

# Thromboembolic Stroke: Vascular Anatomy, Histology, and Differences From Acute Myocardial Infarction

*Joey English MD PhD*

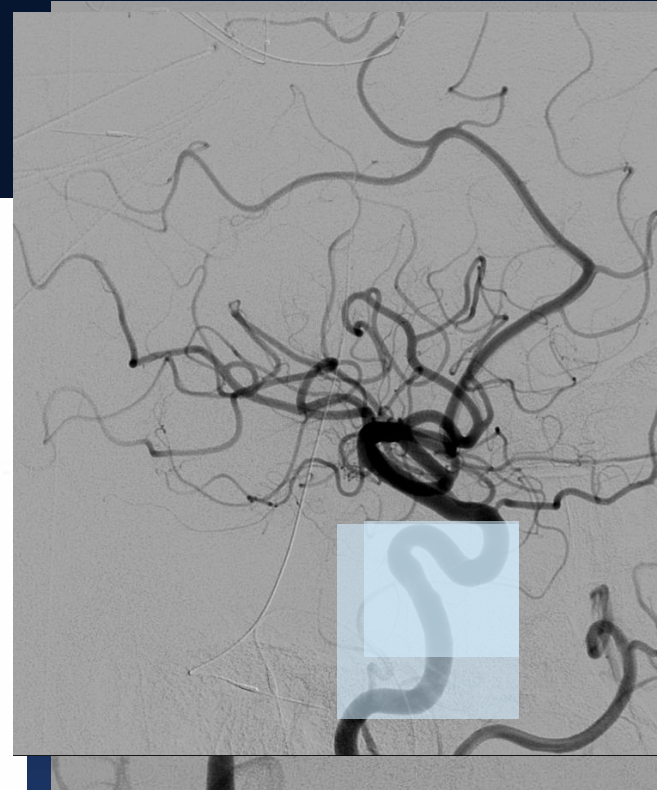
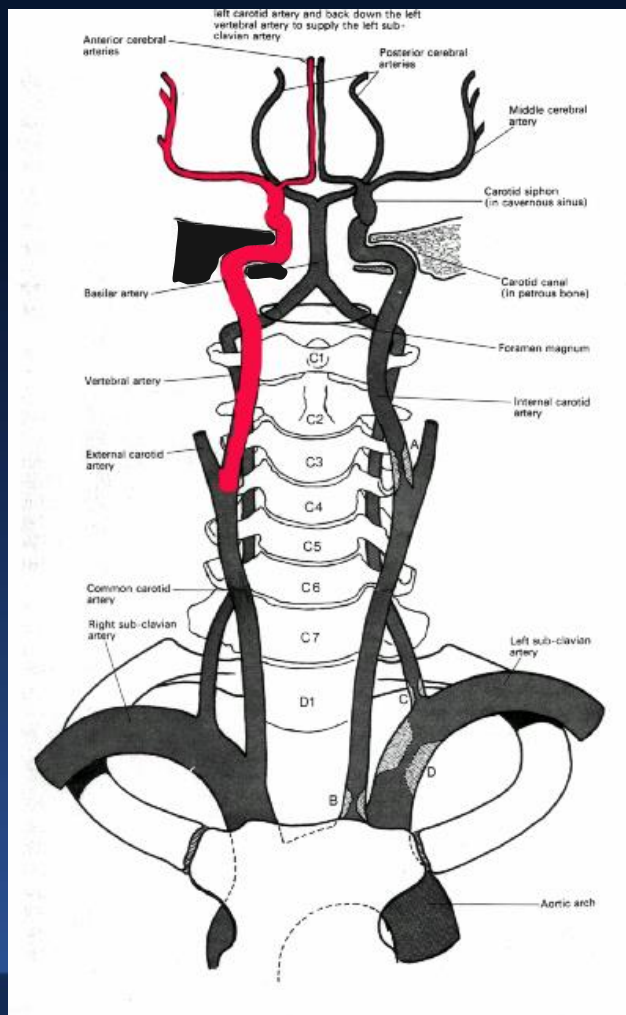
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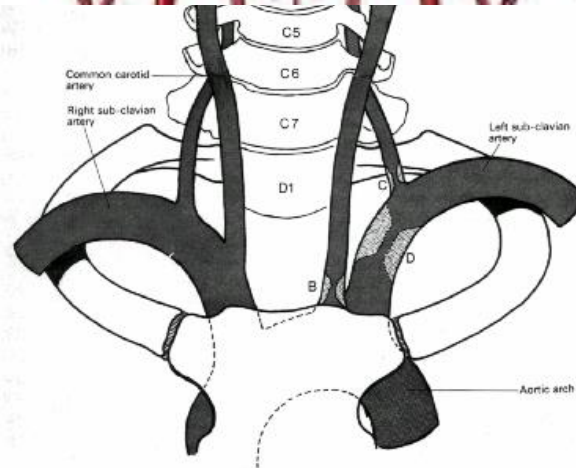
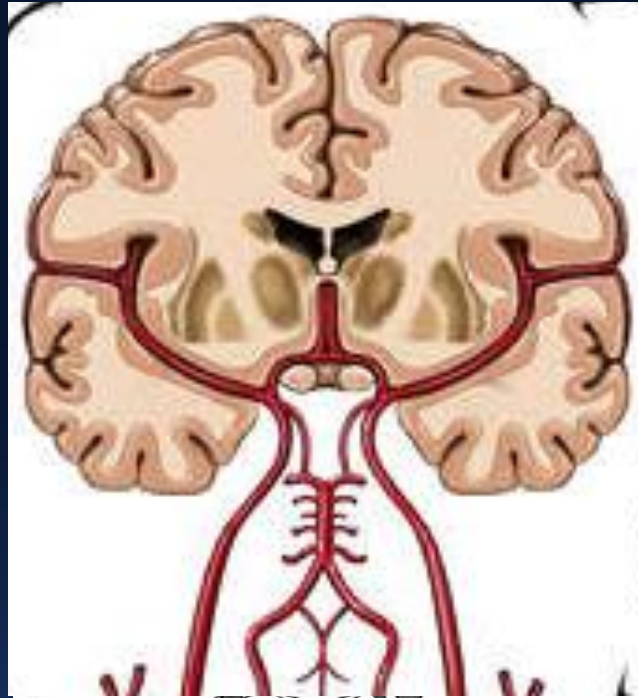
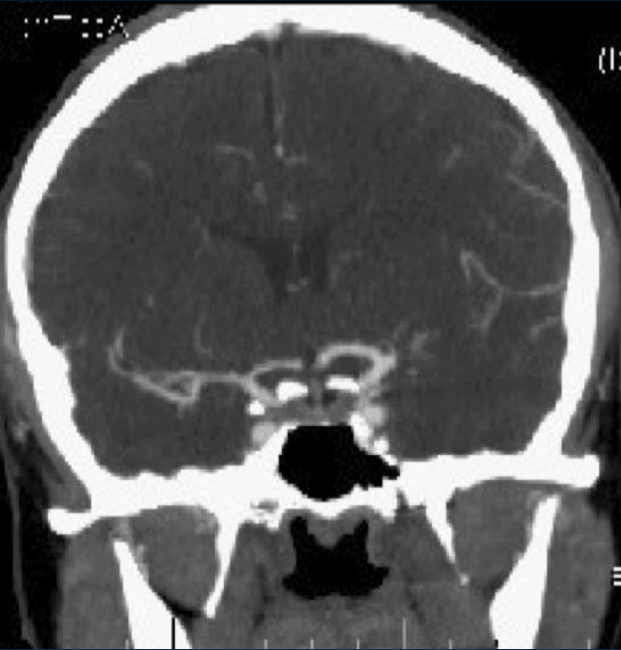
# Disclosure Statement of Financial Interest

**I, Joey English, DO NOT have a financial interest/arrangement or affiliation with one or more organizations that could be perceived as a real or apparent conflict of interest in the context of the subject of this presentation.**

# Cerebrovascular Anatomy

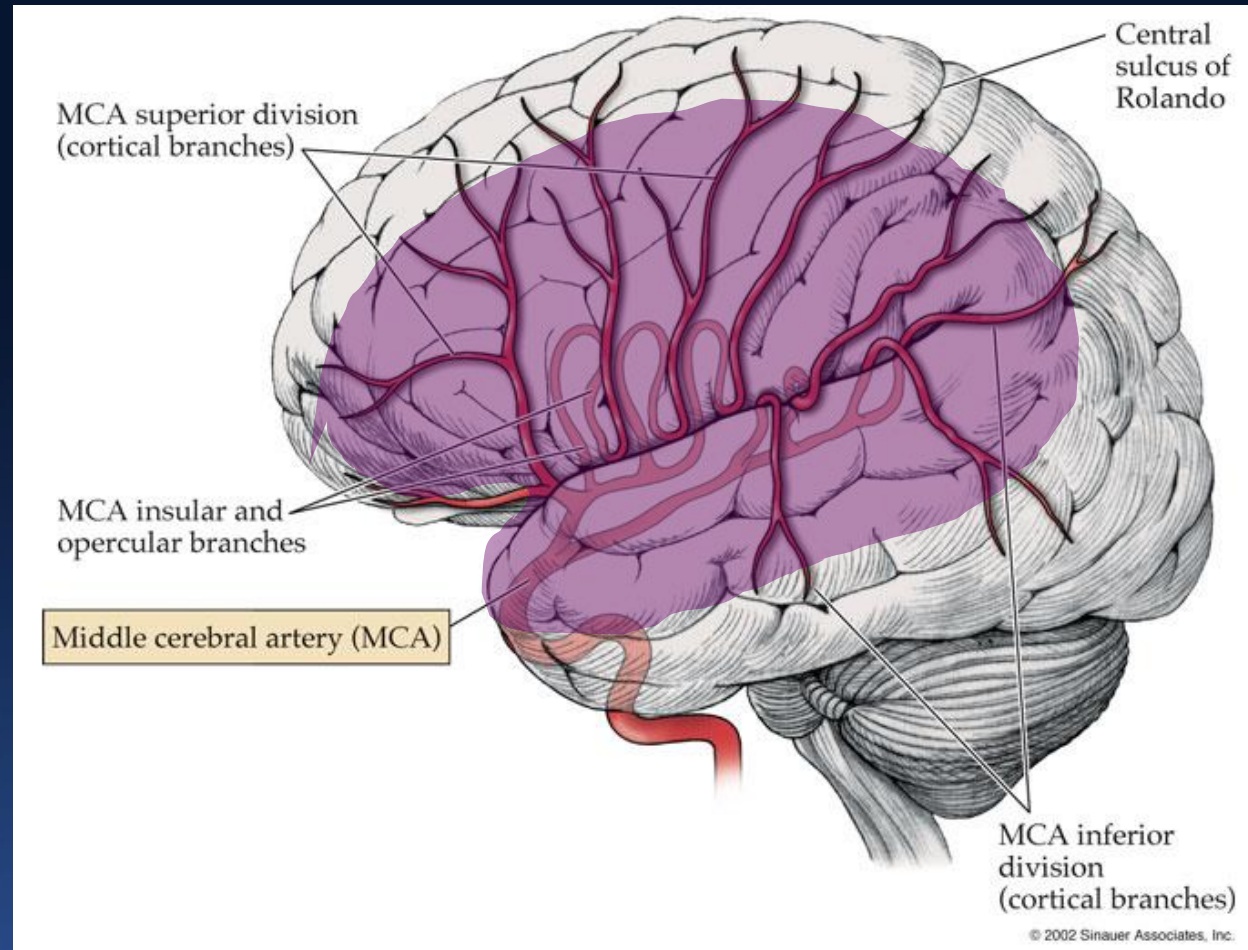
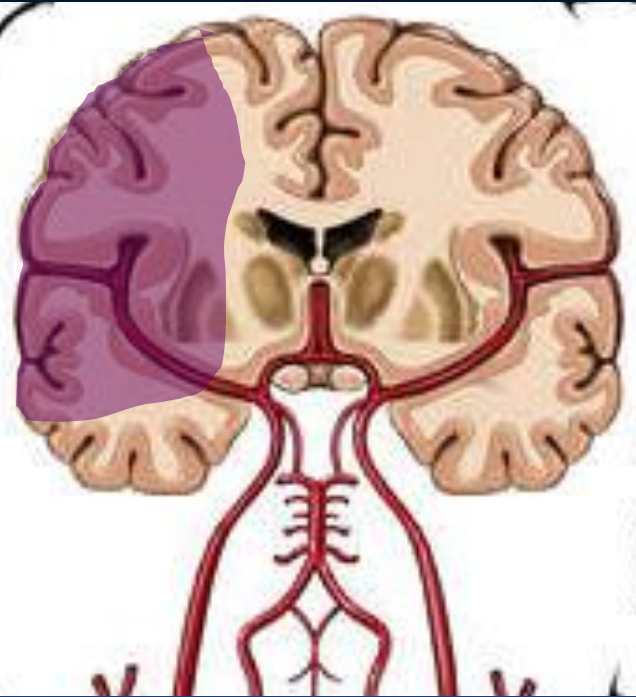


# Cerebrovascular Anatomy

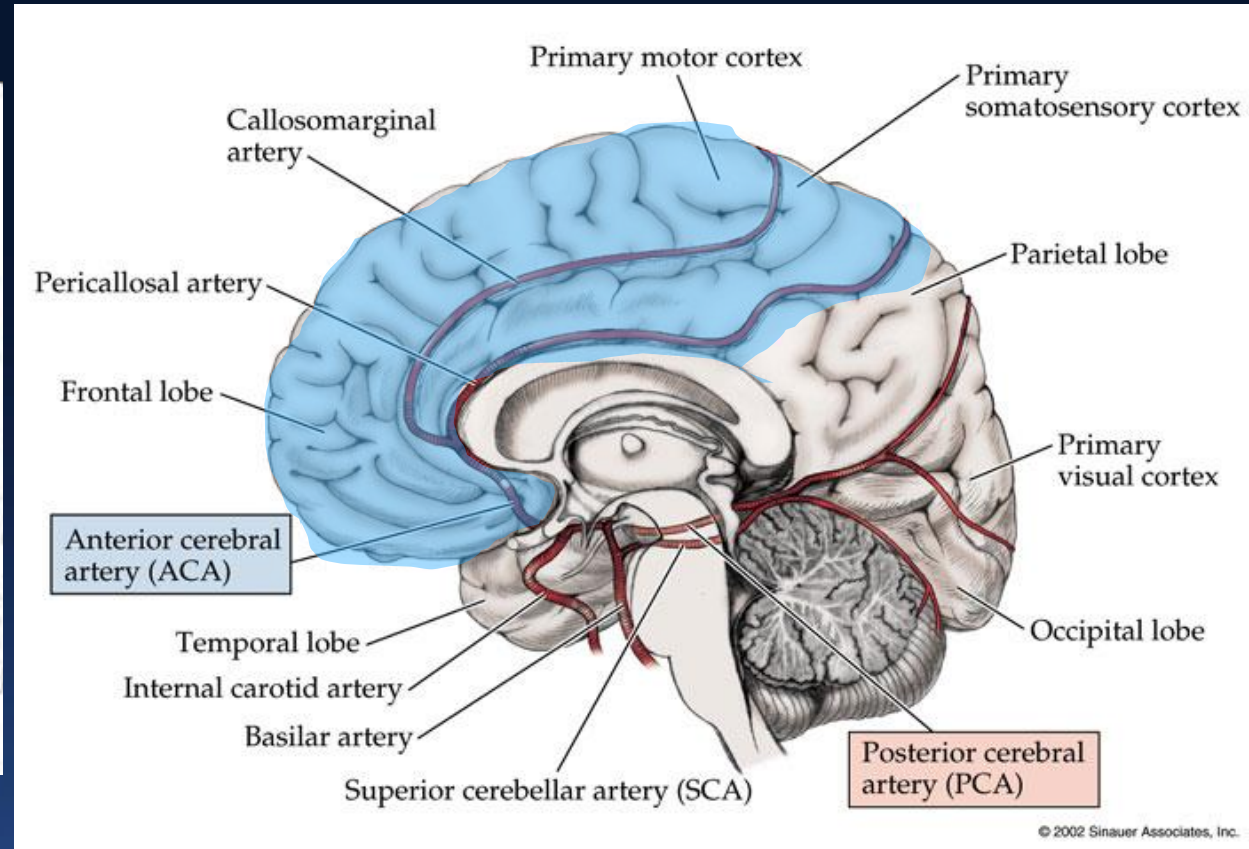
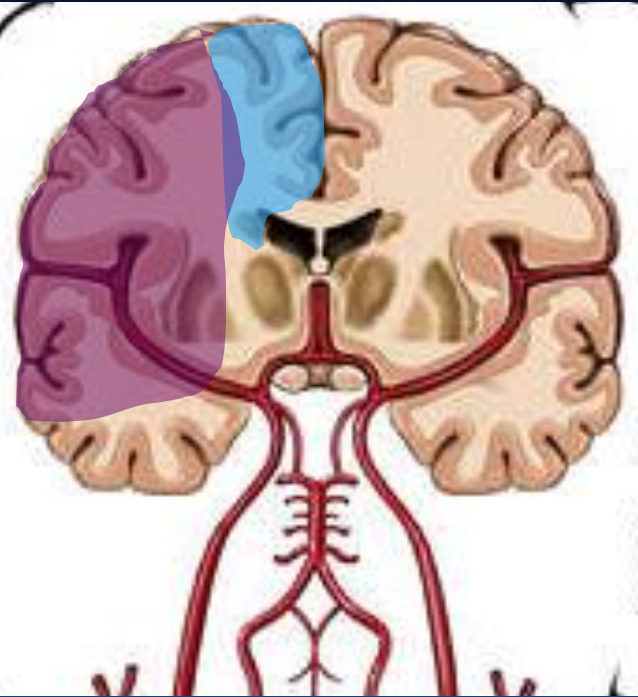




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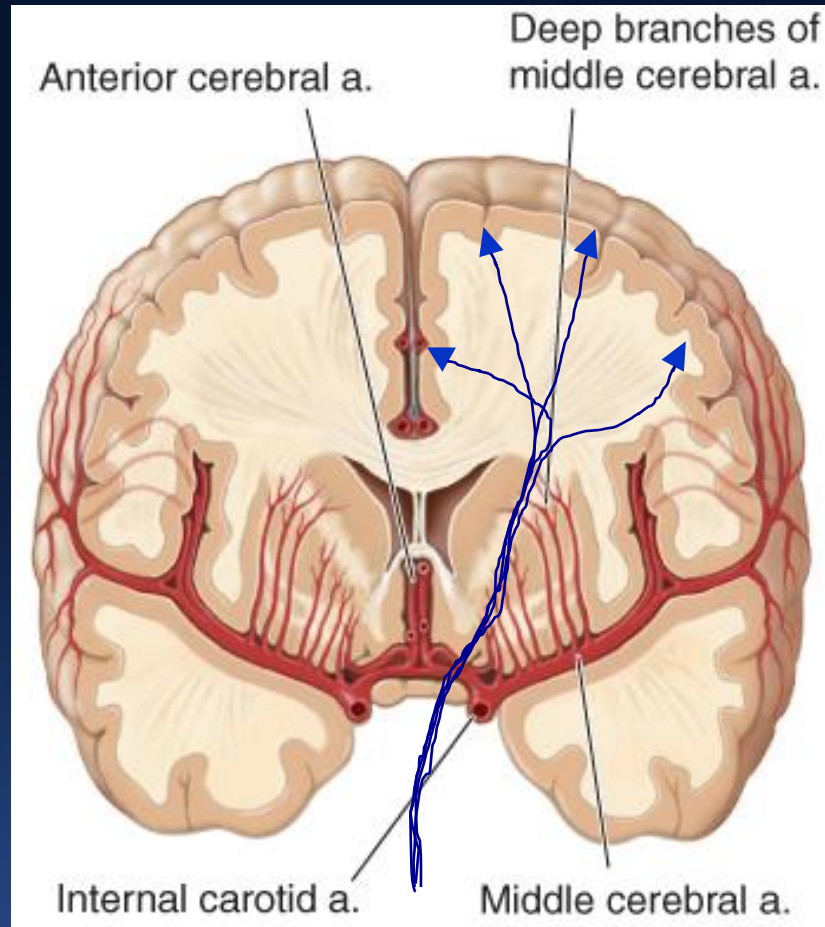
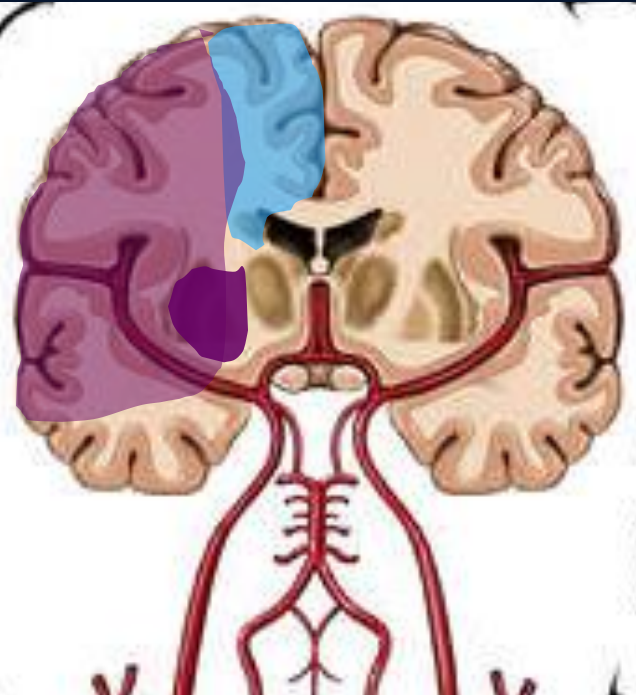


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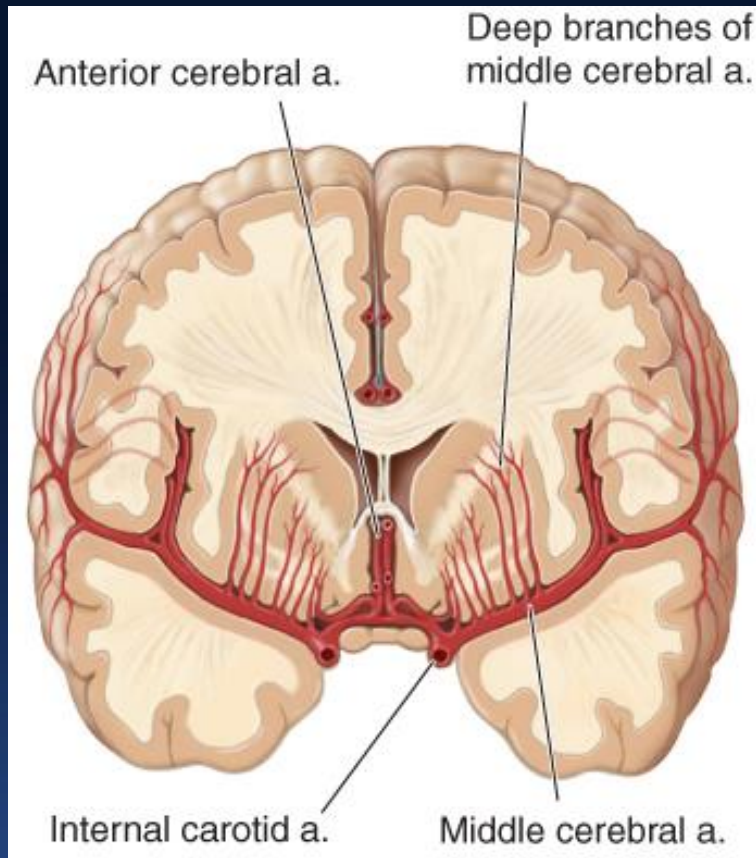
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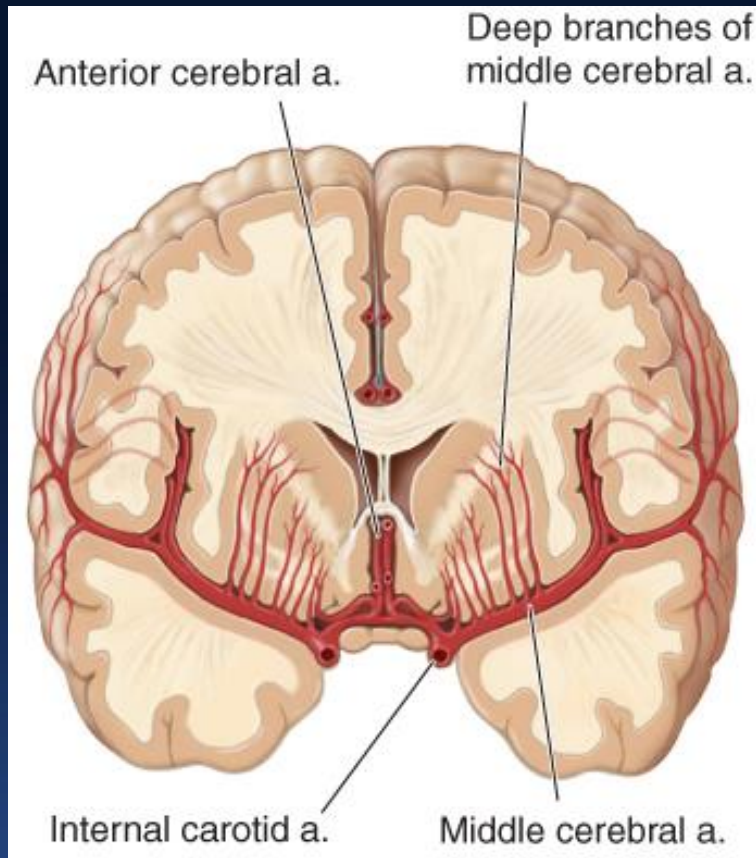


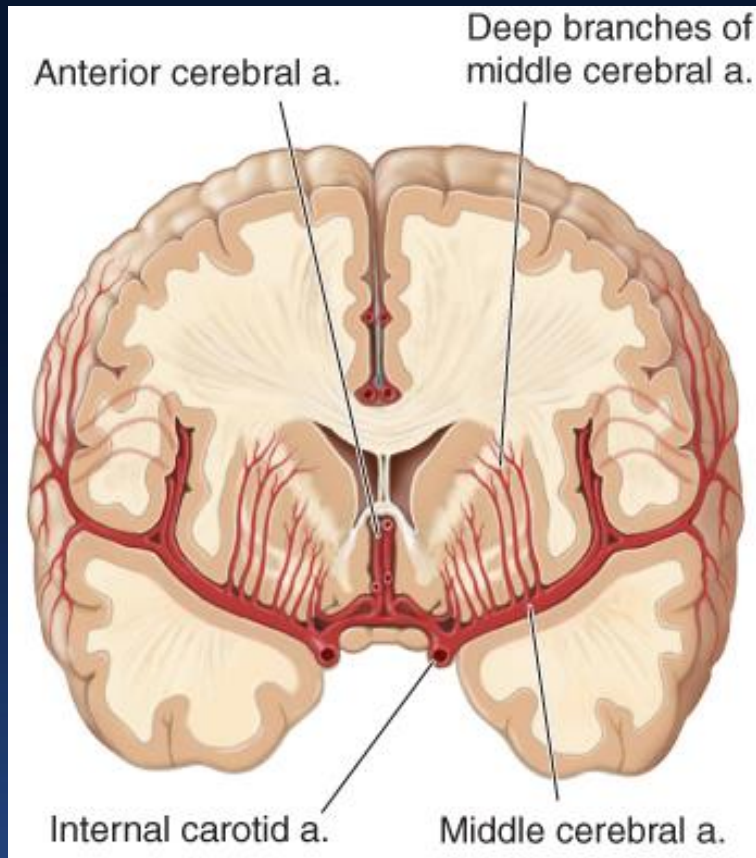
LAD 18°  
0°



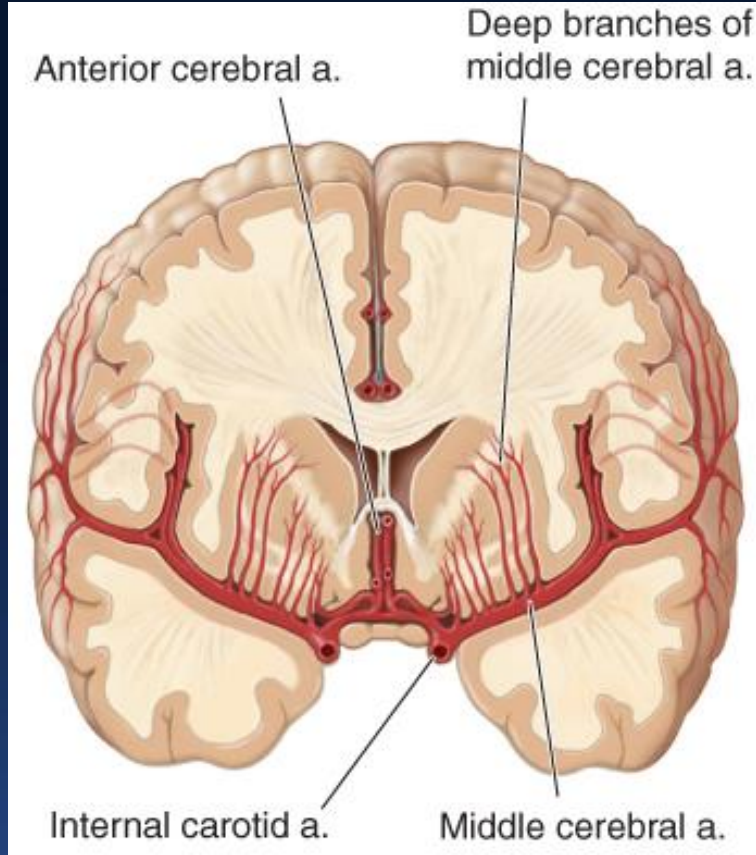




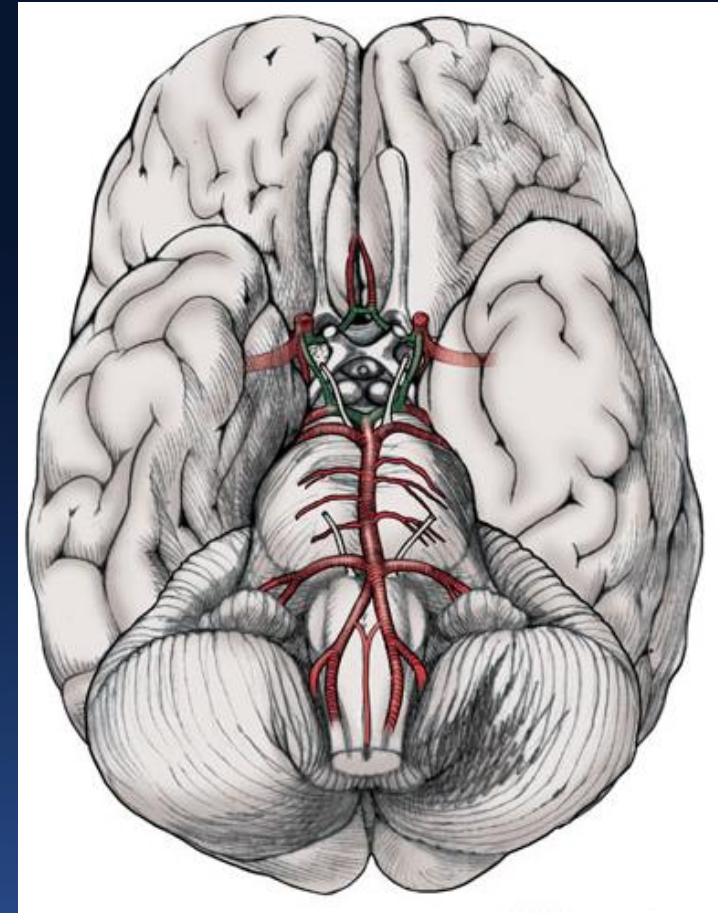
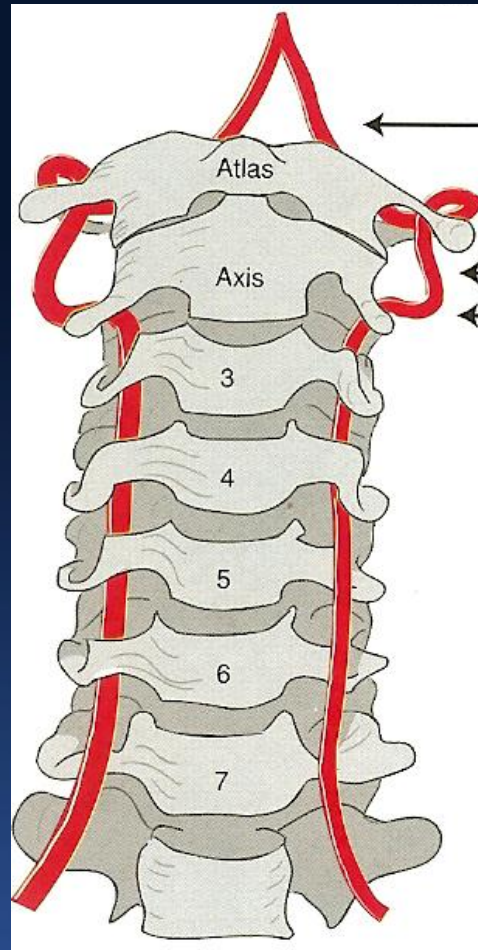
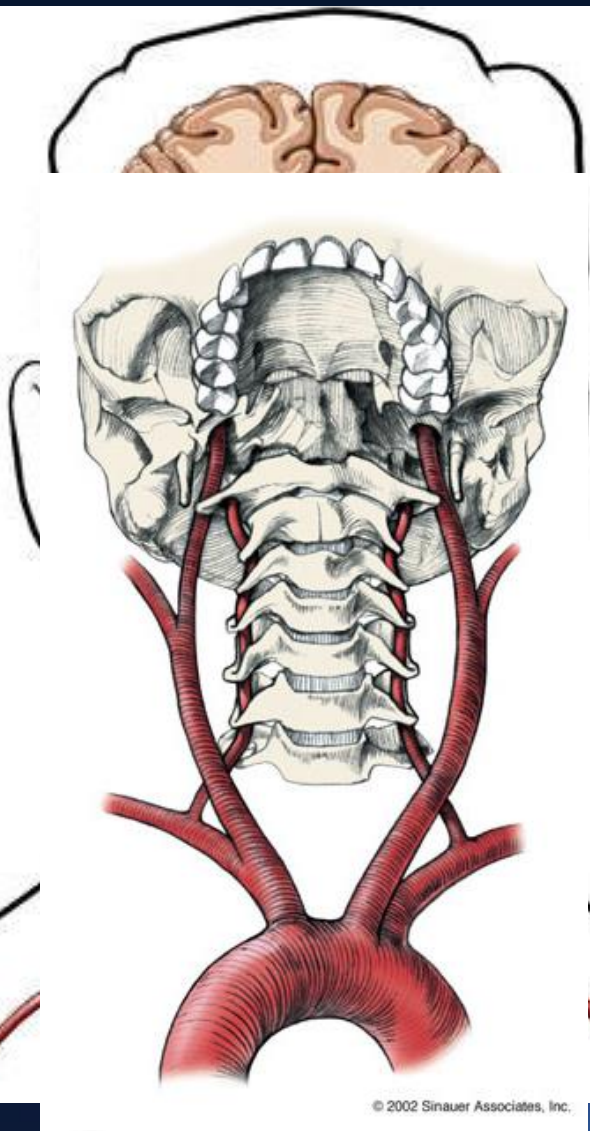






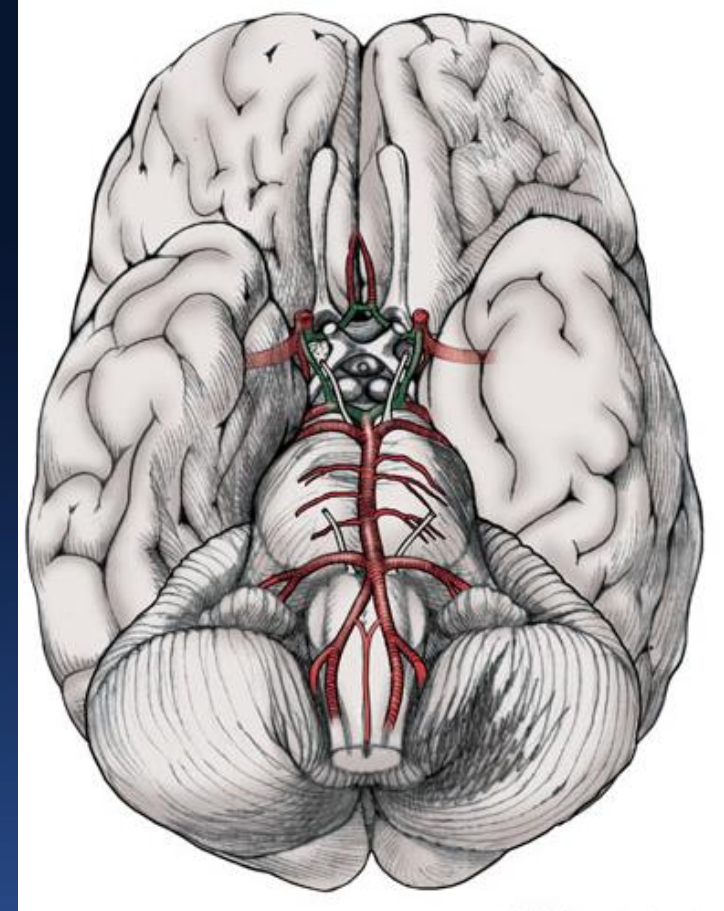
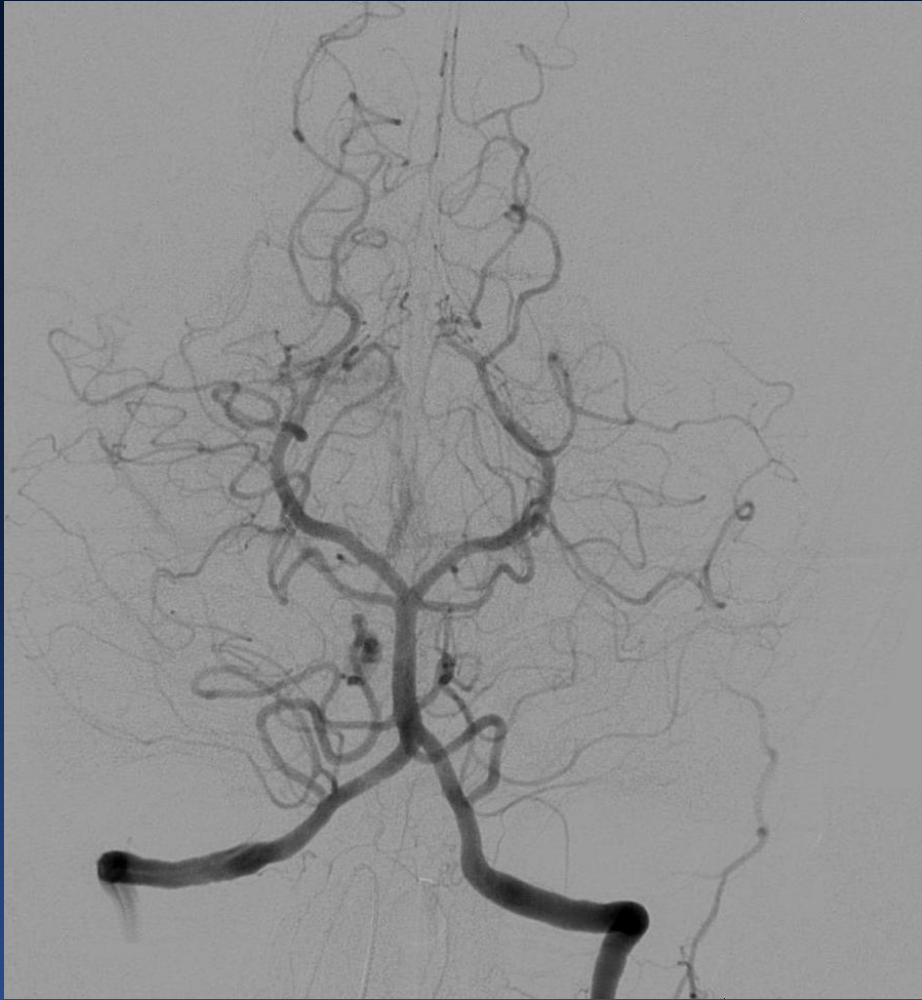


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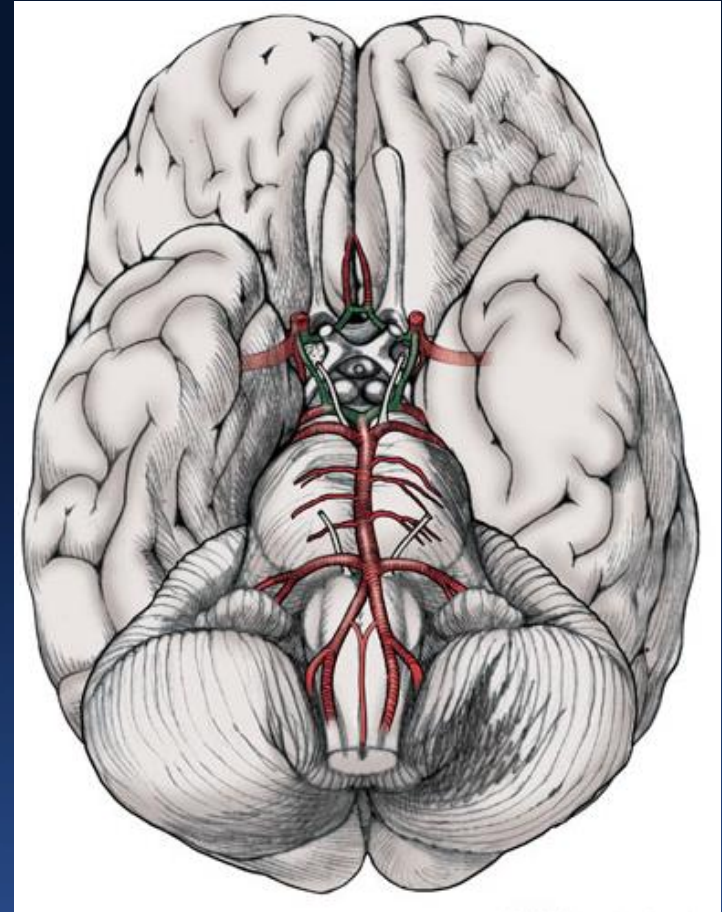
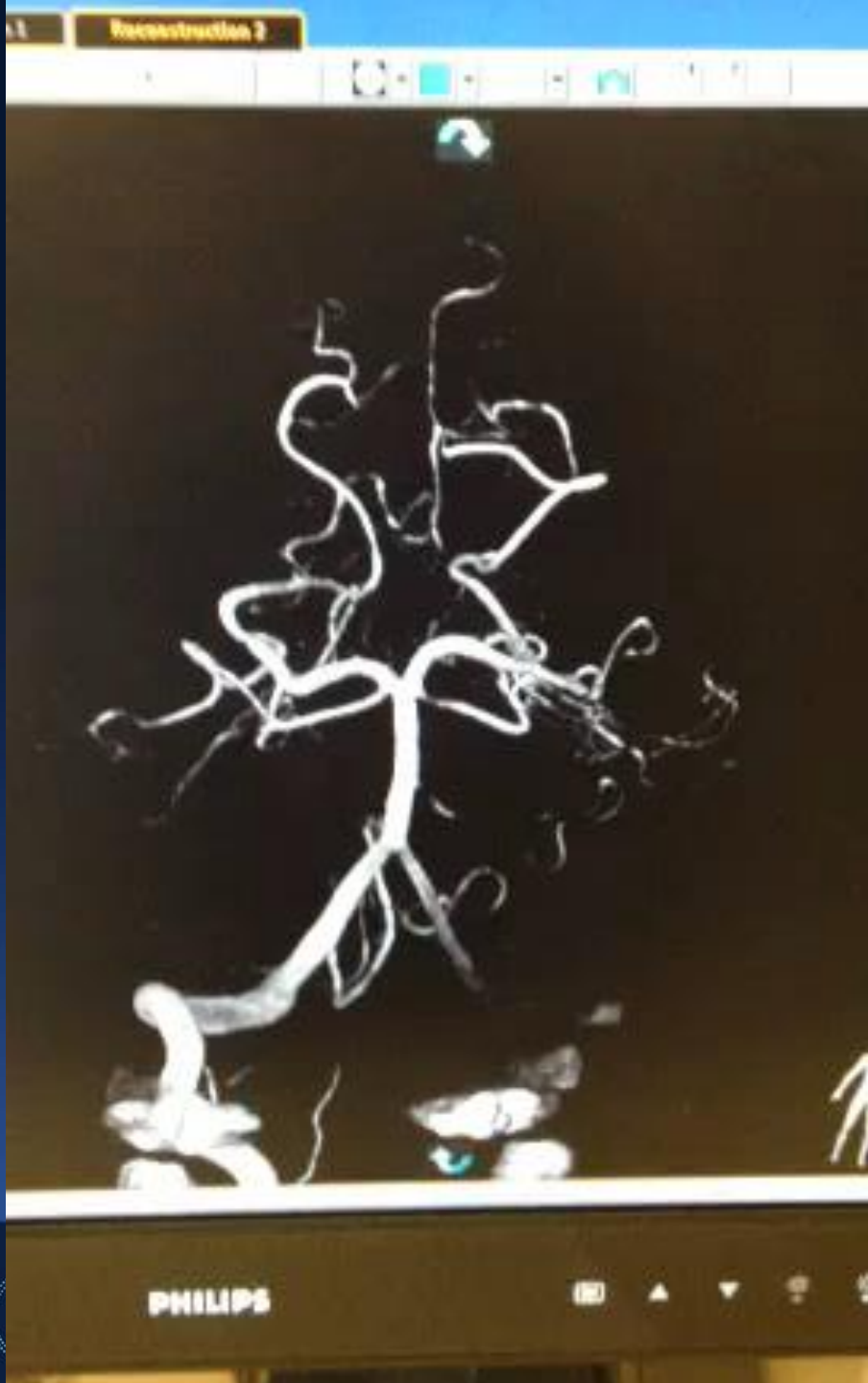




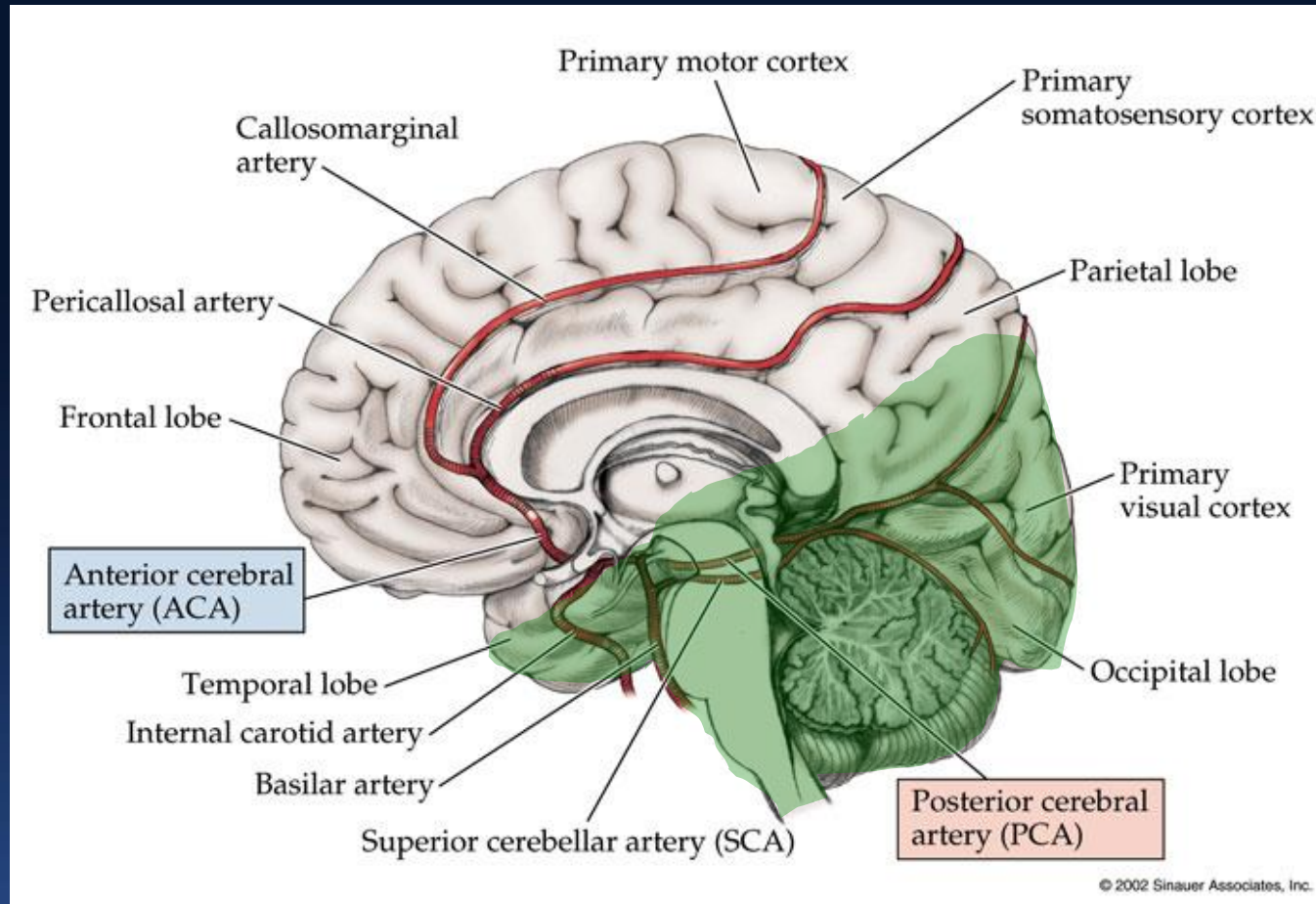
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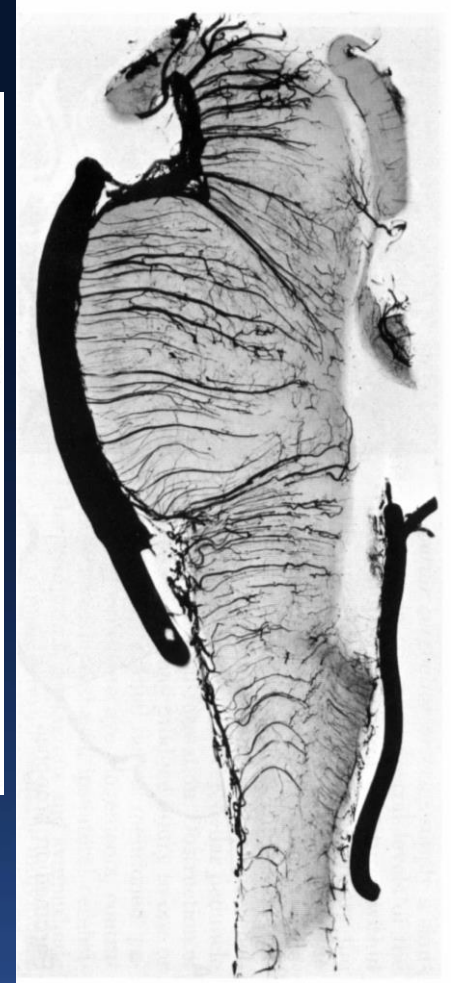
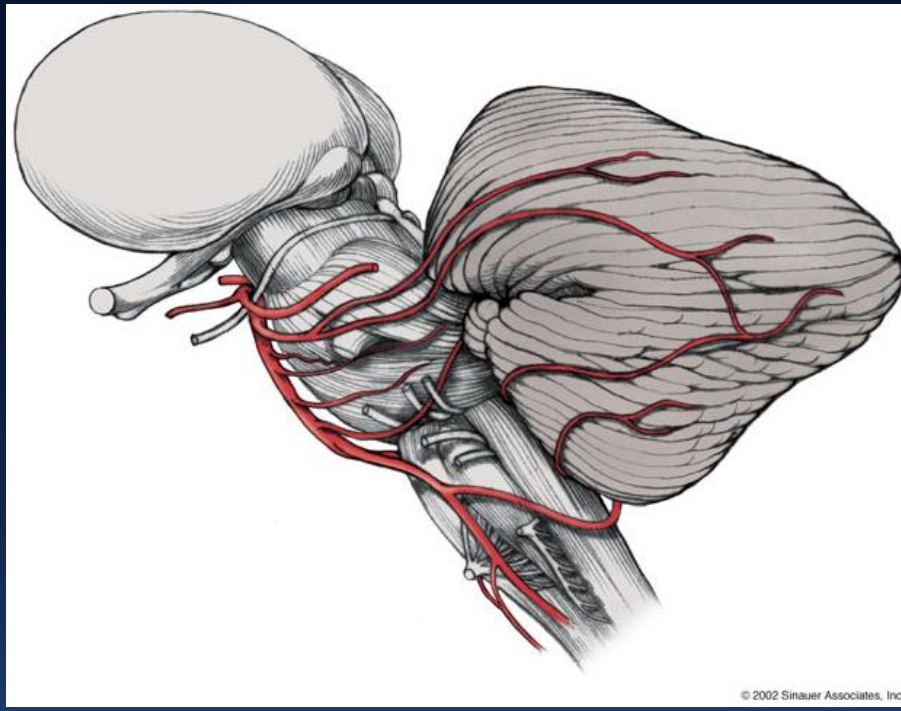
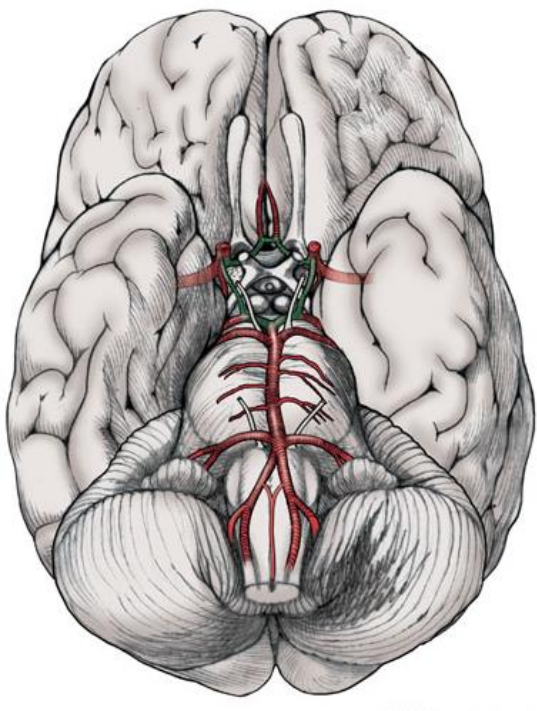




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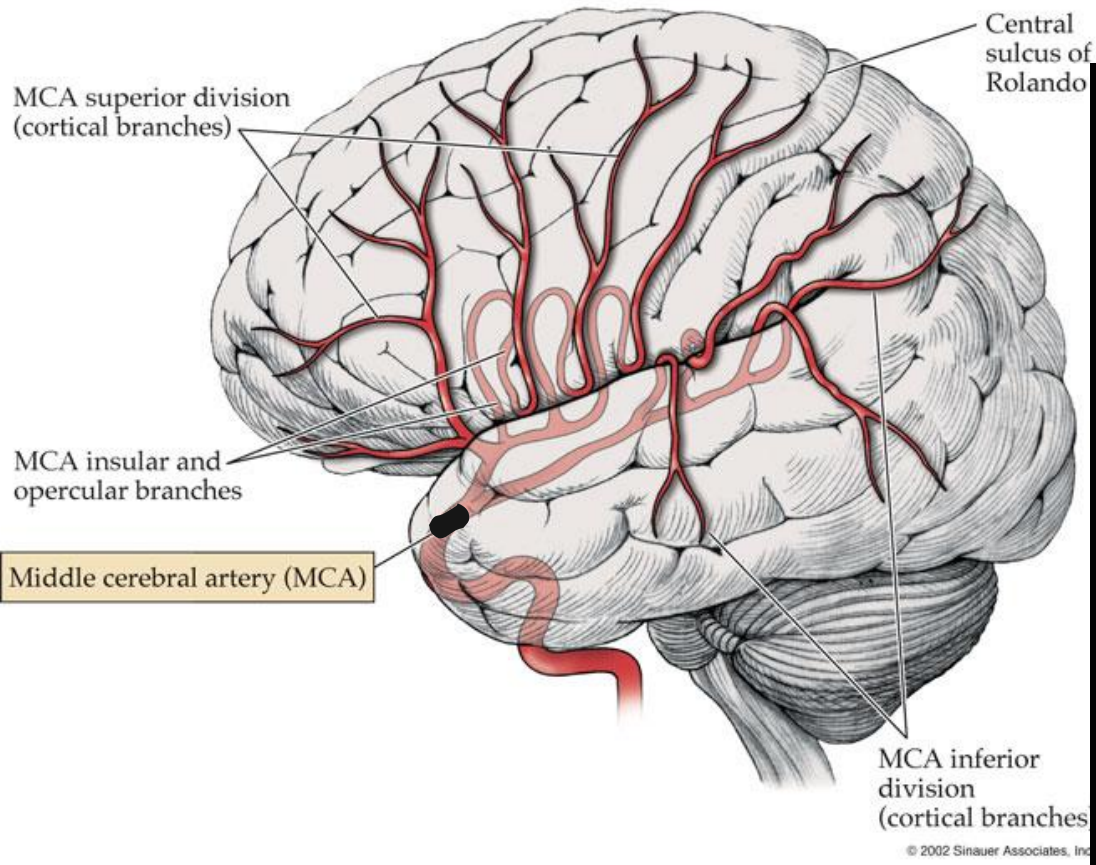


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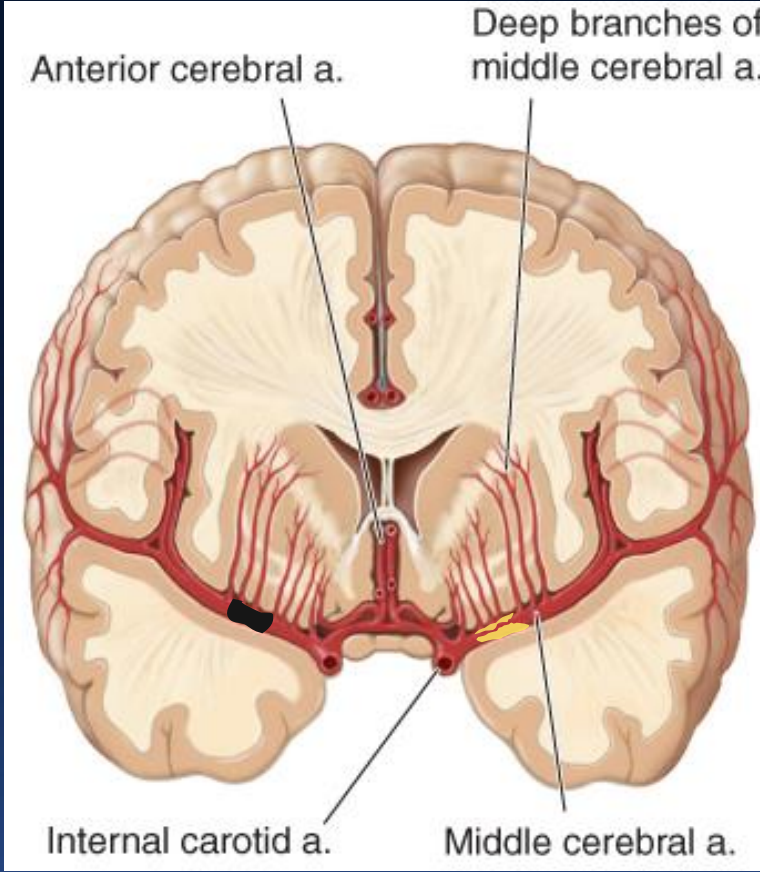
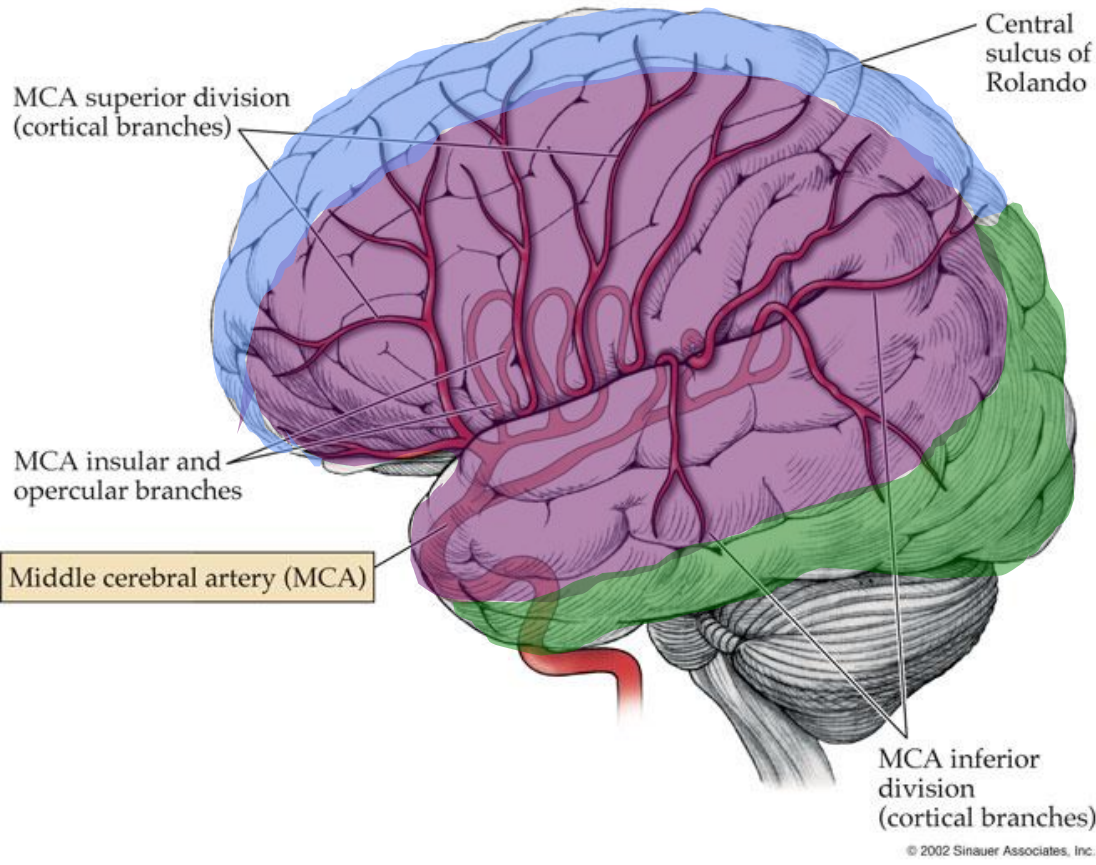




# Ischemic Stroke Mechanisms



# Intracranial Large Vessel Occlusions



LAO 3°  
CRAN 35°  
FD 10.5 inch

0:00  
0:00  
10:40:04

4  
1-1

RAO 90°  
CRAN 0°  
FD 10.0 inch

0:25  
0:25  
10:40:04

4  
1-1



LAO 18°  
CRAN 41°  
FD 6.0 inch

0:00  
0:00  
10:40:55

5  
1-1

RAO 90°  
CAUD 5°  
FD 6.0 inch

0:25  
0:25  
10:40:55

5  
1-1

LAO 10°  
CRAN 40°  
FD 10.5 inch

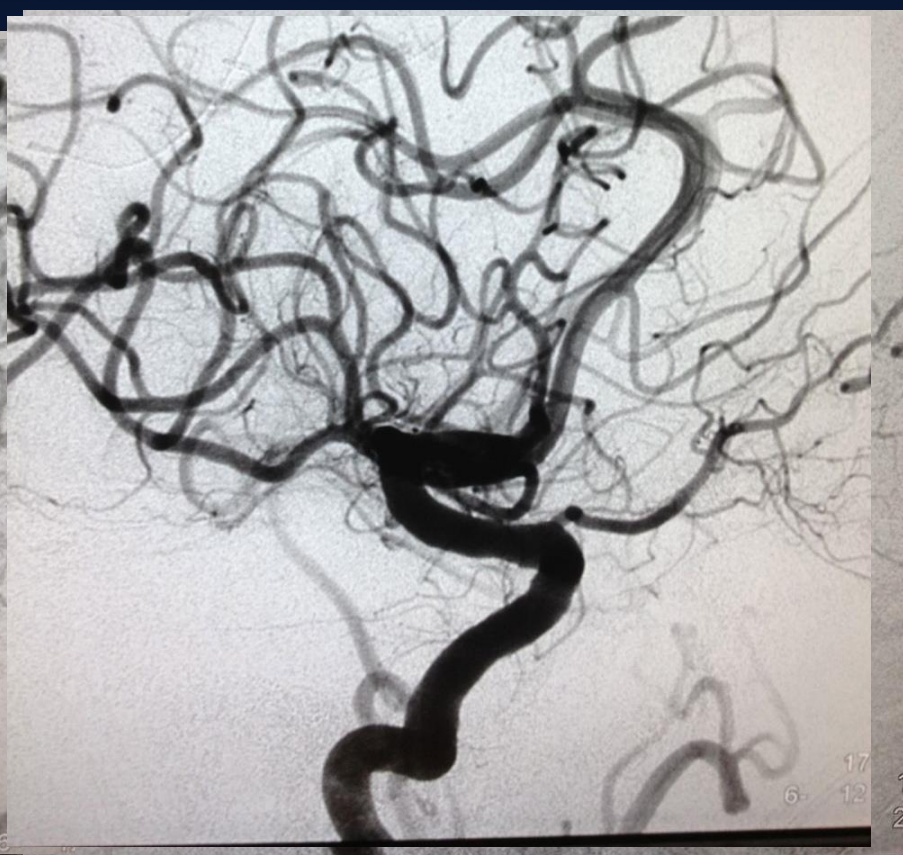
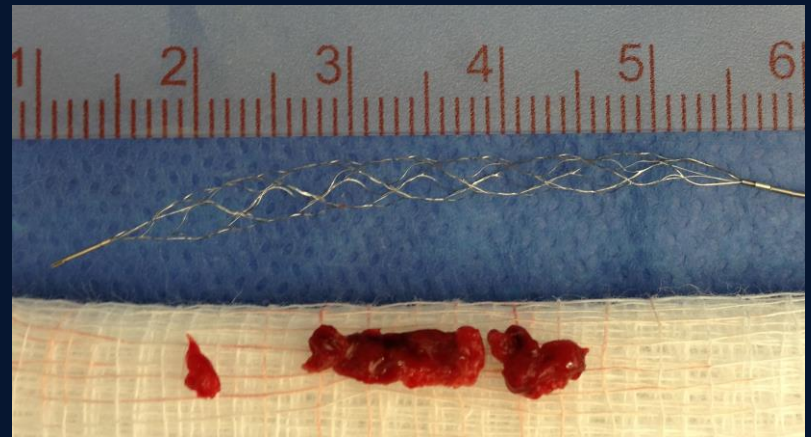
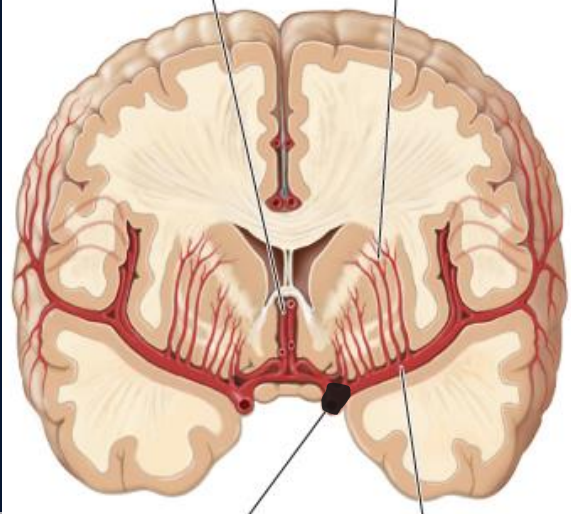
0:00  
0:00  
11:07:03

22  
1-1

RAO 90°  
CRAN 9°  
FD 10.0 inch

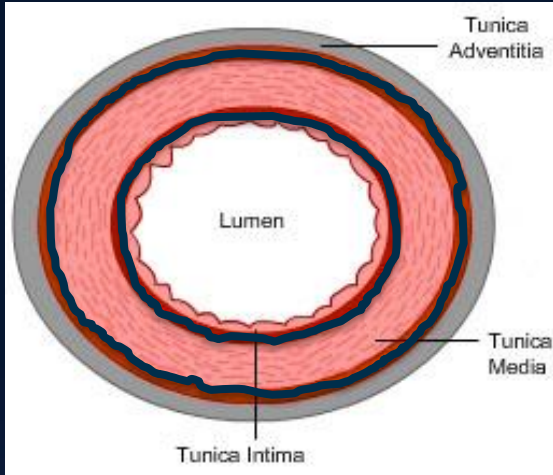
0:08  
0:08  
11:07:03

22  
1-1



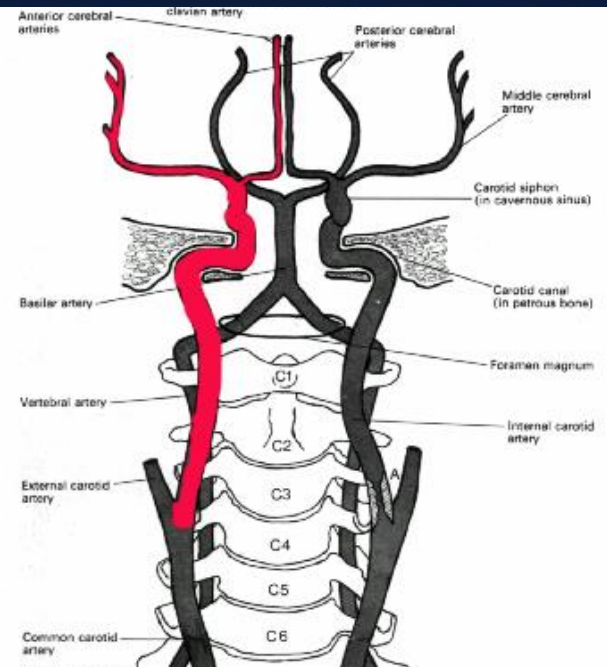


# Cerebrovascular Histology



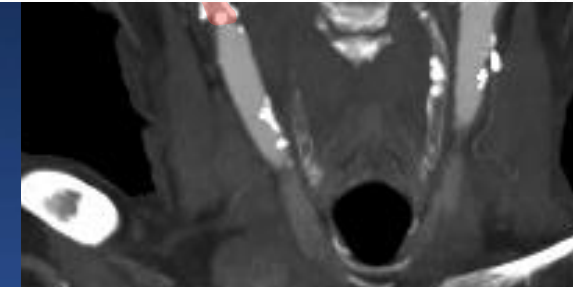
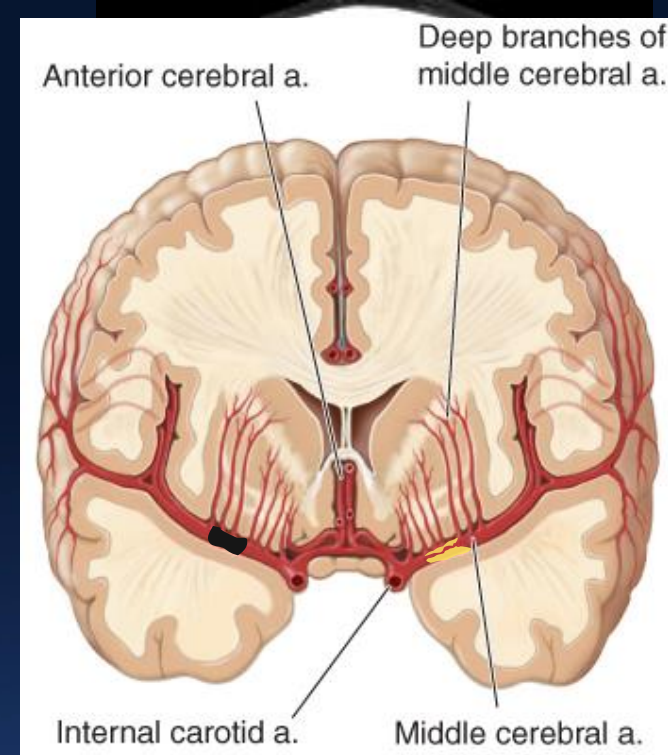
## *Middle Cerebral Artery Histology*

- *Extremely thin adventitia*
- *No external elastic lamina*
- *Relatively thin media*
  - *~20 circular smooth muscle layers*
- *Lower wall thickness:lumen ratio*
- *Progressive changes that start at the skull base*



# Some Cerebrovascular Anatomy Take-Away Points

- **Large vessel occlusions are potential targets for endovascular treatment.**
- **Pathophysiology: thromboembolic occlusion of normal vessel vs. in situ atherosclerosis.**
- **Cervical and skull base anatomy can present challenges to intracranial catheterizations.**
- **Unique histology (minimal adventitia, no external elastic lamina, relatively thin media) compared to coronary vessels.**



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**THANK YOU**



