POINTS TO DISCUSS TO CAS

• INDICATIONS
• CONTRA INDICATIONS
• ANATOMICAL CONSIDERATION
• TECHNICS
CAS should be “gold standard” in these situations

- **Situations where surgery is complex / contra-indicated**
  - Hostile or difficult necks:
    - tracheostomy
    - laryngeal paralysia
    - restenosis
    - cervical Xray therapy
    - carotid stenosis induced by Xray therapy
    - major arthrosis
    - small and large neck with high bifuraction “buffalo neck”
    - carotid by-pass stenosis
  - Highly located lesions
  - Angiodysplasia
  - Lesions at the common carotid level and on the aortic arch
CAS Indications (2)

• **Situations where surgery offers low benefits**
  - controlateral occlusions
  - bad Willis circle
  - tandem lesions (distal or proximal)
  - coronary disease
  - major carotid disease
  - respiratory disease
  - neurological deficit
  - heart failure
  - planned coronary revascularization
  - diabetics
  - female sex

• **Patients with a short life expectancy** due to cancer or elder age represent *relative indications* for carotid stenting.
CONTRA-INDICATIONS FOR CAROTID STENTING

Carotid stenting should NOT be indicated if:

- Non significant carotid stenosis, as for CEA (<50% for symptomatics, <70% for asymptomatics)
- Low risk patients with long life expectancy
- Highly calcified lesions (>50% circumference) as assessed by duplex-scan or CT-scan
- Floating thrombus (but G2B3 3a inhibitors, Rheopro)

**Complex supra aortic anatomy**

- Bovine arch but

No CI for CAS: direct cervical puncture, reverse flow, starclose closure device
ANATOMICAL CONSIDERATIONS, THE CHOICE OF THE ACCES for CAS

Complex anatomy of the Aortic Arch

- **Level I** \( \rightarrow \) +/- 70% of cases
- Easy to endovascular approach
Variation of the angles \( \rightarrow \) « acute »

- **Level II**
- Sometimes difficult to approach

- **Level III**
- Difficult to approach, major risk of embolism
- C ABCT $\rightarrow$ 11 to 15 %
- Bovine Arch
Variation of the disposition of the supra aortic trunks

- Left vertebral artery comes from aortic arch: 8%

- Aberrant right subclavian artery with left cross: 0.5%
- CFA puncture, introducer 5 or 6fr
- Use an hydrophilic guide until the aortic arch
- Selective catheterism of LPC or CBAT with diagnosis catheter
- Guidewire exchange, use a stiff GW inside the External Carotid artery
- Positioning of guiding catheter 8fr or long introducer 6 or 7 fr just under the bifurcation
- Choose the best incidence (LAO) of the Xray tube
- Choose the good stent and the good CPD
- Do angioplasty from P. Bergeron et J. Massonat, EMC, 1998
 OUR ROUTINE TOOLS

- Select adequate tools depending on each case
- Place long 6 or 7 Fr. introducer (90cm) with removable valve in the CCA.
- Use few diagnosis probes (125cm):
  - MPA (multipurpose) or vertebral: right ICA
  - VTK (Vitek): left ICA
  - Simmons 2 and 3 (100cm may be helpful): difficult arches
- Use the StarClose device
TIPS & TRICKS

- Choice of the GW
  - Short introducer + guiding catheter
  - Long introducer

- Dealing with a loop
  - Extern or intern stiff GW Guides supports (buddy wire technique)
  - Choose appropriate weapons (cerebral protection, stent)

- Do not cross the bifurcation if diseased
  - Place a Supracore GW or the Pigtail probe in the CCA

- In case of extreme tortuositities
  - Stay in the more proximal portion of supra-aortic trunks
  - Choose highly profiled devices
Cervical access is an easier alternative for surgeons while brachial or radial accesses need more expertise.

- **Cervical access**
  - Feel the carotid pulse
  - Percutaneous or via short cut down at the basis of the neck, near the clavicle
  - Lower heparinization (2000UI to be reversed)
  - 5 or 6 Fr. Introducers
  - Positioning of the guiding catheter under the bifurcation
  - Angioplasty
  - Compression or extravascular closure devices (StarClose)

- **Surgical conversion is always possible**
CONCLUSION

• Good knowledge of the aortic arch
• Avoid complex cases during learning curve.
• Be selective for patients, tools and techniques!
• Cervical access is helpful in complex anatomies.
• Know when to quit and convert.
• Get trained through courses, simulators, workshops…
• Be confident: there is always a solution for surgeons !!!
THANKS FOR YOUR ATTENTION