Stroke in a Young Woman

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Case History

- 42 year old right handed woman

- Awakened with sensation that “left arm fell asleep”

- Left arm and hand weakness – unable to grip items or make a fist

- PMH:
  - Hypertension
  - Tobacco Use (3-4 packs/week x 20 yrs)

- Medications: Labetolol 100 mg po bid
Case History

- Physical examination:
  - BP 155/92 P 86
  - No carotid bruits, + abdominal and femoral bruits
  - Muscle strength
    - Wrist flexor and extensor 0/5
    - Grip 0/5
    - Finger abductor 0/5

- Laboratory studies:
  - Total chol 245, LDL 177, HDL 48
Case History

- Admitted to Neurology service
- Outside time window for rTPA
- Started on:
  - ASA 81 mg qd
  - Atorvastatin 40 mg qd
  - Labetolol 100 mg bid
- Echocardiogram – no significant abnormalities
- MR of the brain and MRA obtained
MR of the Brain

Axial DWI

Coronal DWI
MRA of the Neck Vessels
Case History

- Some improvement in left hand function
- No new neuro deficits on ASA
- Treated with permissive HTN
- CTA of head and neck vessels ordered
What Would You Do Now?

A. Continue with medical therapy – no new symptoms on ASA and Atorvastatin
B. Anticoagulation
C. Carotid surgery
D. PTA of the Carotid artery
E. Additional testing
Carotid Duplex

RT ICA DISTAL

FR 36Hz 60°
FRP 2.0
2D
27%
C 55
P Med
HGen

PW
52%
WF 160Hz
SV 2.0mm
M3
2.3MHz
3.7cm

R Dist ICA
PSV 806 cm/s
EDV 451 cm/s

6.6 sec
Angiography
Carotid Angiography
What Approach?

A. Balloon angioplasty alone – no EPD
B. Balloon angioplasty with distal EPD
C. Balloon Angioplasty with proximal EPD
D. Carotid Stenting
Procedural Approach

- Plavix 600 mg load
- PreClose Technique – ProGlide device
- 9 Fr Terumo Long sheath
- Heparin to keep ACT > 250 sec
- MoMa Proximal embolic protection system
- Balloon angioplasty
Proximal Embolic Protection
Duplex Ultrasound Post Procedure

FR 18Hz 60°
2D 59%
C 50
P Low
Gen
CF 86%
3000Hz
WF 165Hz
Med
RT ICA MID
PW 54%
WF 60Hz
SV1.5mm
M2
3.5MHz
2.8cm
PSV 153 cm/s
EDV 47.1 cm/s
6.6sec
Clinical Course

- **Immediate post op:**
  - No neurologic complications

- **One month:**
  - Hand strength improved – almost to baseline
  - BP controlled on Labetolol
  - Patient stopped smoking
  - One month of clopidogrel, ASA indefinitely