

CAROTID ENDARTERECTOMY(CEA) IN URGENTLY ADMITTED SYMPTOMATIC PATIENTS

70TH ESCVS CONGRESS
& 7TH IMAD MEETING

G. La Barbera, S. Pisanello, P. Wiesel, L. Cimoli, R. Prunella, M. Prontera,
A Tinelli , G. Boero, F. Valentino, F. Talarico

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U.O. Chirurgia Vascolare - Ospedale "SS. Annunziata" Taranto

U.O. Neurologia - Ospedale "SS. Annunziata" Taranto

U.O. Chirurgia Vascolare - Ospedale Civico di Palermo



LITERATURE REVIEW



> Wiad Lek. 2019;72(5 cz 1):923-927.

Early carotid endarterectomy in symptomatic patients

Roman I Trutiak ¹

Affiliations + expand

PMID: 31175797

Abstract

Objective: Introduction: Stroke is a big social problem. The expediency of surgical treatment is justified as the chances for complete reconvalescence of the neurological deficiency increase. The aim: To analyze available sources of scientific information on the terms of surgical treatment of patients with acute neurological deficiency.

Patients and methods: Materials and methods: We analyzed 41 English publications in PubMed for 5 years from 2012 to 2017, with the keywords "urgent carotid endarterectomy" and "early carotid endarterectomy".

Conclusion: Conclusions: In the classic course of stroke or TIA, the best treatment results are obtained when the CEA is performed 3-7 days after the marker event. CEA should be performed as soon as possible to restore brain revascularization and prevent the fatal progression of the neurological deficiency after crescendo TIA or stroke-in-evolution, despite the fact that the risk of complications and disability after surgery may be higher than 6%.

Review > Ann Transl Med. 2020 Oct;8(19):1267. doi: 10.21037/atm-20-1130.

Timing of carotid endarterectomy and clinical outcomes

Bilal Azhar ¹, Arsalan Wafi ¹, James Budge ¹, Ian Loftus ¹

Affiliations + expand

PMID: 33178799 PMID: PMC7607086 DOI: 10.21037/atm-20-1130

Abstract

The timing of carotid endarterectomy (CEA) for symptomatic ipsilateral carotid artery stenosis has evolved in practice over time. Key landmark trials outlined the benefit of performing CEA in the recently symptomatic carotid artery stenosis, defined as revascularisation within 6 months of the index neurological event. Further evidence and sub-analysis demonstrate that performing CEA within 2 weeks of symptoms has the maximal benefit in reducing stroke free survival and is associated with a safe perioperative complication profile. This has translated into guideline recommendations and widespread clinical practice. The case for performing urgent CEA (within 48 hours of index neurological event) over early CEA (within 2 weeks) has been put forward and studied. Data examining perioperative complications for urgent CEA are mostly derived from retrospective single series studies. A moderate balance exists in the literature for the safety and risk of urgent CEA. Although many studies present acceptable perioperative stroke and mortality rates associated with urgent CEA, evidence still exists that the perioperative complications may not be insignificant. This is particularly the case if the presenting neurology is a stroke, rather than a transient ischaemic attack (TIA) or amaurosis fugax. This should be contextualised in the practice of modern aggressive medical therapy with dual antiplatelets and statins, with evidence suggesting a reduction in recurrent ischaemic events prior to surgical intervention. Careful patient selection, presenting neurology and medical therapy is likely to be a key feature in considering urgent CEA versus early CEA.



Eur J Vasc Endovasc Surg (2015) 49, 137–144

Risk of Early Recurrent Stroke in Symptomatic Carotid Stenosis

S. Strömberg^{a,b,*}, A. Nordanstig^c, T. Bentzel^b, K. Österberg^a, G.M.L. Bergström^b

^a Department of Vascular Surgery, Sahlgrenska University Hospital, Gothenburg, Sweden

^b The Sahlgrenska Center for Cardiovascular and Metabolic Research, Wallenberg Laboratory, Institute of Medicine, The Sahlgrenska Academy at the University of Gothenburg, Gothenburg, Sweden

^c The Department of Neurology, Sahlgrenska University Hospital, Gothenburg, Sweden

WHAT THIS PAPER ADDS

This large retrospective study looks at the risk of early recurrent ipsilateral stroke in patients with symptomatic carotid artery stenosis. A low risk that seems to coincide with improved medical treatment and is in line with other recent studies was found. This knowledge is important to understand how to best treat patients with symptomatic carotid stenosis and balance the risk of very early carotid endarterectomy.

Objectives: The risk of recurrent stroke in patients with symptomatic carotid artery stenosis is highest in the first weeks after a transient ischemic attack (TIA) or minor stroke and can be reduced with carotid endarterectomy (CEA). The optimal timing of CEA remains a controversial issue since very urgent CEA is associated with an increased procedural risk. The aim of this study was to determine the risk of very early recurrent stroke in a population with symptomatic high grade carotid stenosis.

Methods: Data were analyzed on all patients with ocular TIA, TIA, or minor stroke with >70% carotid stenosis as assessed by carotid ultrasound at Sahlgrenska University Hospital during the periods 2004–2006 and 2010–2012. The two time periods were chosen to minimize selection bias and to analyze changes over time. The risk of recurrent stroke within 30 days of the referring event was assessed.

Results: 397 patients with symptomatic carotid stenosis were identified. The risk of recurrent stroke in the total cohort was 2.0% (CI 95% 0.6–3.4) by day 2, 4.0% (CI 95% 2.0–5.9) by day 7, and 7.5% (CI 95% 4.4–10.6) by day 30. There was no significant difference between the two time periods. Patients with minor stroke had a significantly higher risk of recurrent stroke than patients with TIA or ocular TIA as the referring event.

Conclusions: The data suggest that the early risk of recurrent stroke in symptomatic significant carotid stenosis is not as high as some earlier studies have shown. The risk is similar to several studies in which a modern medical treatment regime could be assumed.

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Keywords: Stroke, Transient ischemic attack, Carotid disease, Carotid stenosis

Eur J Vasc Endovasc Surg (2018) 56, 622–631

REVIEW

Editor's Choice — Systematic Review and Meta-Analysis of Very Urgent Carotid Intervention for Symptomatic Carotid Disease

David Milgrom^{a,†}, Shahin Hajibandeh^{b,†}, Shahab Hajibandeh^b, Stavros A. Antoniou^c, Francesco Torella^a, George A. Antoniou^{b,d,*}

^a Liverpool Vascular and Endovascular Service, Royal Liverpool University Hospital, Liverpool, UK

^b Department of Vascular and Endovascular Surgery, The Royal Oldham Hospital, Pennine Acute Hospitals NHS Trust, Manchester, UK

^c Department of Colorectal Surgery, Royal Devon and Exeter NHS Foundation Trust, Exeter, UK

^d Division of Cardiovascular Sciences, School of Medical Sciences, University of Manchester, Manchester, UK

WHAT THIS PAPER ADDS

A systematic review was conducted to evaluate the outcomes of carotid intervention (carotid endarterectomy or carotid artery stenting) in the very urgent period following an ischaemic neurological event in comparison with later intervention, in order to add to the evidence base of optimal timing of carotid intervention. Meta-analysis of published studies directly comparing very urgent to urgent carotid intervention found a significantly higher risk of peri-operative stroke in very urgent carotid intervention.

Background: The optimum timing of carotid intervention for symptomatic carotid stenosis remains unclear. The objective was to investigate outcomes of very urgent (< 48 h from neurological event) in comparison to urgent (≥ 48 h from neurological event) carotid intervention for symptomatic carotid disease.

Methods: A systematic literature review was carried out of randomised control trials (RCTs) and observational studies reporting peri-procedural outcomes of carotid intervention in relation to the length of time since the neurological event (PROSPERO registration number: CRD 42017075766). Ipsilateral stroke and death were defined as the primary outcome endpoints. Transient ischaemic attack (TIA) and myocardial infarction (MI) were secondary outcome parameters. Comparative outcomes were calculated and reported as dichotomous outcome measures using the odds ratio (OR) and associated 95% confidence interval (CI) for very urgent (< 48 h since neurological event) versus urgent (≥ 48 h) intervention. The combined overall effect size was calculated using a random effects model.

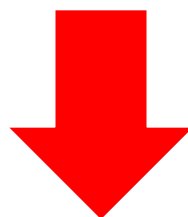
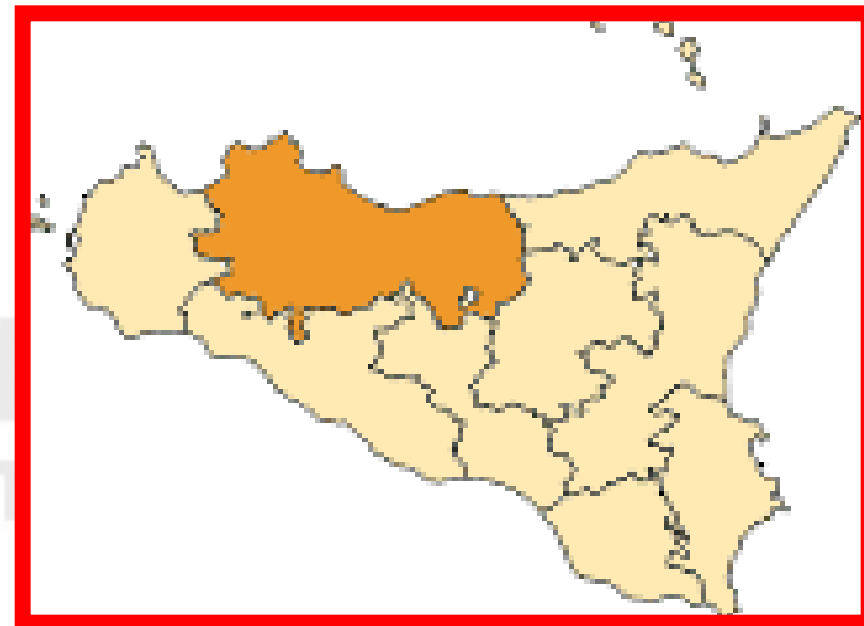
Results: Twelve observational studies and one RCT representing 5751 interventions, 5385 carotid endarterectomies (CEAs) and 366 carotid artery stenting (CAS) procedures, were included in quantitative synthesis. Very urgent carotid intervention was associated with increased risk of stroke within 30 days of treatment compared with urgent carotid intervention (OR 2.19, 95% CI 1.46–3.26, $p < .001$). No significant difference was found in mortality (OR 1.55, 95% CI 0.81–2.96, $p = .19$), TIA (OR 1.33, 95% CI 0.55–3.19, $p = .52$) or MI (OR 1.33, 95% CI 0.41–4.33, $p = .64$).

Conclusions: Very urgent carotid intervention was found to be associated with increased risk of stroke.

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Keywords: Carotid endarterectomy, Carotid stenting, Stroke, Urgent



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We reviewed the post-op results of all the patients treated for urgent symptomatic carotid endarterectomy in our institutions considering:

- Neurologic symptoms at the admission
- Timing Between symptoms and treatment

OUR STUDY



We collected all the patients in a dedicated database considering:

- Epidemiological data
- Risk factors
- Comorbidities
- Neurologic symptoms
- Imaging
- Intraoperative details
- Early results (mortality, stroke, other neurological events)
- Early follow up

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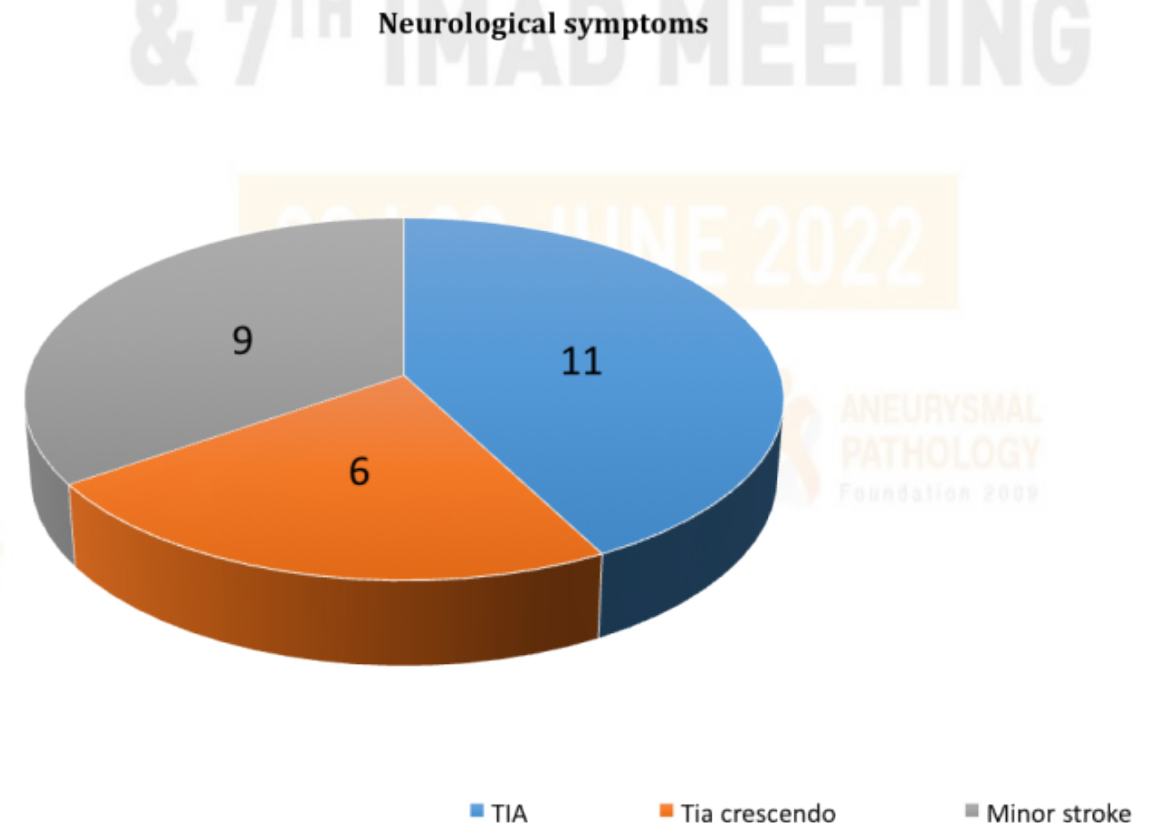
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METHODS

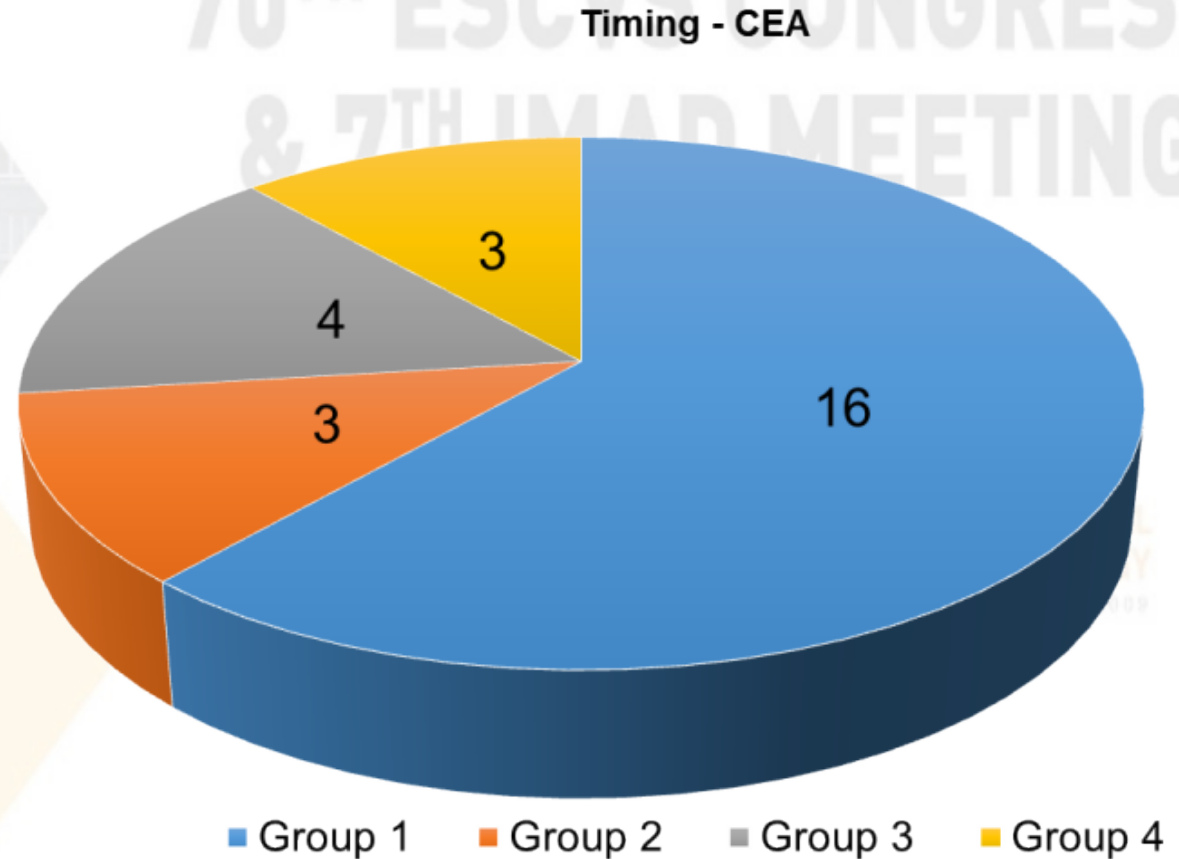
- September 2015 - January 2022
- 26 patients

PATIENTS	CHARACTERISTICS
Male	20
Female	6
Age	71 (range 51-83)
NIHSS	≤ 3
Cerebral lesion	□ ≤ 2,5 cm



METHODS

Group	Timing -CEA
Group 1	≤48 h
Group 2	>48 h ≤7 days
Group 3	>7 days ≤ 15 days
Group 4	> 15 days



RESULTS REVIEW



- In 50% of the patients we performed carotid endarterectomy for eversion
- We used in 4 cases a shunt
- We faced 1 death due to an extensive cerebral hemorrhage after a minor stroke on third post op day
- We experienced 1 reperfusion syndrome (that lasted less than 24 h) in a patient that underwent surgery few hours after a crescendo TIA

CEA \leq 48 hours



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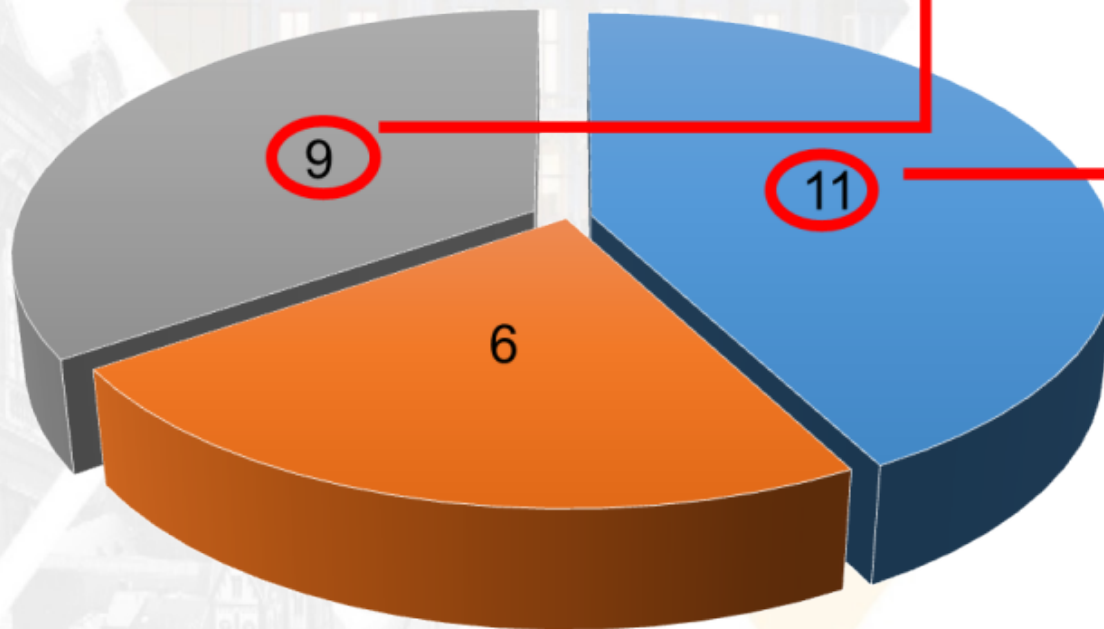
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40% Minor
stroke

81% TIA

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■ TIA

■ Tia crescendo

■ Minor stroke

$p < .03$



POST-OP MORTALITY



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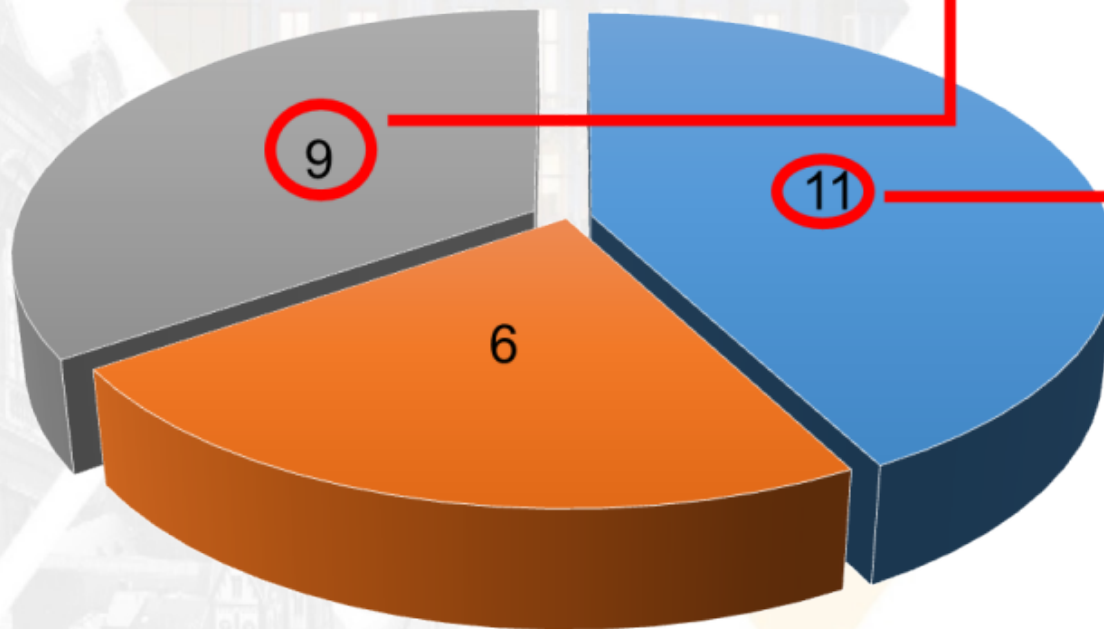
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11% Minor
stroke

0% TIA

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■ TIA

■ Tia crescendo

■ Minor stroke

p= ns



POST-OP MORTALITY

POSITIVE CT SCAN → 33%

NEGATIVE CT SCAN → 0%



$p < .005$

CEA ≤ 48 hours → 6%

CEA ≥ 48 hours → 0%



$p = \text{ns}$

CONCLUSIONS

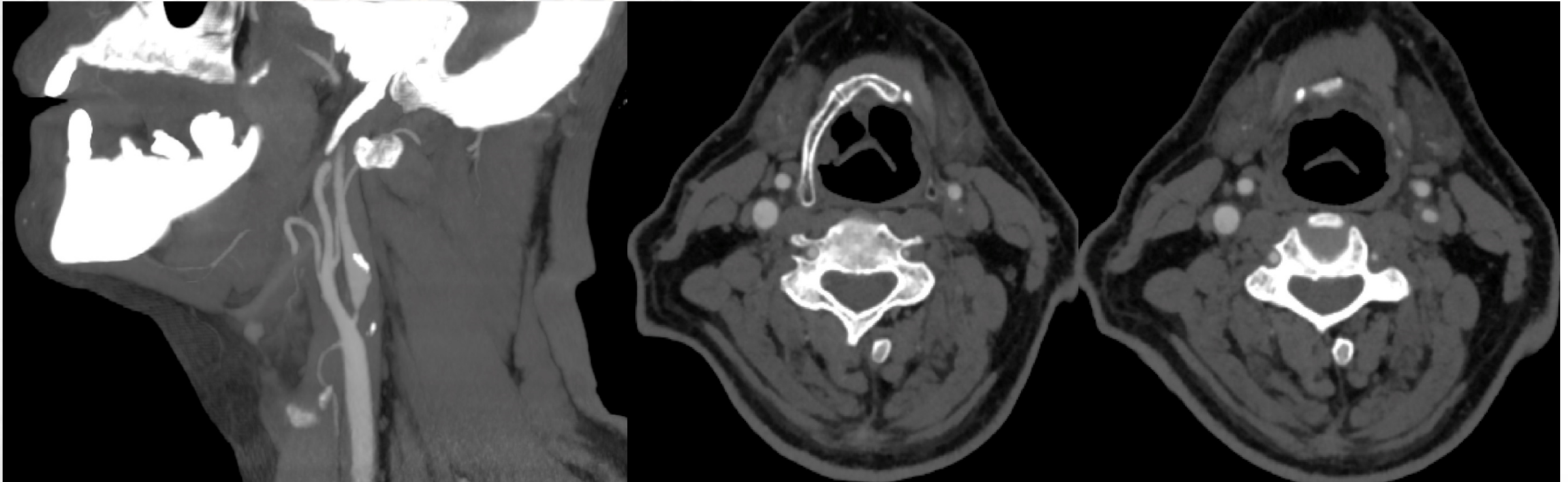


In our experience patients with a minor stroke and a positive CT scan that underwent CEA in less than 48 hours faced a higher post op mortality rate.

Therefore a careful pre-operative evaluation of the patient is mandatory in order to reduce adverse events.

CLINICAL CASE

- F. G. 62 years old
- **Anamnesis:** hypertension, diabetes mellitus, atrial fibrillation in NAO.
- **August 2020:** ischemic stroke, left ACI and M1 of MCA occlusion treated by thrombolysis, thromboaspiration and PTA ACI. Dysarthria and limb weakness on the right.
- **May 2022: Left ACI restenosis**

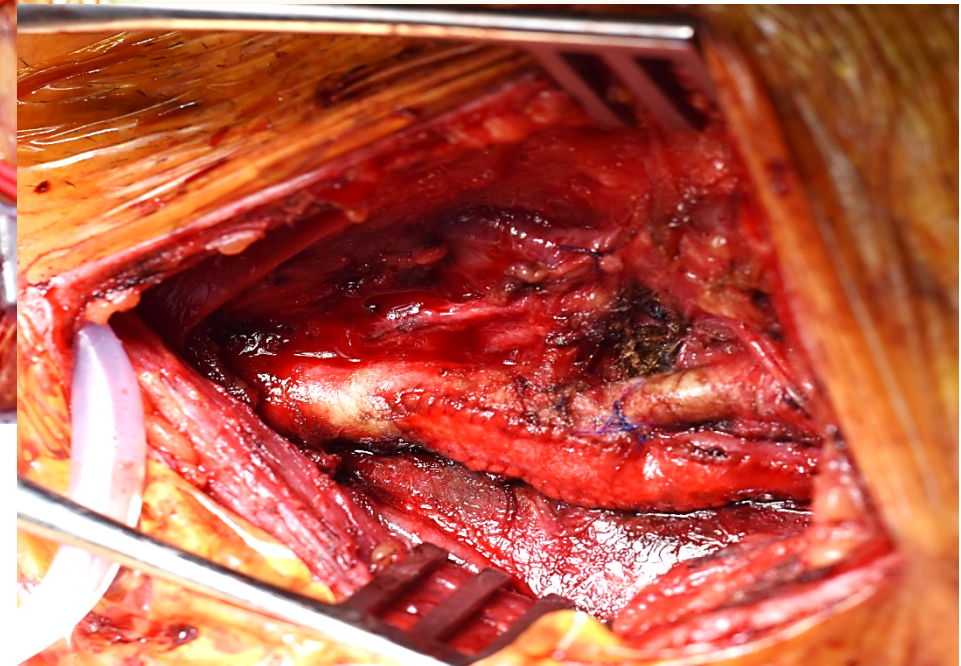
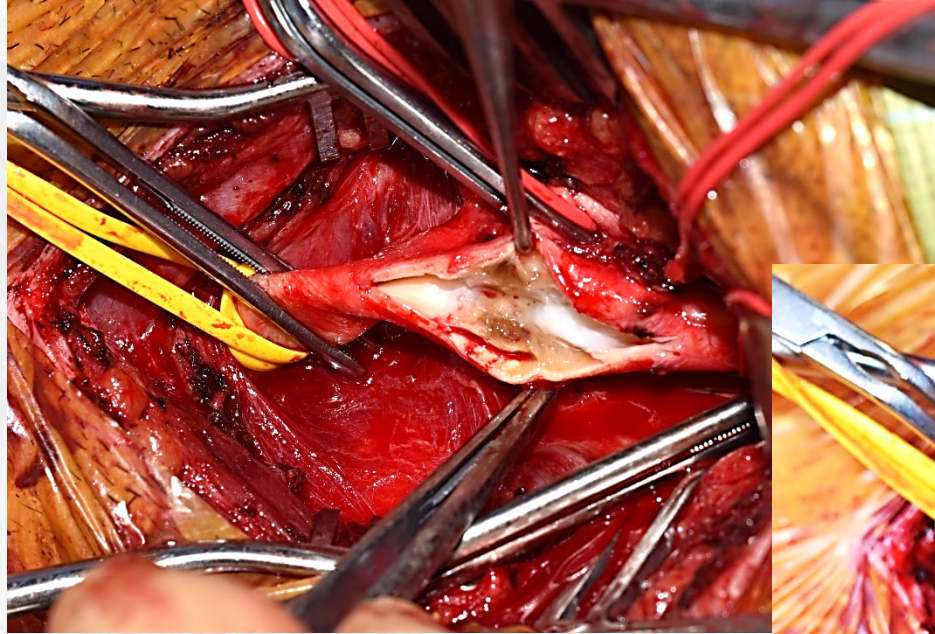


CLINICAL CASE



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CAROTID ENDARTERECTOMY

CLINICAL CASE

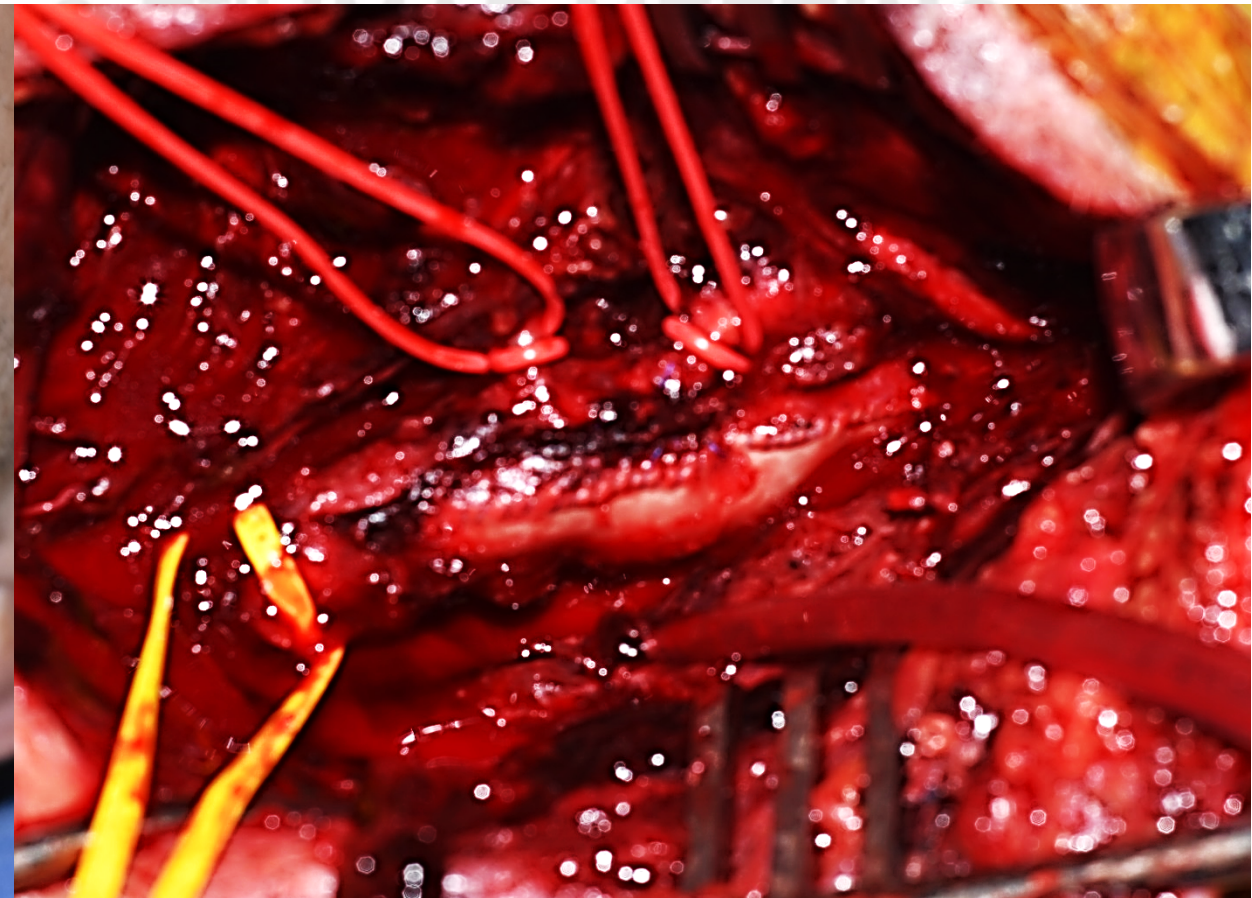


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LATEROCERVICAL HEMATOMA AND DYSPNEA IN THE 2ND POSTOPERATIVE DAY



CLINICAL CASE

**ONE HOUR AFTER SURGERY → LEFT HEMIPLEGIA AND WORSENING
OF DYSARTHRIA**



LEFT CAROTID OCCLUSION



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LIÈGE
Université



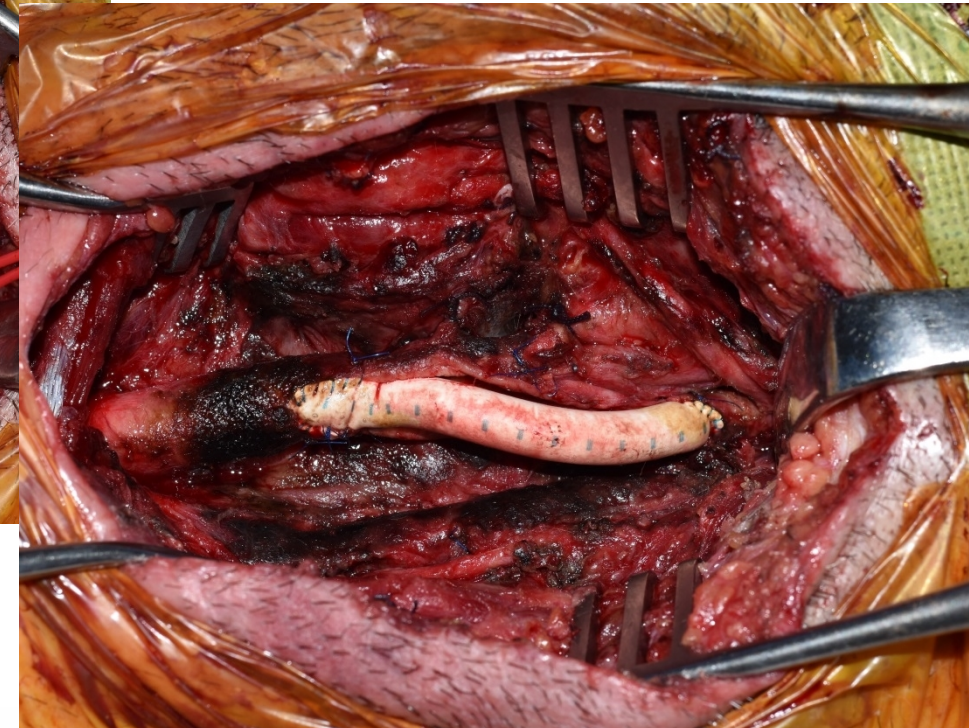
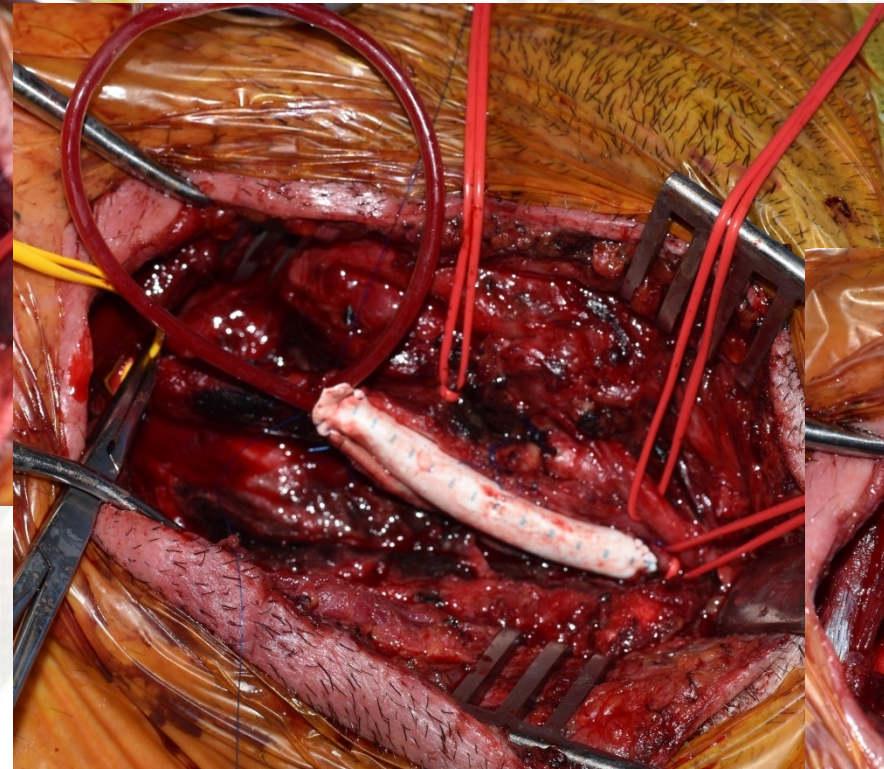
ANEURYSMAL
PATHOLOGY
Foundation 2009

CLINICAL CASE



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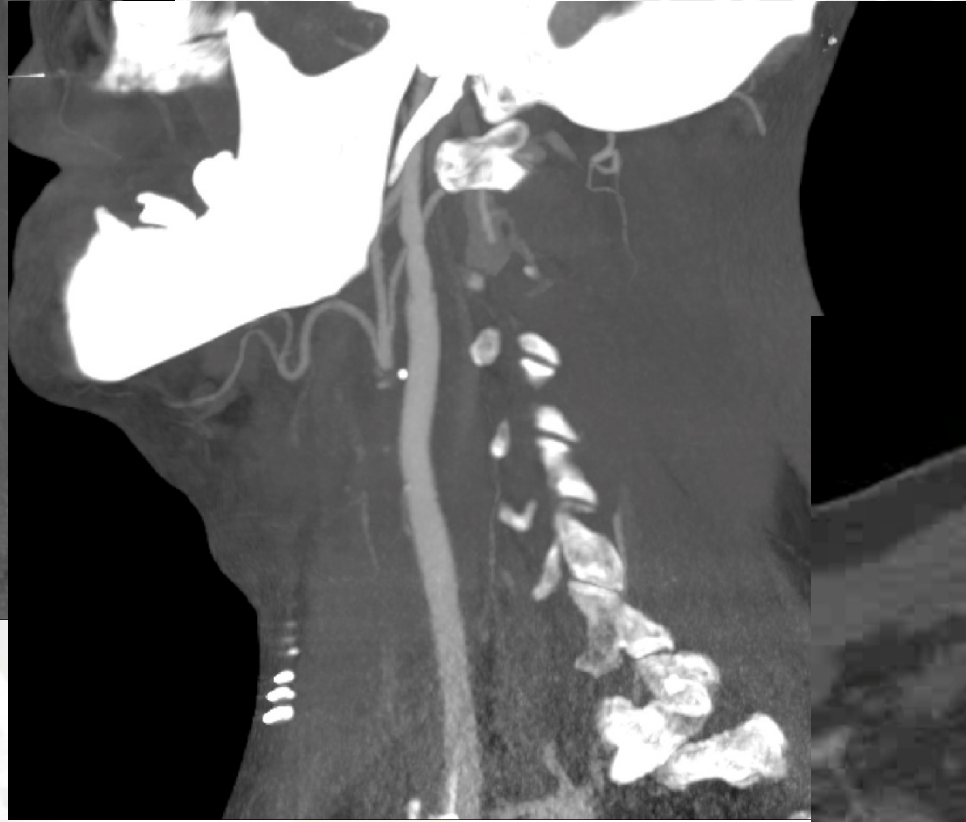
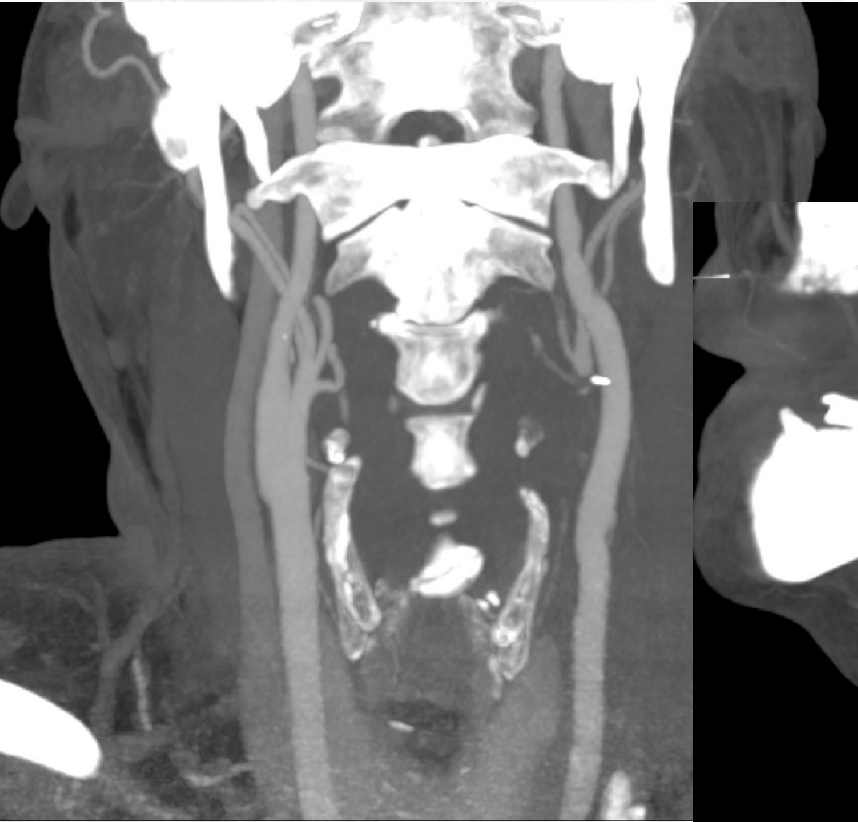
CAROTID CAROTID BYPASS

CLINICAL CASE



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NIHSS PRE OP 11
NIHSS POST OP 3



POST OPERATIVE CT SCAN

The background features a collage of images including the Grand Palais in Liège, the Liège Cathedral, and a street view of the city. Overlaid on these are large, semi-transparent geometric shapes: a yellow triangle at the top, a blue triangle on the left, and a yellow diamond at the bottom.

**THANK YOU FOR
THE ATTENTION**

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