

# Carotid Occlusion Studies

Last updated: September 5, 2017

## INDICATION

- to predetermine patient's **tolerance to carotid occlusion** during preparation for carotid ligation.
  - 30% population will not tolerate carotid ligation without stroke! (49% of ICA and 28% of CCA ligations) H: bypass see p. Vas7 >>
- carotid ligation is used:
  - 1) nonoperable **aneurysms** of carotid artery; now its rare - microsurgical techniques and multiple designs of clips allow for direct aneurysm obliteration and parent artery reconstruction.
  - 2) radical resections of **tumors** located along intracranial course of ICA (carotid ligation for cure or hemostasis).

## TECHNIQUE

- **temporary balloon occlusion:**
  - after angiography, nondetachable balloon is positioned in ICA under local anesthesia.
  - patient is **anticoagulated** with heparin, 100 U/kg (serial activated clotting times should be twice control time).
  - balloon is expanded and occlusion of flow verified **angiographically**.
  - patient is examined **neurologically** throughout procedure.
  - additional monitoring:
    - 1) **scalp EEG** (any slowing or change in symmetry of activity)
    - 2) **transcranial Doppler** (changes in direction and velocity of flows)
    - 3) regional CBF studies (additional verification of adequacy of collateral flow) – **Xe inhalation, SPECT** using  $^{99m}\text{Tc}$ -HMPAO.

## COMPLICATIONS

- ≈ 3.7% :
- 1) asymptomatic carotid dissection (2%)
  - 2) permanent neurologic deficit (0.33%).

BIBLIOGRAPHY for ch. “Neurovascular Examination” → follow this [LINK >>](#)