DEBATE:
Some Symptomatic Patients With An ICA String Sign Need Urgent Invasive Treatment: Which Ones; What Treatment; What Outcome Can Be Expected

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Management of Atherosclerotic Carotid and Vertebrobasilar Artery Disease. 2017
Clinical Practice Guidelines of the European Society for Vascular Surgery (ESVS)

Recommendation 15
Carotid endarterectomy or carotid stenting are not recommended in symptomatic patients with a chronic internal carotid near-occlusion, unless associated with recurrent symptoms despite optimal medical therapy and following multidisciplinary team review

Carotid near-occlusion (NO): distal luminal collapse of the ICA beyond a tight stenosis

- near total occlusion
- pseudo-occlusion
- string sign
- critical stenosis
- small or narrow distal internal carotid artery (with variations)
- preocclusive stenosis
- subtotal stenosis
- subtotal occlusion
- functional occlusion
- subocclusion
- hypoplasia
- 99% stenosis
- hairline residual lumen
- incomplete occlusion

Analysis of pooled data from the randomised controlled trials of endarterectomy for symptomatic carotid stenosis

2003

There was a trend towards benefit from CEA in pts with near-occlusion at 2 years’ FU (5-6%), but no benefit at 5 yrs (~3-7%).

Our ITT analysis might have underestimated the benefit of CEA for pts with near-occlusions, because of the high rate of CEA during FU in the BMT group.
Natural history of carotid NO - literature

  after 12 mo: TIA: 5% vs. 24%, Stroke: 1.5% vs. 14%, progression to total occlusion: 37%

- Johannson et al. Journal of Internal Medicine, 2015: Additional Neurological Symptoms before Surgery of the Carotid Arteries (ANSYSCAP): prospective registry >300 pts
  Patients with symptomatic carotid NO with full collapse might have a very high risk of stroke recurrence 43% <90 days; CEA could be considered for these patients.

- García-Poster A, Int J Stroke 2017: CAOS registry (Spain), 83 NO treated medically
  Patients with symptomatic carotid NO seem to have an increased risk of early ipsilateral recurrent stroke (10.6% <90 days).

What treatment for carotid NO, what are the outcomes?

- Literature search up to 2014 (24 articles)
- Stroke incidence rates (IRs) per 100 pat-yrs of BMT (6.4) significantly higher than after CEA (IR 2.24) or CAS (IR 1.64)
- No differences between CEA and CAS, concerning TIA, stroke, stroke-related death, and MAE

Why do the pooled data from ECST and NASCET negate any stroke preventive effect of CEA?

- Only 16 (14 in NASCET) /271 NO pts had a full lumen collapse
- Patient selection (and the uncertainty principle in ECST) played a role
- The carotid NO data were analysed post-hoc and statistically underpowered
- Lower prevalence of some RF in ECST: old age, diabetes, CHD, hyperlipidemia
- >30% of pts of the BMT arm received CEA during FU; ITT analysis might have underestimated the benefit of CEA
- >50 of pts with carotid NO were randomized >4 weeks after the index event

Identification, Prognosis, and Management of Patients with Carotid Artery Near Occlusion

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Conclusions: symptomatic carotid near occlusion

- The strong recommendation against CEA and CAS is invalid!
- Lack of Level I evidence for CEA, CAS and BMT alone
- Natural history data indicate a significant early+late stroke risk
- Some (if not all) symptomatic pts with an ICA string sign need urgent invasive treatment
DEBATE: Near Total Occlusion Of The ICA – A “String Sign” Should Not Be Treated Invasively Even If Symptomatic. Medical Treatment Is Best.

Thank you very much.

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