranial doppler
- ACT (heparin therapy)

TOE: Type B Dissection



LiDCO rapid


Hemodynamic
125/97/72
71
87
6.2
Fluid Response
111
Preload
13
LiDCO Rapid

Monitoring

- Hourly ABG
- Urin
- ACT
- Spinal drainage 5-10ml/hr


40807996
08-Jun-2011
AMATO
ROBERT
Review
Exam 1 Seq 12
Frm 8 / 16
Mask 1
16 cm
106 cm
15 cm
LAO 0 deg
CAU 0 deg
L 0 deg
LIVE


E.A.COMBS
LONDON
12
1
2
3
4
5
6
7
8
9
10
11

Time lines

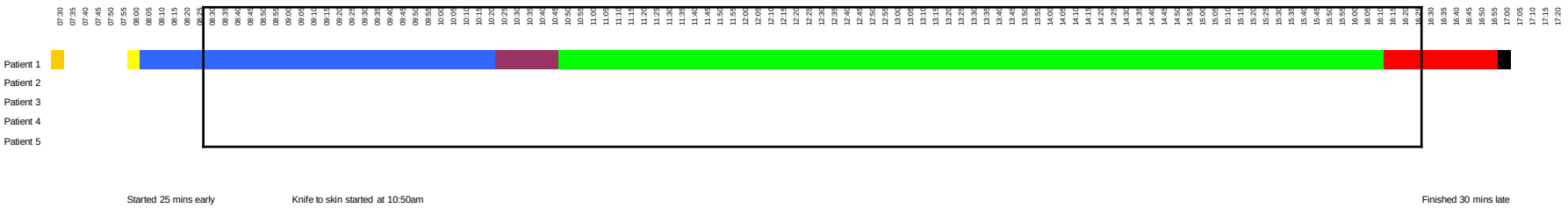
Wednesday 29th September 2010

Obi Agu

Needle to skin utilisation 105.2%

Knife to skin time 77.1%

1 last minute cancellations - Reason = No theatre time due to overruns

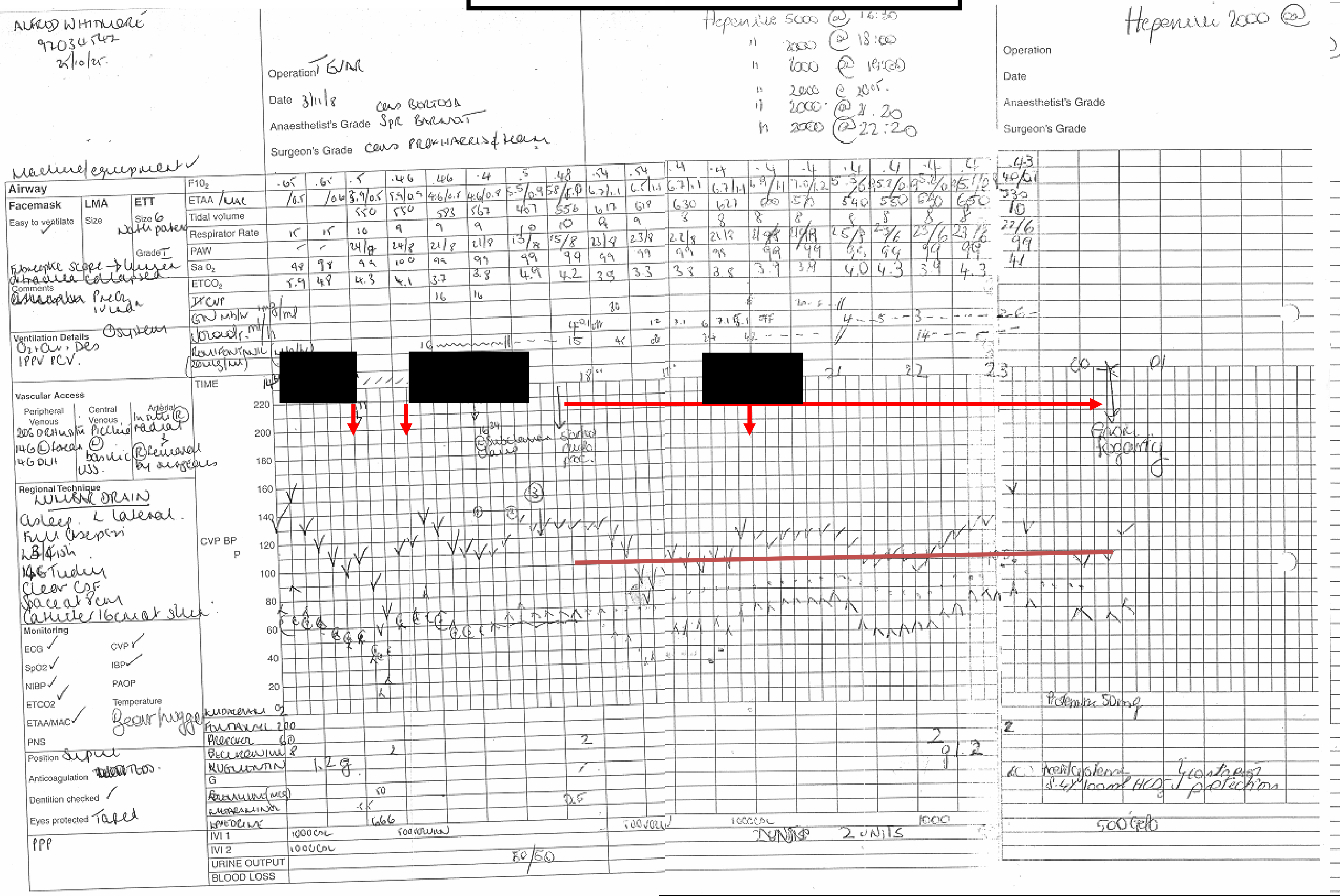


Started 25 mins early

Knife to skin started at 10:50am

Finished 30 mins late

FEVAR: CASE

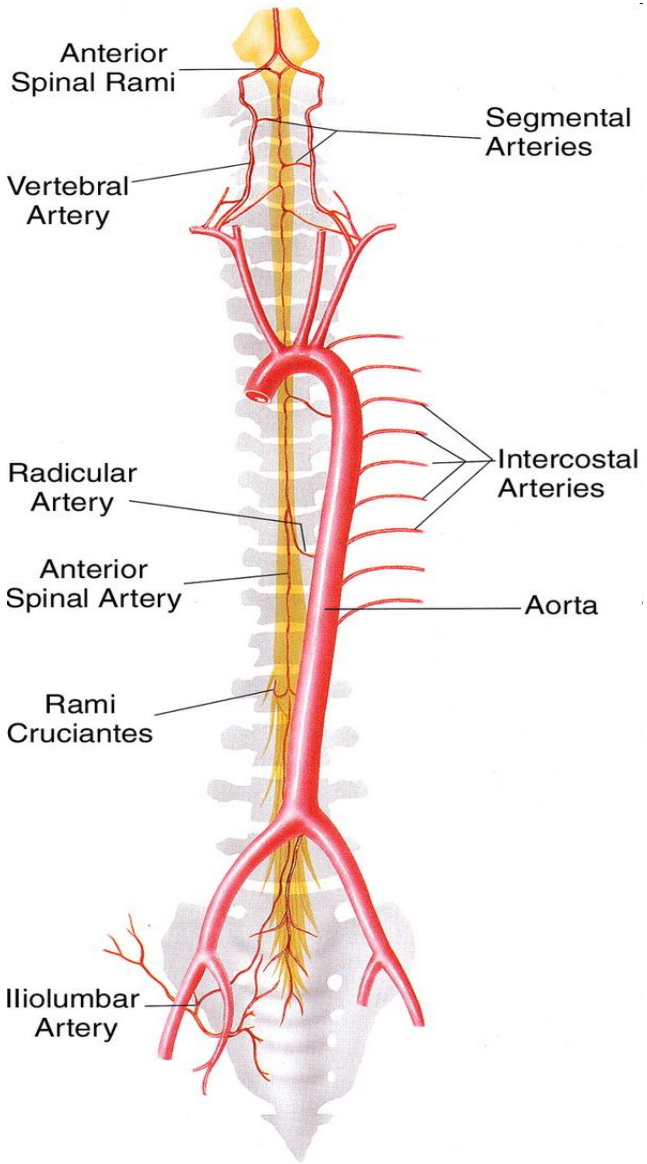


Operation
Date
Anaesthetist's Grade
Surgeon's Grade
Airway
Facemask
LMA
ETT
Easy to ventilate
Size
Grade
Comments
Ventilation Details
Vascular Access
Peripheral Venous
Central Venous
Arterial
Regional Technique
Monitoring
ECG
SpO2
NIBP
ETCO2
ETAA/MAC
CVP
IBP
PAOP
Temperature
PNS
Position
Anticoagulation
Dentition checked
Eyes protected
FiO2
ETAA / MAC
Tidal volume
Respirator Rate
PAW
Sa O2
ETCO2
TIME
[redacted]
CVP BP
P
220
200
180
160
140
120
100
80
60
40
20
0
G
IVI 1
IVI 2
URINE OUTPUT
BLOOD LOSS

Postoperative

- Handover
- Neurology
- Blood Loss
- Respiratory
- Cardiovascular
- GI
- Renal

Anatomy of the Arterial Supply

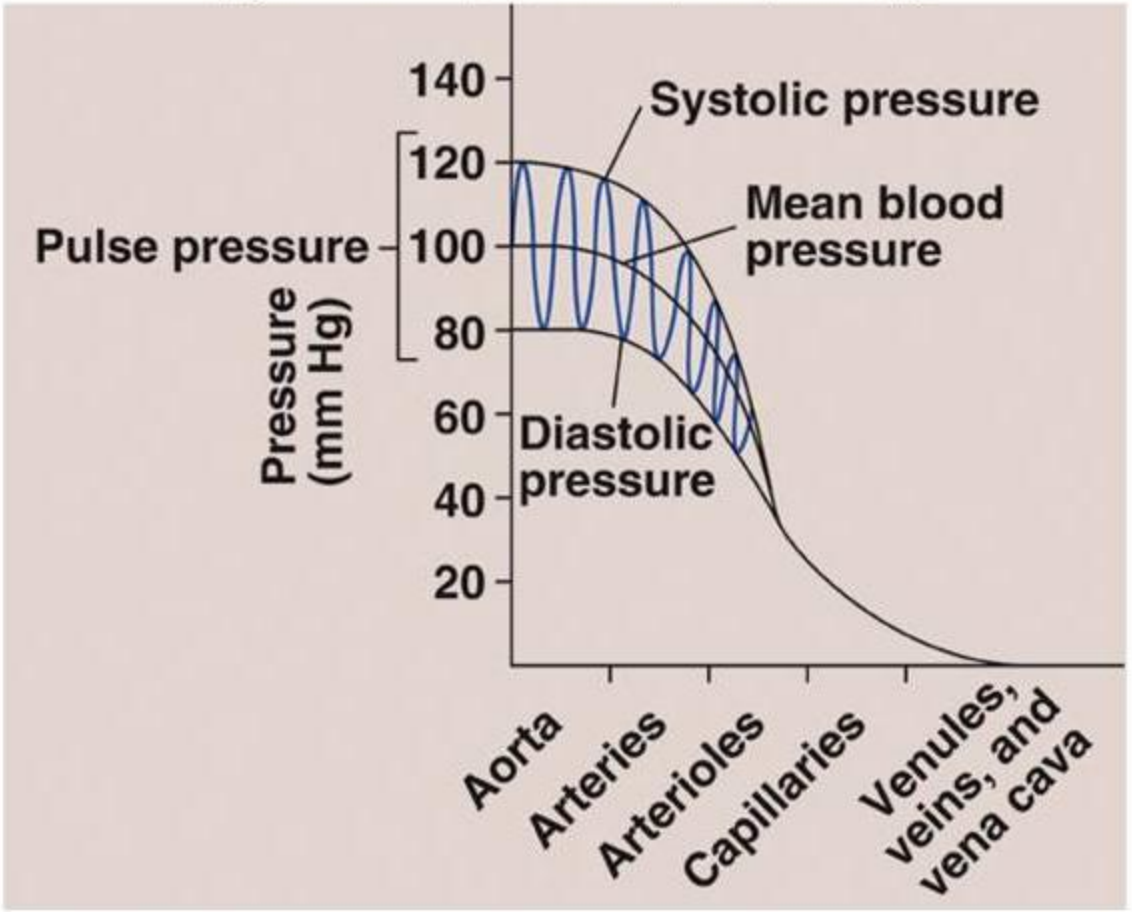


Anterior spinal artery syndrome SYMPTOMS

Paraplegia

Possible sphincter disturbances

Loss pain and temperature



Abdominal aortic aneurysm quality markers

Area	No.	Standard description	Target		
			Elective	Unplanned	Emergency
Pre-operative	1	Proportion of patients who are operated on who came in from screening programme?	Monitor	n/a	n/a
	2	Proportion of patients with a known un-ruptured AAA of at least 5.5cms that are declined surgery	Monitor	Monitor	Monitor
	3	Pre-operative length of stay for elective patients to be kept below 1 day average.	1 day	n/a	n/a
	4	On the day cancellation rate for elective AAA procedures	Monitor	n/a	n/a
	5	Number of patients who suffer a ruptured AAA whilst on the elective AAA waiting list	Monitor	n/a	n/a
Operative & in-hospital	6	Proportion of AAA procedures performed using EVAR	60%	Monitor	Monitor
	7	Crude in-hospital mortality rate	4%	15%	40%
Post-operative	8	Crude 30 day mortality rate	4%	15%	40%
	9	Proportion of patients discharged to level 3 critical care/ITU bed immediately following surgery	Monitor	Monitor	Monitor
	10	30 day re-admission rate for patients who have undergone AAA surgery	Monitor	Monitor	Monitor
	11	Total length of hospital stay	Monitor	Monitor	Monitor

?