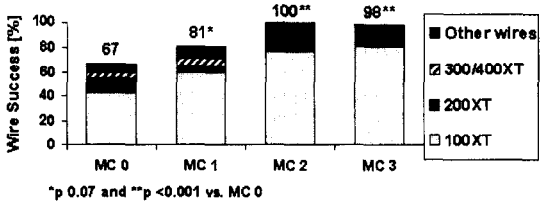
Noon

811-5 **High Success Rate in Recanalization of Chronic Total Coronary Occlusions with a Novel Guidewire Principle Using the Guidance of Micro Channels**

Heinz J. Buettner, Christian Mueller, Jens Petersen, Helmut Roskamm, *Herz-Zentrum Bad Krozingen, Bad Krozingen, Germany.*

Background: Vascular micro channels (MC) in chronic total coronary occlusions (CTO) may guide recanalization wires and improve success rates. The new ACS Cross-ITÖXT guidewire family has distal tip tapering from 0.014" to 0.010" that eases entrance into MC. Tip stiffness increases gradually from the 100XT-wire to the 400XT-wire.
Methods: We included 204 consecutive pts. with 214 CTO. Age of occlusion was >3 months to 20 years and occlusion length 24.1(5-80)mm. MC as visible on cineangiography were none in 37% (MC 0), incomplete in 26% (MC 1), complete in 14% (MC 2) and complete with distal capillary refill in 23% (MC 3). In all lesions the first attempt was done with the 100XT-wire trying carefully to stay within MC. If necessary tip stiffness was stepwise increased to the 400XT-wire.
Results: Success rates for crossing the occlusion were 61% for the 100XT-wire, 76% for all Cross-ITÖXT wires and 82% including other additional wire types. Wire success was dependent on visibility and completeness of MC (Figure 1). If MC were visible 60% to 81% of occlusions could be passed with the 100XT-wire. Vessel success rate was 79%. In-hospital events were pericardial tamponade in 0.5%, non-q wave myocardial infarction in 1%; no pt. died.
Conclusions: The use of a new guidewire family with a tapered tip and the concept of stepwise increase of wire tip stiffness is safe and very effective in recanalizations of CTO. Wire success was significantly dependent on the visibility of MC.

Figure 1



*p 0.07 and **p <0.001 vs. MC 0

ORAL CONTRIBUTIONS

812 Carotid Interventions I

Monday, March 18, 2002, 11:00 a.m.-12:15 p.m.
Georgia World Congress Center, Hall D1

11:00 a.m.

812-1 **Carotid Artery Stenting in Patients at High Clinical Risk of CEA Complications: Immediate and Long-Term Outcome**

Moshiri Shahram, Francesco Liistro, Fabio Sgura, Goran Stankovic, Alaide Chieffo, Davide Maccagni, Carlo Di Mario, Takuro Takagi, Antonio Colombo, *San Raffaele Hospital, Milan, Italy, Centro Cuore Columbus, Milan, Italy.*

Background: Carotid endoarterectomy (CEA) has been established as the standard treatment for carotid occlusive disease and has been shown to be beneficial in patients with high-grade carotid stenosis. Nevertheless this approach is not free of complications. Among these, perioperative stroke and death have been reported in 2.5-7.5% but the incidence can be as high as 18% in the high risk-patients. The management of perioperative neurological deficits complicating CEA is still controversial. We have previously reported our experience with emergency carotid stenting in small number of patients. The aim of this registry is the results of emergency carotid stenting in a larger population.
Methods and Results: From April 1998 to July 2001, 25 patients underwent emergency carotid angioplasty and stenting for perioperative stroke. Among all procedures, 21 were performed in the hemodynamic laboratory and the remaining 4 in the operating theatre. Carotid angiography was performed immediately (within 15 ± 5 min) after the appearance of neurological symptoms. Thrombosis at the CEA site was found in18 (72%) lesions and vessel dissection in the remaining 7 lesions (28%). Adjunctive carotid artery angioplasty with direct stent implantation was performed in all patients (within 35 ± 12 min) with a technical success rate of 100%. 3 (12%) deaths occurred in hospital, all related to neurological events (within 15 days). At a mean follow-up of 14 ± 9 months (rang 1 to 28) 1 (4%) death occurred after 3 months, non neurologic-related. One patient (4%) had incomplete recovery. Complete neurological status recovery was observed in 21 patients (84%).
Conclusions: Emergency percutaneous transluminal angioplasty carotid stenting (PTACS) is feasible, safe and effective in the treatment of peri-operative stroke after CEA leading to a complete neurological recovery in the majority of the patients.

11:15 a.m.

812-2 **Is Doppler Ultrasound Accurate in Screening for Restenosis After Carotid Artery Stenting? A Comparison With Quantitative Carotid Angiography**

Sara Lessio, David J. Clark, Robert Schainfeld, Margaret E. O'Donoghue, William Irwin, Jeffrey M. Isner, Kenneth Rosenfield, *St Elizabeth's Medical Center of Boston, Boston, Massachusetts.*

Background: Limited information exists regarding the accuracy of doppler ultra sound in predicting restenosis after carotid artery stenting (CAS).
Methods: 41 patients underwent both doppler ultrasound and quantitative carotid angiography (QCA) at a median of 6 months after CAS in a single center. Ultrasound was performed by one experienced operator blinded to the results of QCA. Internal carotid arteries (ICA) with a peak in stent systolic doppler velocity of >130 cm/sec or a peak diastolic velocity of >40 cm/sec were were classified as having >60% restenosis. Off line QCA was performed by a single investigator blinded to results of the ultrasound. The maximum % in stent restenosis of the ICA was calculated using the distal non tapered portion of the ICA as a reference.
Results: 6 of the 41 ICA stents had in stent restenosis of > 60% by QCA. Only 1 ICA restenosis was symptomatic but all 6 ICA underwent repeat percutaneous carotid intervention. Doppler ultrasound had a sensitivity of 33%, specificity of 63%, positive predictive value of 13%, and a negative predictive value of 85% in detecting an in stent ICA restenosis of >60% compared to QCA. The peak in stent ICA doppler velocity correlated mild-moderately with the maximum % in stent restenosis by QCA. (r=0.39, p=0.01
Conclusion: Peak doppler systolic and diastolic velocities resulted in several false positives and negatives in screening patients for restenosis after carotid artery stenting.

11:30 a.m.

812-3 **Carotid Artery Stent Implantation With Cerebral Protection: A Multicenter Experience of 320 Procedures**

Bernhard Reimers, Fausto Castriota, Nicola Corvaja, Raffaella Manetti, Carlo Cernetti, Carlo Di Mario, Pietro Pascotto, Alberto Cremonesi, Antonio Colombo, *Cardiology Department, Mirano, Italy, Columbus Clinic, Milano, Italy.*

Background: Distal embolization of debris during percutaneous carotid artery stenting may result in neurological deficit. Newly available devices for cerebral protection potentially reduce the risk of embolization.
Methods and Results: 320 consecutive procedures (308 patients) of elective carotid stent implantation with cerebral protection performed in 3 different centers were included in a prospective registry.
Cerebral protection was performed using filter devices (80.6% of procedures), occlusive distal balloons (17.2%), and endoluminal clamping of the common and external carotid artery (2.2%).
All lesions presented a >70% diameter stenoses (mean 82±8%). Mean age of the patients was 67±11 years, 83% were males, and 58.7% of patients had a previous stroke or transient ischemic attack. In 313 procedures (97.8%) it was possible to position a protection device. In 9 of 55 procedures using distal balloon protection this was not tolerated by the patient (2.8%). In 317 procedures (99.1%) a stent was successfully placed. Neurological complications during the procedure, in-hospital and during 30 days of follow-up occurred in 6 patients (1.9%). These were 1 major stroke (0.3%), 3 minor strokes (0.9%), and 2 transient ischemic attacks (0.6%). Protection device related complications,all without neurological symptoms, occurred in 5 procedures (1.6%). These were 3 distal dissections covered with additional stents, 1 dissecion leading to occlusion of the internal carotid artery, and 1 filter entrapment requiring surgical removal. Major adverse cardiac events during the 30 days of follow-up occurred in 2 patients (0.6%).
Conclusions: Routine use of cerebral protection during carotid artery stenting appears feasible and safe. In the present registry the incidence of neurological complications was low.

11:45 a.m.

812-4 **Carotid Artery Stenting With Neuroprotection: A Single Center Experience**

Sriram S. Iyer, Gary S. Roubin, Jiri J. Vitek, Nadim Al-Mubarak, Rajesh M. Dave, Christina Brennan, Sara Mgaieth, Gishel New, *Lenox Hill Heart and Vascular Institute, NY, New York, Cardiovascular Research Foundation, NY, New York.*

Background: To prevent/reduce the incidence of cerebral embolic events during carotid artery stenting, various protection devices are being evaluated. The feasibility, safety and efficacy of these systems are currently under investigation.
Methods: Between 2/2000 - 7/2001, we performed carotid artery stenting using a variety of distal protection devices [Percusurge Guardwire™ (n=133), Mednova™ (n=61), Accunet™ (n=3), Angioguard™ (n=4)] in 195 symptomatic and asymptomatic patients (201 arteries). The decision to use a filter or a balloon occlusion device was based on the collateral circulation and the carotid anatomy cephalad to the stenosis. All patients were evaluated by a neurologist at baseline and within 24 hours of the procedure.
Results: The mean age was 72 ± 8 yrs: 24% of the patients were ≥ 80 yrs. 66% were asymptomatic: 5% had prior carotid endarterectomy and 5% had a contralateral occlusion. Procedural success was 99.0%. There were 5 (2.4%) minor strokes, no major strokes. In the Guardwire™ group, 2 patients had retinal emboli leading to permanent