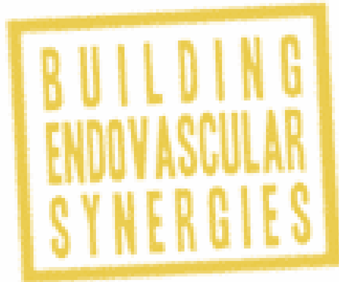

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COMBINED CAROTID STENTING AND CARDIAC SURGERY IN THE SAME OPERATING ROOM: PRELIMINARY RESULTS .

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Background

Severe Carotid stenosis in cardiac patients:

12-18%

Stroke incidence in patients with severe ICA stenosis undergoing cardiac surgery :

10-20%

Operative strategies

review 2003, Naylor et al

	OPERATIVE MORTALITY	IPSILATERAL STROKE	MIOCARDIAL INFARCTION	TOTAL
STAGED CEA→CABG	**3.9%**	**2.5%**	**6.5%**	**12.9%**
STAGED CABG→CEA	**2.0%**	**5.8%**	**0.9%**	**8.7%**
SYNCHRONOUS CEA+CABG	**4.6%**	**3.0%**	**3.6%**	**11.2%**

Aim of the study:

combining carotid stenting to cardiac surgery helps to improve clinical results?

CAS

~~CEA~~ + Heart Surgery → does it works?

CAS & Cardiac Surgery

22 patients included

M: 13 (59%) F: 9 (41%)
Mean age: 70,3 (56-81)

Previous TIA/stroke: 5 (23%)
Bilateral carotid disease: 9 (41%)

EuroScore ≥6 : 85%

Stable angina pectoris: 12 (54%)
Unstable angina pectoris: 9 (41%)
Valve disease: 6 (27%)
Previous myocardial infarction: 11 (50%)
EF<40%: 5 (23%)

Our study: CAS & cardiac surgery

Inclusion criteria:
- coronary and/or cardiac valve disease
- carotid stenosis > 80% (uni or bilateral)

Exclusion criteria:
- pre-occlusive ICA stenosis or endoluminal thrombus
- ICA tortuosity precluding distal filter deployment

(Access: →cervical)
- severe aortic and epiaortic vessel tortuosity (type III arch, bovine arch, CCA coiling or kinking)
- severe calcification of aortic arch or epiaortic vessels
- severe aortoiliac occlusive arteriopathy
- abdominal aortic aneurysm
- aortobifemoral prosthesis

CAS & Cardiac Surgery

Operative strategy

- No preoperative anti-platelet drugs
- Systemic heparin bolus (70 UI/Kg) after placement of the introducer sheath
- Combined procedure in the same operating room
- General anesthesia and full invasive cardiac monitoring during CAS
- Double antiplatelet treatment in the early postoperative period (12 hours)

CAS & Cardiac Surgery

Interventions:

Filter-protected transfemoral CAS:	16 (73%)
Filter-protected transcervical CAS:	6 (27%)

AVR:	1 (4.5%)
CABG+AVR:	3 (13.5%)
CABG+MVR:	2 (9%)
CABG only	15 (68%)

On-pump	11 (73%)
Off-pump	4 (27%)

CAS & Cardiac Surgery

Results:

Deaths:	0
Myocardial infarctions:	0
Ipsilateral strokes:	0
(Ipsilateral T.I.A.) :	1
Contralateral strokes:	1 (4.5%) (major)
Total:	1 (4.5%)

CAS & Cardiac Surgery
CEA vs CAS

	OPERATIVE MORTALITY	IPSILATERAL STROKE	MIOCARDIAL INFARCTION	TOTAL
SYNCHRONOUS CEA+CABG **(litterature)**	**4.6%**	**3.0%**	**3.6%**	**11.2%**
COMBINED CAS & Cardiac Surgery **(our experience)**	**0**	**0**	**0**	**0**

CAS & Cardiac Surgery

Other CAS experiences

	N° Patients	OPERATIVE MORTALITY	STROKES	MIOCARDIAL INFARCTION	TOTAL
SYNCHRONOUS* CAS+Cardiac Surgery (Mendiz et al, 2006)	**30**	**10%**	**0**	**0**	**10%**
SYNCHRONOUS* CAS+CABG (Versaci et al, 2007)	**37**	**5.4%**	**2.7%**	**0**	**8.1%**
COMBINED CAS+Cardiac Surgery (Our experience)	**22**	**0**	**4.5% (contralat.)**	**0**	**4.5%**

*CAS in the angiographic suite and then transfer to the operating room for surgery

CAS & Cardiac Surgery

Conclusions:

Combined CAS and cardiac surgery seems a safe procedure:

- low mortality and low incidence of MI
- no stent thrombosis with delayed double antiplatelet regimen
- no major postoperative bleedings
- acceptable incidence of strokes

…but still a small experience

…work in progress…

CAS & Cardiac Surgery

Thank you!

Carotid artery stenting

Less invasive

↓ Mortality, Miocardial Infarctions

Needs double anti-platelet regimen

↑ Bleeding risk

CAS & Cardiac Surgery

Other "synchronous" experiences (not combined)

- Mendiz et al, Catheter Cardiovasc Interv 2006 (30 patients):

  3 deaths (10%), no strokes, no MI → total: 10%

- Versaci et al, Ann Thoracic Surg 2007 (37 patients):

  2 deaths (5.4%), 1 stroke (2.7%), no MI → total: 8.1%