Aneurysm clipping - In the Era of Endovascular Neurosurgery

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CASE

- 45 YR Male
- C/o thunderclap headache since 10 days
- Which associated with multiple episodes of vomitting since 2 days.
- H/o seizures- General tonic clonic seizures since 2days.

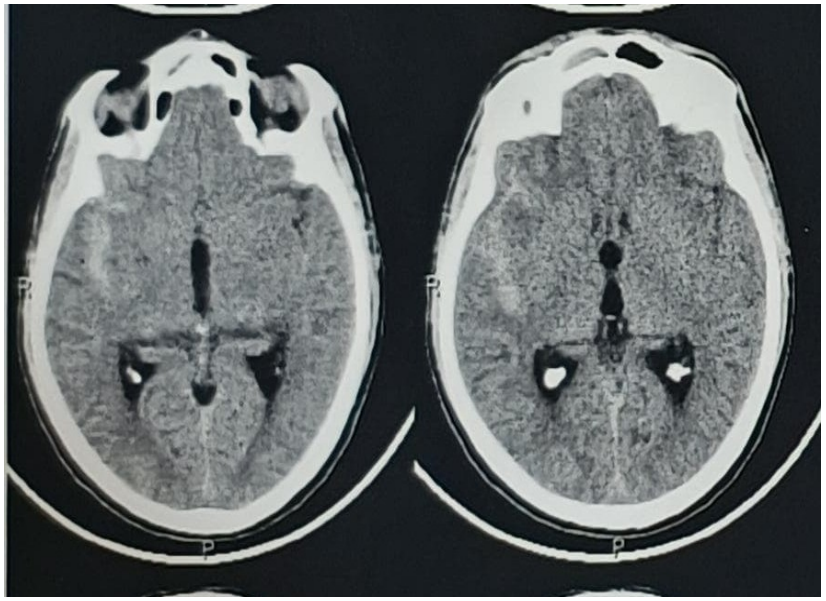
- On examination

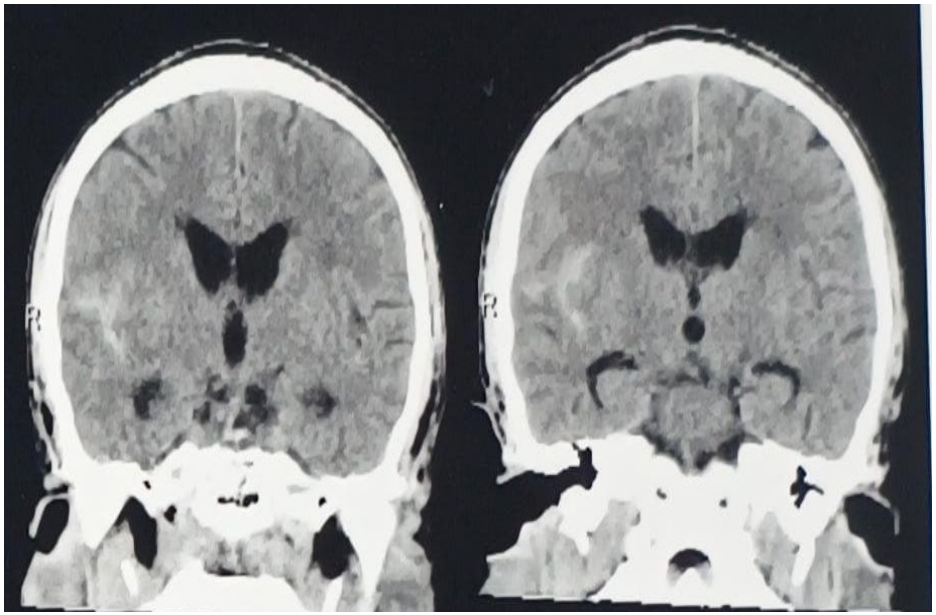
✓ GCS E3V5M6

✓ Pupils bilaterally equally RTL

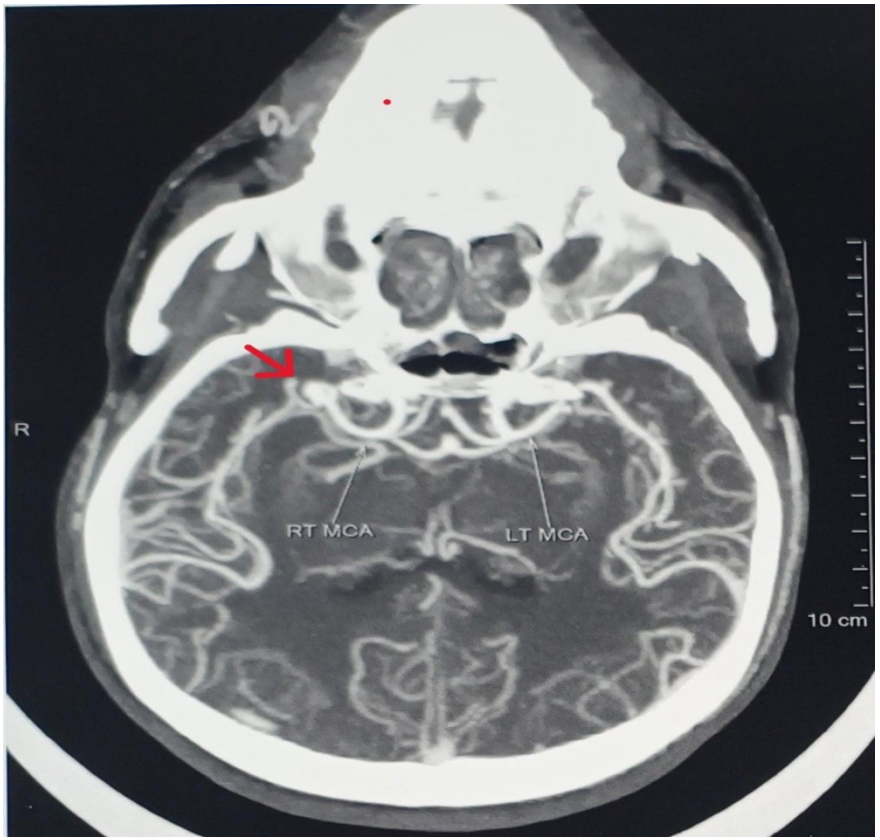
✓ No motor deficits

NCCT Brain



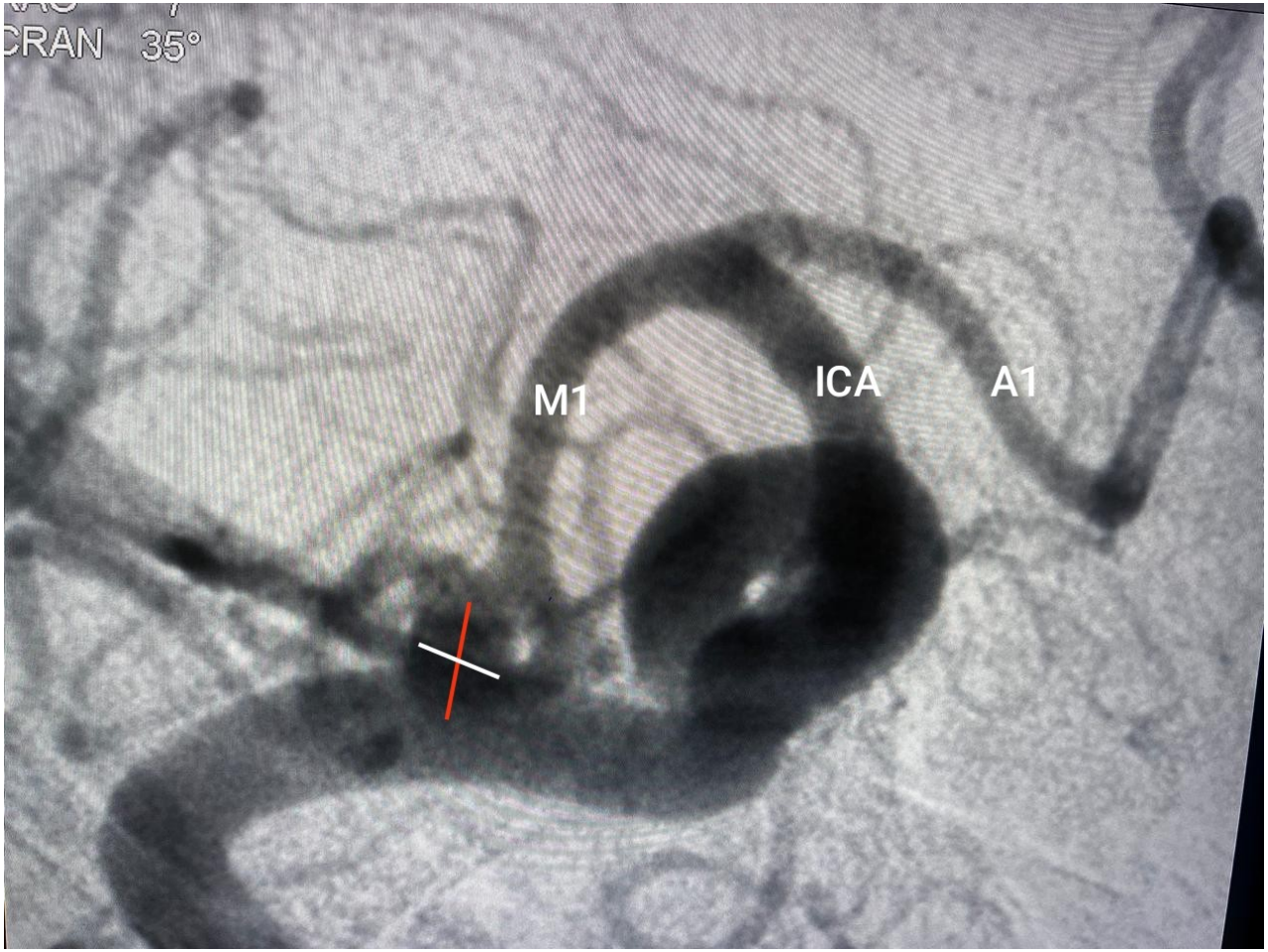


CT Angiography



- CT Angiography shows a saccular aneurysm of 7.7x7x3.3 mm in M1 Segment of MCA

DSA

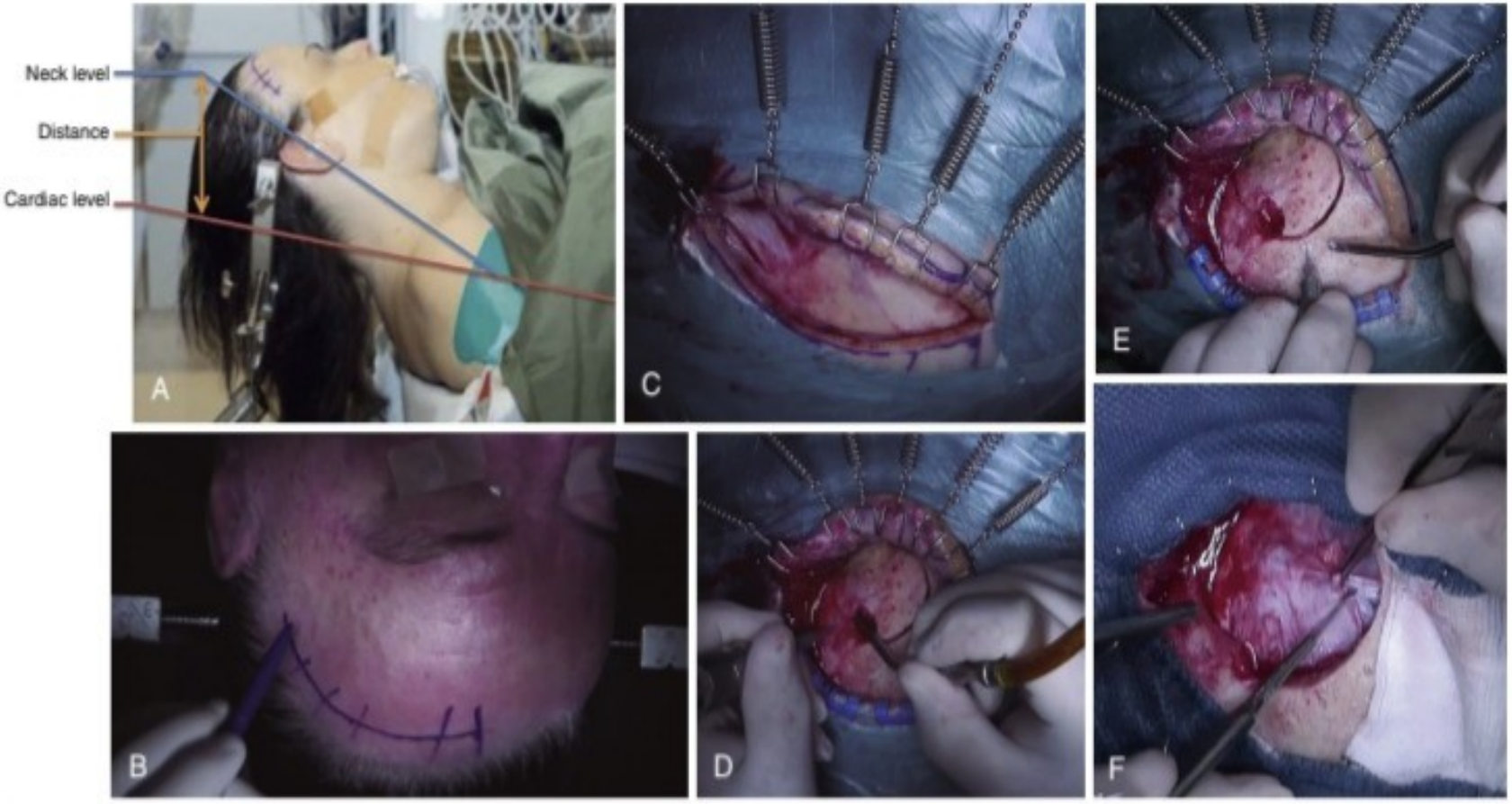


- A 4.6 x 3.5 mm Saccular aneurysm with neck of diameter 2.8 mm seen at the MCA bifurcation, pointing infero-laterally and directed posteriorly.

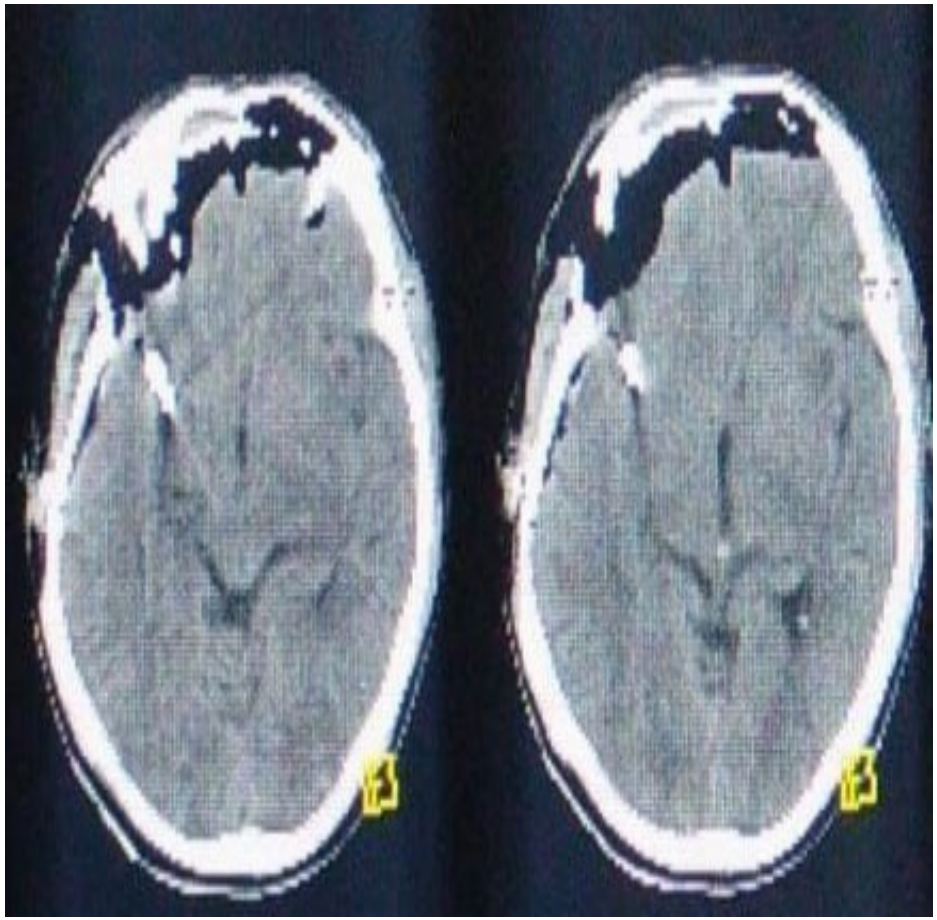
Treatment

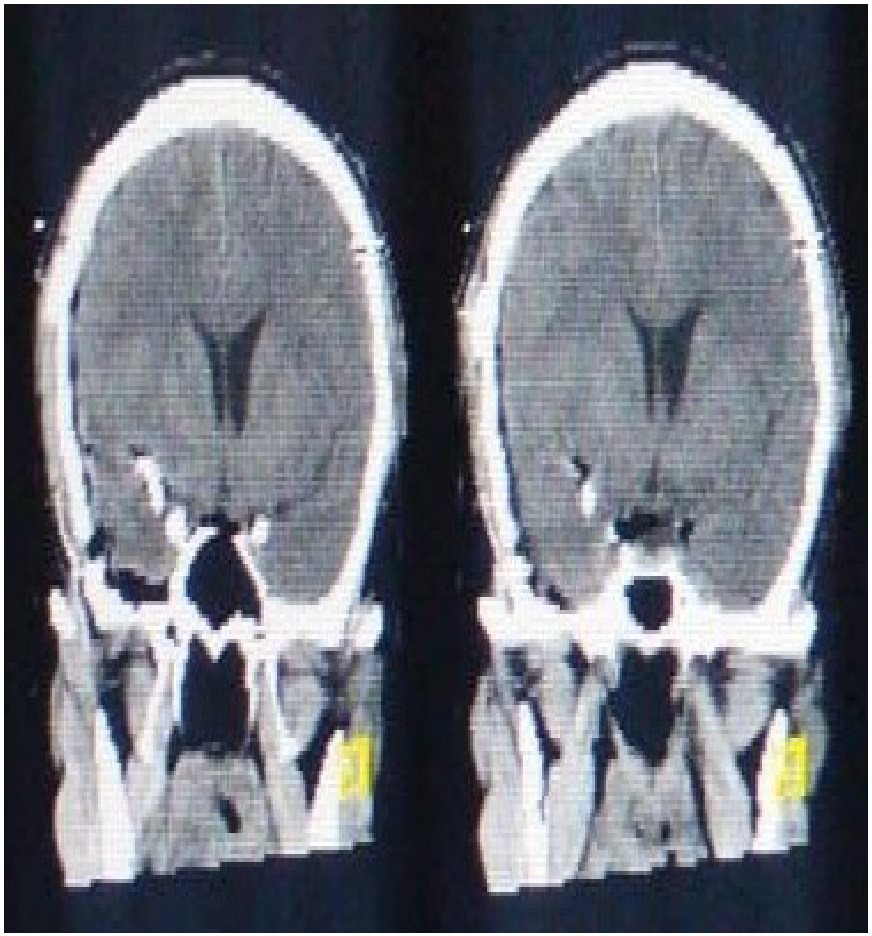
- Patient and relatives given both options; stent assisted coiling and clipping of the ruptured MCA bifurcation aneurysm.
- But due to financial constraints opted for clipping of the aneurysm.

Position and craniotomy



Post op NCCT Brain





Post op DSA

- Post of period was uneventful and no neurodeficit was present in post op period.
- And was discharged on POD 8.

MCA Aneurysm

- M1 (sphenoidal)

  Lateral lenticulostriate artery

  Anterior temporal artery
- M2 (insular)
- M3 (opercular)
- M4 (cortical)

Classification

- Morphology

  Saccular aneurysms : most common

  Fusiform aneurysms

  Blister aneurysm : less common

  Extremely dysmorphic or distal aneurysms are usually infectious M4 branch

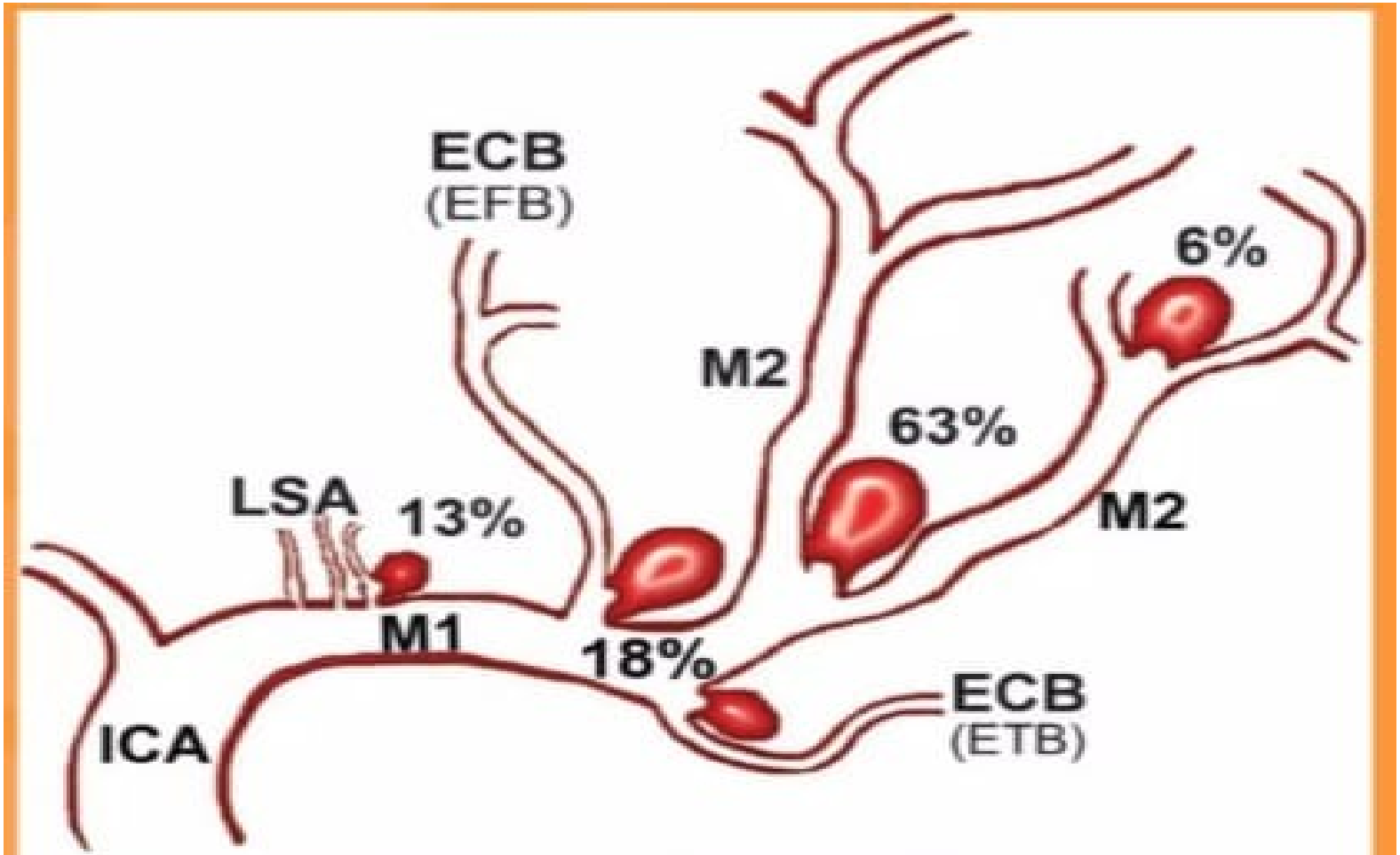
- Size

  Small (<5mm)

  Medium (5-10 mm)

  Large (11 to 25 mm)

  Giant (>25mm)



4-group classification of 1309 MCA aneurysms:

M1-LSAAs:	13%	M1-ECBAs:	18%
MbifAs:	63%	MdistAs:	6%

Presentation

- Hemorrhage – SAH / parenchymal
- Seizures
- TIA – Giant
- Speech deficits / motor weakness

Treatment

- MCA aneurysm are preferentially clipped at most centres

✓ Frequently broad-based configuration

✓ The relatively small caliber of surrounding branches often precludes the use of stents

✓ Their classic bifurcation location makes recurrence more likely

Conclusion

- No aneurysm should be considered for treatment without bringing to bear all tools that are currently available at a given center of excellence.
- Favorable outcome more likely in institutions that treat high volume of patients with aneurysms
- Both open and endovascular neurosurgery should go hand in hand with a dedicated team for making evidence based decisions.