

6 x E aneb Eliminuje Endovaskulární Expanze Eleganci Eversní Endarterektomie ?

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Klinikum Chemnitz, GgmbH, SRN



XXII. Slovenský kongres cievnej chirurgie, Jasná pod Chopkom, 2018

CMP – incidence aj. statistika

- Evropa: 1,4 mil. (715 mil.obyvateľ) / rok
1,1 mil. úmrtí / rok
USA: 800 000 (325 mil.obyvateľ) / rok
170 000 úmrtí / rok
- 2. najčastejšia príčina smrti
- polovina nemocných invalidných
- nemocní obsadí 1/5 akútných a 1/4 chron.lôžek
- liečebné výdaje 38 mld. E,- / rok

Etiologie CMP obecně

- 2/3 CMP důsledkem tromboembolismu
- 1/3 CMP důsledkem postižení EC tepen
- 1/3 CMP u nemocných mladších 65 let



Etiologie CMP konkrétně

TE příhoda z povodí ACI (ACMI)	25 %
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Tromboza intrakraniálních malých cév	25 %
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Embolie kardiálního původu	20 %
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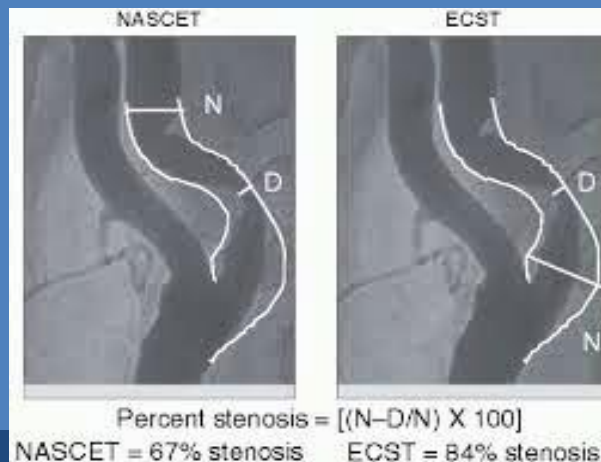
Neobjasněné a další příčiny	30 %
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TE příhoda z dosud asymptomatické	
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ACI stenosis nad 50 %	15 %
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Stenosa A.carotis interna

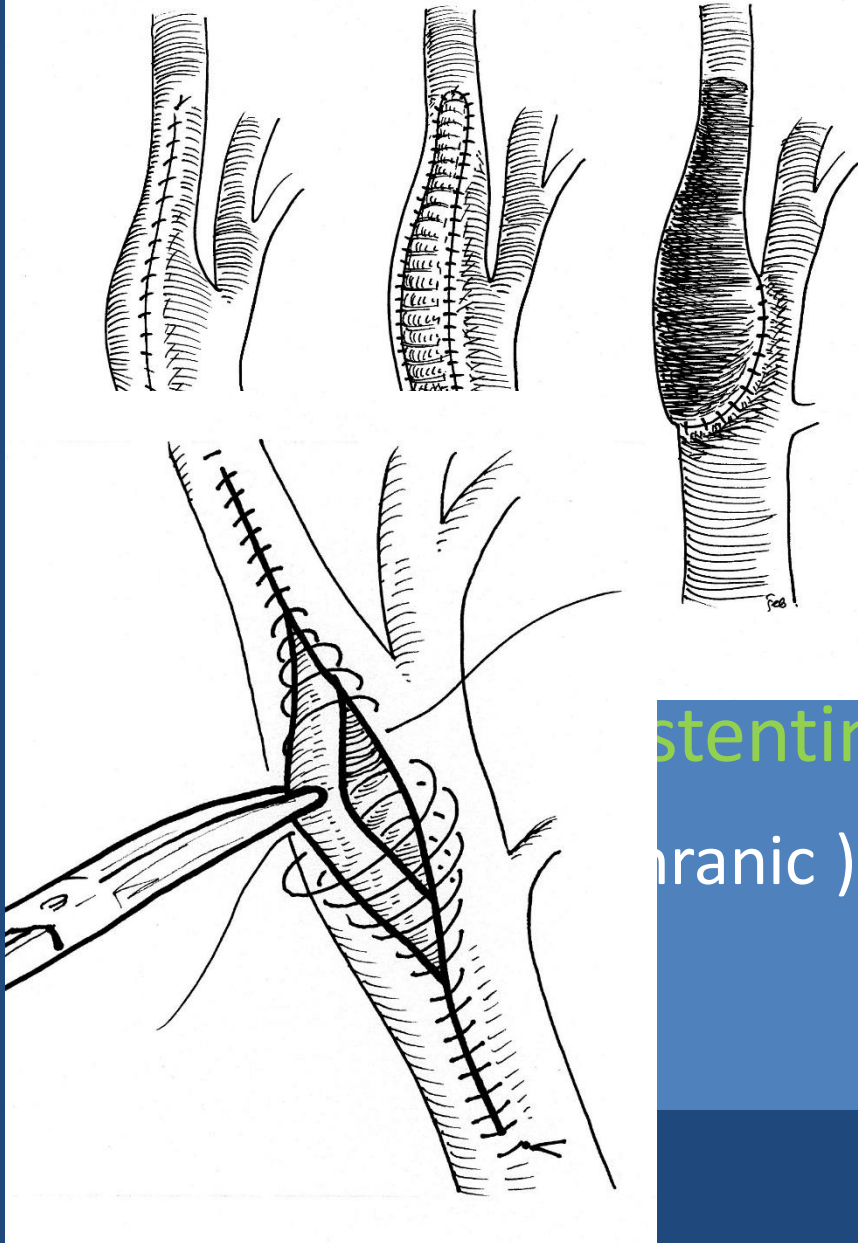
- Asymptomatická nad 70 %,
- Symptomatická nad 50 %
- Metodika měření stupně zúžení



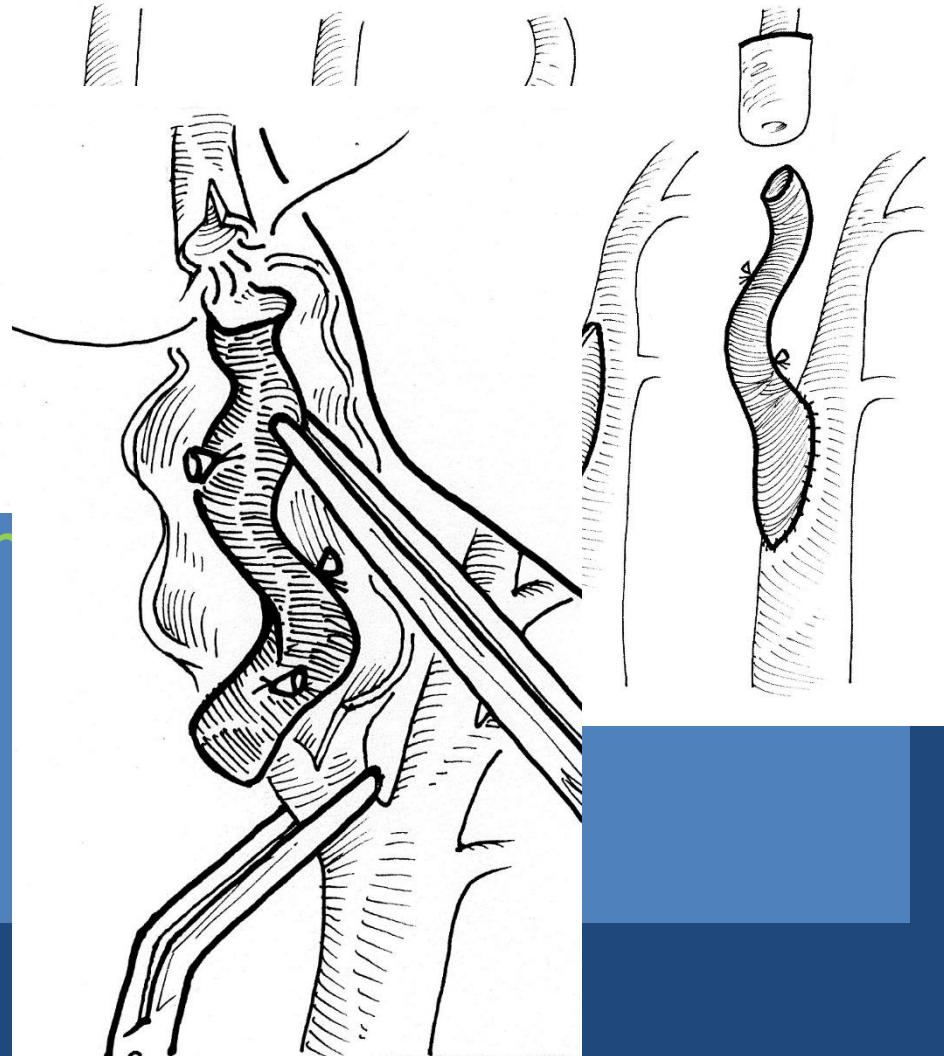
Terapie

- Konservativní (BMT= Best Medical Treatment)
- Endarterektomie 1953 /DeBakey, Eastcott/
(technické varianty)
- CAS (Carotid Artery Stenting) 1994
(s EPD nebo bez)

edních 20 letech ?



stentir
ranic)



Carotid Stenting Versus Endarterectomy for Asymptomatic Carotid Artery Stenosis: A Systematic Review and Meta-Analysis.

Moresoli P¹, Habib B¹, Reynier P¹, Secres J Am Coll Cardiol. 2017 May 9;69(18):2266-2275. doi: 10.1016/j.jacc.2017.02.053.

ELSEVIER
FULL-TEXT ARTICLE

Carotid Artery Stenting Versus Endarterectomy for Stroke

• Souč

Cerebrovascular
Diseases

Review

Cerebrovasc Dis 2017;43:68-75
DOI: 10.1159/000453282

Received: September 2, 2016
Accepted: November 7, 2016
Published online: November 30, 2016

⁷, Gray

Medicine®

SYSTEMATIC REVIEW AND META-ANALYSIS

Rece
End:

OPEN

RESEARCH ARTICLE

Long-term efficacy of carotid artery stenting versus endarterectomy: A Systematic Review and Meta-Analysis of Carotid Artery Stenting Versus Endarterectomy for Carotid Stenosis

Diao et al. *Journal of Cardiothoracic Surgery*. (2016) 11:142
DOI 10.1186/s13019-016-0532-x

Journal of
Cardiothoracic Surgery
ly July 2015
MD, Qingsheng Lu, MD,
MD

RESEARCH ARTICLE

Open Access

Carotid endarterectomy versus carotid angioplasty for stroke prevention: a systematic review and meta-analysis



Zengyan Diao, Guoyong Jia, Wei Wu and Cuilan Wang*

CEA vs. CAS II - metaanalýzy

Systematic review

BJS 2018

Meta-analysis of the procedural risks of carotid endarterectomy and carotid artery stenting over time

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Background: Stroke/death rates within 30 days of carotid endarterectomy (CEA) and carotid artery stenting (CAS) in RCTs inform current clinical guidelines. However, the risks may have changed in recent years with wider use of effective stroke prevention therapies, especially statins, improved patient selection and growing operator expertise. The aim of this study was to investigate whether the procedural stroke/death risks from CEA and CAS have changed over time.

Methods: MEDLINE and Embase were searched systematically from inception to May 2016 for observational cohort studies of CEA and CAS. Studies included reported on more than 1000 patients, with 30-day outcomes after the procedure according to patients' symptom status (recent stroke or transient ischaemic attack). Restricted maximum likelihood random-effects and meta-regressions methods were used to synthesize procedural stroke/death rates of CEA and CAS according to year of study recruitment completion.

Results: Fifty-one studies, including 223 313 patients undergoing CEA and 72 961 undergoing CAS, were reviewed. Procedural stroke/death risks of CEA decreased over time in symptomatic and asymptomatic patients. Risks were substantially lower in studies completing recruitment in 2005 or later, both in symptomatic (5.11 per cent before 2005 *versus* 2.68 per cent from 2005 onwards; $P = 0.002$) and asymptomatic (3.17 *versus* 1.50 per cent; $P < 0.001$) patients. Procedural stroke/death rates of CAS did not change significantly over time (4.77 per cent among symptomatic and 2.59 per cent among asymptomatic patients). There was substantial heterogeneity in event rates and recruitment periods were long.

Conclusions: Risks of procedural stroke/death following CEA appear to have decreased substantially. There was no evidence of a change in stroke/death rates following CAS.

Paper accepted 2 September 2017

Published online 4 December 2017 in Wiley Online Library (www.bjs.co.uk). DOI: 10.1002/bjs.10717

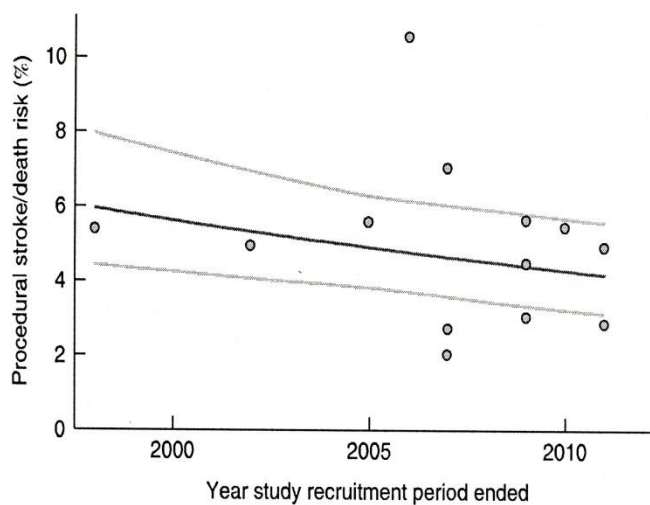
51 studií /RCT/, od 2005 : 223 313 CEA, 72 961 CAS,

Podstatné snížení rizika perioperační CMP/smrti u CEA, nikoli u CAS

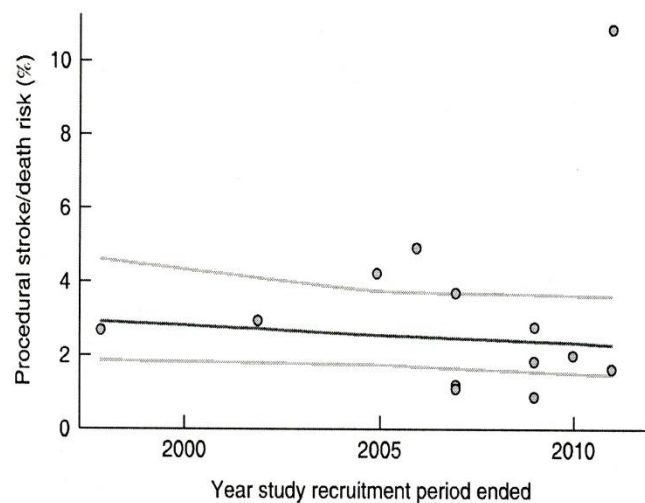
CEA vs. CAS II – pokrač.

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K. Lokuge, D.D. de Waard, A. Halliday, A. Gray, R. Bulbulia and B. Mihaylova



a Symptomatic patients



b Asymptomatic patients

Fig. 5 Meta-regression of carotid artery stenting procedural stroke/death rates among **a** symptomatic and **b** asymptomatic patients. Risks are shown with 95 per cent confidence intervals

Výsledky metaanalýz - shrnutí

- CAS: 30 d. stroke/death risk 5,0 % (2006-2010)
- 4,3 % (2011-2015)
- CEA superiority: 30 d. stroke/death
30 d. TIA
1 r. restenosa
4-10 let stroke/death
- CEA inferiority: 1 r. stroke/death

ESVS Guidelines



Eur J Vasc Endovasc Surg (2018) 55, 3–81

Editor's Choice — Management of Atherosclerotic Carotid and Vertebral Artery Disease: 2017 Clinical Practice Guidelines of the European Society for Vascular Surgery (ESVS)

Writing Group ^a, A.R. Naylor, J.-B. Ricco, G.J. de Borst, S. Debus, J. de Haro, A. Halliday, G. Hamilton, J. Kakisis, S. Kakkos, S. Lepidi, H.S. Markus, D.J. McCabe, J. Roy, H. Sillesen, J.C. van den Berg, F. Vermassen, ESVS Guidelines Committee ^b, P. Kolh, N. Chakfe, R.J. Hinchliffe, I. Koncar, J.S. Lindholt, M. Vega de Ceniga, F. Verzini, ESVS Guideline Reviewers ^c, J. Archie, S. Bellmunt, A. Chaudhuri, M. Koelemay, A.-K. Lindahl, F. Padberg, M. Venermo

Keywords: Carotid, Vertebral, Stroke, Transient ischaemic attack, Endarterectomy, Stenting, Medical therapy, Screening, Dementia, Asymptomatic, Symptomatic, Thrombolysis, Imaging, Bypass, Surgical techniques, Complications, Patch infection, Restenosis

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^b **ESVS Guidelines Committee:** P. Kolh (Liege, Belgium), N. Chakfe (Strasbourg, France), R.J. Hinchliffe (Bristol, UK), I. Koncar (Belgrade, Serbia), J.S. Lindholt (Odense, Denmark), M. Vega de Ceniga (Galdakao, Spain), F. Verzini (Perugia, Italy).

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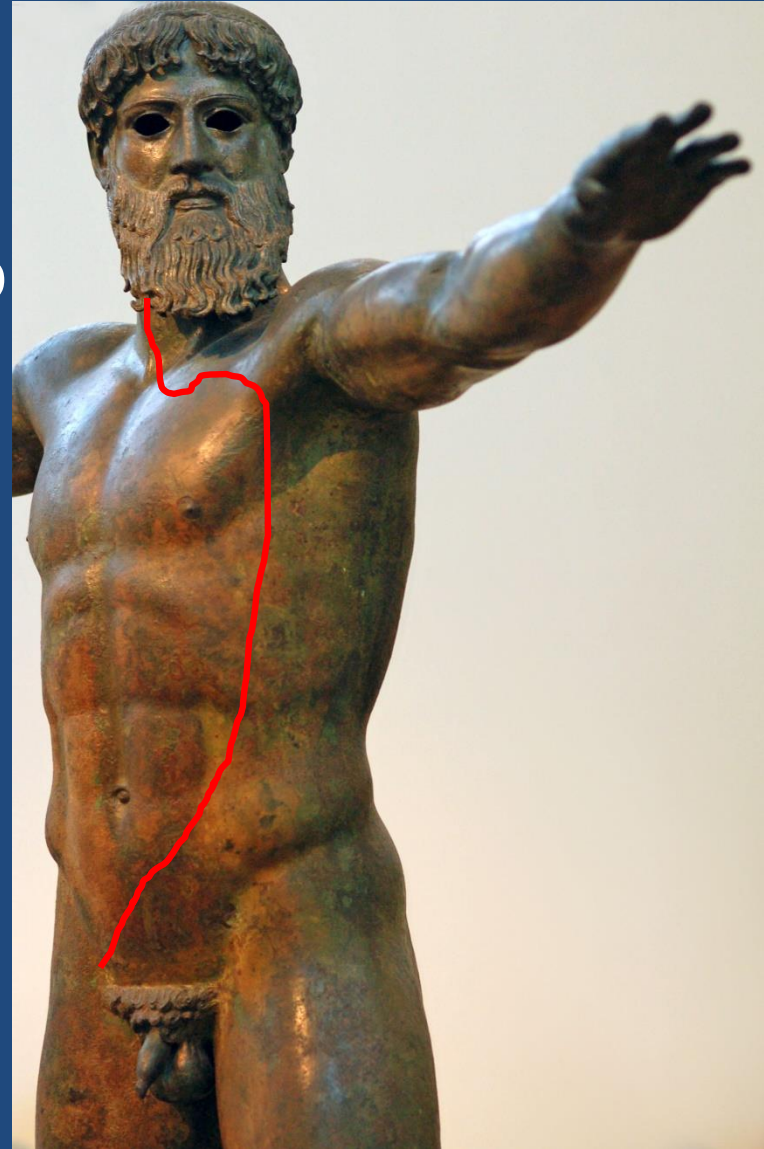
1078-5884/© 2017 European Society for Vascular Surgery. Published by Elsevier Ltd. All rights reserved.
<http://dx.doi.org/10.1016/j.ejvs.2017.06.021>

CEA vs. CAS III



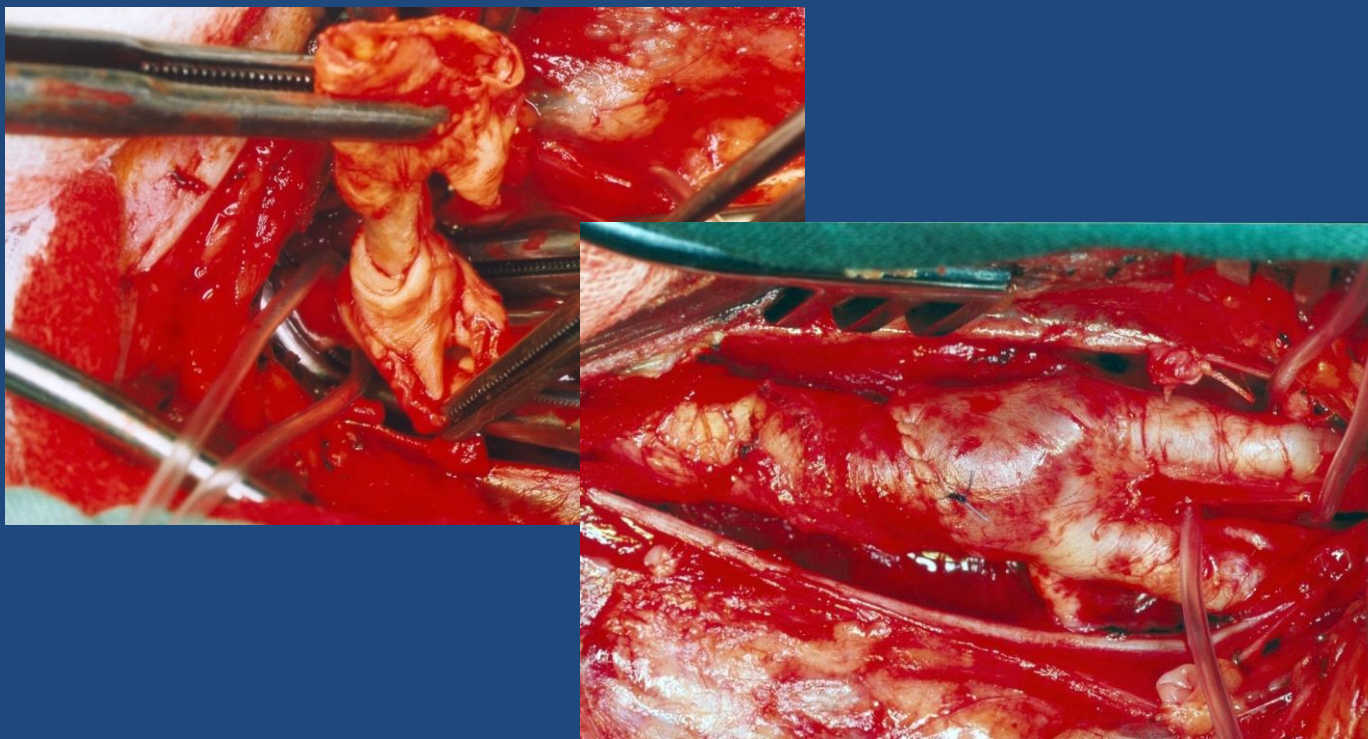
CEA vs. CAS

- 2. Šetrnost operačního



CEA vs. CAS III – pokrač.

- 3. Trvanlivost výsledku (restenosa)



CEA vs. CAS III – pokrač.

- 4. 60 let zkušeností
- 5. Snižování operačního rizika



CEA vs. CAS III – pokrač.

- Levnější provedení
- Levnější následná medikace



CEA vs. CAS IV

II. OPERACE PROTI

1. Závažné komorbidity

- Těžká ICHS, nedávný IM (6 týdnů)
- Městnavá srdeční slabost
- Plánovaná operace srdce
- Těžká COPD
- Selhání ledvin
- Věk nad 80 let

2. Anatomie aj.

- předchozí operace a ozáření (hostile neck)
- Oboustranná stenosa ACI
- Kontralaterální uzávěr ACI
- Kontralaterální paréza n. recurrens
- Tracheostomie

CEA vs. CAS IV – pokrač.

III. STENTING PRO

- Absence incize na krku
- Není riziko poškození hlavových nervů
- **Není riziko pooperačního krvácení s deviací trachey a dušením**
- Nižší riziko IM do 30 dnů po výkonu
- Kratší hospitalizace

CEA vs. CAS IV – pokrač.

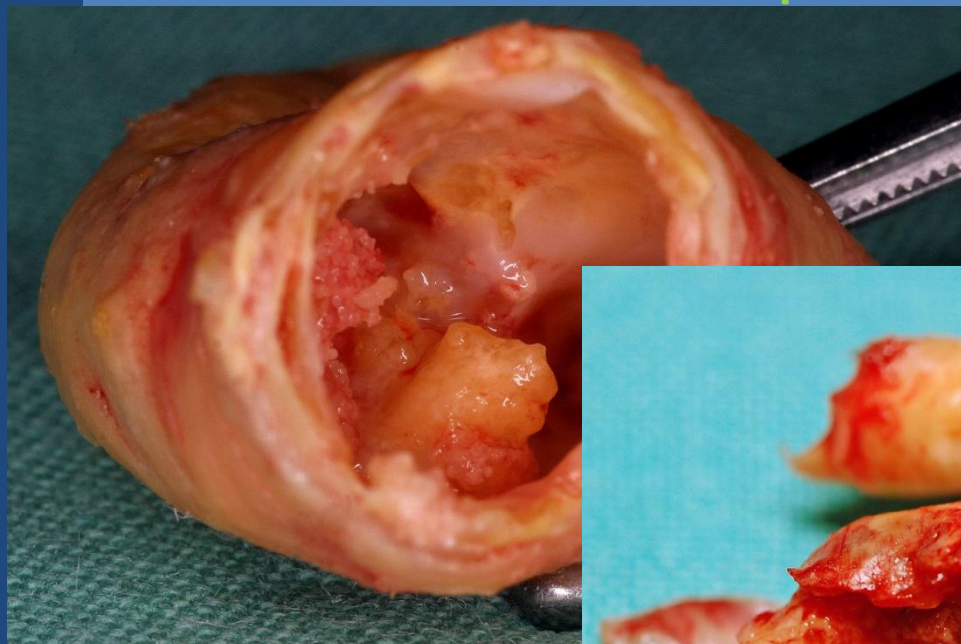
IV. STENTING PROTI

1. Morfologie plátu

- Měkký **plát** s vysokým lipidovým obsahem
- Těžce kalcifikovaný **plát**, **plát** s krvácením
- **Plát** s tenkým fibrozním krytem
- Extensivní **plát** (nad 15 mm)
- Stenosa karot.bifurkace, subtotální uzávěr ACI

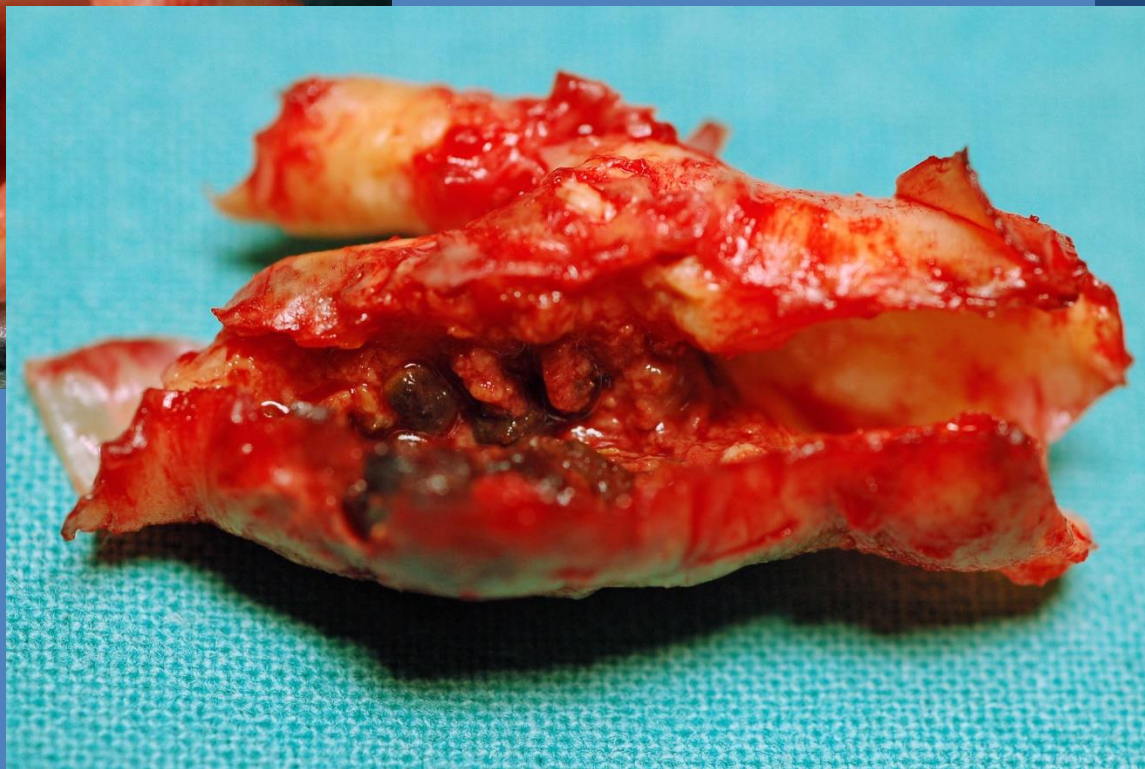
Raywat,N., Anusak, L.:Recent Update on Carotid Endarterectomy versus Carotid Artery Stenting, Cerebrovasc Dis 2017;43:68-75

2. Anatomie přístupových tepen



dstupů větví

1. + 2.



CEA vs. CAS IV – pokrač.

3. Kortikální a subkortexové léze (NMR)

1 ložisko	CAS 15 % vs. CEA 8 %
5 a více ložisek	CAS 16 % vs. CEA 4 %

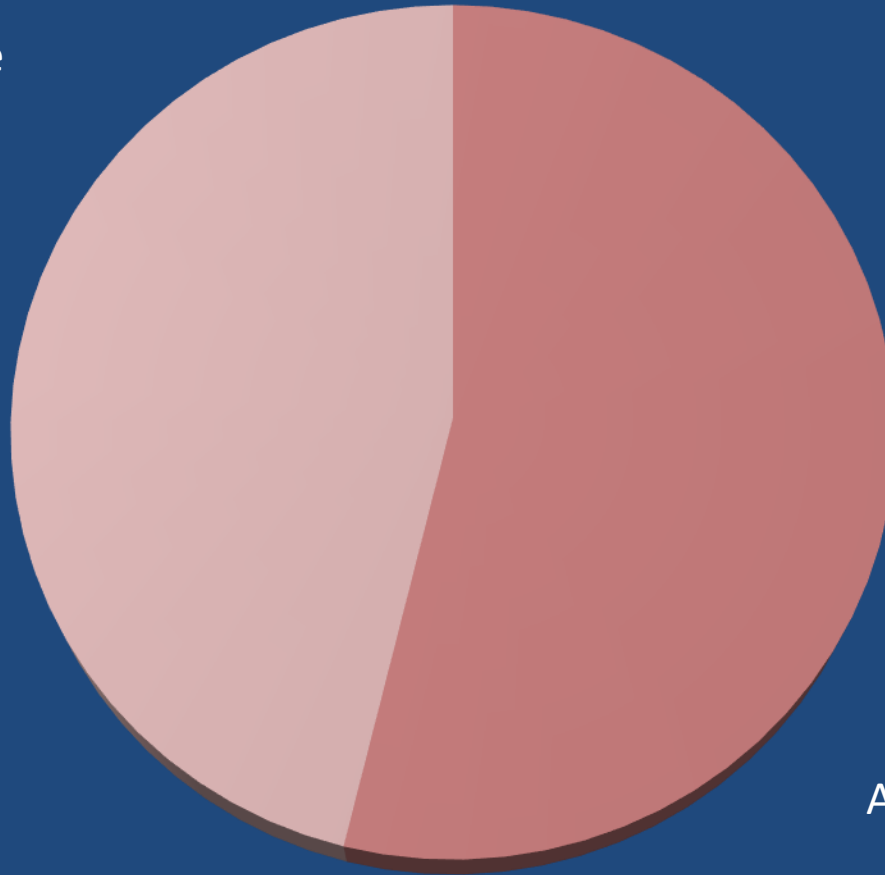
Užití EPD zvýšilo výskyt embolizačních lézí !
Dlouhodobý vliv na kognitivní funkce ?

Gensicke,H., et al.: Characteristics of Ischemic Brain Lesions After Stenting or Endarterectomy for Symptomatic Carotid Artery Stenosis. Stroke, 2013;44:80-86

CEA Klinikum Chemnitz 2016 - 2017

Symptomatické

131 (48 %)



Asymptomatické

140 (52 %)

	n	%
Eversní TEA	225	83
TEA + Patch	46	19
Ostatní	7	2,6
i.l. shunt	25	9

Pooperační revize (krvácení)	7	2,6
Časný uzávěr ACI	1	0,4
CMP lehká	5	1,8
CMP těžká	3	1,1
CMP celkem	8	3,0
Letalita hospitalizační	1	0,4
Letalita 30– denní	3	1,1

Závěr

Odpověď na úvodní otázku je záporná. CEA si nadále drží pozici standardního postupu v léčbě karotických stenóz. CAS by měl být indikován uvážlivě ve specifických klinických situacích a neměl by se stát rutinním nástrojem v rukou technokratů. Zmíněná komplementarita obou metod však bohužel, a zejména ke škodě pacientů, často koliduje s absencí komunikace mezi odbornostmi.

Děkuji vám za pozornost

