group C, n = 23 (Excluder, W.L.Gore) and group D, n=10 Endurant (Medtronic, Inc.).

Results: Epidemiological characteristics, atherosclerotic risk factors, type of anesthesia, mean blood loss during surgery and baseline serum levels of cytokines did not differ among the patients of the four groups. Mean temperature was more pronounced postoperatively in group A. Serum levels of IL-6, and IL-10 were significantly higher 24 and 48 hours postoperatively compared to preoperative levels in all groups. Patients in Group C presented the smallest increase in levels of serum IL-6, and IL-10, 24 and 48 hours postoperatively. Mean difference in cytokines levels after aneurysm exclusion was higher for group A versus C (P <.01) compared to group A versus B (P <.05). Increased inflammatory response was associated with prolonged hospital stay.

Conclusions: Endograft type appears to influence the inflammatory response following EVAR. The impact of postimplantation inflammatory response in clinical outcomes requires further investigation.

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RR21.

Inflammatory Mediators and Cerebral Embolism in Carotid Stenting: New Markers of Risk

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Objectives: Cerebral embolism is a feared complication of carotid artery stenting (CAS) and might be associated with specific morphological patterns, however serological predictors of risk have been scarcely investigated.

Methods: Consecutive patients with carotid artery stenosis undergoing filter-protected CAS were preoperatively evaluated to identify unstable plaque at duplex ultrasound, complicated aortic plaque at trans-esophageal echocardiography and inflammatory status with high sensitivity C-reactive proteins (hs-CRP) and serum amyloid-A protein (SSA) serum levels. Aortic arch type, carotid tortuosity, and complexity of the procedure were considered. Cerebral embolism was evaluated by comparing number, volume and side of preoperative and postoperative cerebral lesions at diffusion weight resonance magnetic imaging (DW-RMI) and through light and scanning electron microscopy analysis of cerebral protection filters obtained from CAS.

Results: Twenty consecutive patients were submitted to CAS with no complications. At least 1 asymptomatic cerebral lesion on DW-MRI was present in 18 (90%) patients. Female gender was associated with a higher number of cerebral lesions (18.2±10.9 vs. 8.3±8.8 P = .03). Plaque morphology, supraaortic vessels anatomy and procedure complexity did not correlate with number or volume of new cerebral lesions at DW-RMI. The presence of complicated aortic plaque was associated with higher volume of contralateral cerebral lesions (2350±2593 vs. 636±632 mm3 P = .02). Hs-CRP >5mg/l and SAA >10 mg/l were significantly associated with a higher number of cerebral lesions (16.2 ± 10.7 vs. 4.3±3.4 P = .02, and 14.8 ± 10.3 vs. 2.8 ± 3.4 P = .006, respectively). Hs-CRP>5 and SAA>10 mg/l also correlated with greater surface involvement by embolic materials in the protection filters at microscopic analysis (37.0 ± 5.7 vs. 26.9 ± 2.5 P = .004).

Conclusions: Inflammatory status is associated with higher embolic risk during CAS independent from morphological and technical aspects of the procedure.

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RR22.

Magnetic Resonance Imaging for Identifying Vulnerable Carotid Plaques

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Objectives: Carotid Magnetic Resonance Imaging (MRI) may be a usefull tool to characterize carotid plaque vulnerability, but large studies are still lacking. The purpose of this study is to assess carotid MRI features of vulnerable plaque in a large study and assess changes in carotid plaque morphology with time since neurologic event.

Methods: We included 161 patients with carotid plaque. All underwent a carotid MRI using 3T High Resolution MR sequences. Stenosis degree, plaque thickness, plaque type (lipidic, fibrotic, calcified), Intra-plaque hemorrhage (IPH), fibrous cap rutpure (FCR) and gadolinium enhancement (GE) were assessed. Plaque type was classified on the basis of the predominant component of the plaque. IPH, FCR and GE were classified as absent or present.

Results: 7 patients were excluded because of poor image quality. In the 154 remaining patients, 52 were symptomatic (41 strokes, 7 transient ischemic attacks and 4 amaurosis in the last 6 month) and 102 asymptomatic. IPH (39 vs 16%; P = .002), FCR (30 vs 9%; P <.0001), GE (77 vs 55%; P = .014) were significantly higher in symptomatic versus asymptomatic plaque. No difference were observed for stenosis degree or plaque thickness. Plaques with exten-

sive calcification were observed more frequently in asymptomatic patients (43 vs 22%; $P = .014$). IPH is significantly higher in symptomatic plaque regardless of the time since the neurologic event. For FCR difference between symptomatic and asymtptomatic are significant only during the first 15 days following the neurological event.

Conclusions: Carotid MRI can identify plaque features that are associated with symptomatic presentation and may be indicative of plaque vulnerability. These features may ultimately be utilized in the management of extracranial carotid stenosis.

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RR23.

A Stroke/Vascular Neurology Service Increases the Volume of Urgent CEAs Performed in a Tertiary Referral Center

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Objectives: Patients presenting with carotid-related acute neurological symptoms are at hightened risk of stroke. Urgent CEA (uCEA) during the index hospitalization is indicated in select patients. We aimed to determine the effect of a dedicated vascular neurology team on the volume of uCEAs and assess outcomes.

Methods: CEAs (n=436) performed at a tertiary center between 2005-2011 were analyzed. Chi-square was used to compare the uCEA volume pre- (June 2005-Aug. 2008) and post- (Sept. 2008-Nov. 2011) implementation of a vascular neurology service. Fisher's exact and t-tests were used to analyze perioperative outcomes.

Results: The proportion of uCEAs performed increased significantly after initiation of a vascular neurology service (4.1% [7/172] vs. 22.2% [49/221], $P < .0001$). Per annum, uCEAs increased from 5.3% (4/75) in 2005 to 39.6% (25/63) in 2011 (Fig). uCEA indications were stroke-in-evolution 10% (5/49), crescendo TIAs 6% (3/49), acute stroke 45% (22/49), and cerebral/ocular TIAs 39% (19/49). Mean National Institutes of Health Stroke Scale (NIHSS) was 3.5 (0-24); mean TIA score was 5 (1-8). A trend towards a higher combined stroke/death rate in the urgent compared to the elective symptomatic CEA group group was present (7.1 % [3/49] vs. 2% [1/49]; $p = .36$); however, patients undergoing uCEA with an NIHSS<10 had no perioperative complications.

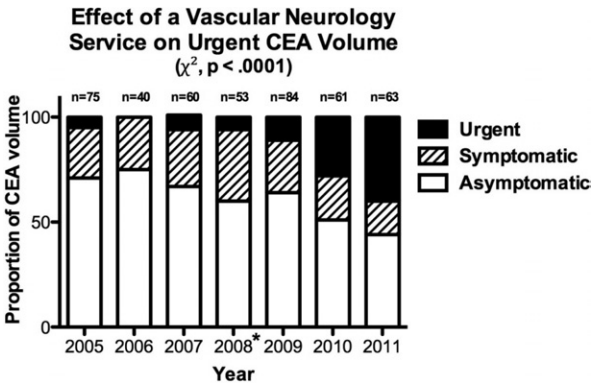

Fig. *September 2008: Vascular neurology service implementation

Conclusions: Collaboration with a vascular neurology team increased the volume of uCEAs over a three year period. In patients with mild strokes (NIHSS<10), uCEA outcomes approximate those for electively-performed CEAs.

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RR24.

Fate of Patients with Spinal Cord Ischemia(SCI) Complicating Thoracic Endovascular Aortic Repair (TEVAR)

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Objectives: SCI is a devastating complication of TEVAR with varying degrees of disability. Here we review the outcomes of patients with SCI after TEVAR.

Methods: Patients with SCI after TEVAR, defined by any lower extremity neuro deficit over baseline, were evaluated. A database query and chart review/phone interviews with patients/family were used to determine outcomes and functional status after discharge. Patients were analyzed based on functional recovery and timing of their CSF drain placement(prophylactic or post-op for symptoms).

Results: 609 TEVARs were performed in the study period, and 57 patients developed SCI (9.4%). In-hospital mortality with SCI was 7.0%. 54 patients (95%) had a CSF drain placed with the majority placed post-op (54%). Complete data were available for 34 patients (60%) of whom 27 (47%) were alive at follow-up[median 11.8mos]. Of these 34 patients, 26 (76%) had functional improvement, with 12 (35%) reporting return to baseline. Survival was worse in patients with no functional improvement (NI) when compared to patients with improvement (WI). Median survival for WI patients was 56mos compared to 3mos ($P<.001$) in NI patients. No difference in functional improvement or