How to avoid stroke in off-pump CABG surgery

M. Arbeus MD; D. Souza MD PhD
Dep. of Cardiothoracic Surgery
Örebro University Hospital
Sweden
Aortic atheromas

Incidence of aortic atheromas in patients needing revascularisation – 20-25%

Davila-Roman et al; Stroke; 1994
Postoperative stroke in cardiac surgery

Incidense 2-6 %

• Salazar et al. Ann Thorac Surg; 2001
• Charlesworth et al. Ann Thorac Surg; 2003
Aortic Atheromas and postoperative stroke in cardiac surgery

Incidence 8.7 %

“minor surgical modifications”

van der Linden et al; JACC; 2001
Aortic manipulation and postoperative stroke after CABG

The impact of aortic manipulation on neurologic outcomes after CABG: A risk-adjusted study

Kapetanakis et al; Ann Thorac Surg; 2004
Aortic manipulation and postoperative stroke after CABG

Reduced strokes in the elderly: The benefit of untouched aorta off-pump coronary surgery

Lev-Ran et al; Ann Thorac Surg; 2004
OPCAB with clampless aorta techniques in patients with high risk for neurologic injury
Intraoperative Diagnostics

INVESTIGATION ROUTINE

Epiaortic ultrasound of ascending aorta
Epiaortic Ultrasound normal
Epiaortic Ultrasound severe aortic disease
OPCAB in aortic disease

METHODS

- Clampless technique (Heartstring)
- No touch aorta technique
OPCAB
No touch
Aorta
No touch SV
BITA
composite
OPCAB no touch
aorta/vein/BITA
Severe fibrosis of the lungs
Surgical technique?
OPCAB
Clampless
No touch SV
Y-graft