IMPACT OF LSA COVERAGE DURING TEVAR ON STROKE AND SCI FROM THE VQI: DOES REVASCULARIZATION HELP?

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Stroke and SCI Risk Factors following TEVAR

Unique Anatomy
LSA coverage
- Dominant L Vertebral in 60-65% of cases
- VA terminates in the PICA in 2% of cases
- Small right VA, left dominant VA 5%

Right Vertebral Variations
- Right VA from the aorta between the subclavian and common carotid artery in cases of missing brachiocephalic arteries.
- Right VA from the aorta on the left between the left common carotid artery and left subclavian artery.
- Right VA from the aorta on the left, distal to the left subclavian artery.

Vertebral Artery Contributions to Spinal Cord Blood Supply

Neurologic complications associated with endovascular repair of thoracic aortic pathology: Incidence and risk factors. A study from the European Collaborators on Stent/Graft Techniques for Aortic Aneurysm Repair (EUROSTAR) Registry

Table IV: Multivariate regression analysis for predictors

Table V: Efficacy of stent grafts for thoracic aortic endografting
Subclavian-carotid transposition

Mark Morasch Tips and Tricks
( J Vasc Surg 2009;49:251-4.)

Vascular Quality Initiative*

Objective
Investigate the impact of coverage of the LSCA without revascularization on the rates of stroke and spinal cord ischemia in patients undergoing TEVAR.

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Pedro Teixeira, Karen Woo, Adam Beck, Salvatore Scali, Fred Weaver

• Period: 2003-2014
• Study population: Patients undergoing TEVAR, ruptures excluded.

Study Groups
• LSCA coverage with revascularization
• LSCA coverage without revascularization
Outcomes
Stroke
Spinal Cord Ischemia

Statistical Analysis
• Univariate analysis.
• Multivariable analysis for risk-adjusted outcomes.

Factors Included in the Adjustment
• Age
• Gender
• Smoking history
• Hypertension
• CHF
• COPD
• Home O₂
• Renal dysfunction
• ASA 4
• Prior aortic surgery
• Prior bypass
• Prior aneurysm repair
• Pre-operative beta-blocker
• Trauma
• Urgent/Emergent surgery
• Aortic length covered
• Spinal drain
• Transfusion of >= 3 units PRBC

Adjusted Odds Ratio: 1.55 (0.74-3.26), P = .244

Adjusted Odds Ratio: 2.29 (1.03-5.14), P = .043
Conclusion

In the Vascular Quality Initiative
For patients undergoing left subclavian artery coverage during TEVAR the addition of a revascularization procedure was associated with a significantly lower incidence of spinal cord ischemia but not stroke