

ANAESTHESIA FOR VASCULAR SURGERY

PREOPERATIVE ASSESSMENT

- ◆ High risk group
- ◆ IHD - 30% symptomatic
- ◆ - 50% thallium scan +tive
- ◆ -90% angiography +tive

PREOPERATIVE ASSESSMENT

- ◆ COAD 50%
- ◆ Hypertension 50%
- ◆ Renal impairment 30%
- ◆ Diabetes 20%
- ◆ CCF 10%

PREOPERATIVE ASSESSMENT

- ◆ Degree of investigation controversial
- ◆ U+E FBE ECG CXR minimum
- ◆ More involved testing on history and investigation-- remember time constraints and general rule of thumb
- ◆ “Patients with IHD do not benefit from coronary angioplasty/ CABGS preop unless they have a medical indication for the intervention”

PREOPERATIVE ASSESSMENT

Premedication: ? beta blockers
? statins

PERIPHERAL BYPASS SURGERY

Above knee patency 70% 5yr leg vein,

50% 5yr artificial graft

Tibial patency 70% 5yr leg vein,

20% 5yr artificial graft

PERIPHERAL BYPASS SURGERY

Use back of hand IV if possible, especially if distal graft

Arterial line routine, CVC not routine

No strong evidence to suggest one anaesthetic technique superior to the other

Make an individual choice

Conversion from regional to GA may increase mortality

PERIPHERAL BYPASS SURGERY

- ◆ Duration of surgery 1.5 - 5hrs
- ◆ Usually low blood loss operation
- ◆ Little post operative pain if Iliacs not involved

Peripheral Bypass Surgery

- ◆ Heparin 1mg = 100 to 120 units
- ◆ Half life = 1 hour
- ◆ Protamine to Heparin reversal ratio = 2:1

Carotid Endarterectomy

- ◆ 1 to 2 % peri-operative stroke rate
- ◆ 1/3 occur intra-operatively
- ◆ Confounding variables:
 - ◆ routine versus selective shunting
 - ◆ Recent CVA

Carotid Endarterectomy

- ◆ Techniques:
- ◆ “Deep General Anaesthesia”
- ◆ “Adequate General Anaesthesia”
- ◆ Regional Anaesthesia

Carotid Endarterectomy

- ◆ Deep general anaesthesia

Rarely used: Increased mortality

Adequate GA/ Regional

No difference in outcome

Carotid Endarterectomy

- ◆ General Anaesthesia
- ◆ 16 guage peripheral IV
- ◆ Arterial Line
- ◆ Relaxant anaesthesia
- ◆ TIVA/Inhalational :
 - ◆ no difference in outcome

Carotid Endarterectomy

- ◆ Assessment of cerebral perfusion:
 - ◆ Stump pressure
 - ◆ Back flow
 - ◆ EEG/ BIS
 - ◆ Intracranial Doppler
 - ◆ Awake patient

Carotid Endarterectomy

- ◆ Blood Pressure control:
- ◆ Aim at time of cross clamping systemic BP to be at mid acceptable BP range
- ◆

Carotid Endarterectomy

- ◆ After cross clamping maintain systemic BP above that at time of cross clamping
- ◆ Do NOT treat post clamping hypertension without informing surgeon

Carotid Endarterectomy

- ◆ Duration 1 1/4 to 4 hours
- ◆ Minimal post operative pain
- ◆ Very high incidence of post operative bradycardia

Open Abdominal Aortic Aneurysm

- ◆ High stress surgery
- ◆ 1 to 2 % elective mortality
- ◆ Up to 20% perioperative AMI
- ◆ 70% mortality for ruptured

Open Abdominal Aortic Aneurysm

- ◆ Investigations as for Peripheral Bypass Surgery
- ◆ Cross Match Blood

Open Abdominal Aortic Aneurysm

- ◆ Procedure
 - LARGE BORE IV access
 - Arterial line
 - Central line
 - ? Swan Ganz Catheter
 - ? Epidural Catheter
 - Urinary Catheter
 - Preheat, warmed fluids FAWD
 - (Never ever below the waist)
 - Cell Saver
 - Duration 2 to 6 hours

Open Abdominal Aortic Aneurysm

- ◆ Times of haemodynamic stress:
 - ◆ Induction
 - ◆ Mobilisation of bowel
 - ◆ Cross clamping
 - ◆ Release of clamp
 - ◆ Extubation

Open Abdominal Aortic Aneurysm

- ◆ Renal insult
 - ◆ Depends upon duration and level of cross clamping
 - ◆ IV Mannitol
 - ◆ Free radical scavenger

Ruptured Abdominal Aortic Aneurysm

- ◆ Often shocked
- ◆ Get to theatre ASAP
- ◆ LARGE BORE IV's
- ◆ Arterial line (if time)

Central line after induction unless patient is very stable

Ruptured Abdominal Aortic Aneurysm

- ◆ Surgical preparation prior to induction
- ◆ ? Suxamethonium
- ◆ Once cross clamped, aggressive fluid loading plus peripheral venodilation
- ◆ ? FFP/ platelets

Endoluminal Abdominal Aortic Aneurysm

- ◆ BORING!!!
- ◆ GA/Epidural/Spinal/Local infiltration
- ◆ Large bore IV
- ◆ Arterial line
- ◆ Beware: foreign environment
- ◆ Light sedation
- ◆ Beware: hidden blood loss
- ◆ Beware: hidden transfusion

Endoluminal Abdominal Aortic Aneurysm

- ◆ Low post operative pain