Incidence, Impact, and Predictors of Cranial Nerve Palsy and Haematoma Following Carotid Endarterectomy in the International Carotid Stenting Study


Objective: Cranial nerve palsy (CNP) and neck haematoma are complications of carotid endarterectomy (CEA). The effects of patient factors and surgical technique were analysed on the risk, and impact on disability, of CNP or haematoma in the surgical arm of the International Carotid Stenting Study (ICSS), a randomized controlled clinical trial of stenting versus CEA in patients with symptomatic carotid stenosis.

Materials and methods: A per-protocol analysis of early outcome in patients receiving CEA in ICSS is reported. Haematoma was defined by the surgeon. CNP was confirmed by an independent neurologist. Factors associated with the risk of CNP and haematoma were investigated in a binomial regression analysis.

Results: Of the patients undergoing CEA, 45/821 (5.5%) developed CNP, one of which was disabling (modified Rankin score = 3 at 1 month). Twenty-eight (3.4%) developed severe haematoma. Twelve patients with haematoma also had CNP, a significant association (p < .001). Independent risk factors modifying the risk of CNP were cardiac failure (risk ratio [RR] 2.66, 95% CI 1.11 to 6.40), female sex (RR 1.80, 95% CI 1.02 to 3.20), the degree of contralateral carotid stenosis, and time from randomization to treatment > 14 days (RR 3.38, 95% CI 1.05 to 10.57). The risk of haematoma was increased in women, by the prescription of anticoagulant drugs pre-procedure and in patients with atrial fibrillation, and was decreased in patients in whom a shunt was used and in those with a higher baseline cholesterol level.

Conclusions: CNP remains relatively common after CEA, but is rarely disabling. Women should be warned about an increased risk. Attention to haemostasis might reduce the incidence of CNP. ICSS is a registered clinical trial: ISRCTN 25337470.

Treatment of Symptomatic Aberrant Subclavian Arteries


Objective: The aim of this study is to present experience with 10 patients with symptomatic aberrant subclavian artery (ASA) and aneurysm of ASA who underwent surgical treatment.

Methods: From 2008 to 2011 10 patients with symptomatic aberrant subclavian artery (mean age 60 years [range 24–90 years]) were studied. Symptoms were dysphagia (n = 7), dyspnea (n = 4), acute chest pain (n = 1), respiratory distress syndrome (n = 1), superior cava syndrome, and shock (n = 1). Six patients had aneurysm formation of the ASA (mean diameter of 7.1 cm [range 3.0–12.4 cm]; rupture [n = 1], dissection [n = 1]). All data were analyzed retrospectively.

Results: Treatment was performed as a hybrid procedure in eight patients. This included thoracic endoluminal graft exclusion with revascularization of the ASA, a pure endovascular procedure with two occluders in one patient, and an open procedure in one patient with ligation of the aberrant artery through a thoracotomy. Three patients died during the early postoperative period owing to pulmonary complications. All three suffered from a symptomatic aneurysm, and two were treated as an emergency procedure. Median follow-up was 20 months (range 12–49 months).

Conclusion: A symptomatic ASA and its associated aneurysmal formation should be excluded after diagnosis. In most cases, a hybrid procedure consisting of thoracic endografting and revascularization of the ASA is feasible.

Endograft Limb Occlusion in EVAR: Iliac Tortuosity Quantified by Three Different Indices on the Basis of Preoperative CTA


Objective: To assess the incidence and outcome of graft limb occlusions after endovascular aortic repair (EVAR) of abdominal aortic aneurysm (AAA) in a high volume single centre. To quantify iliac artery tortuosity in patients with AAA and correlate this with limb occlusion.

Design: Data were collected consecutively and prospectively, and analyzed retrospectively.

Materials: Patients treated with Zenith bifurcated stent grafts from January 2000 to December 2010 at a tertiary referral vascular unit were analyzed. Routine regular office follow-up with computed tomography angiography (CTA) and, subsequently, duplex ultrasound imaging was performed. Patients with limb occlusions were identified. For each index patient, controls were obtained, one immediately preceding and one following the index patient in the consecutive cohort of EVAR patients.

Methods: Demographics and CTA data on limb graft occlusions were recorded and compared with a defined control group. Three different indices were used to describe the tortuosity of the iliac vessels based on pre-operative CTA: pelvic artery index of tortuosity (PAI), common iliac artery index of tortuosity (CAI), and a visual description of vessel tortuosity—the double iliac sign (DIS). Demographic data and indices were correlated for later occurring limb occlusion.

Results: Of 504 patients underwent EVAR and 18 patients experienced graft limb occlusion during a median follow-up of 28 months (range 0–133). Primary graft patency was 97% at 1 year and 96% at 3 years. Logistic regression showed that iliac artery tortuosity (DIS) (p = .001) and body mass index (p = .007) had a significant impact on graft patency.

Conclusion: A tortuous vessel on the preoperative CTA is associated with an increased risk of limb occlusion after EVAR. Adjunctive stenting of iliac segments deemed at risk is suggested, which is achieved without compromise of the aneurysm repair.

Polytetrafluoroethylene Covered Stent Placement for Focal Occlusive Disease of the Infrarenal Aorta


Background: Arterial insufficiency is rarely caused by isolated infrarenal aortic occlusive lesions. Endovascular treatment options include plain balloon angioplasty and bare metal stent placement. In this study the feasibility and efficacy of polytetrafluoroethylene (PTFE) covered balloon expandable stents were evaluated.

Material and methods: Consecutive patients from two centers were prospectively collected in a database and retrospectively analyzed. Results were evaluated by clinical examination, ankle-brachial indices (ABI), duplex ultrasonography, and plain abdominal radiography.

Results: Thirty-six consecutive patients were treated between November 2008 and June 2013. Indication for treatment was Rutherford 3 (n = 29), 4 (n = 3), and 5 (n = 4). Technical success was always achieved and there were no distal embolizations or vessel wall ruptures. The median follow-up was 22 months (range 0–60). All patients improved clinically and the ABI increased significantly from 0.73 ± 0.18 to 1.01 ± 0.14 (p < .01).

One patient covered stent was removed surgically because of infection. Primary patency rates were 100% at 1 and 2 years without stent fractures.

Conclusion: The use of PTFE covered stents for the treatment of isolated infrarenal aortic occlusive disease is safe and very effective. Patency rates are excellent and complications including distal embolization and vessel wall rupture are extremely rare.

Low-dose Thrombolysis for Thromboembolic Lower Extremity Arterial Occlusions is Effective Without Major Hemorrhagic Complications


Objective: To evaluate the efficacy and bleeding complications associated with a low-dose thrombolysis protocol for thromboembolic lower extremity arterial occlusions.

Design: A retrospective cohort study.

Materials and methods: A retrospective analysis was performed using data from all consecutive patients who underwent catheter-directed,