



YONSEI
UNIVERSITY

개두술의 이해와 감시

용인 세브란스 병원 신경외과 황준규

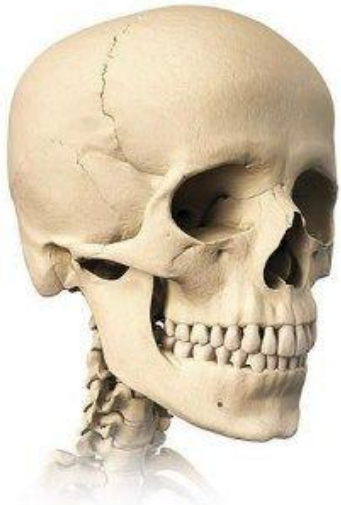
Severance



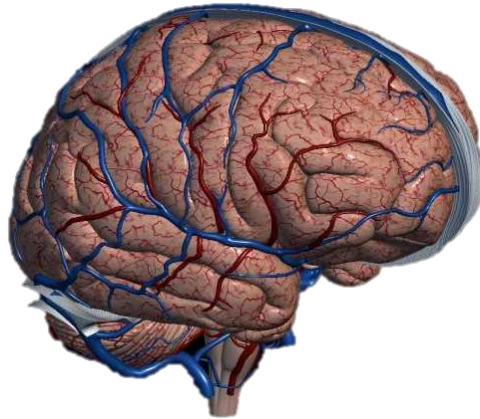
Brain surgery



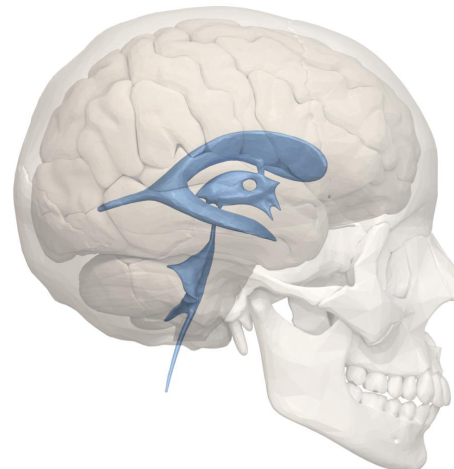
Brain surgery에서 고려해야 할 것은 무엇인가?



Approach



Artery, Vein

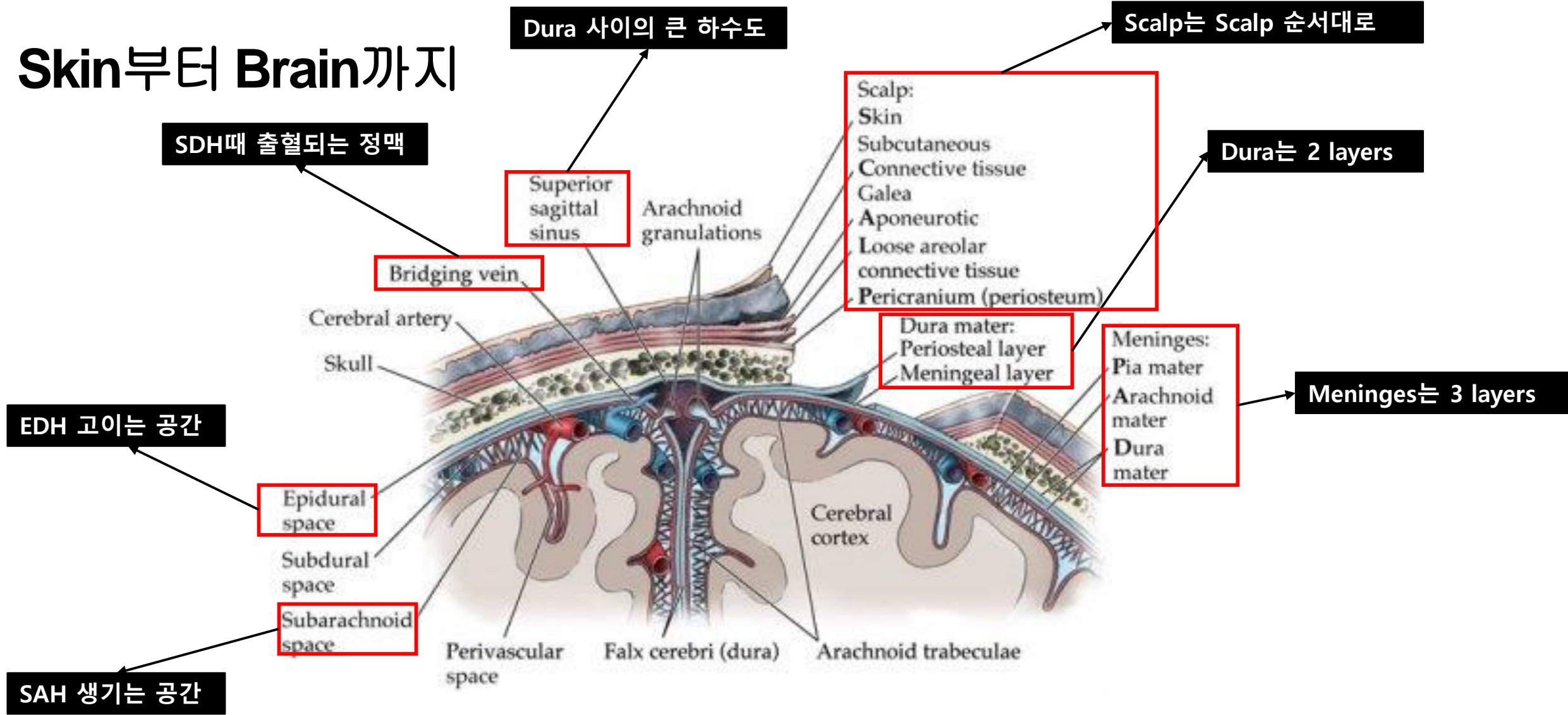


CSF flow

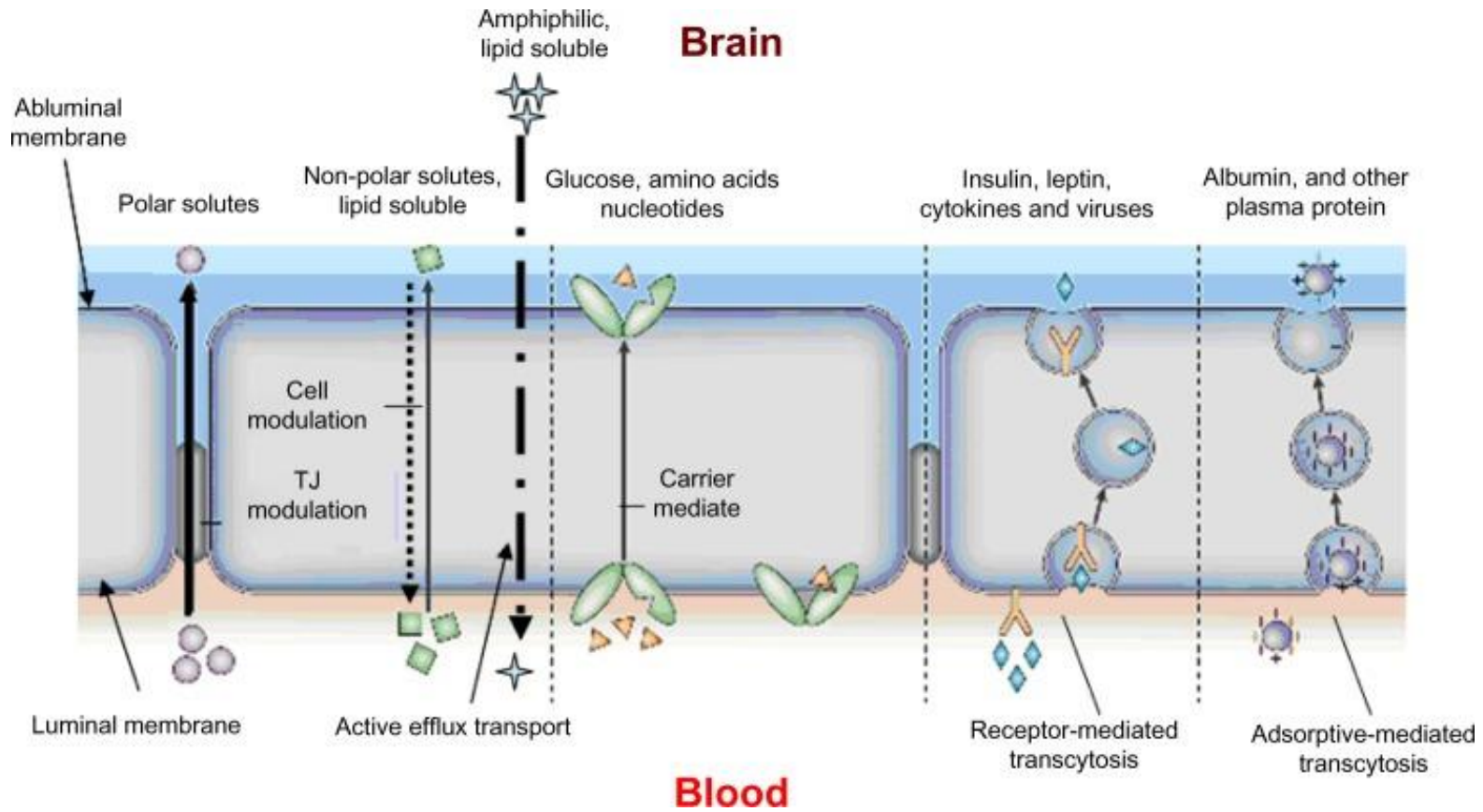
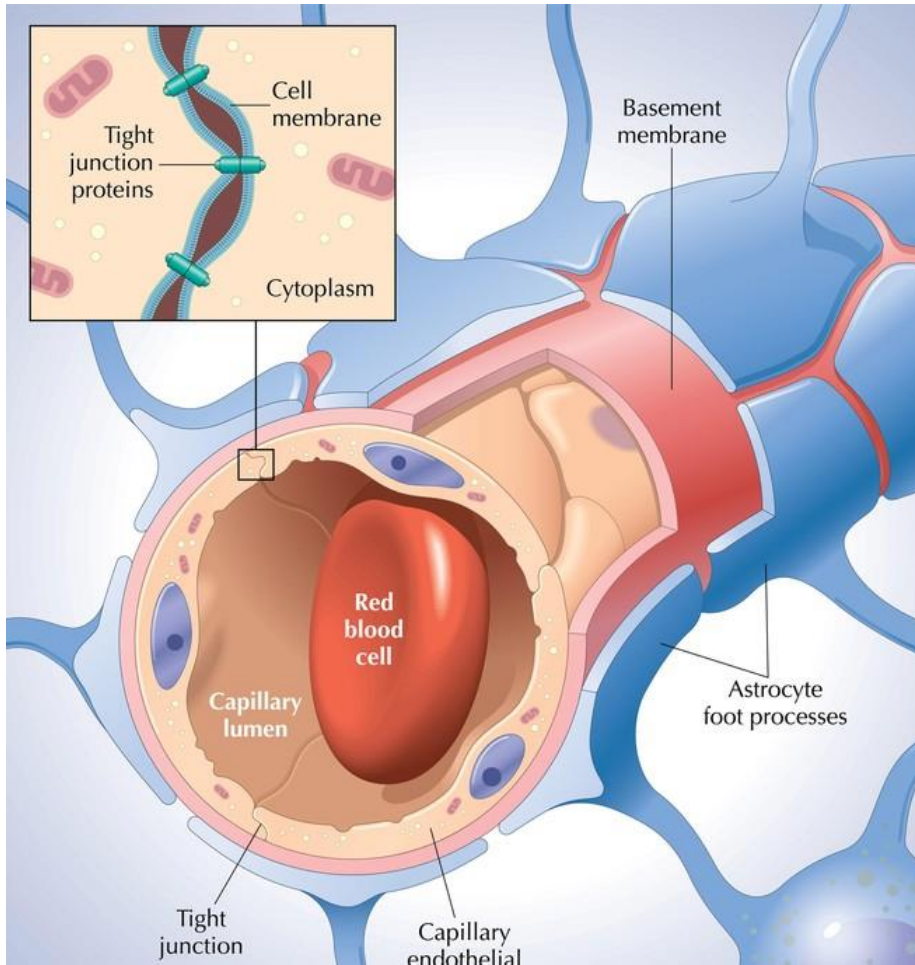


Brain stem,
Basal ganglia

Skin부터 Brain까지



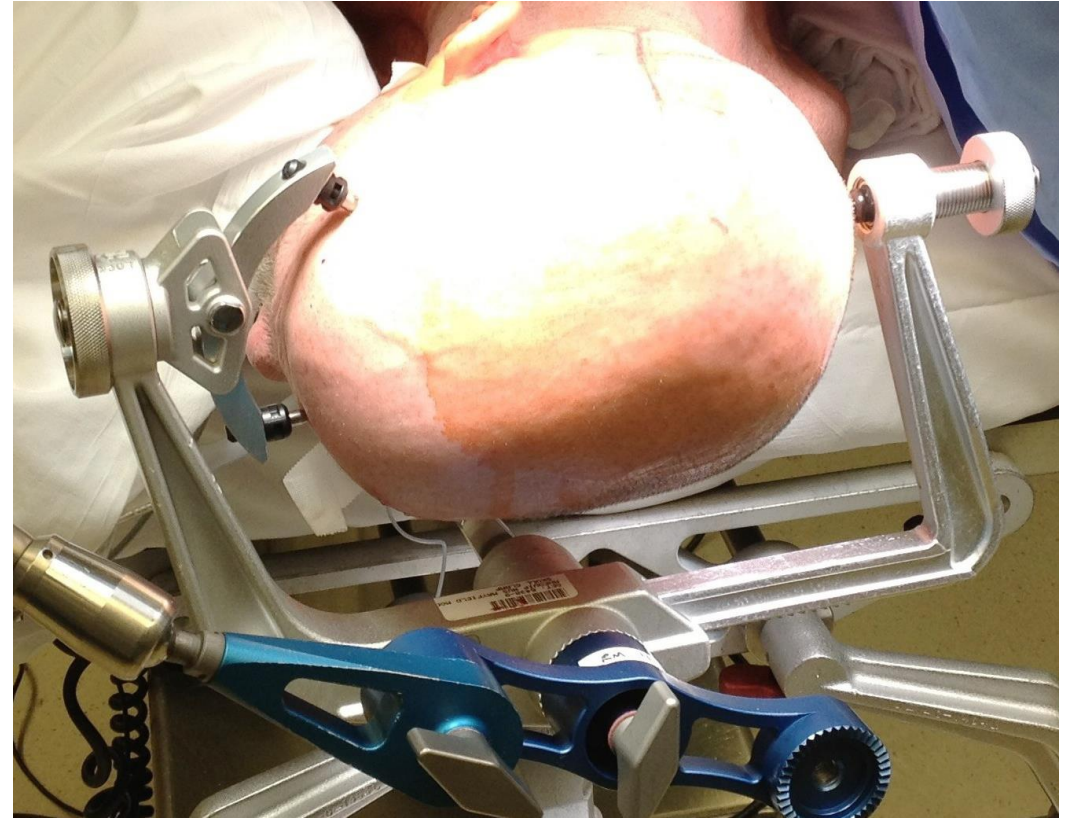
Blood Brain Barrier (BBB)



Head fixation

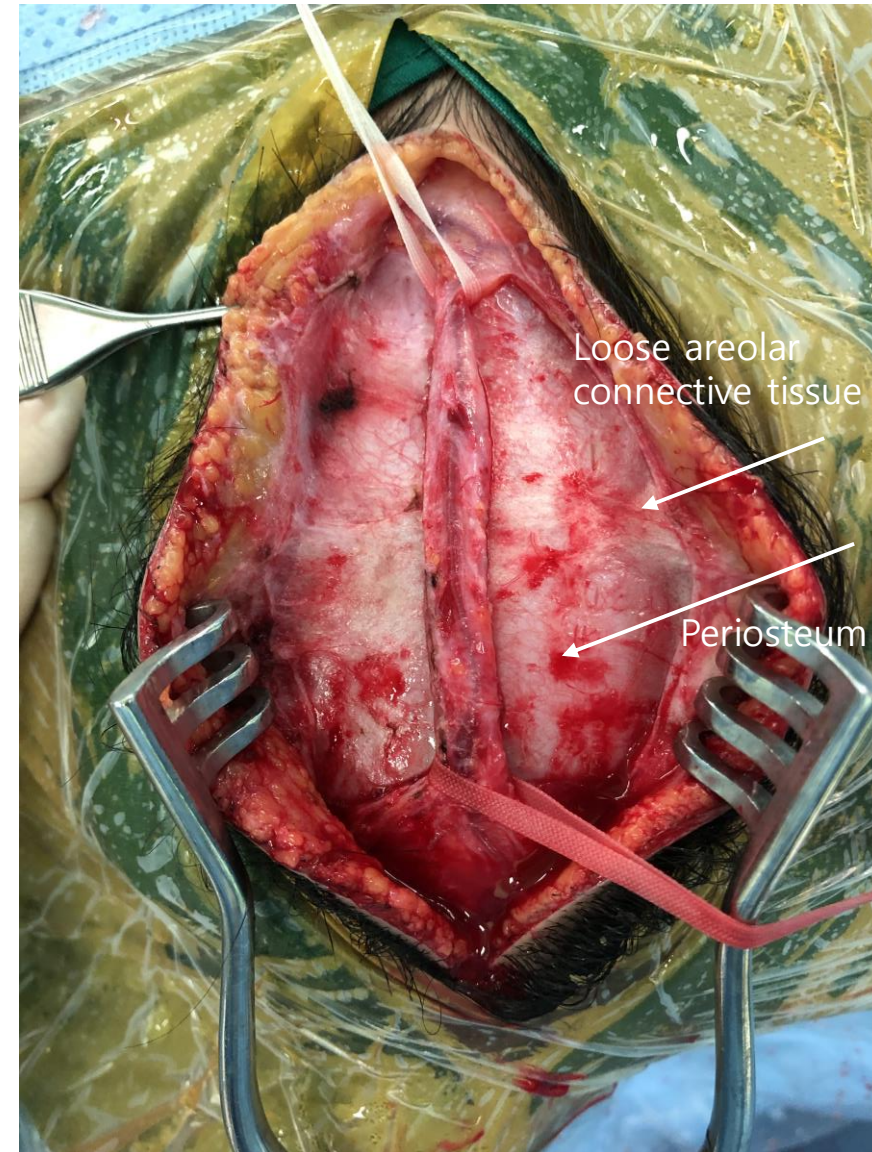
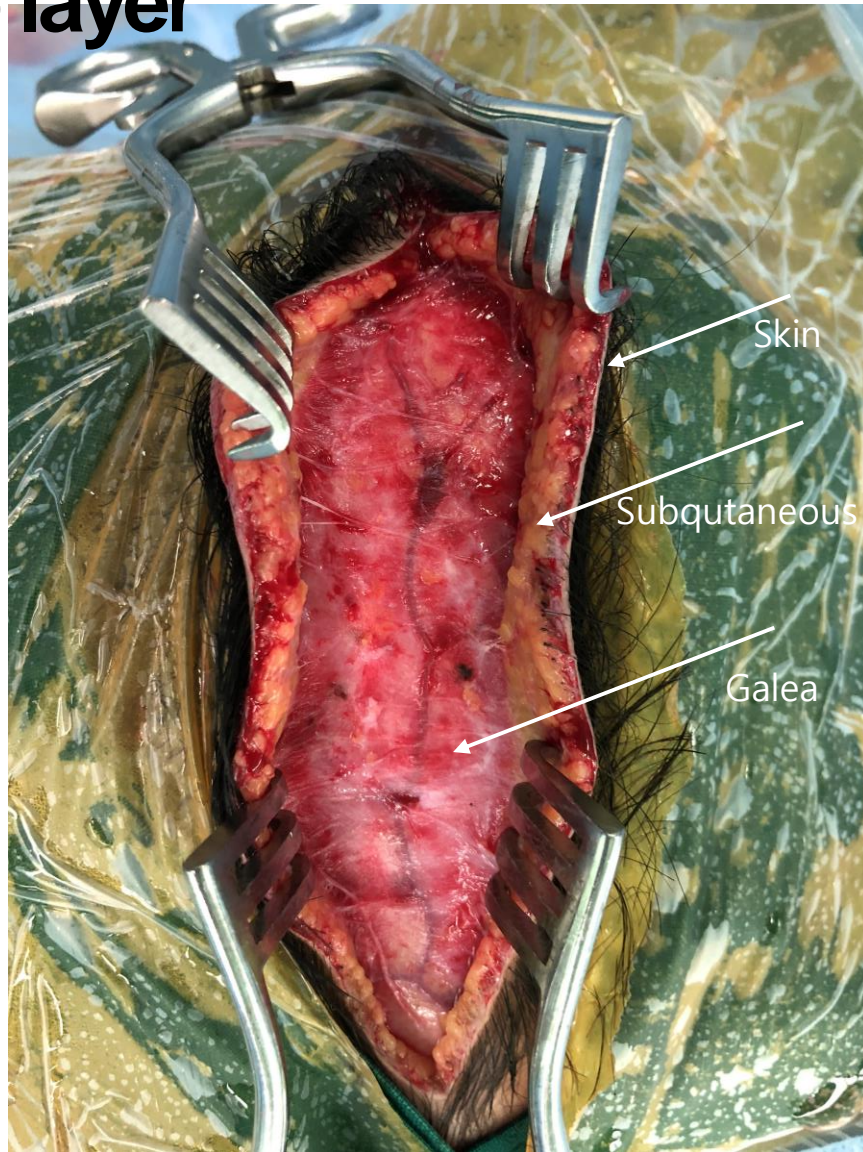


Horse shoe

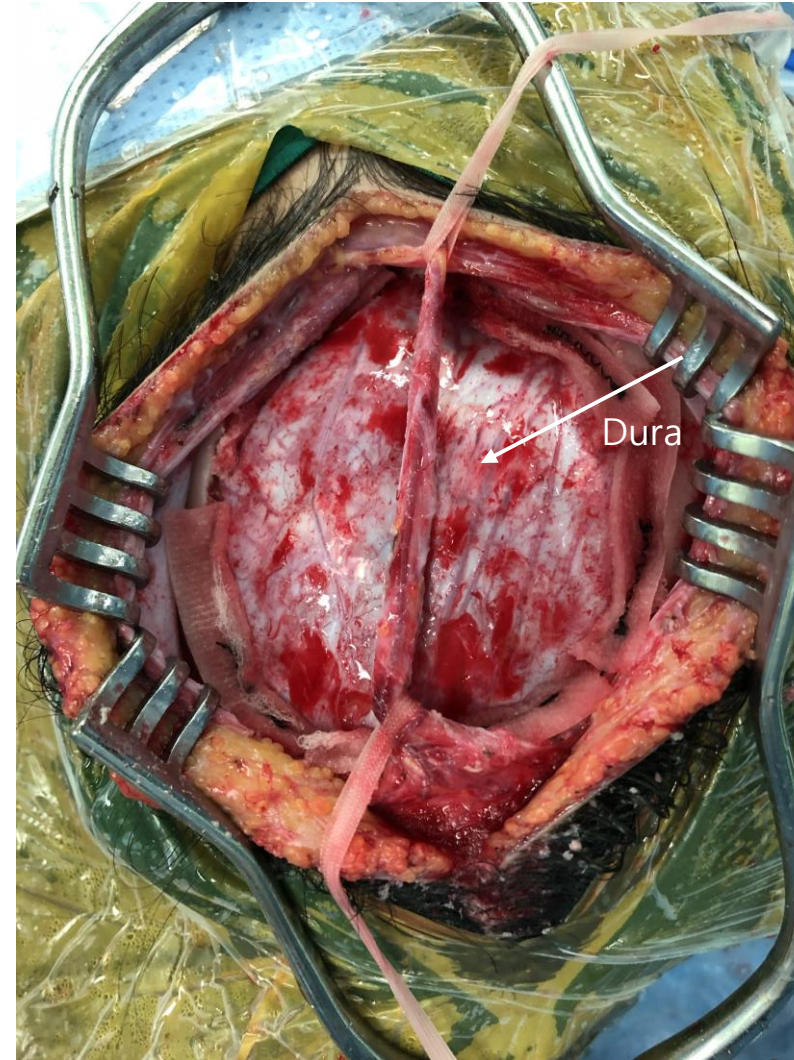


Mayfield head fixation

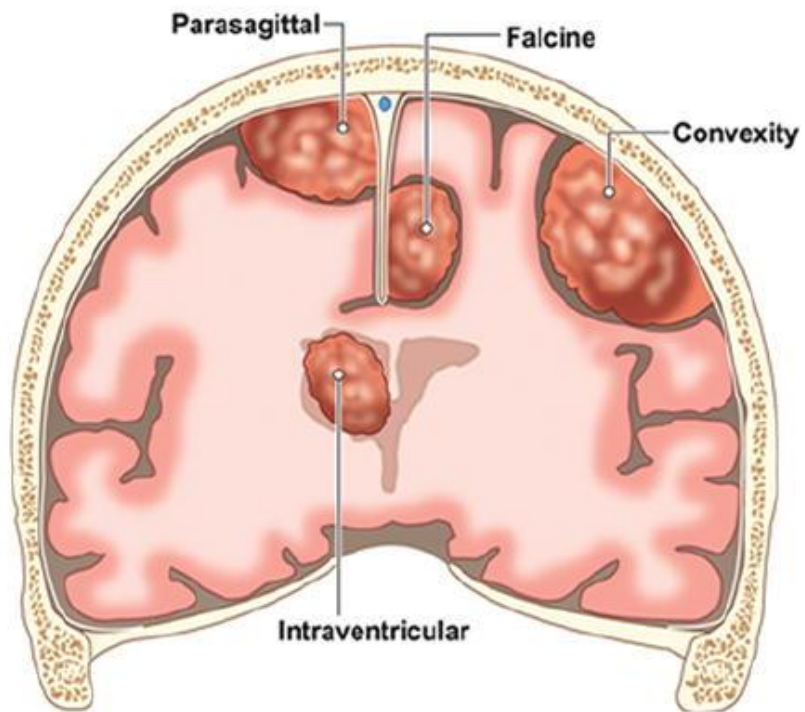
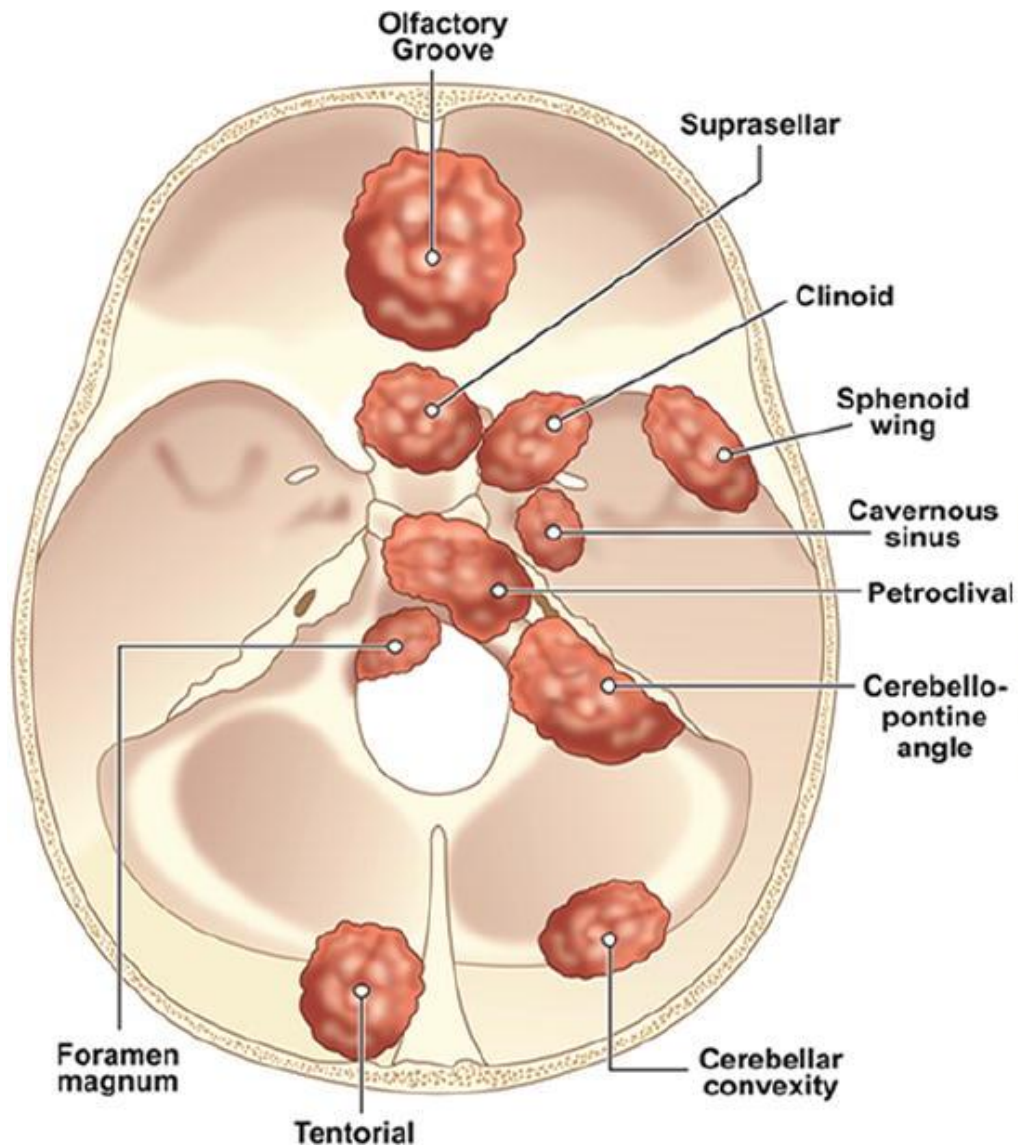
Scalp layer



Bone and dural layer



접근 방향의 다양성



Common craniotomies



Temporal



Pterional



Orbitozygomatic



Parietal



Frontal/coronal

Keyhole craniotomies



Mini-pterional



Supraorbital



Lateral Supraorbital

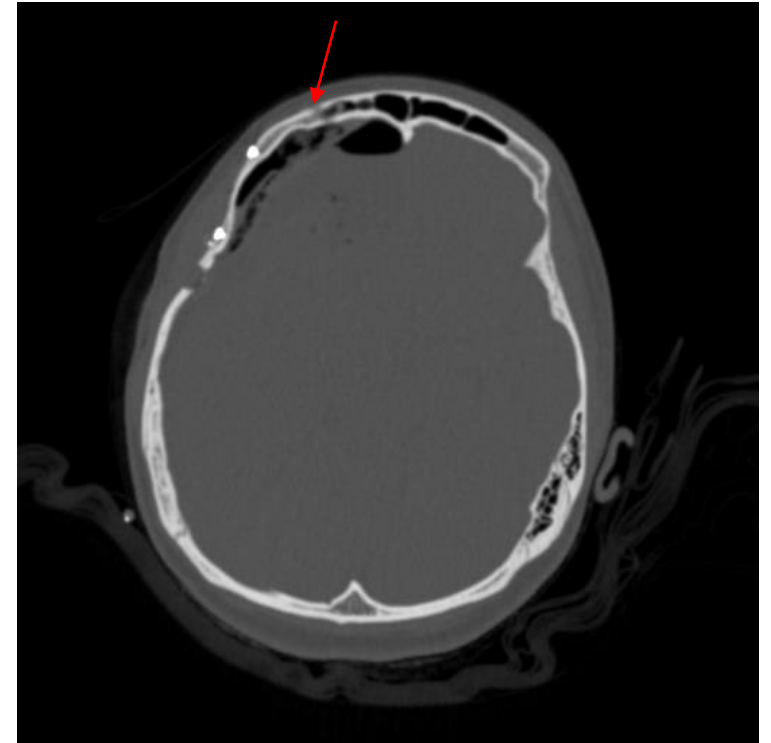
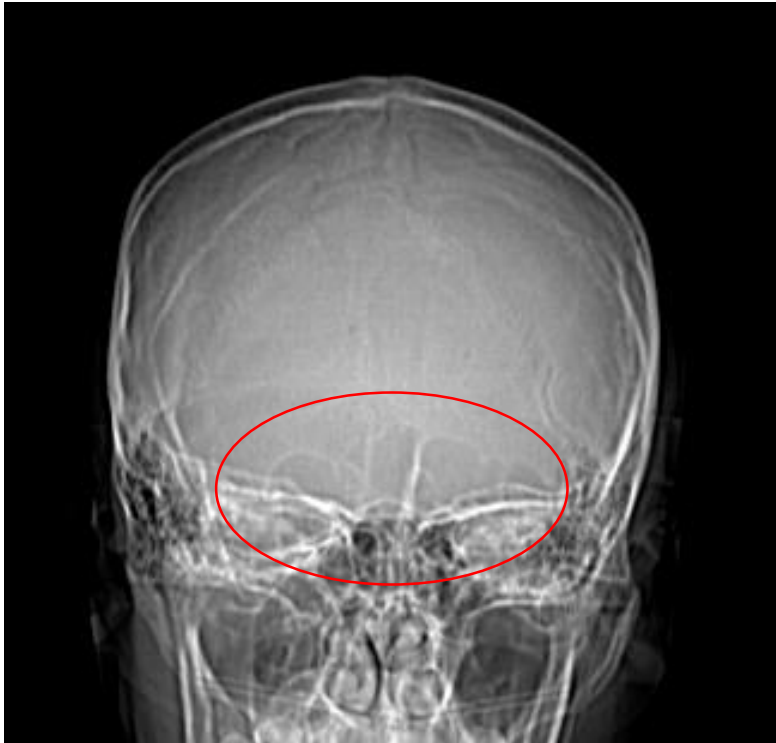


Interhemispheric

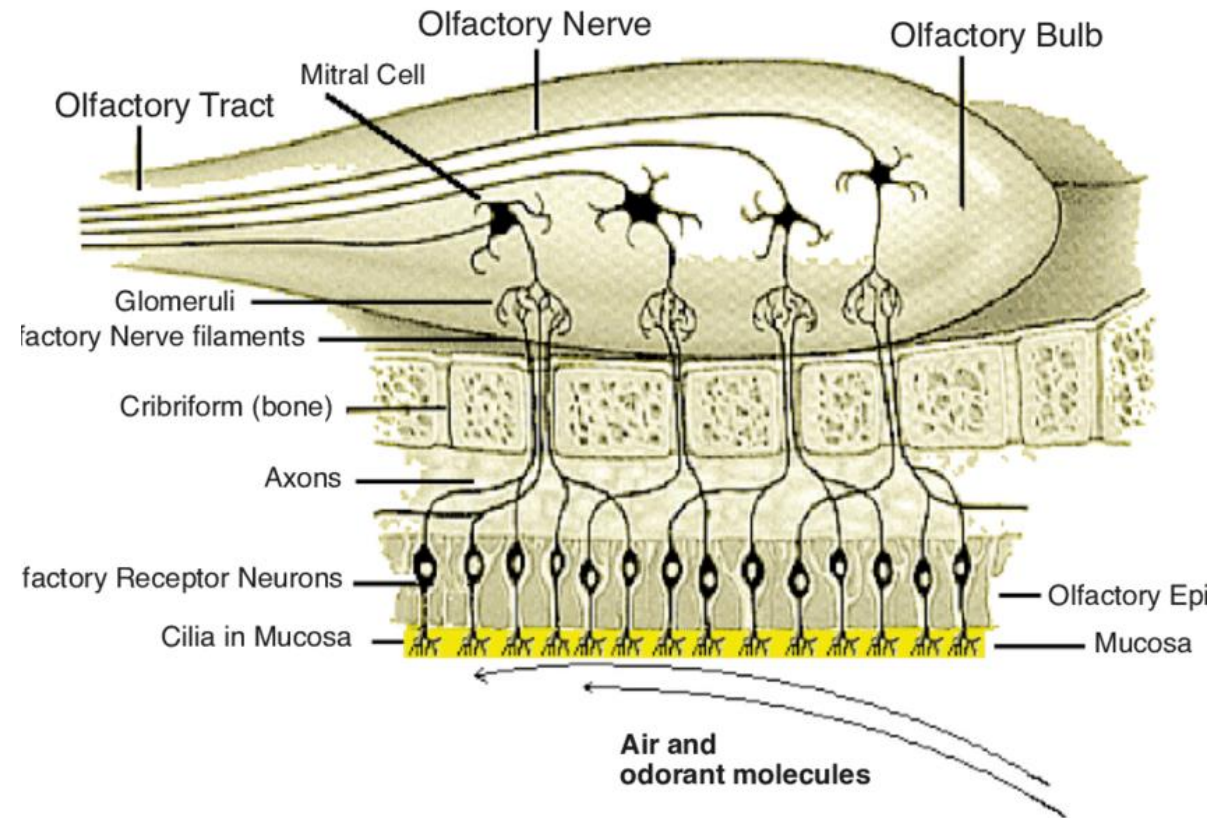
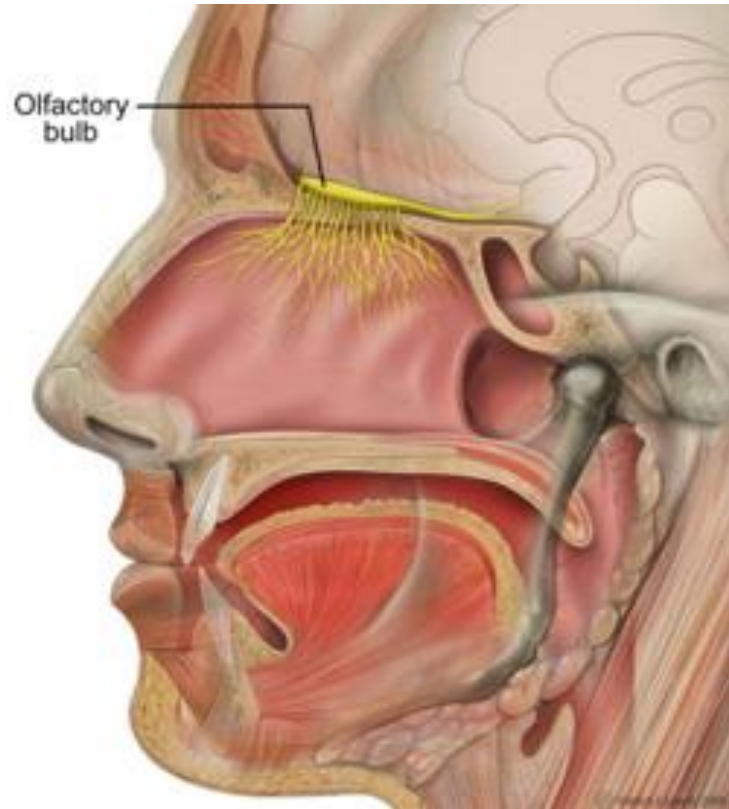


Retrosigmoid

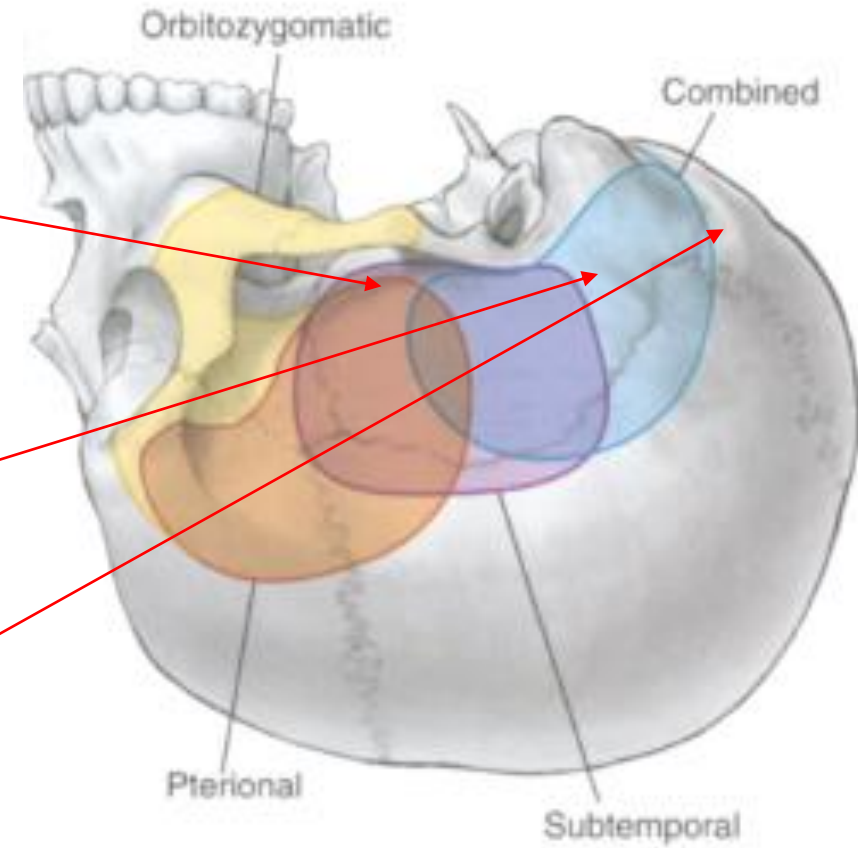
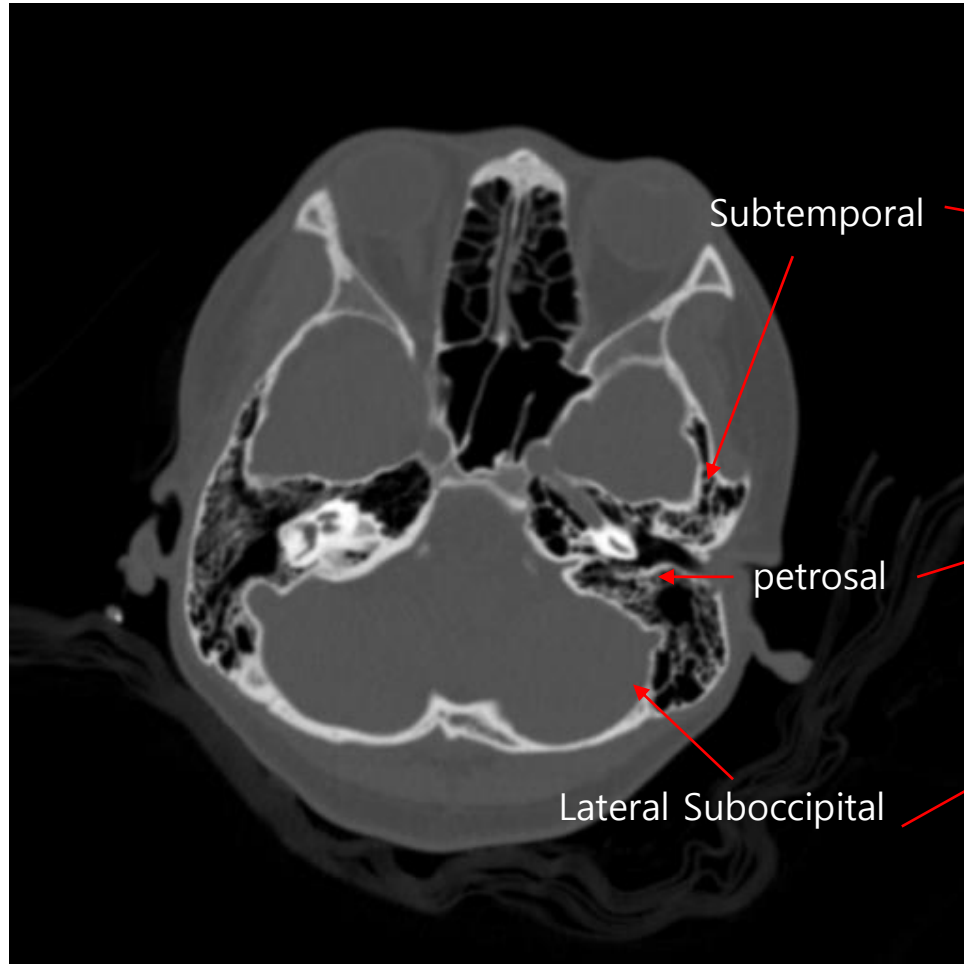
Frontal sinus (frontal bone)



Olfactory nerve and frontal base

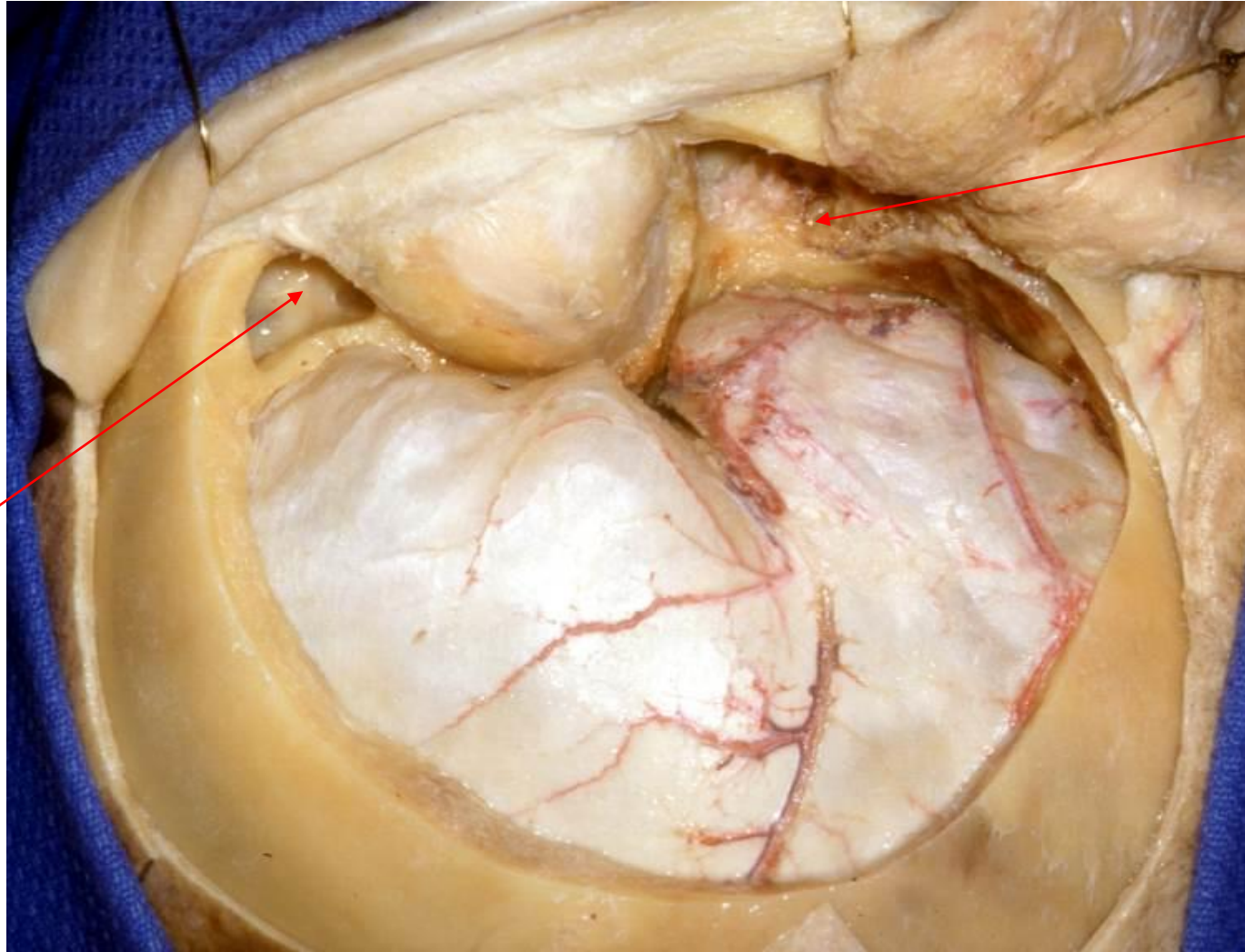


Air cell (temporal bone)

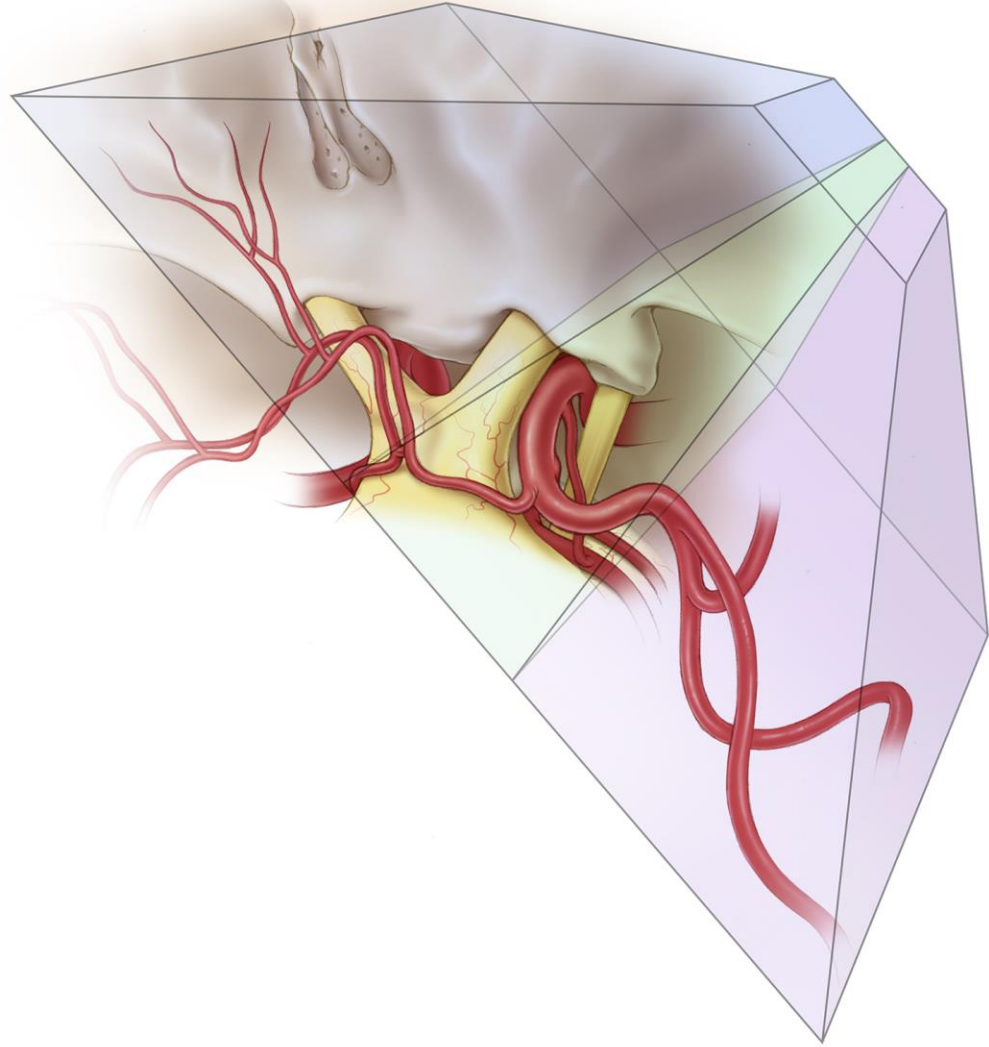
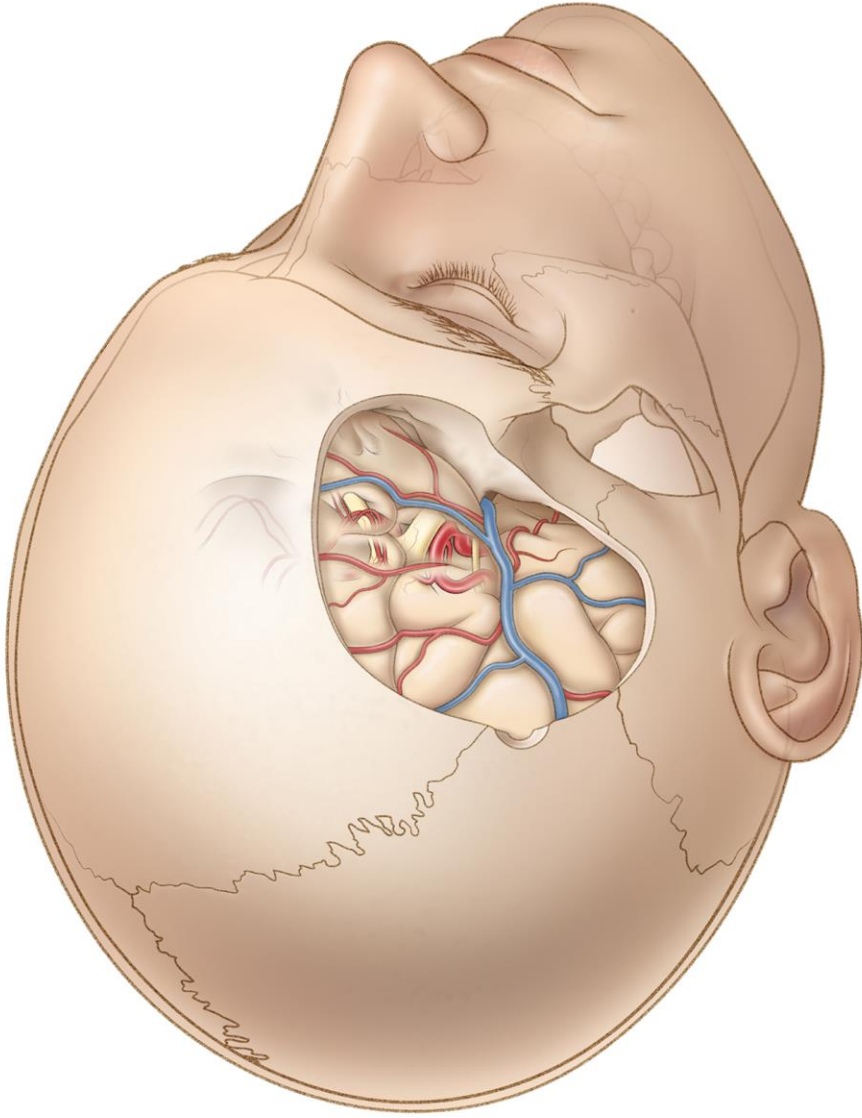


Pterional approach

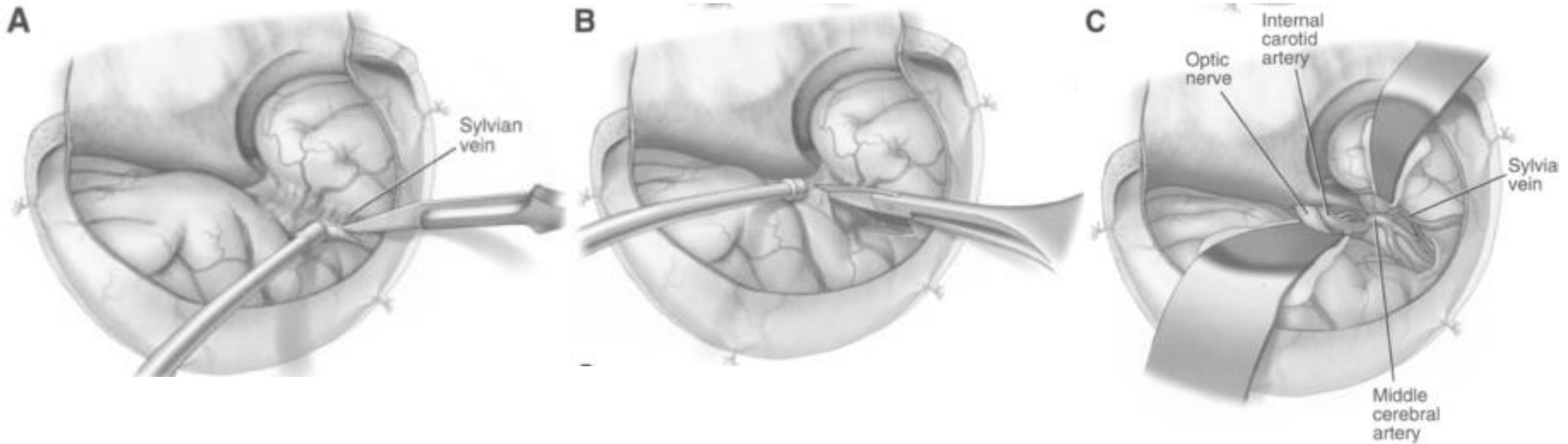
Frontal sinus



Air cell



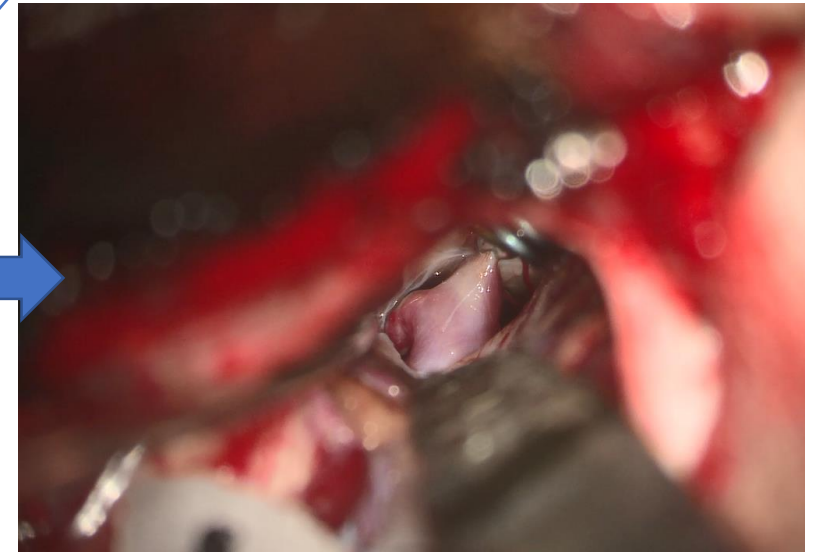
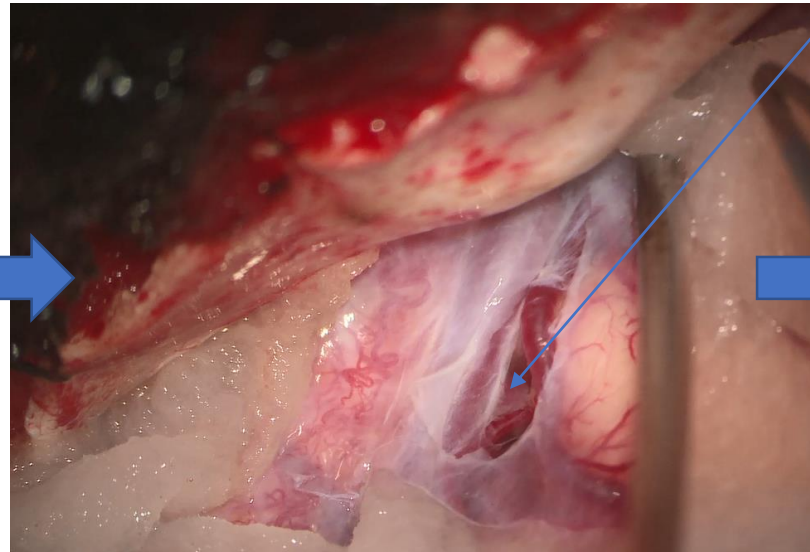
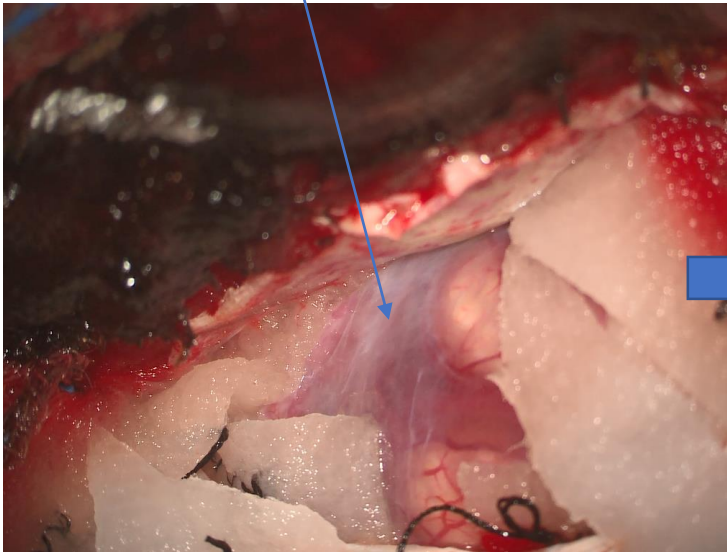
Pterional approach



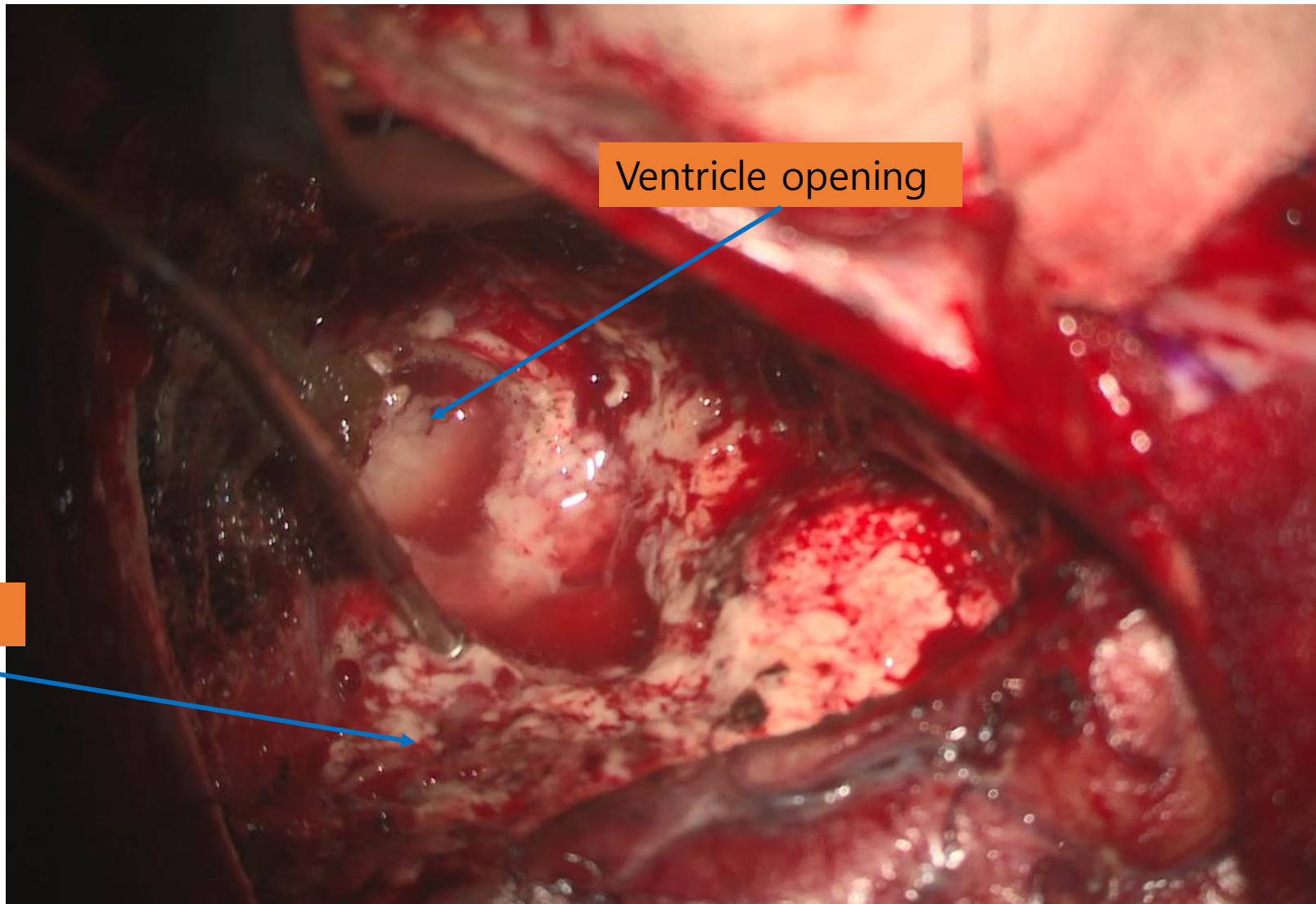
Clipping

Arachnoid membrane

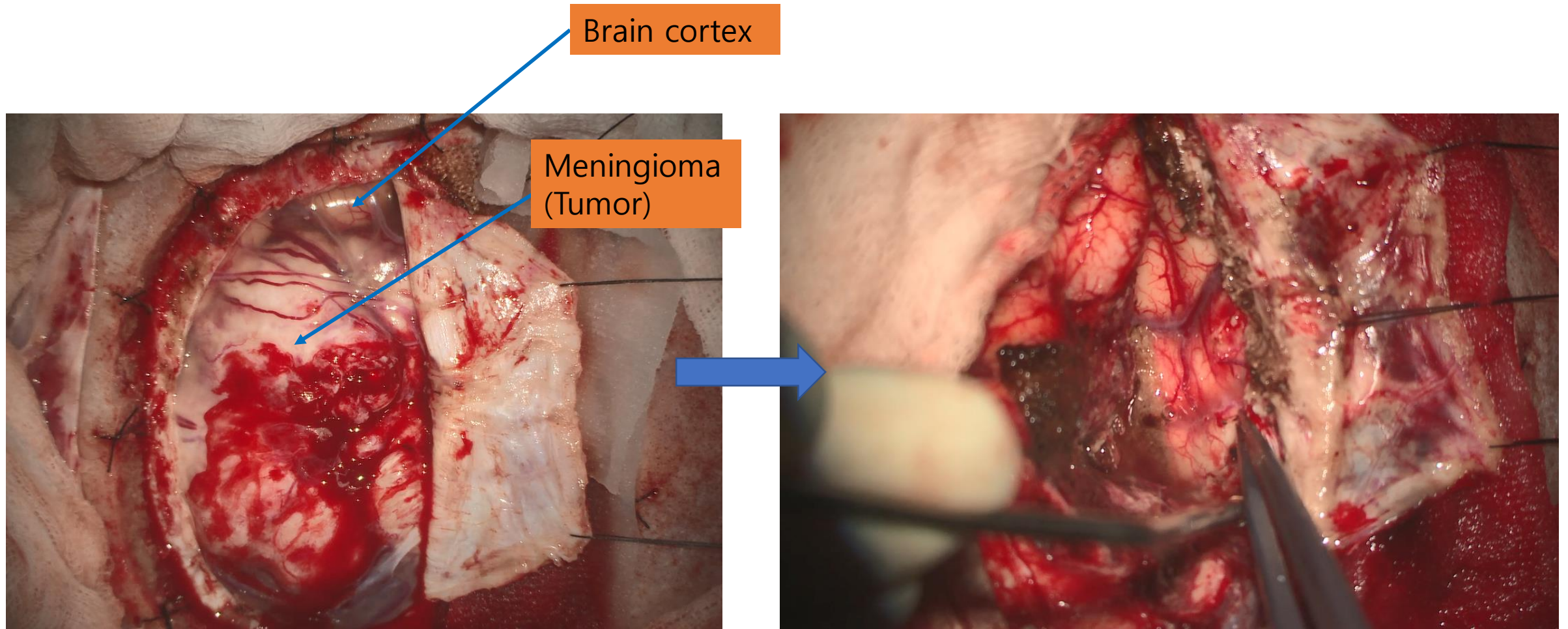
Subarachnoid space



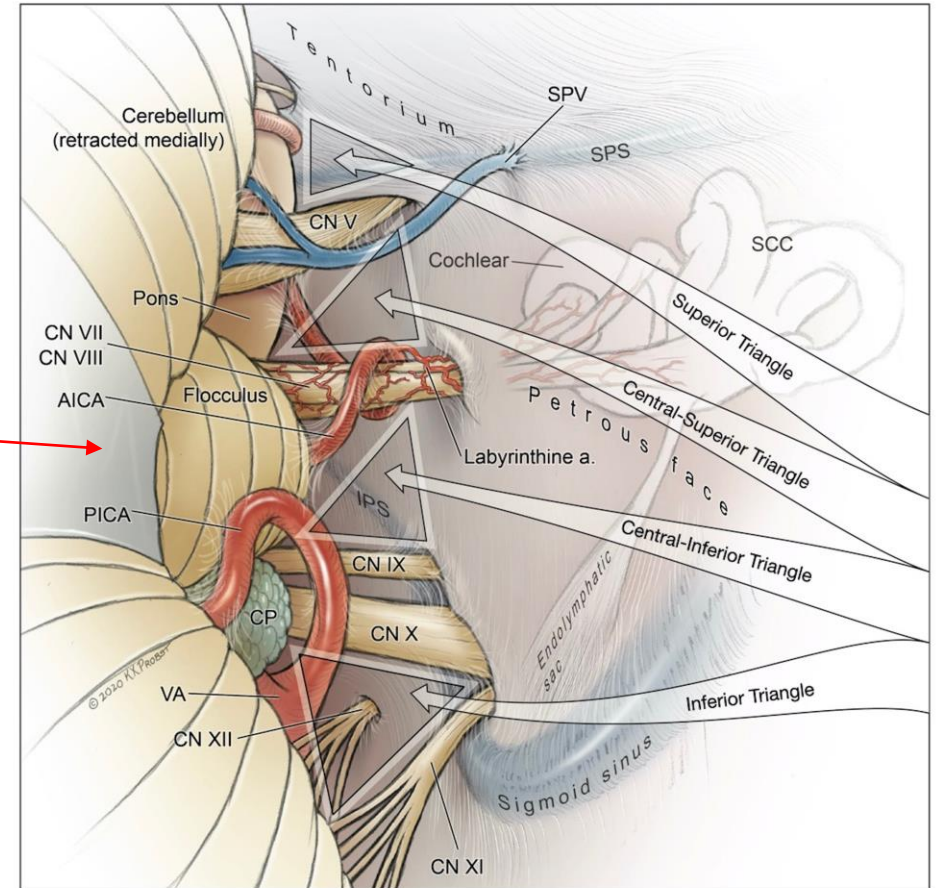
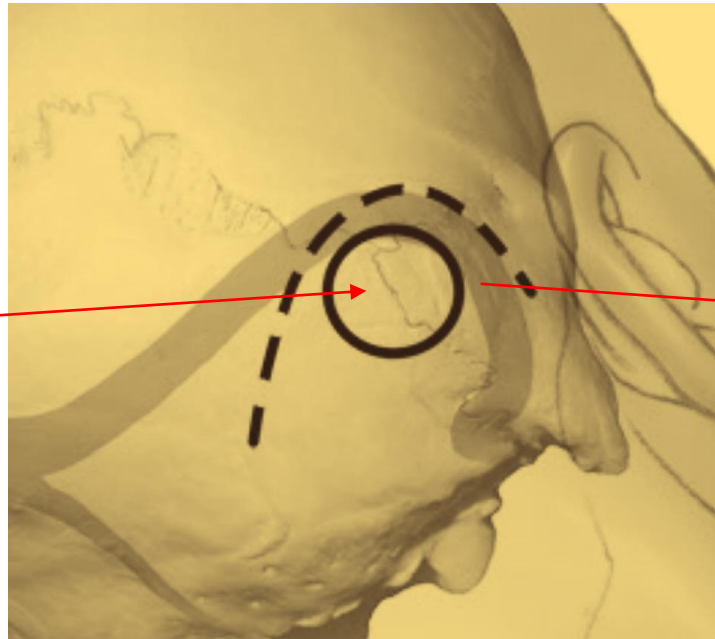
Intra axial tumor removal



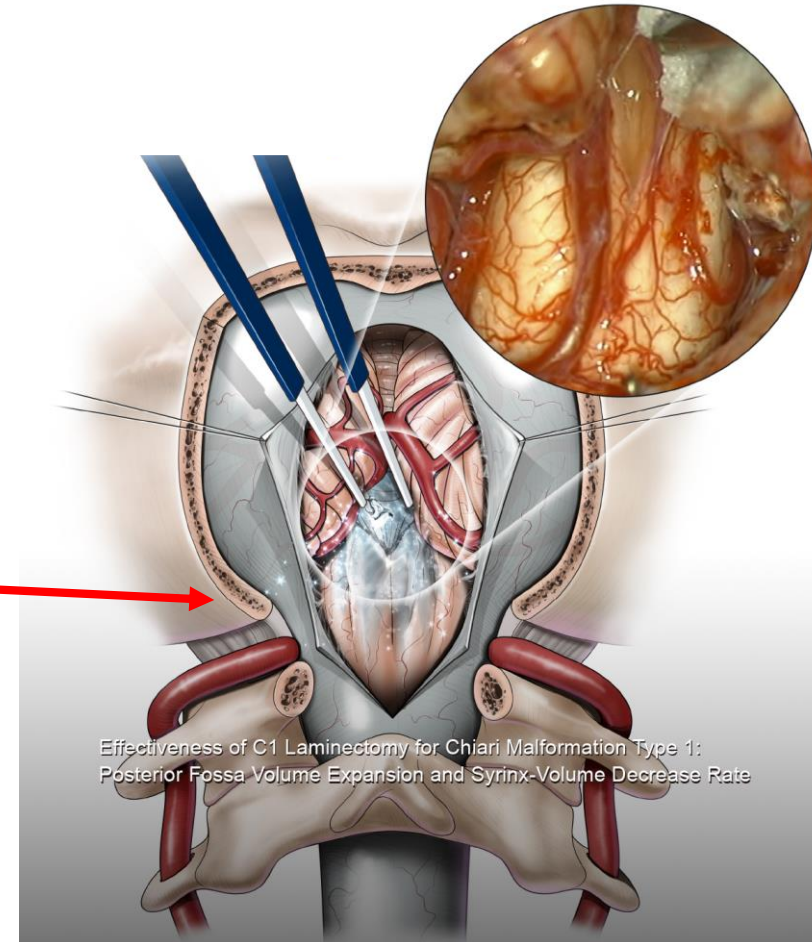
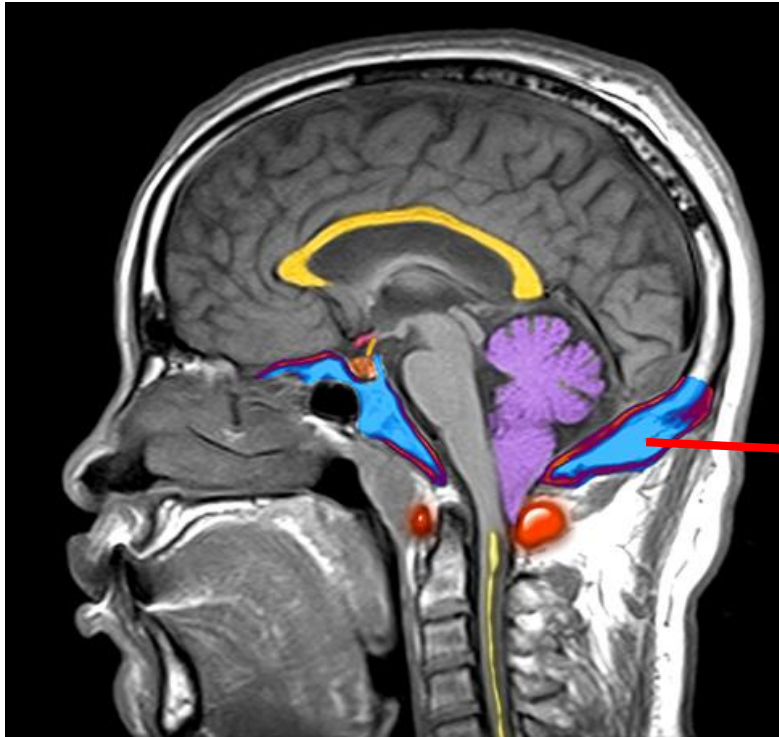
Extra-axial tumor removal



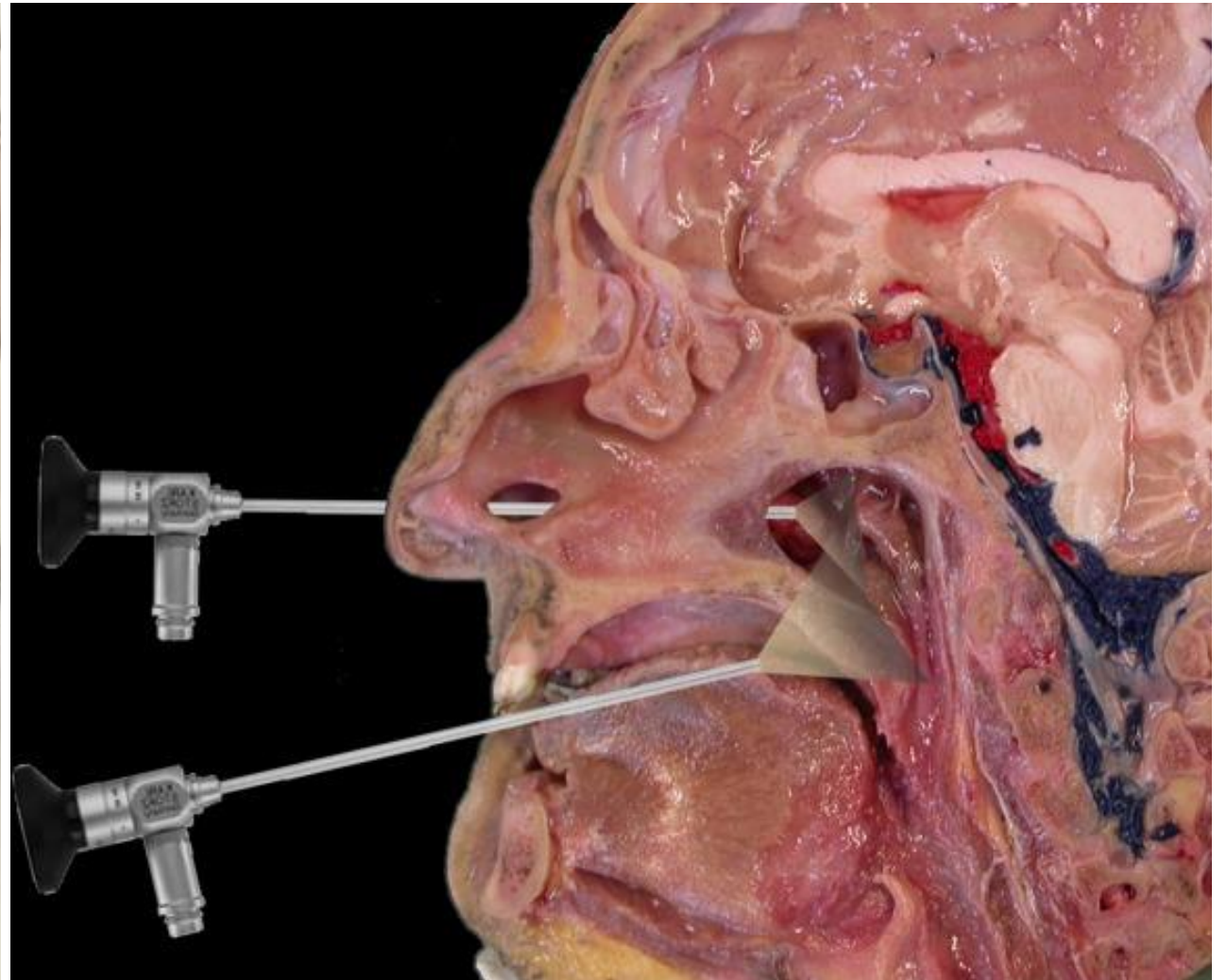
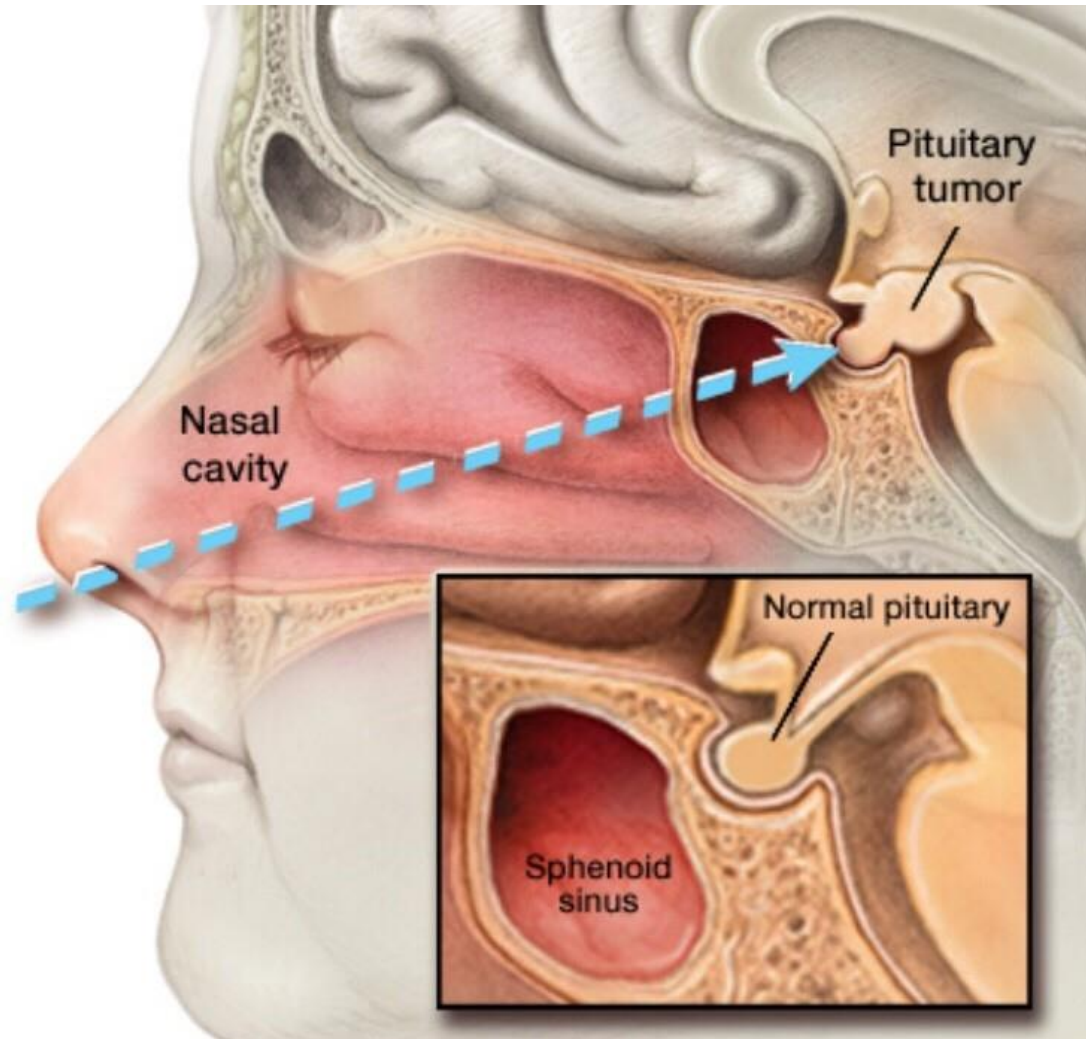
Lateral suboccipital craniotomy



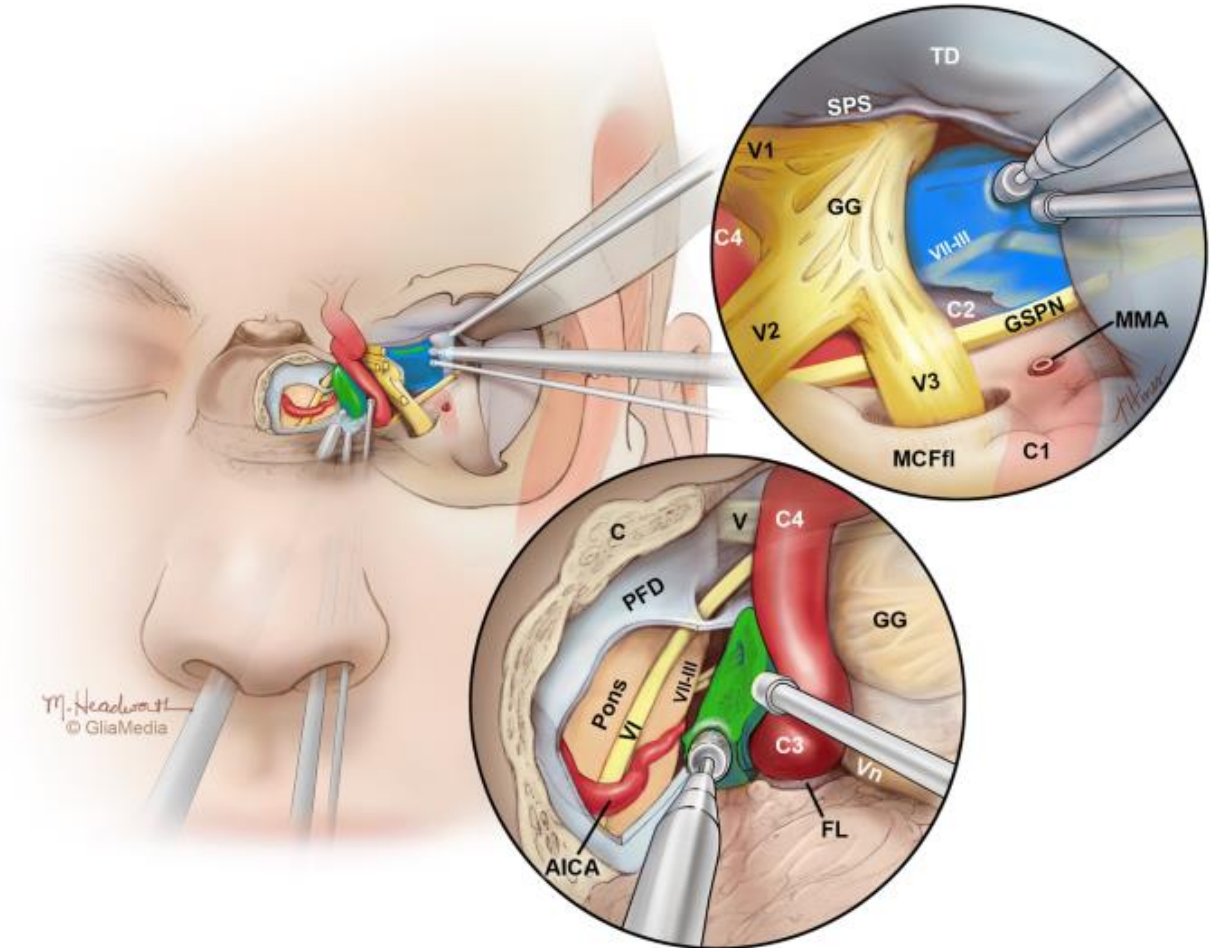
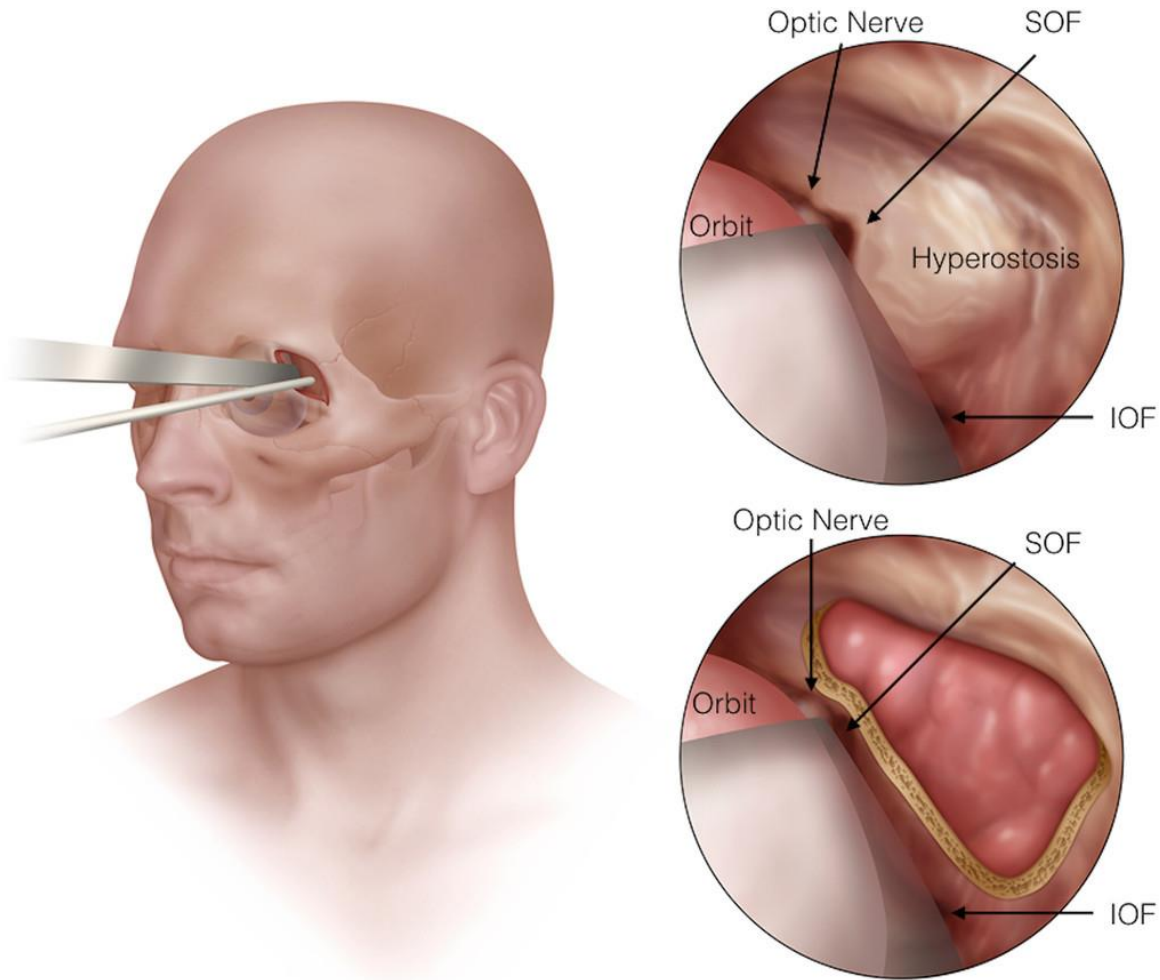
Midline suboccipital craniotomy



Trans-sphenoidal approach (TSA)



Trans-orbital approach





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