Update on prevention and consequences of SCI during open and Endo TAAA repairs: what is different between open and endo procedures and treatment

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Disclosures
No disclosure relevant to this presentation

SCI
Not only a mobility impairment
- Incontinence
- Recurrent urinary tract infection
- Recurrent pulmonary infection
- DVT, pulmonary embolism
- Wound dehiscence
- Bedsores
- Severe depression

Survival after SCI

Collateral Network

DeSart et al., J Vasc Surg 2013
CT study of SC vascularization

Preserve SC supply
- Preserve critical intercostal arteries when possible
- Preserve subclavian and hypogastric arteries
- Staged procedure

Avoid unnecessary coverage

Intercostals reimplantation

Spinal cord supply and TEVAR

Multi-level aortic disease
Synchronous aneurysms

“Simultaneous coverage of more than one vascular territory is associated with postoperative paraplegia.”

Czerny, Melissano, Bertoglio et al. J Endovasc Ther 2012
Multi-level aortic disease
TAAA: staging procedures

1st Aortic step
2nd Visceral step

Optimization of SC perfusion

- Coronary reserve optimization
- Haemodynamic stability
- CSFD

Coronary reserve optimization

Coro-CT
All Pts.

PTCA (BMS)
Coronary Angiography

Coro-CT
PTCA
Coronary Angiography

DAPT 1 month

CSFD with Liquoguard

Liquoguard drains and simultaneously measures CSF pressure.
Fully automatic, Volume-controlled or Pressure-controlled CSF drainage.

CSFD selection criteria

All Extent I, II and III

2 or more territories

Haemodynamic stability

Aorto-iliac injury
Surgical conduit
Bleeding
Acute hearth failure
Hypotension
SC hypoperfusion

Cheung et al., Ann Thorac Surg 2005
Rapid pacing

Controlled hypertension
- MAP > 90 mmHg

Early detection of SCI
- Motor-evoked potentials (MEP)
- Early neurological status assessment

MEP & SEP
- MEP/SEEP Mayo clinic protocol
- Complete b/f-EVAR
- MEP/SEEP 75%
- CSF < 0.5 mmHg
- MAP > 90-100 mmHg
- Restore pelvic / limb perfusion
- MEP/SEEP 75%
- Incomplete b/f-EVAR

Early neurological assessment
- Early (temporary) awakening in case of general anesthesia
- Prefer local anesthesia instead of spinal

G. Oderich et al. JEVT 2016
Spinal cord ischemia may be reduced with extensive use of adjuncts such as:
- Spinal cord imaging
- CSFD
- Collateral pathway preservation
- Hemodynamic stability