

Complications of carotid stenosis surgery

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Introduction

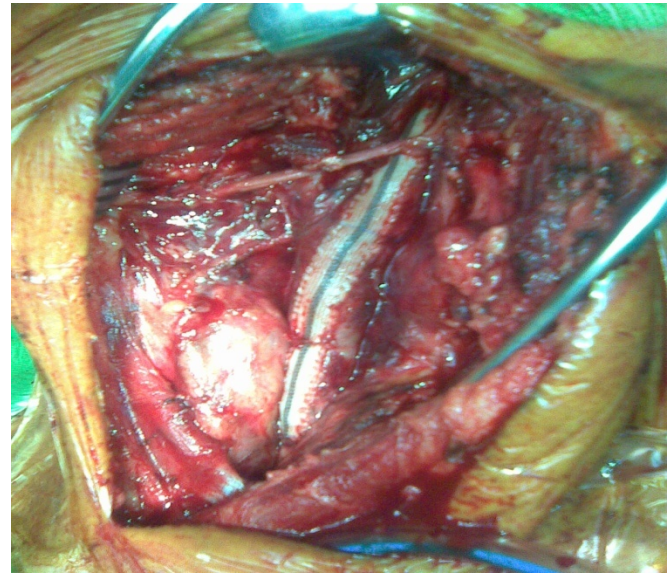
- Improvement in medical and surgical management of carotid stenosis has led to improved outcome.
- Stroke is a debilitating condition

Management

- BMT
- Surgical intervention
 - CEA
 - CAS

Introduction

- CEA well tolerated and hospital stay <48 hrs
- CEA complications devastating and sometimes irreversible



Management

- Symptomatic
 - NASCET, ECST:
- Asymptomatic
 - ACAS, ACST:

AHA guidelines 2006

class 1/evidence level A

| | <50% | 50-69% | 70-99% |
|--|---|---|---|
| symptomatic TIA/stroke within 6 month | Fresh thrombus Large ulcer | Sx<3% M/M Good op risk Male | Sx<6%M/M |
| asymptomatic | | | Sx<3% M/M Good op risk male <75yrs |

Stroke 2006

Complications

- MI
- Stroke
- Nerve injury
- Cerebral hyper perfusion syndrome
- Bleeding
- Infection

MI

- Most common complication
- \pm 50% have symptomatic CAD
- \pm 50% of death due to MI
- Despite these cardiovascular event rates are on the decline.

Stroke

CAUSES

- Embolization
- Hypo perfusion
- Hyper perfusion syndrome
- Intracranial haemorrhage
- Contralateral stroke
- Unknown

Perioperative Stroke

management

- Recovers from GA with neurological deficit
- Neurological deficit later

Hyper perfusion syndrome

- Occurs 2 - 7 days post CEA
- Incidence: 0.4 – 7.7%
- Clinical findings
 - Headache
 - Seizures
 - Cerebral haemorrhage (0.2 – 0.8%)
- Pathophysiology
- Management
 - Prevention
 - Treatment

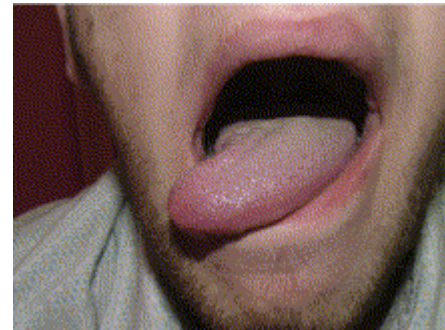
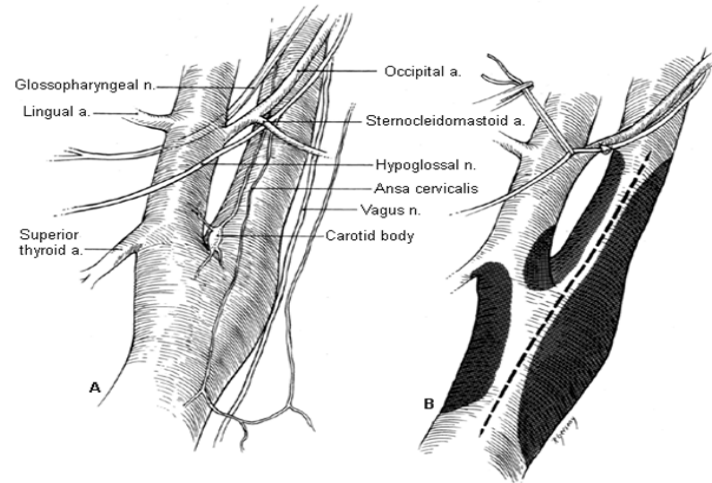
Local complications

- Cranial nerve injury
 - Vagus (CN X)
 - Hypoglossal (CN XII)
 - Spinal accessory nerve (CN XI)
 - Facial
 - others
- Bleeding
- False aneurysm
- Wound infection

Local complication

hypoglossal nerve

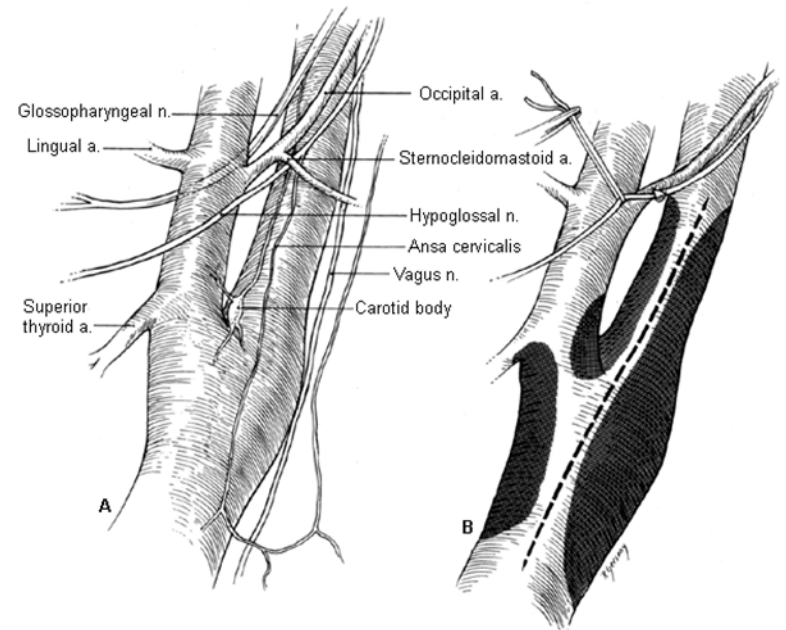
- hypoglossal 3.7%



Local complication

vagus nerve

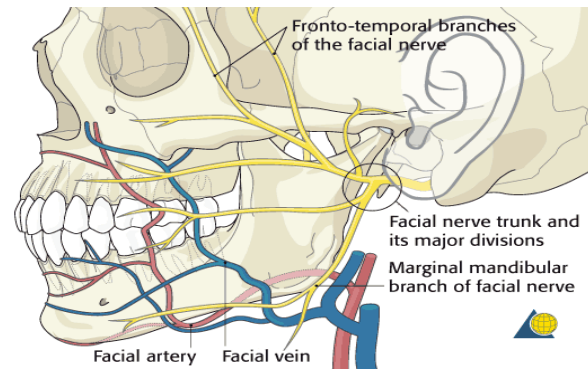
- In to neck through jugular foramen
- Found in carotid sheath
- Incidence: vagus 2.5%
- Mainly clamping
- recurrent laryngeal nerve dysfunction



Local complication

facial nerve

- Marginal mandibular nerve: 2.2%



Local complication

Bleeding

- Incidence: 0.7 – 3%
- Mostly attributed to capillary oozing
- Antiplatelet therapy
- Heparin administration

Local complication

Infection

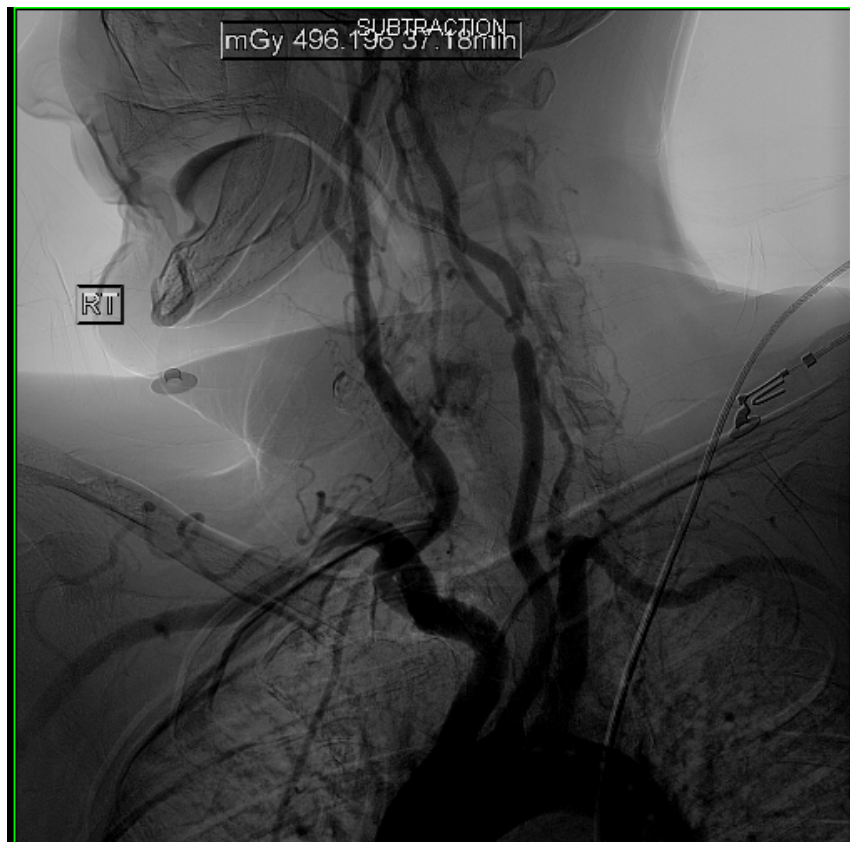
- Incidence: 0.09 – 0.15%
- Attributed to good blood supply
- Prosthetic patch
- bovine pericardium patches

Local complication

Restenosis

- Incidence: 5 – 22%
- 3% symptomatic
- Causes
 - NIH
 - Atherosclerosis

CAS



Thank you



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