BUILDING ENDOVASCULAR SYNERGIES

MEET 2015
MULTIDISCIPLINARY EUROPEAN ENDOVASCULAR THERAPY

The use of adjunctive Aortic Arch Debranching and Spinal Drainage in Thoracic Endovascular Aortic Repair is associated with low morbidity and complication: Experience in The Oxford Regional Vascular Unit.

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Disclosure

Speaker name:

Francesca Fratesi

I have the following potential conflicts of interest to report:

- ☐ Consulting
- ☐ Employment in industry
- ☐ Shareholder in a healthcare company
- ☐ Owner of a healthcare company
- ☐ Other(s)

☐ I do not have any potential conflict of interest

Background

TEVAR has become a standard treatment for the Aortic Arch and descending Aorta due to less invasive approach compared to Open Repair.

TEVAR is still associated with major complications

- Spinal Cord Ischemia (SCI) - paraplegia (3 to 5%)
- Stroke (3.8 to 6.3%)
- Left Upper exteremity ischemia (rare, variable symptoms)

N Uchida et al. How to prevent spinal cord injury during endovascular repair of thoracic aortic disease. Gen Thorac Cardiovasc Surg (2014) 62:391–397

Cheng D et al. Endovascular aortic repair versus open surgical repair for descending thoracic aortic disease a systematic review and meta-analysis of comparative studies. J Am Coll Cardiol 2010;55:986-1001.

Background

Risk factors for Spinal Cord Injury and cerebrovascular events during TEVAR:

Coverage of the left subclavian artery (LSA)

Coverage of long segments of the thoracic aorta (>30 cm)

Prior downstream aortic repair

Compromising important intercostal (T8–L1), vertebral, pelvic and internal iliac artery collaterals.

N Uchida et al. How to prevent spinal cord injury during endovascular repair of thoracic aortic disease. Gen Thorac Cardiovasc Surg (2014) 62:391–397

Matsuda H et al. Spinal cord injury is not negligible after TEVAR for lower descending aorta. Eur J Vasc Endovasc Surg. 2010;39(2):179–86.

Background

Adjunctive procedures to lower risk of SCI and other cerebrovascular complications:

- Reconstruction of left subclavian artery (LSA)
- Cerebro-spinal fluid (CSF) drainage
- Maintenance of systemic blood pressure
- Staged reconstruction whenever possible
- Monitoring of SCI using motor or sensory-evoked potential

N Uchida et al. How to prevent spinal cord injury during endovascular repair of thoracic aortic disease. Gen Thorac Cardiovasc Surg (2014) 62:391–397

Matsuda H et al. Spinal cord injury is not negligible after TEVAR for lower descending aorta. Eur J Vasc Endovasc Surg. 2010;39(2):179–86.

Ullery BW et al. Risk factors, outcomes, and clinical manifestations of spinal cord ischemia following thoracic endovascular aortic repair J Vasc Surg 2011;54:677-84

Aim of the study

To evaluate the outcome of adjunctive procedures

(LSA reconstruction +/- CSF drain and monitoring) in patient

undergoing TEVAR in the Oxford Regional Vascular Unit

Methods

Retrospective review of prospective database from January 2010 to December 2014

Elective or urgent TEVAR for aneurysm disease or dissection of thoracic aorta

Adjuntive procedures:

- CSF monitoring/drainage
- LSA revascularization +/- debranching of supra-aortic trunk

Results

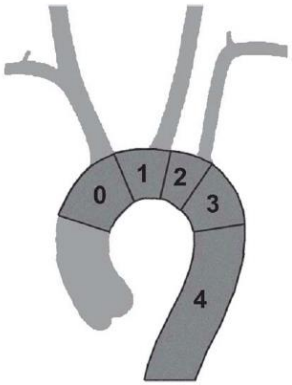
January 2010 - December 2014: 27 patients

	N (%)
Male	18 (66.6)
Age	72.9 ± 9.2
Thoracic Aorta Dissection	9 (33.3)
Thoracic Aorta Aneurysm	17 (62.9)
Previous aortic surgery (downstreem)	5
Acute presentation	21 (77,7)
Emergency operation	13
Ruptured at presentation	6

Results

Landing Zone

Zone 1	1 (4%)
Zone 2	9 (33%)
Zone 3	17 (43%)



Number of stent-grafts used

1 stent-graft	10
2 stent-grafts	8
3 stent-grafts	7
4 stent-grafts	2

Length of Thoracic aorta covered

25.6 ± 12.3 cm

Results

Adjunctive procedures 13 patients (48,1%)

	N (%)
Cerebro-Spinal Fluid (CSF) drain	6
CSF drain + LSB	2
CSF drain + LSB + LCCA Chimney	2
Debranching supra-aortic trunk	8
Simultaneous with TEVAR	5

Results

Asymptomatic: 6 pts

	N (%)
No adjunctive procedures	4
Left subclavian artery BP (LSB)	2
Simultaneous with TEVAR	1

Results

Symptomatic: 15 pts

	N (%)
No adjunctive procedures	8
Left subclavian artery BP (LSB)	6
Simultaneous with TEVAR	4
LSB + LCCA chimney	2
LSB + CSF drain	1
CSF drain (alone)	1

Results

Ruptured: 6 pts

	N (%)
No adjunctive procedures	2
LSB + CSF drain	1
CSF drain (alone)	4

Results

Postoperative Complications (30-days)

	Adjunctive procedures (n=11)	No Adjunctive procedures (n=16)
Spinal Cord Ischemia	0	1
Stroke (minor)	1	0

Conclusions

- Perioperative adjunctive procedures in TEVAR is associated with low complications rates
- SCI and cerebrovasculqr events are not neglectable
- The use of adjunctive procedure should be included in each protocol in Vascular Unitsnits performing TEVAR

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Thank you!