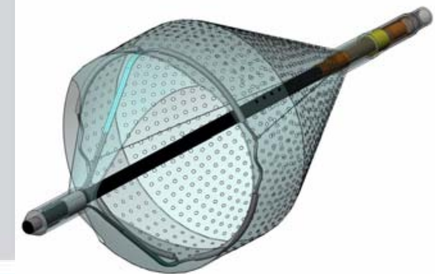
CAROTID ARTERY STENTING TECHNICALS ASPECTS

HOPITAL SAINT JOSEPH MARSEILLE

embo shield® PRO



Symposium Abbott Vascular

CANNES - MEET 2008

Drs V PIRET, P BERGERON

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 dupplex-scan or CT-scan
- Floating thrombus (but G2B3 3a inhibitors, Rheopro)

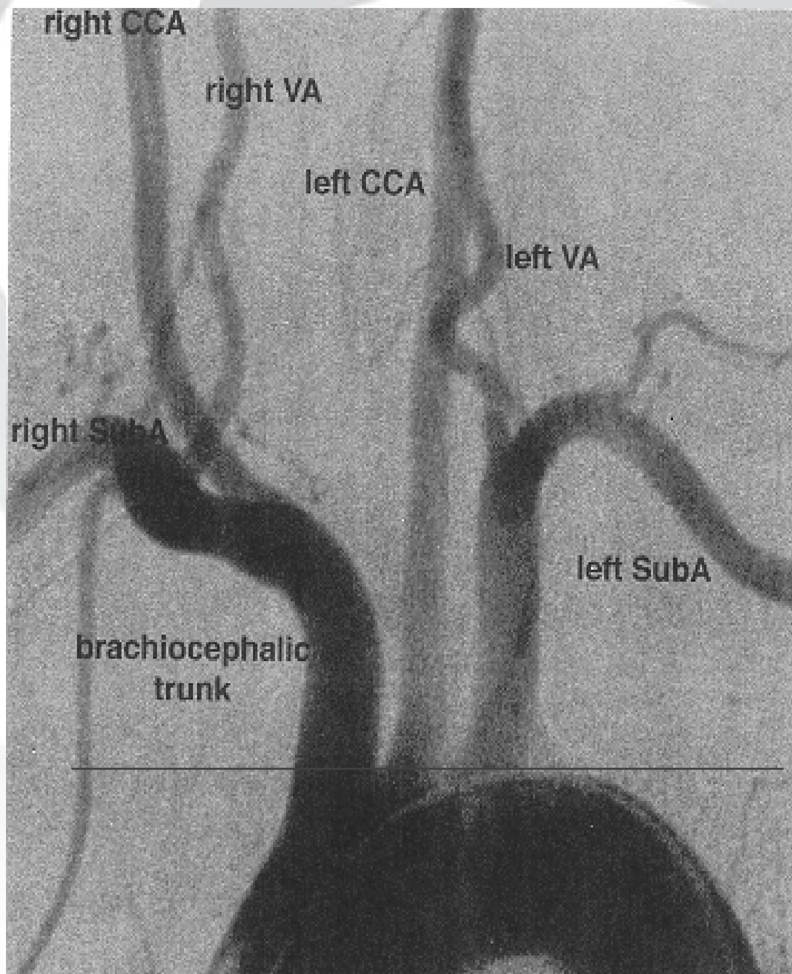
Complex supra aortic anatomy

- Bovine arch but

No CI for CAS: direct cervical puncture, reverse flow, starclose closure device

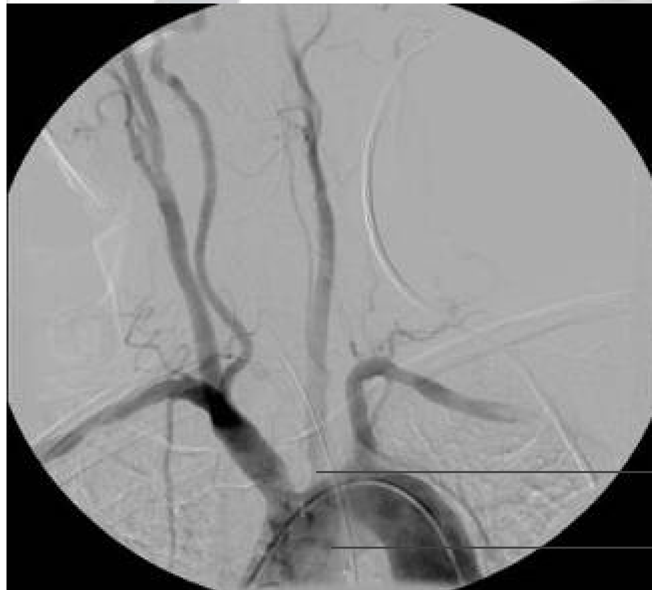
ANATOMICAL CONSIDERATIONS , THE CHOICE OF THE ACCES for CAS

Complex anatomy of the Aortic Arch

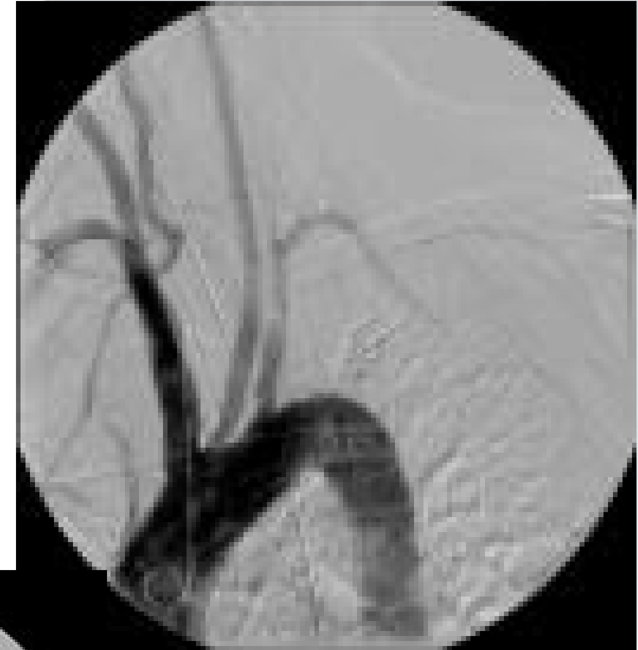


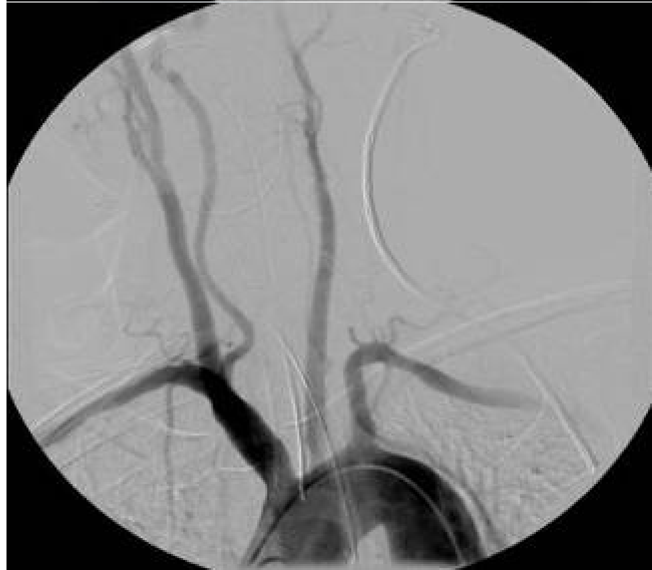
- Level I → +/- 70 % of cases
- Easy to endovascular approach

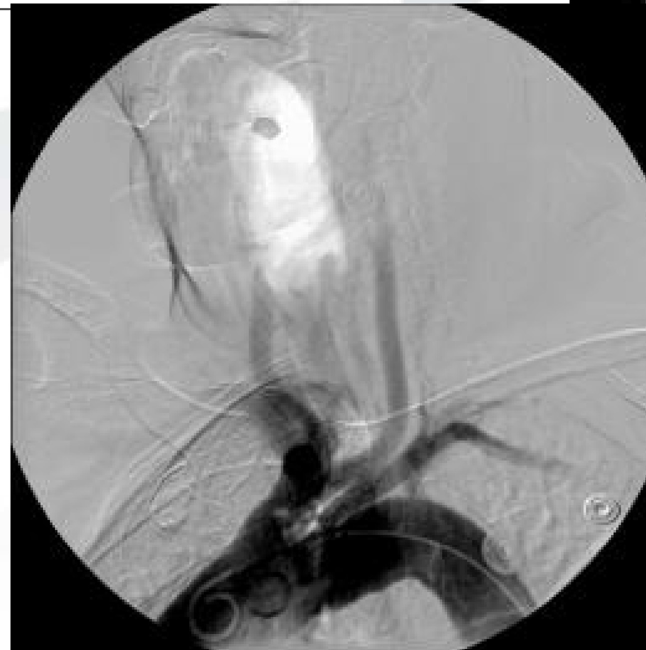
Variation of the angles → « acute »



- Level II
- Sometimes difficult to approach

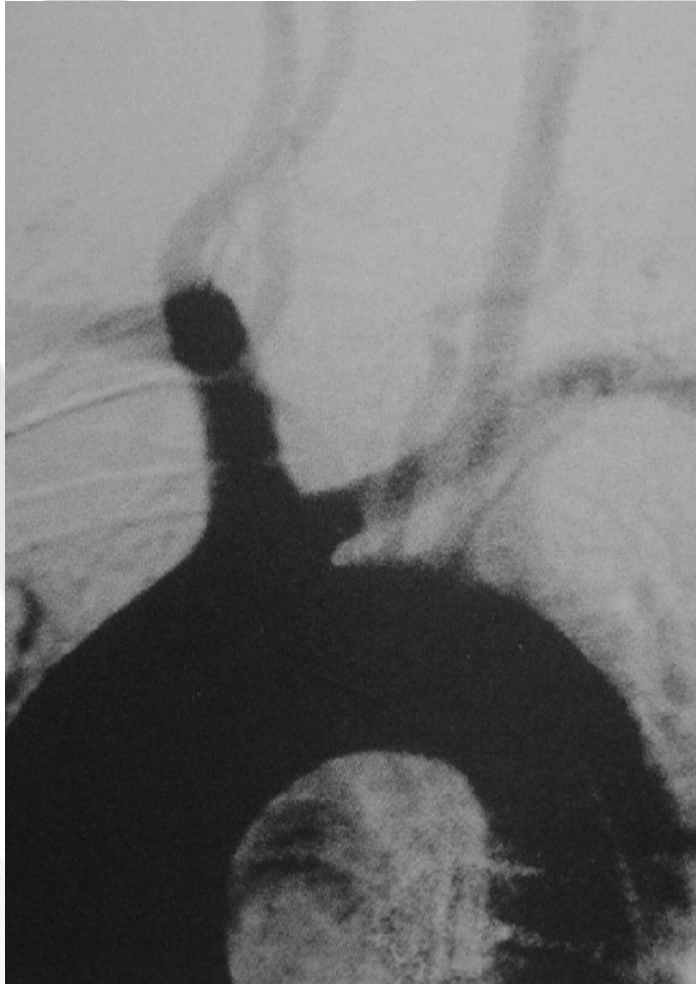


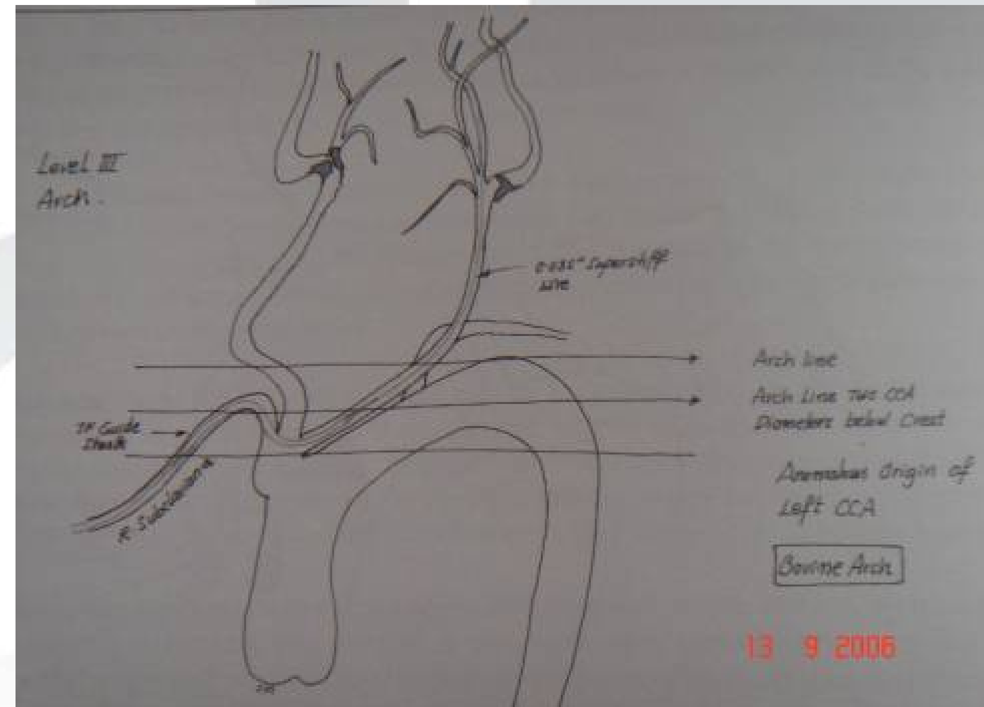




- ➢ Level III
- ➢ Difficult to approach, major risk of embolism

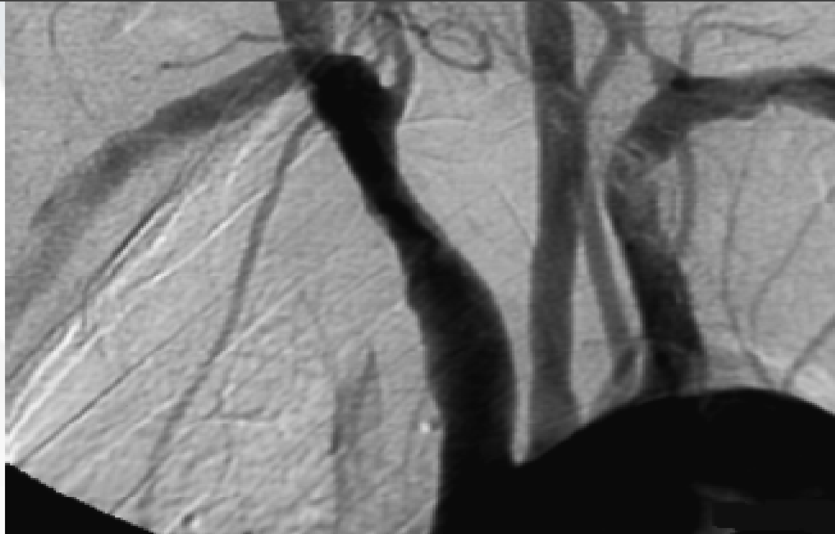
- C ABCT → 11 to 15 %
- Bovine Arch



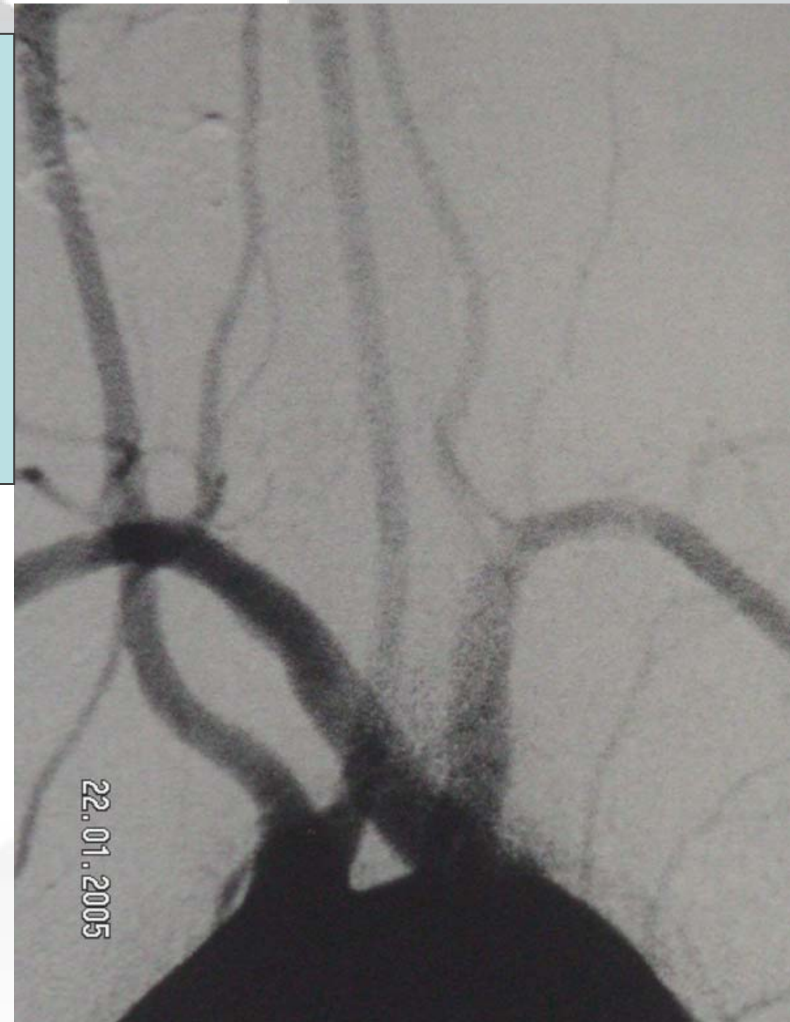


Variation of the disposition of the supra aortic truncks

Letf vertebral artery come from aortic arch : 8 %

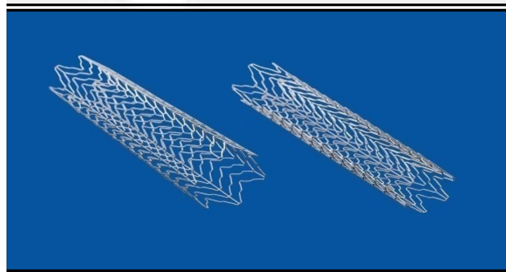


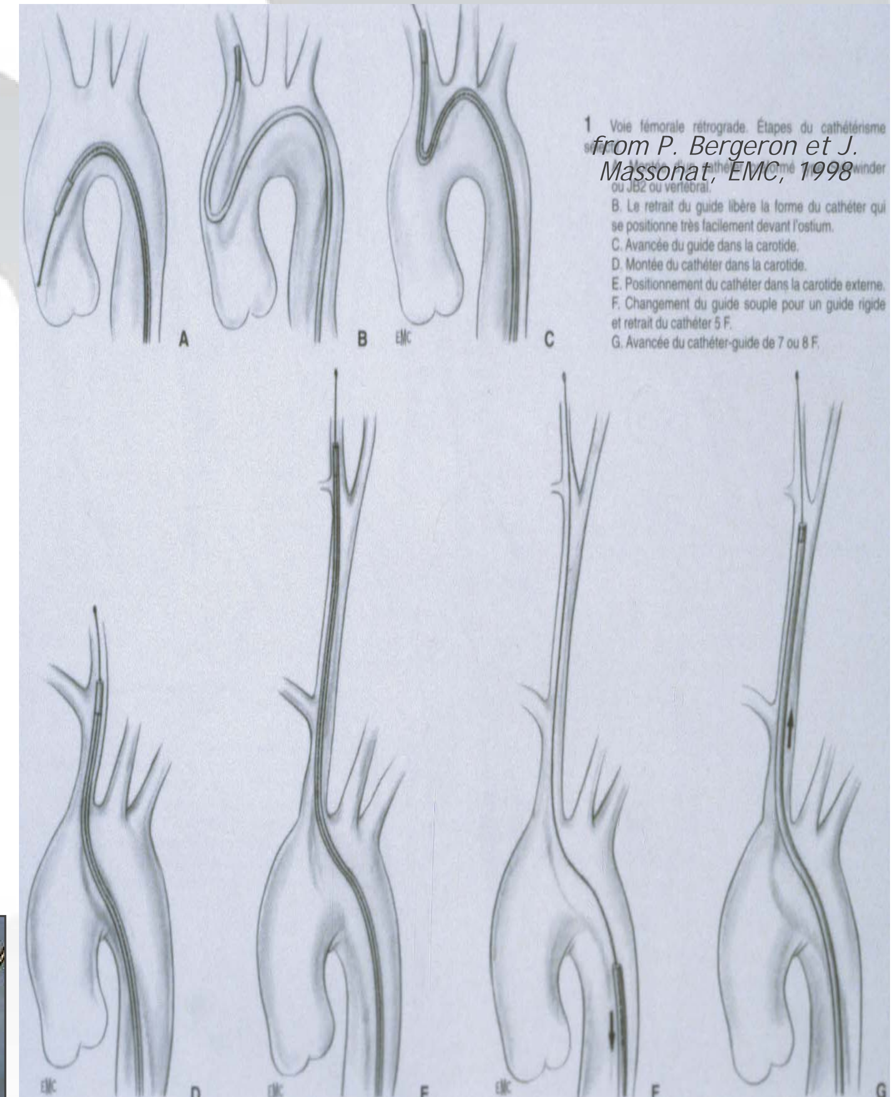
Aberrant right subclavian artery with left cross: 0,5 %



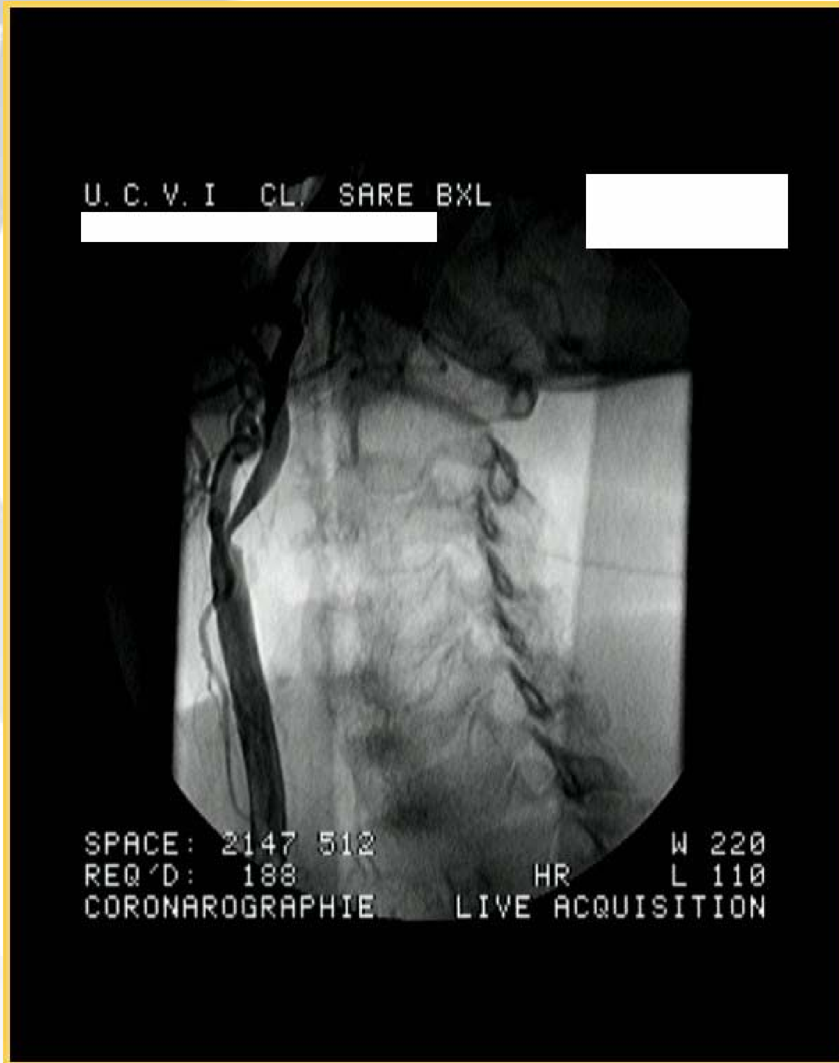
FEMORAL ACCESS

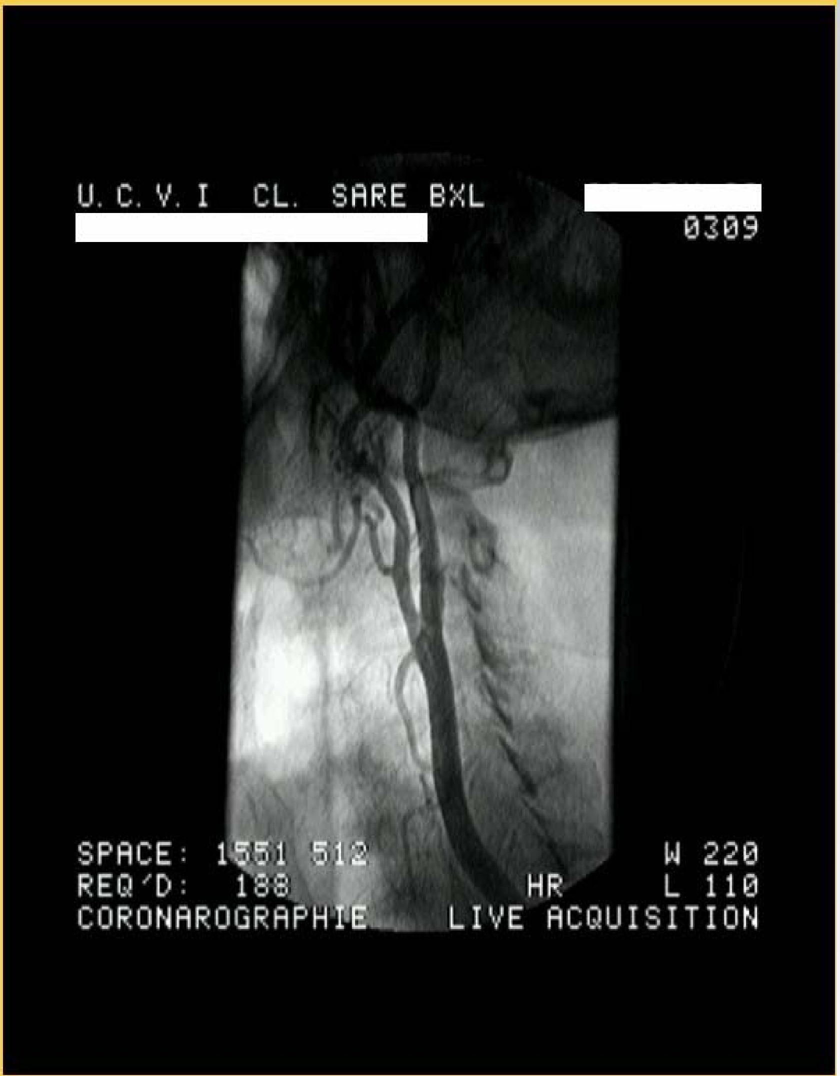
- CFA puncture, introducer 5 or 6fr
- Use an hydrophilic guide untill the aortic arch
- Selective catheterism of LPC or CBAT with diagnosis catheter
- Guidewire exchange, use a stiff GW inside the External Carotid artery
- Positioning of guiding catheter 8fr or long introducer 6 or 7 fr just under the 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


U. C. V. I CL. SARE BXL
SPACE: 2147 512
REQ'D: 188
HR
W 220
L 110
CORONAROGRAPHIE
LIVE ACQUISITION


U. C. V. I CL. SARE BXL
0309
SPACE: 1551 512
REQ'D: 188
HR
W 220
L 110
CORONAROGRAPHIE
LIVE ACQUISITION

OUR ROUTINE TOOLS

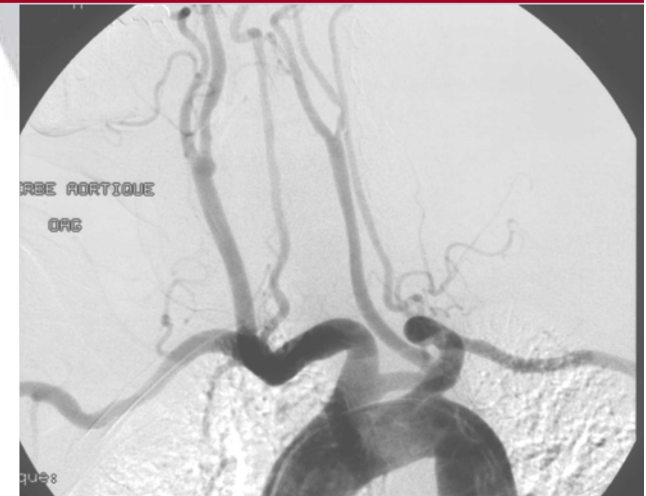
- Select adequate tools depending on each case
- Place long 6 or 7 Fr. introducer (90cm) with removable valve in the CCA.
- Use few diagnosis probes (125cm) :
  - <u>MPA (multipurpose) or vertebral</u>: right ICA
  - <u>VTK (Vitek)</u>: left ICA
  - Simmons 2 and 3 (100cm may be helpful): difficult arches
- 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 tortuosities
  - Stay in the more proximal portion of supra-aortic trunks
  - Choose highly profiled devices

CERVICAL ACCESS TECHNIQUE

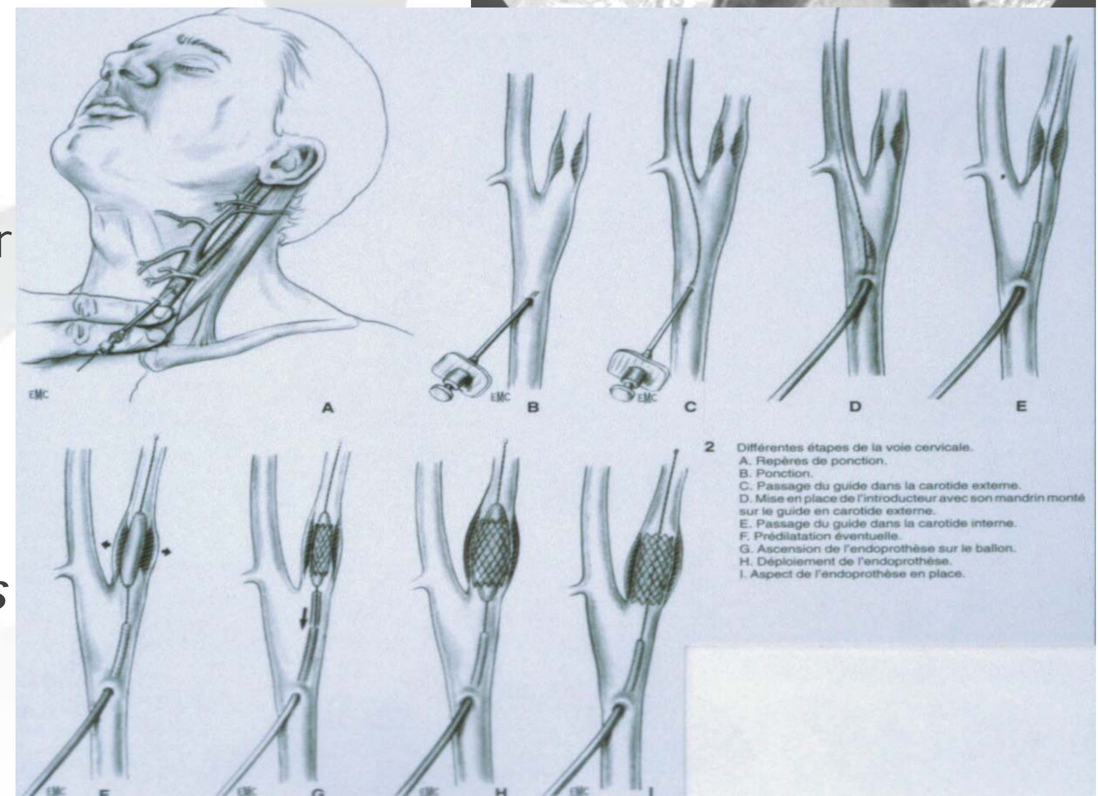
Cervical access is an easier alternative for surgeons while brachial or radial accesses need more expertise.



- *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