

Translabrynthine Resection of Acoustic Neuroma

The Center for Acoustic Neuroma



Translabyrinthine Resection of Acoustic Neuroma

Indications

1 - Any tumors with non-serviceable hearing

Serviceable hearing

50/50 rule

Speech discrimination >50%

Pure-tone average threshold
>50%

2 - Tumors larger than 3 cm in the CPA

3 - Tumor in the CPA extending to lateral ICA

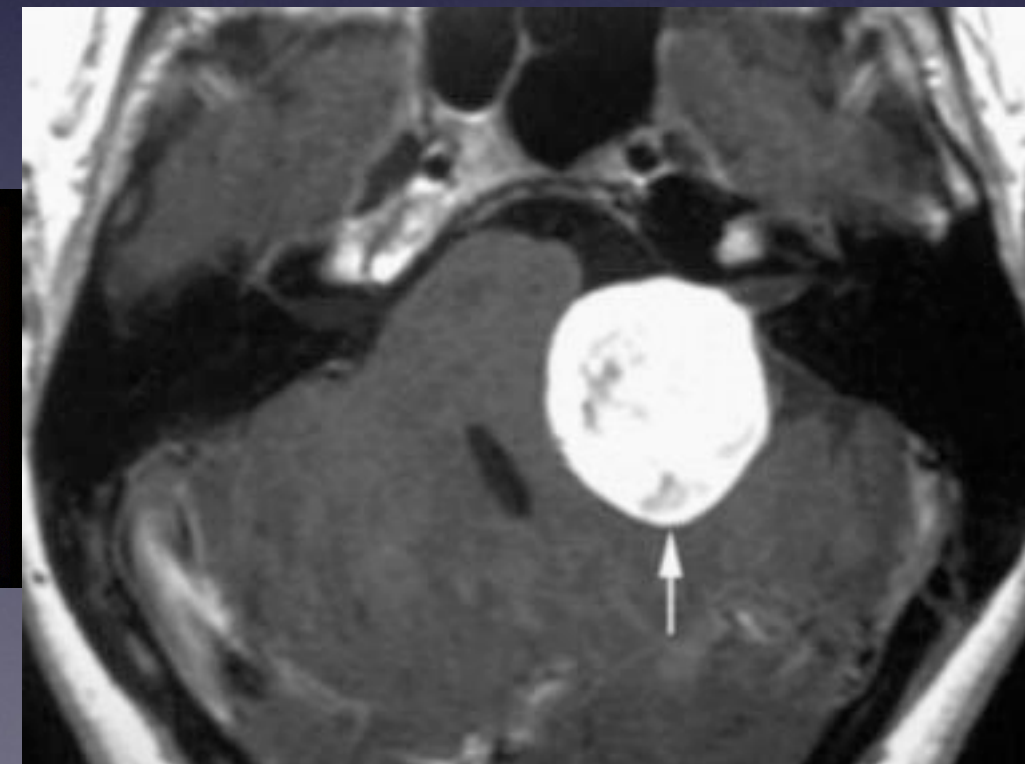
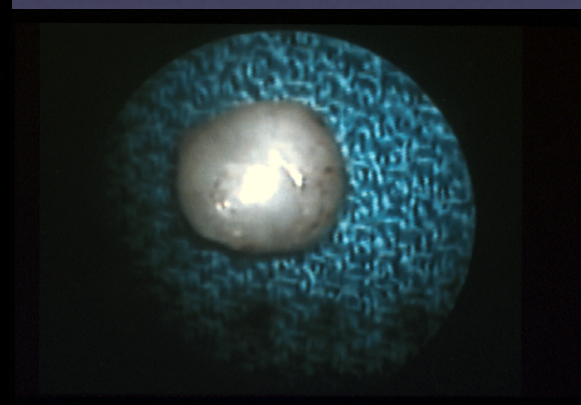
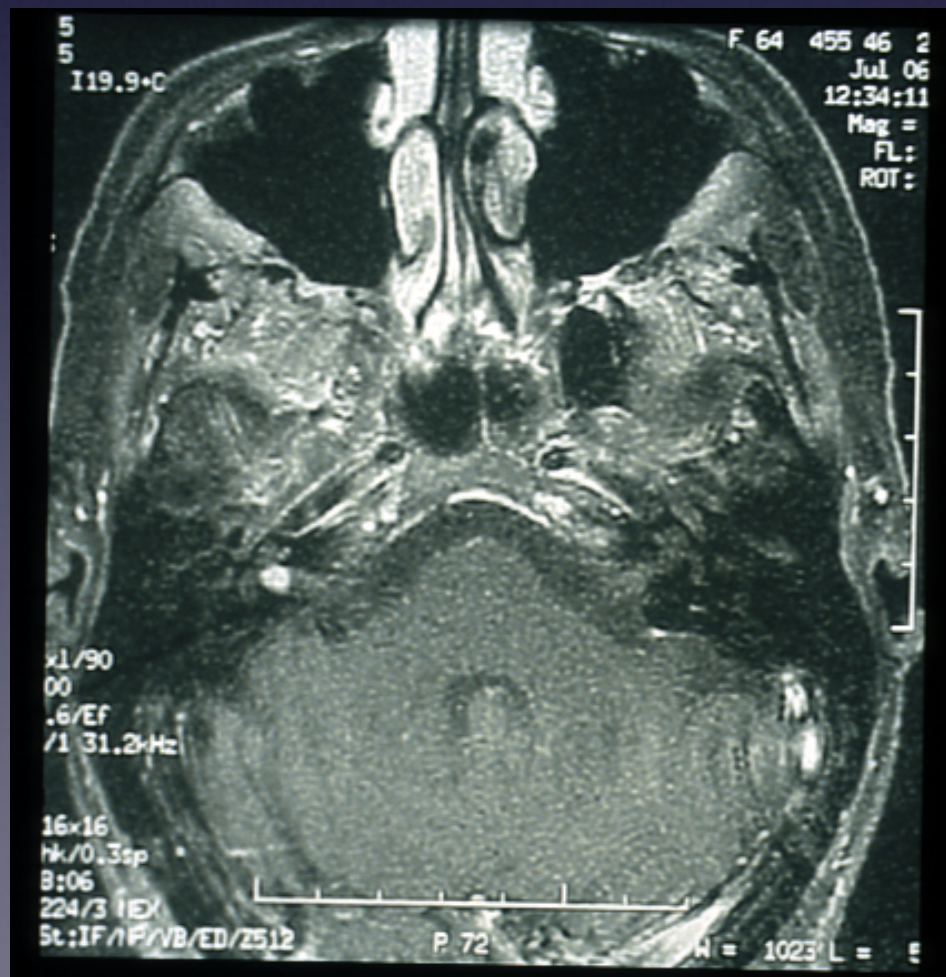


Translabyrinthine Resection of Acoustic Neuroma Middle Fossa Approach

Tumors confined to the IAC with
serviceable hearing

Retro-sigmoid approach

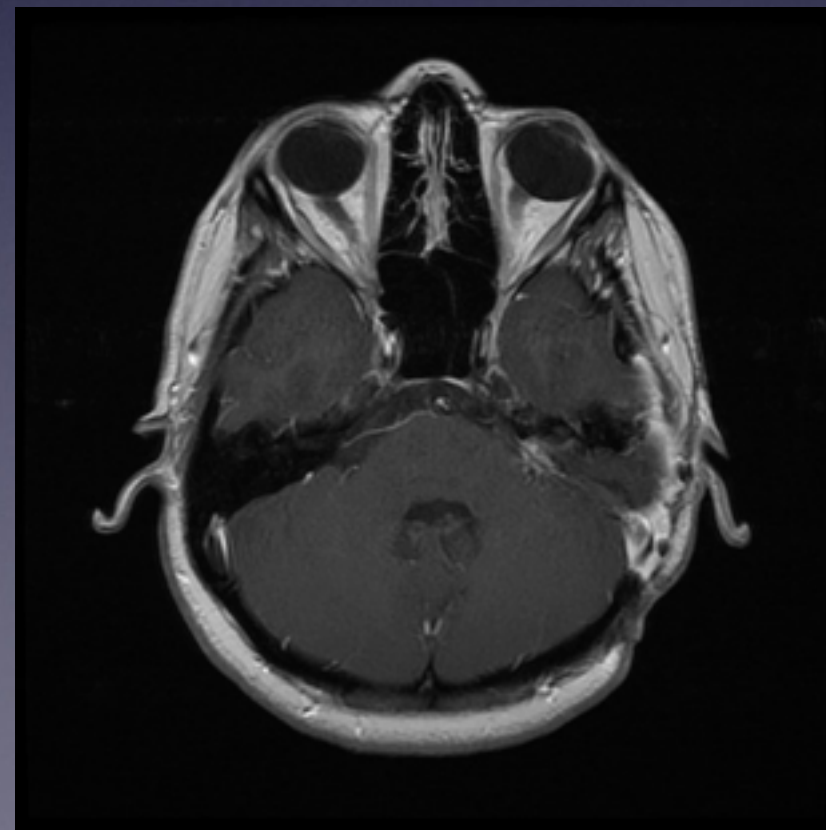
Tumors less than 3 cm with serviceable
hearing and minimal IAC invasion



Translabyrinthine Resection of Acoustic Neuroma

Patient Counseling Personal Tips

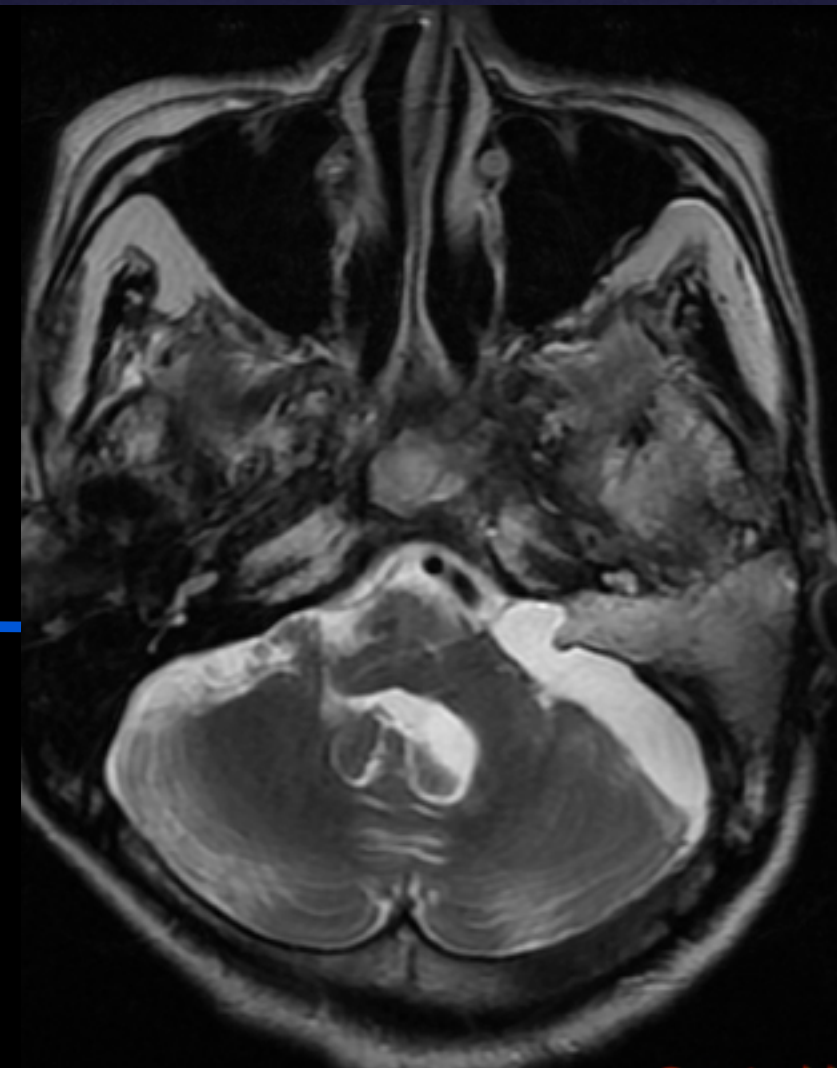
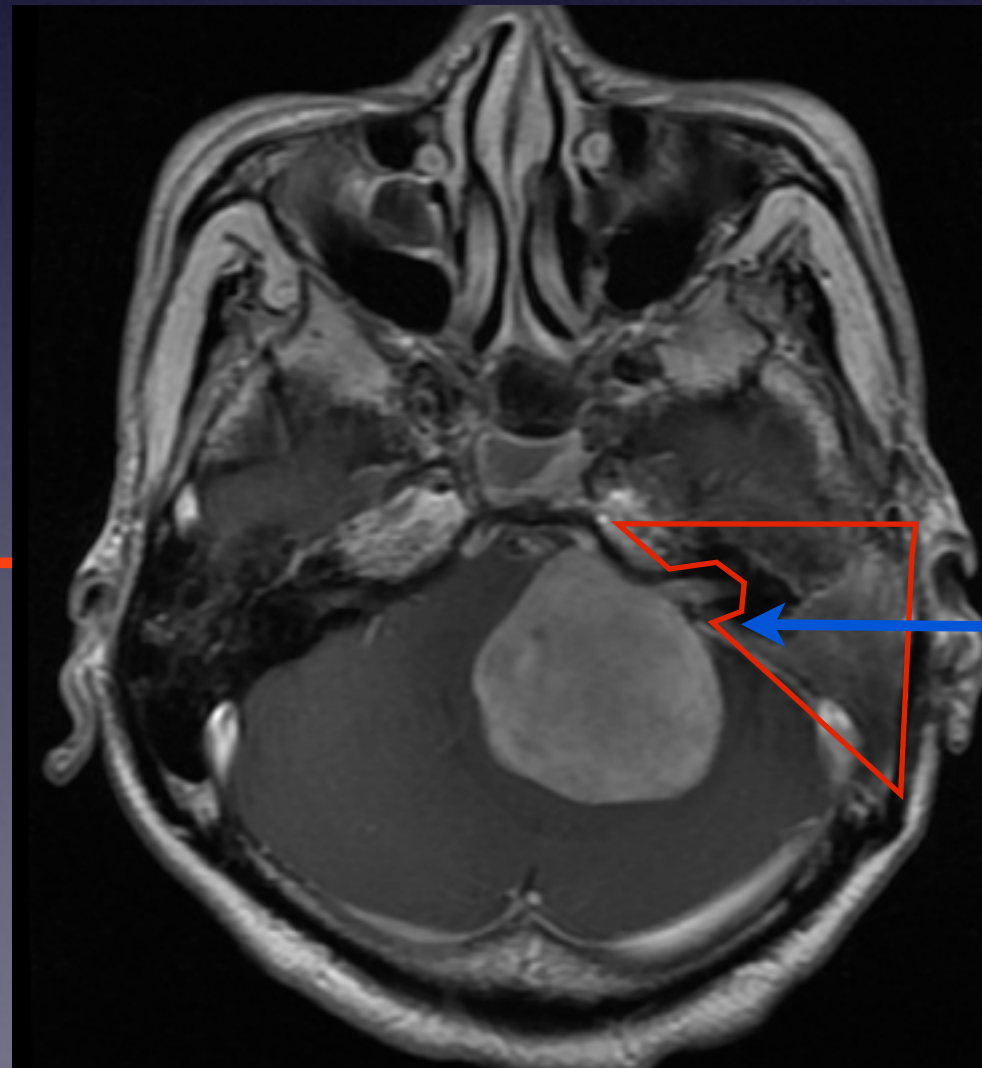
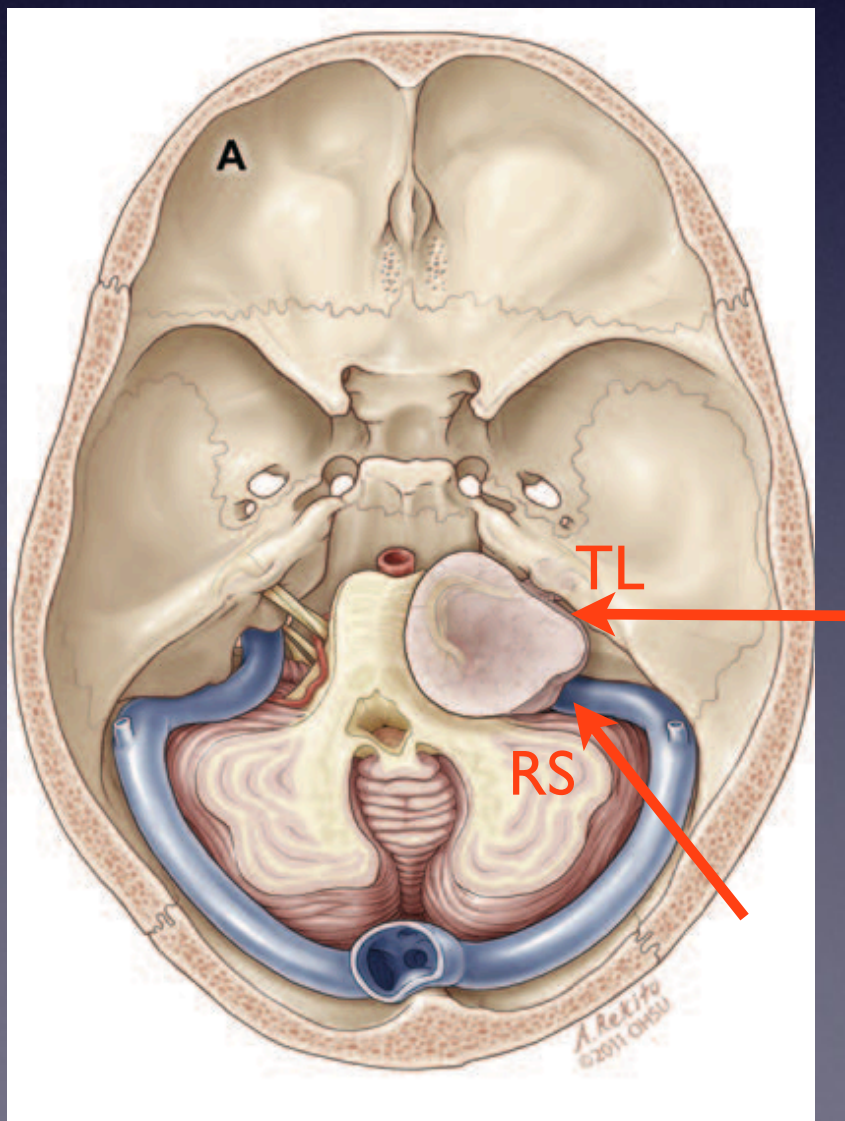
- 1 - Focus on attainable goals
- 2 - Facial nerve preservation is the first priority
- 3 - I never saw an unhappy patient with good facial outcome and unilateral hearing loss
- 4 - I never saw a happy patient with a facial paralysis



Translabyrinthine Resection of Acoustic Neuroma

ADVANTAGES

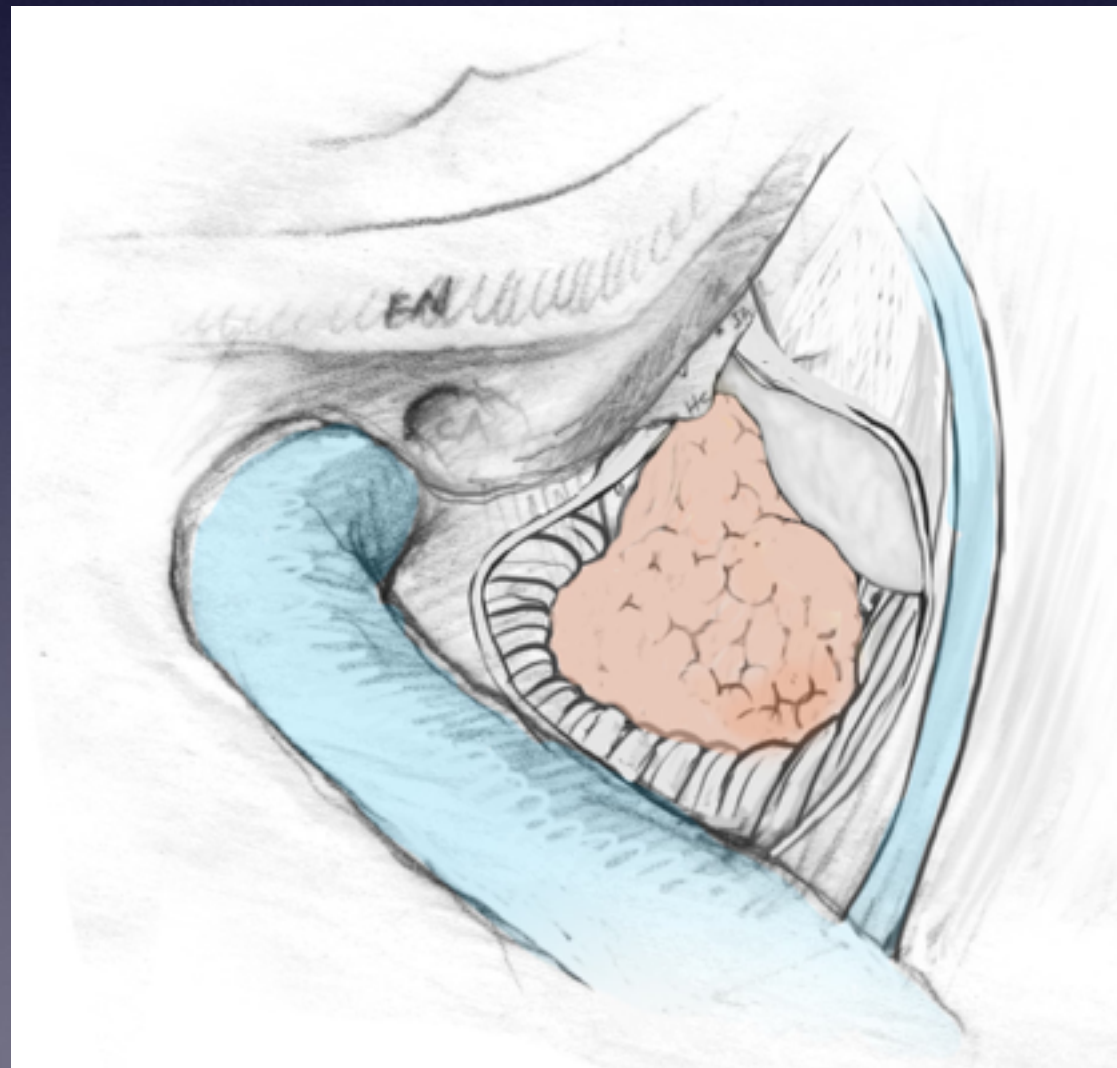
- 1 - DIRECT EXTRADURAL ROUTE TO CEREBELLO-PONTINE ANGLE
- 2 - NO CEREBELLAR RETRACTION OR MANIPULATION
- 3 - CONSISTENT ACCESS TO THE FUNDUS OF THE IAC
- 4 - EARLY IDENTIFICATION OF THE FACIAL NERVE AT FUNDUS OF THE IAC
- 5 - NO MANIPULATION OF THE LOWER CRANIAL NERVES
- 6 - NO POSTOP CHRONIC HEADACHE



Translabyrinthine Resection of Acoustic Neuroma

DISADVANTAGES

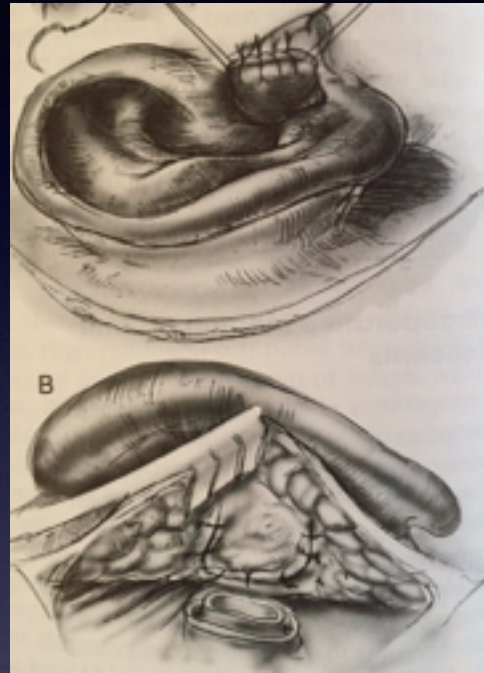
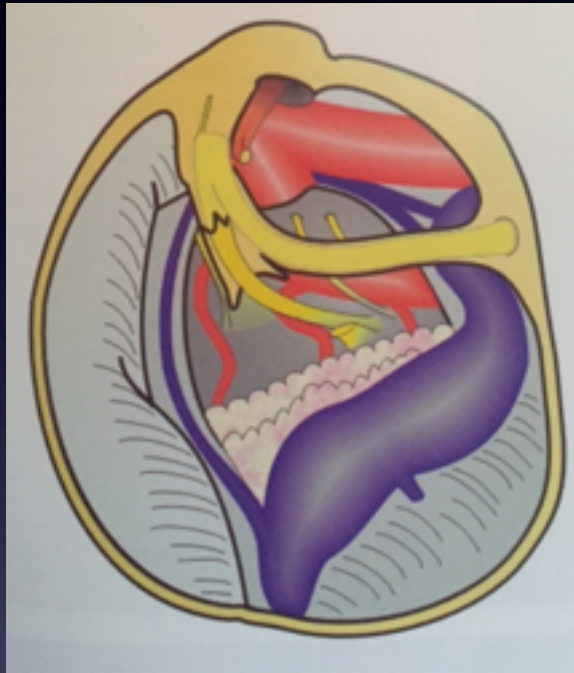
I - HEARING LOSS



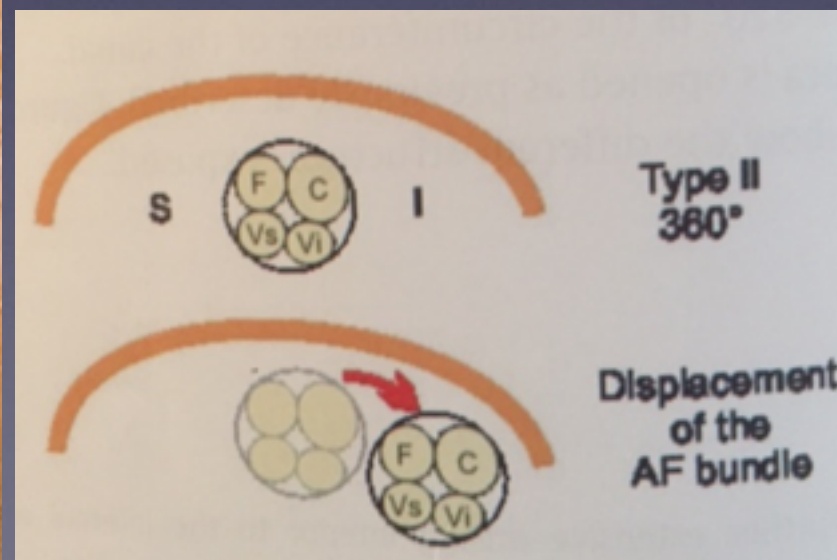
Translabyrinthine Resection of Acoustic Neuroma

EXPANDING TRANSLABYRINTHINE LIMITS

HUGO FISH - TRANSOTIC APPROACH



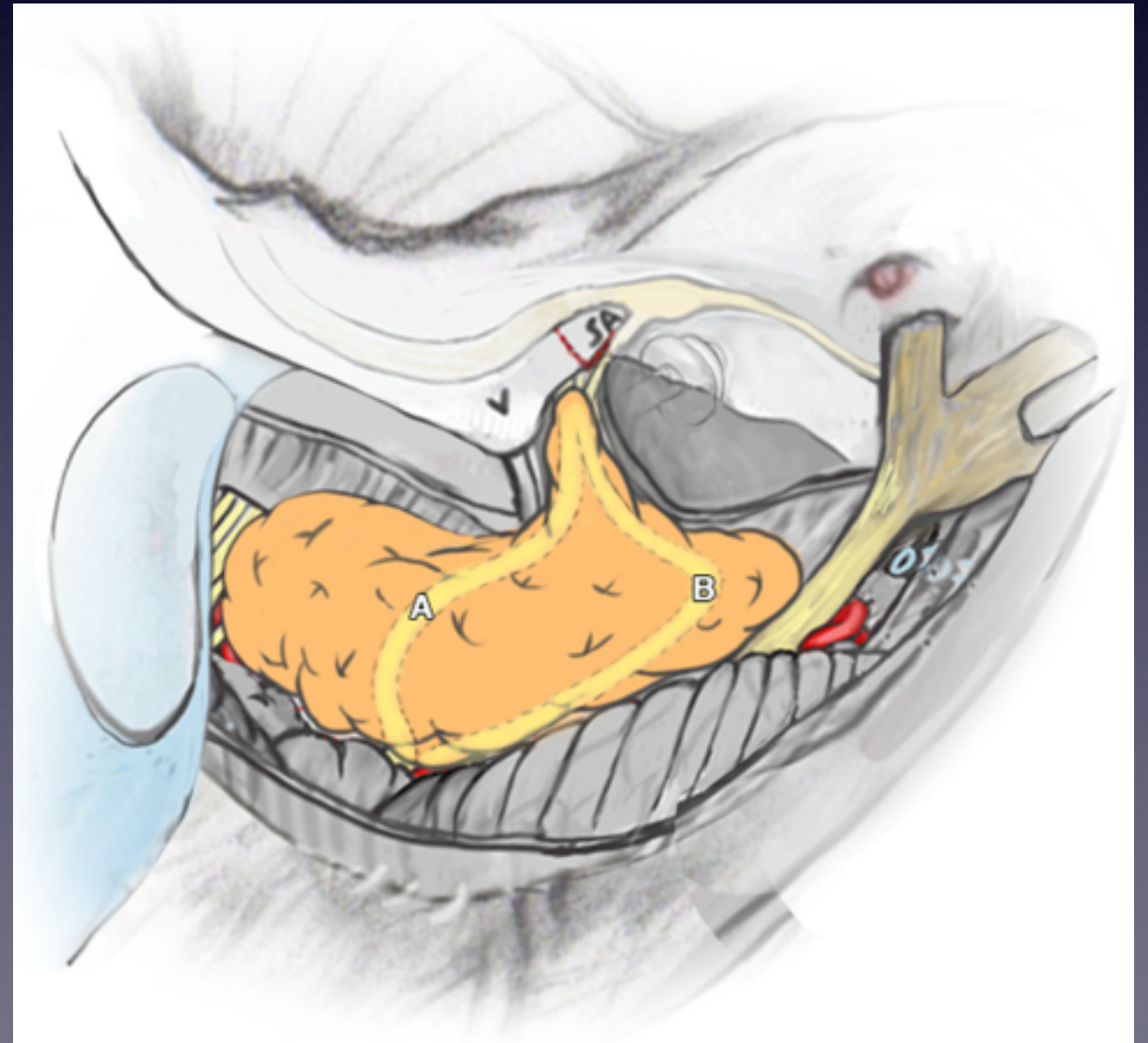
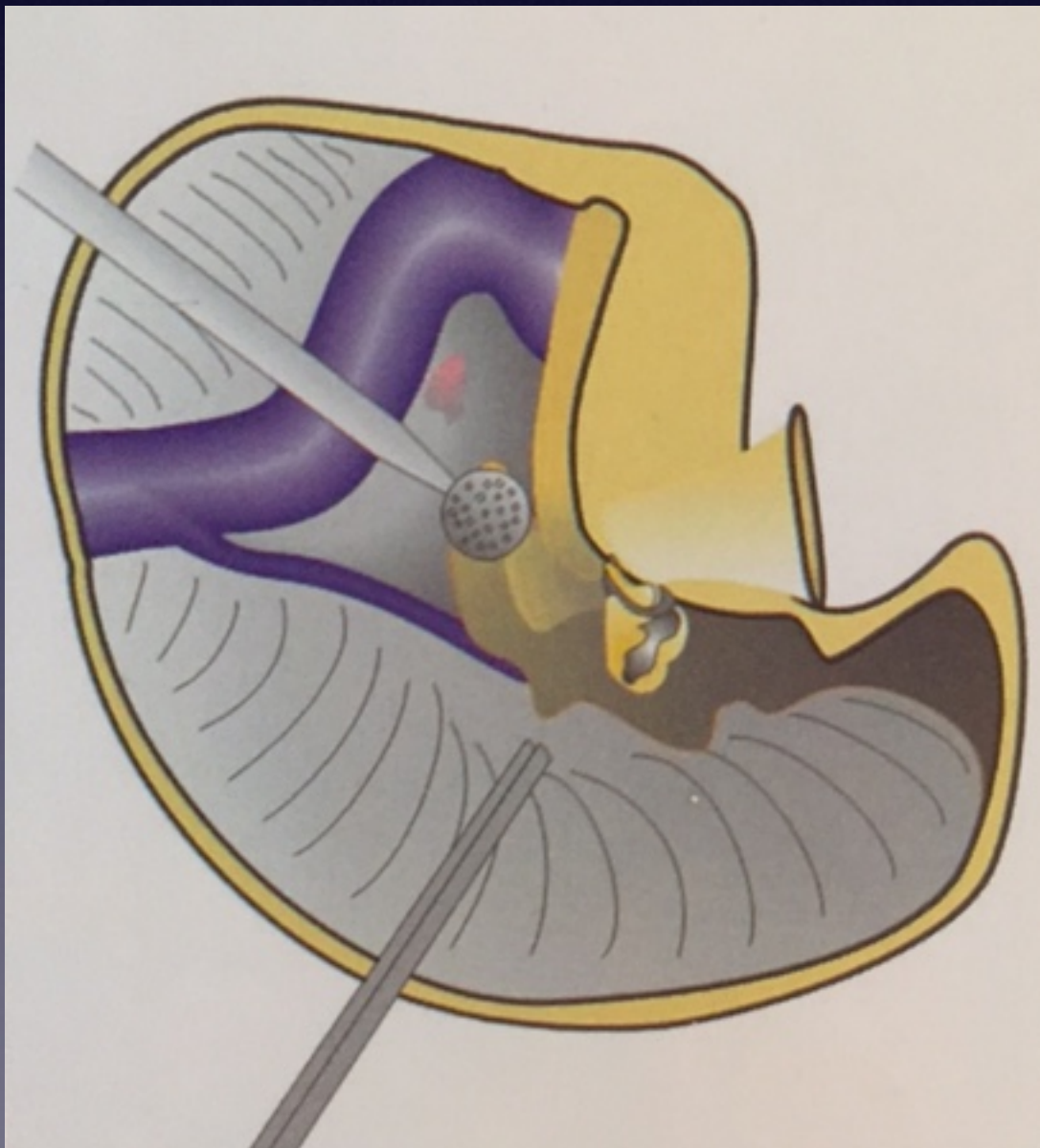
MARIO SANNA - IAC DURAL MOBILIZATION



Translabyrinthine Resection of Acoustic Neuroma

EXPANDING TRANSLABYRINTHINE LIMITS

Center for Acoustic Neuroma -
Combined Translabyrinthine/Middle Fossa

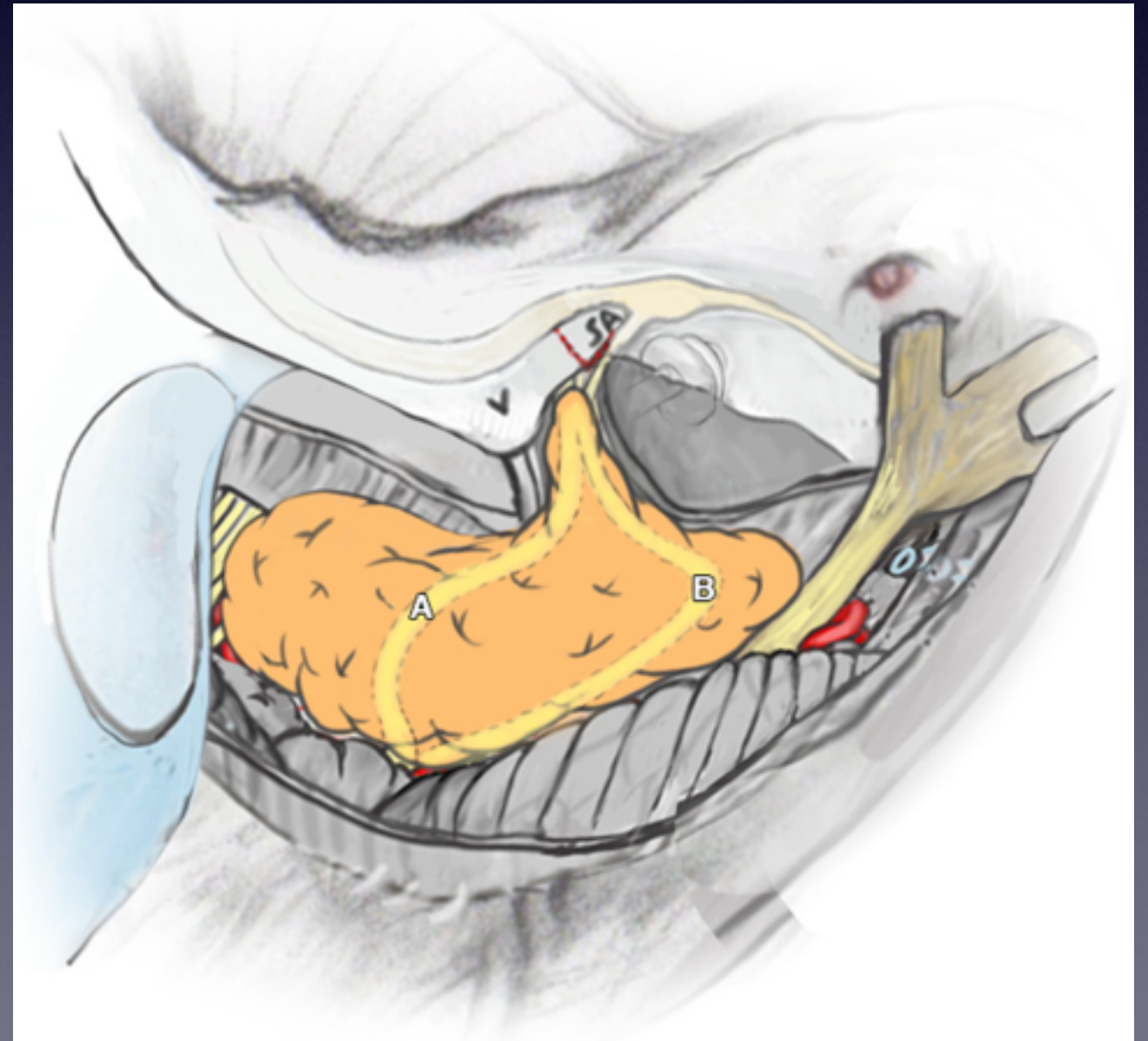
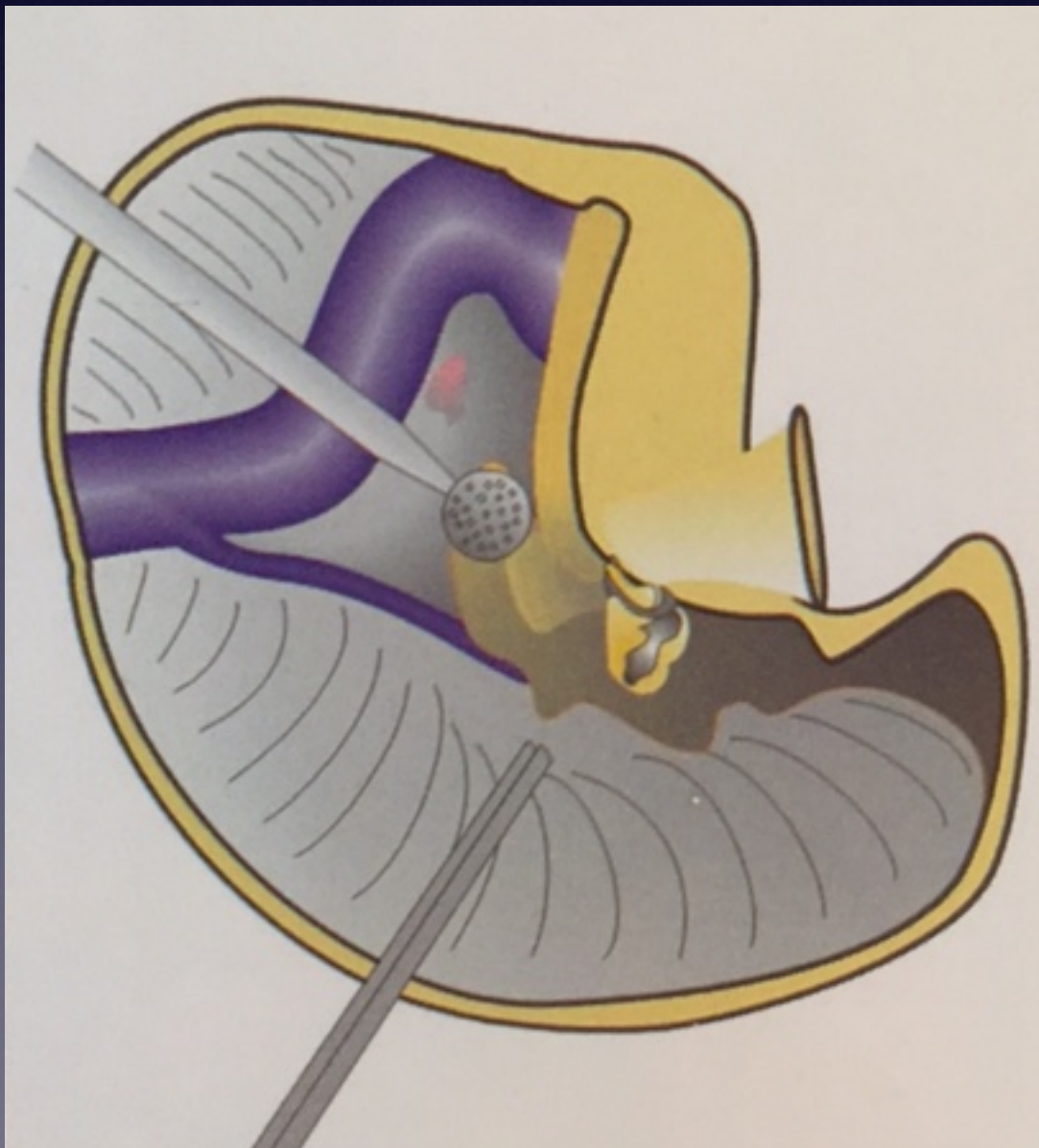


Translabyrinthine Resection of Acoustic Neuroma

EXPANDED TRANSLABYRINTHINE APPROACH

RATIONALITY

- 1 -TO FACILITATE ACCESS AND CONTROL OF ALL CIRCUMFERENCE TO LARGE ACOUSTIC NEUROMA VIA TRANSLAB APPROACH
- 2 -TO IMPROVE CONTROL /VISUALIZATION OF THE FACIAL NERVE AT THE CPA
- 3 -TO ALLOW 270 DEGREE EXPOSURE OF THE IAC



Translabyrinthine Resection of Acoustic Neuroma

EXPANDED TRANSLABYRINTHINE APPROACH

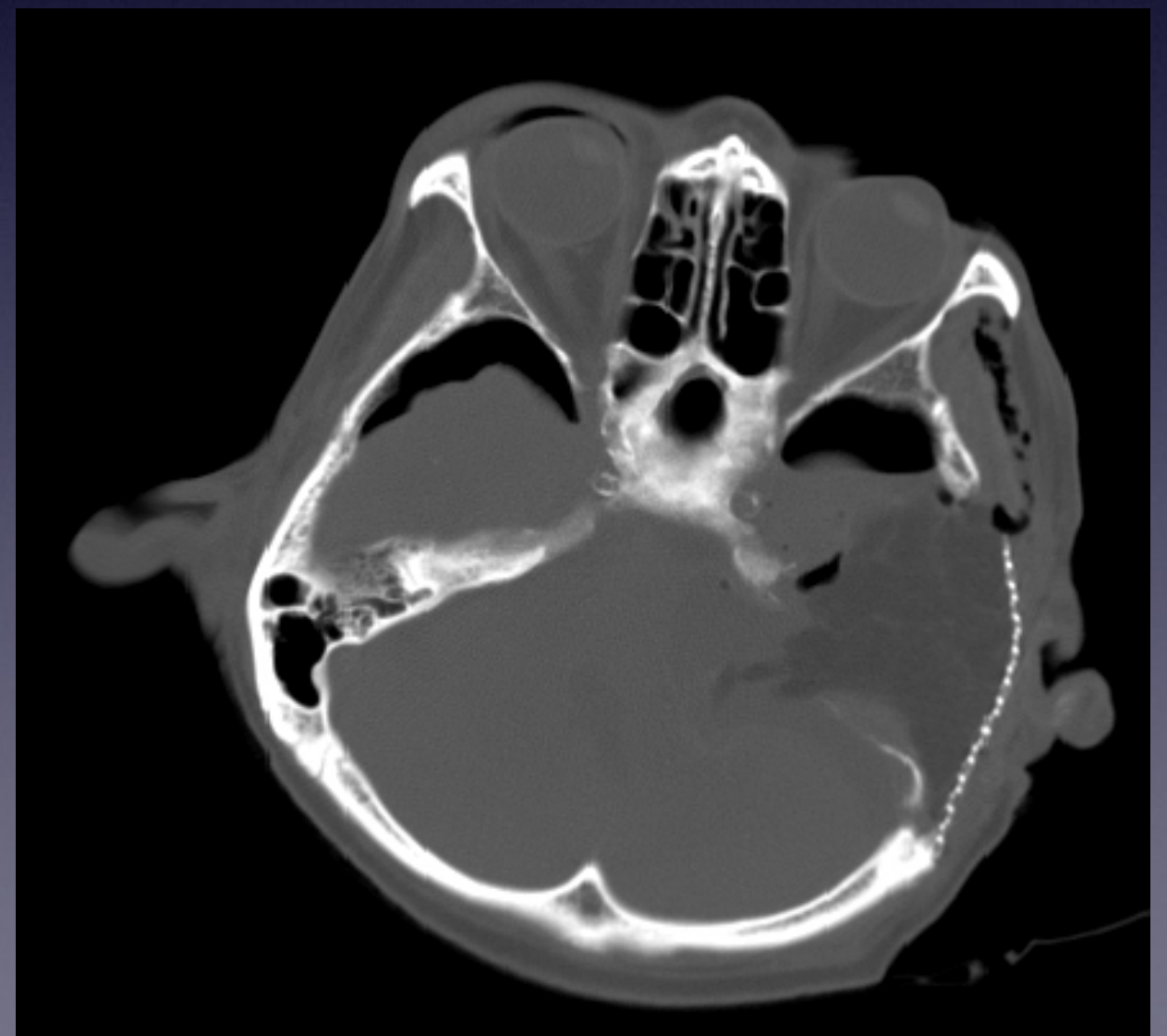
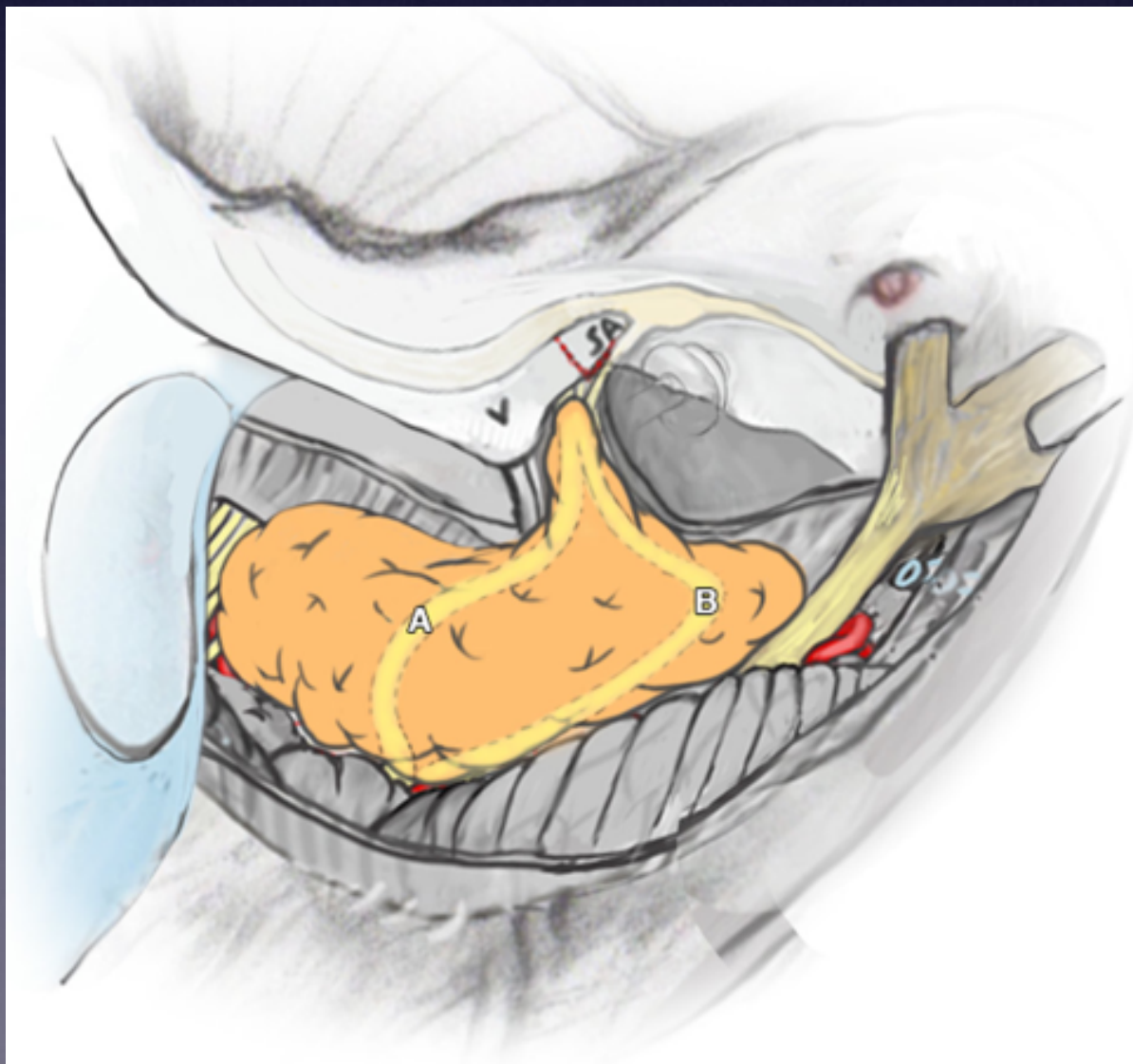
RATIONALITY (cont.)

4 - TO ALLOW EXTRADURAL VISUALIZATION OF THE PORUS OF MECKEL'S CAVE

5 - TO ALLOW EARLY VISUALIZATION AND CONTROL OF THE TRIGEMINAL NERVE IN THE CPA

6 - TO ALLOW VISUALIZATION OF THE CN IX AT THE COCHLEAR AQUEDUCT

7 - TO ALLOW EASY CONTROL OF LOWER CRANIAL NERVES

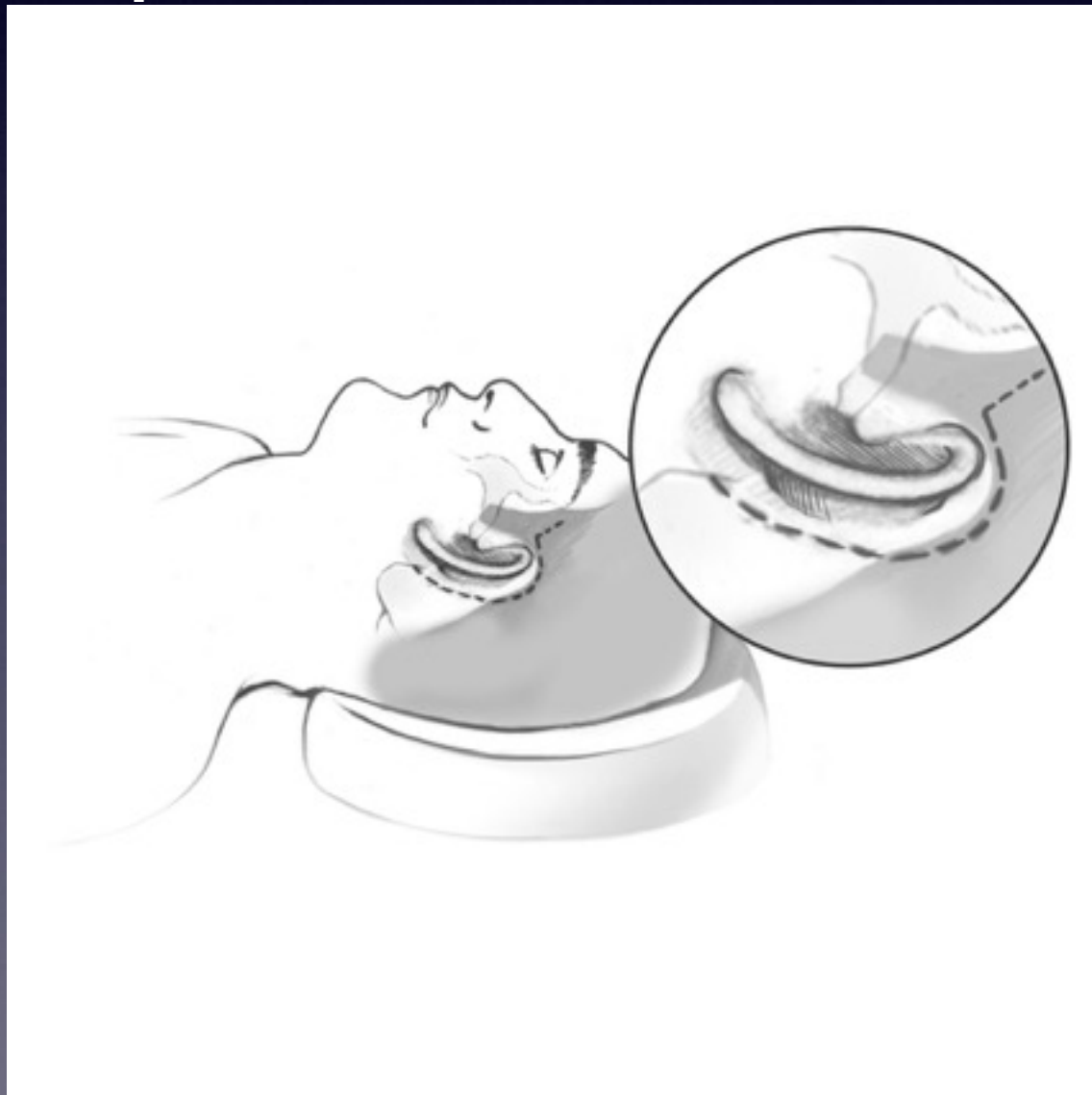


Translabrynthine Resection of Acoustic Neuroma

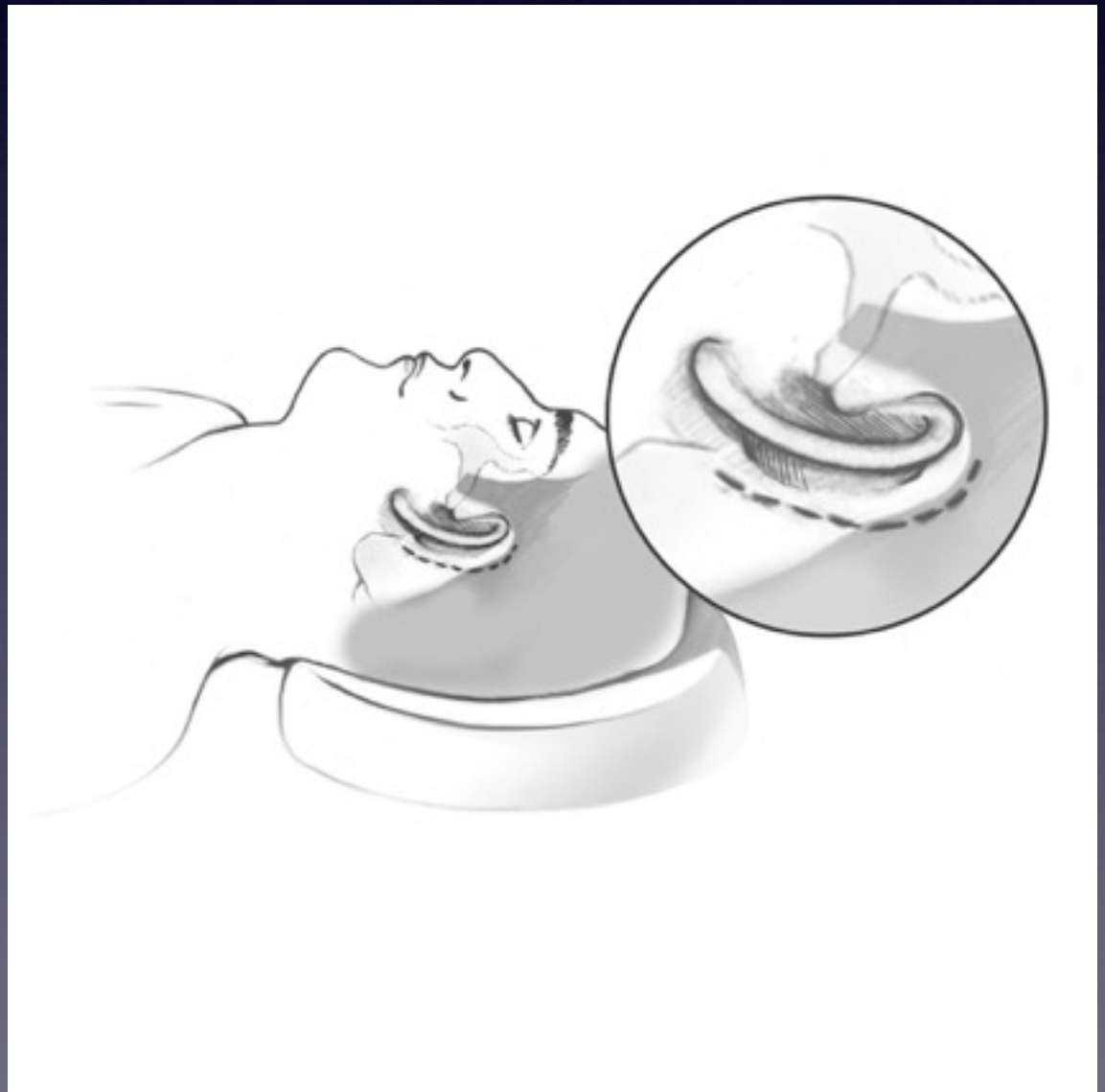
Expanded Translabrynthine Approach

Skin incision

Expanded TL



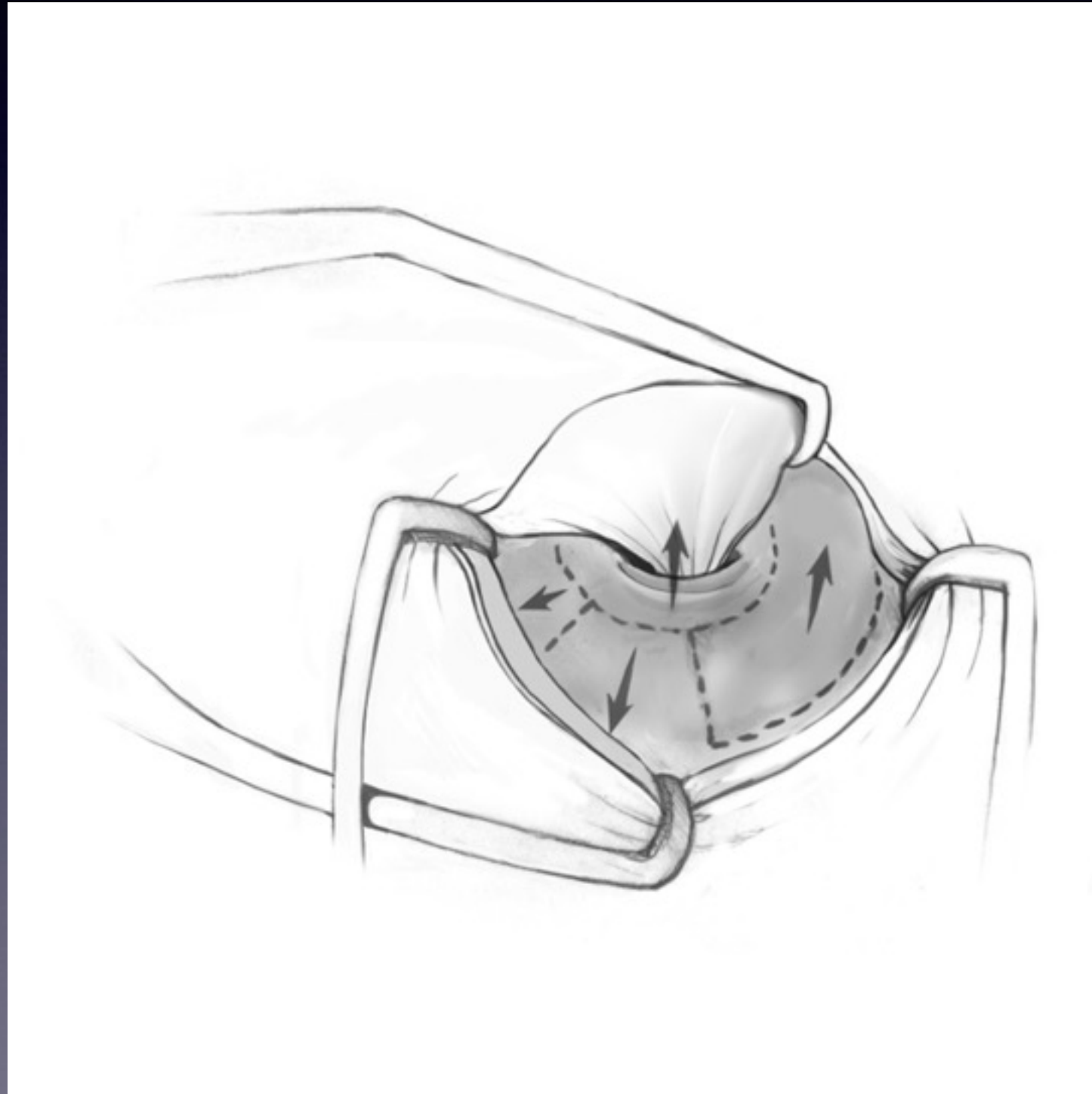
TL



Translabyrinthine Resection of Acoustic Neuroma

Expanded Translabyrinthine Approach

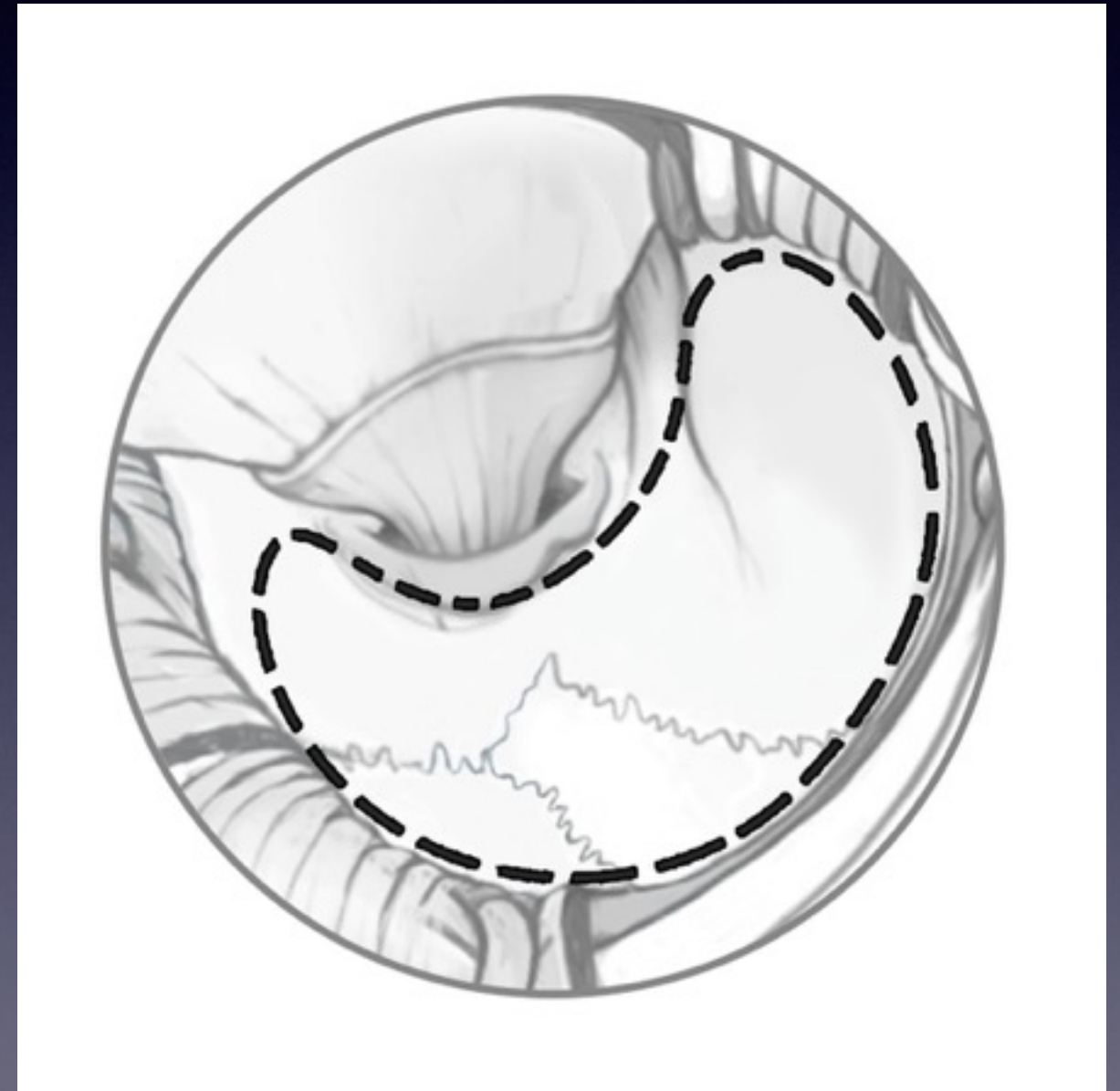
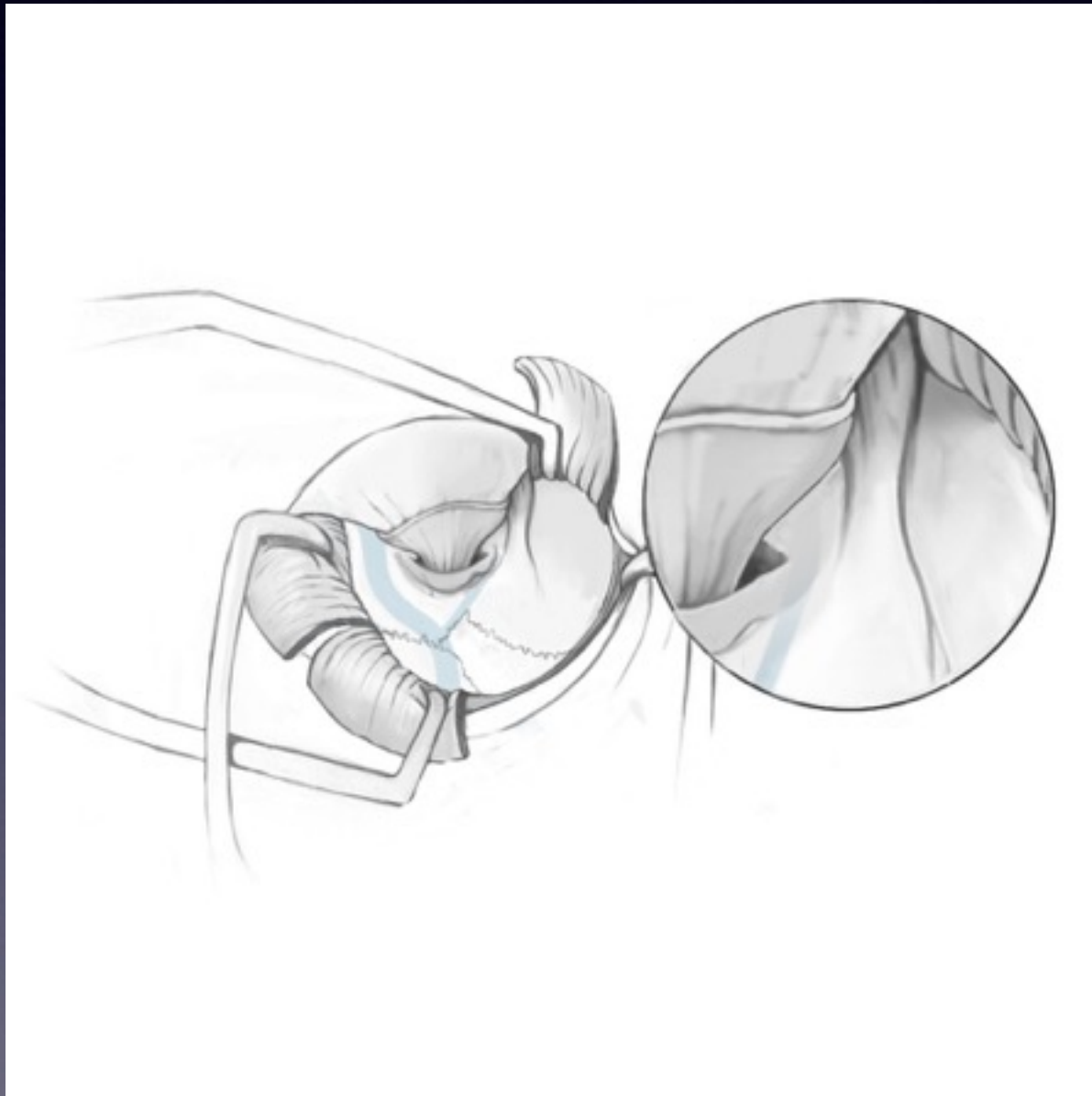
Skin flap



Translabyrinthine Resection of Acoustic Neuroma

Expanded Translabyrinthine Approach

Muscle mobilization

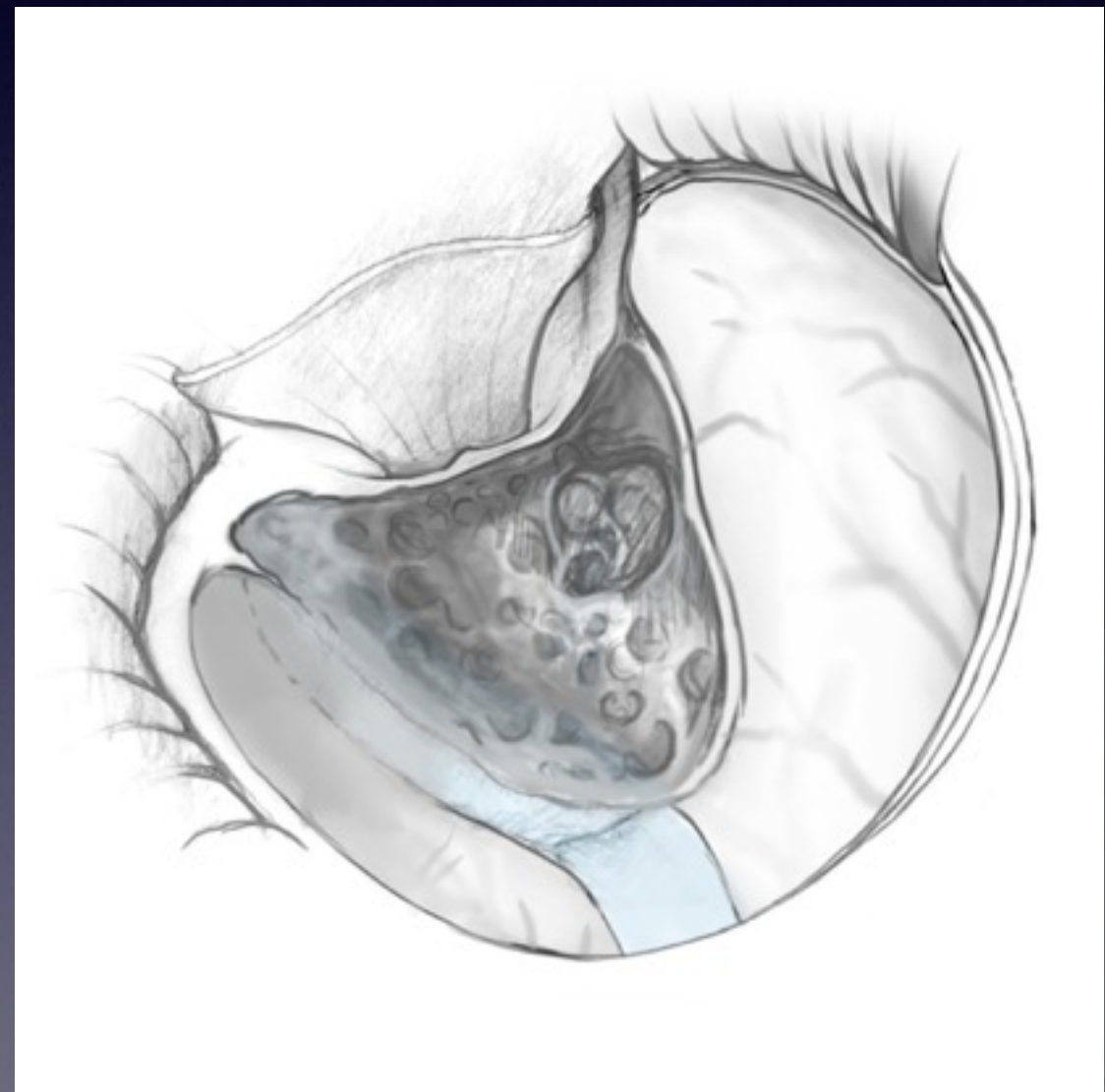
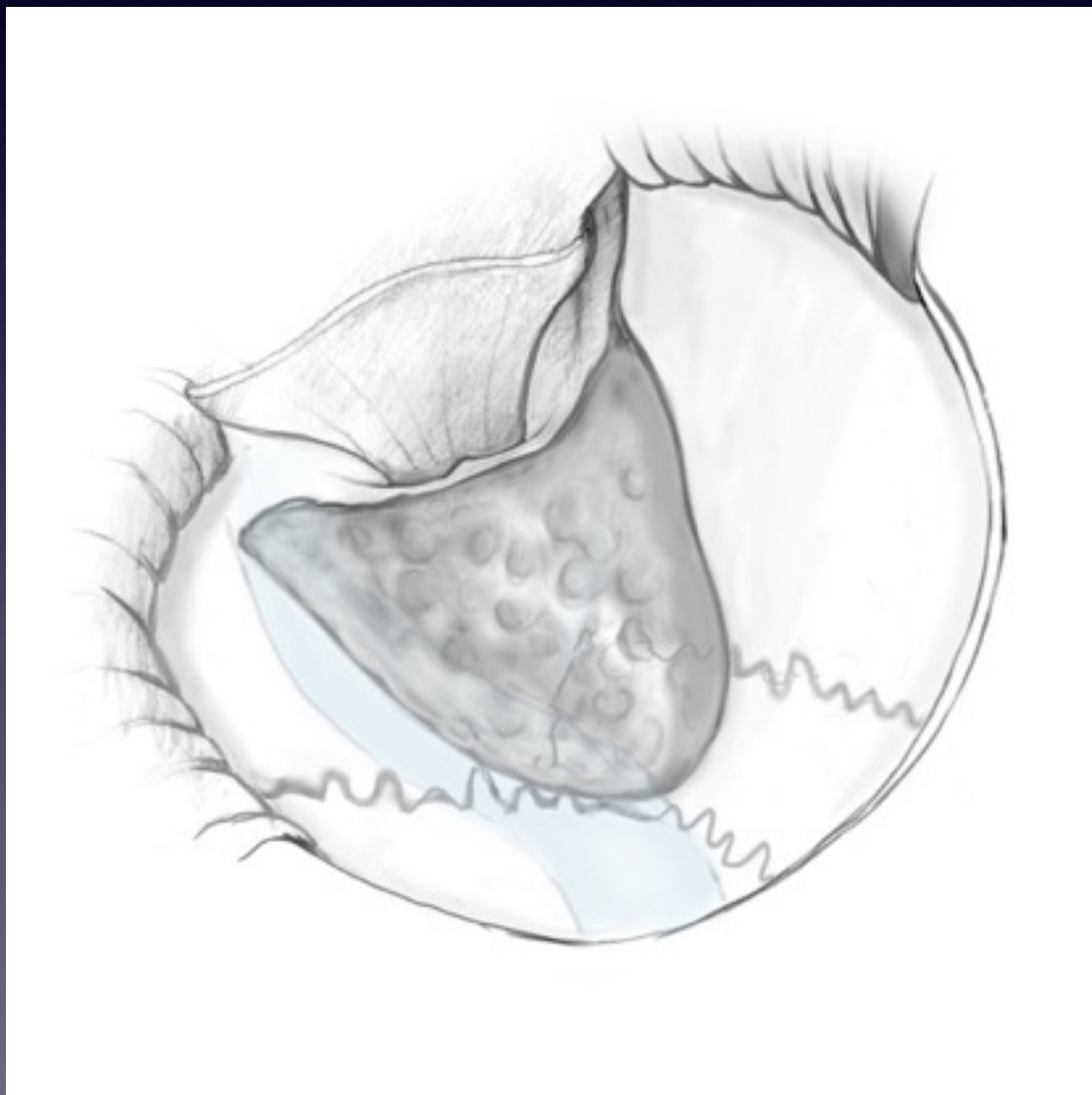


Translabyrinthine Resection of Acoustic Neuroma

Expanded Translabyrinthine Approach

Decortication

Removal of temporal squamosa

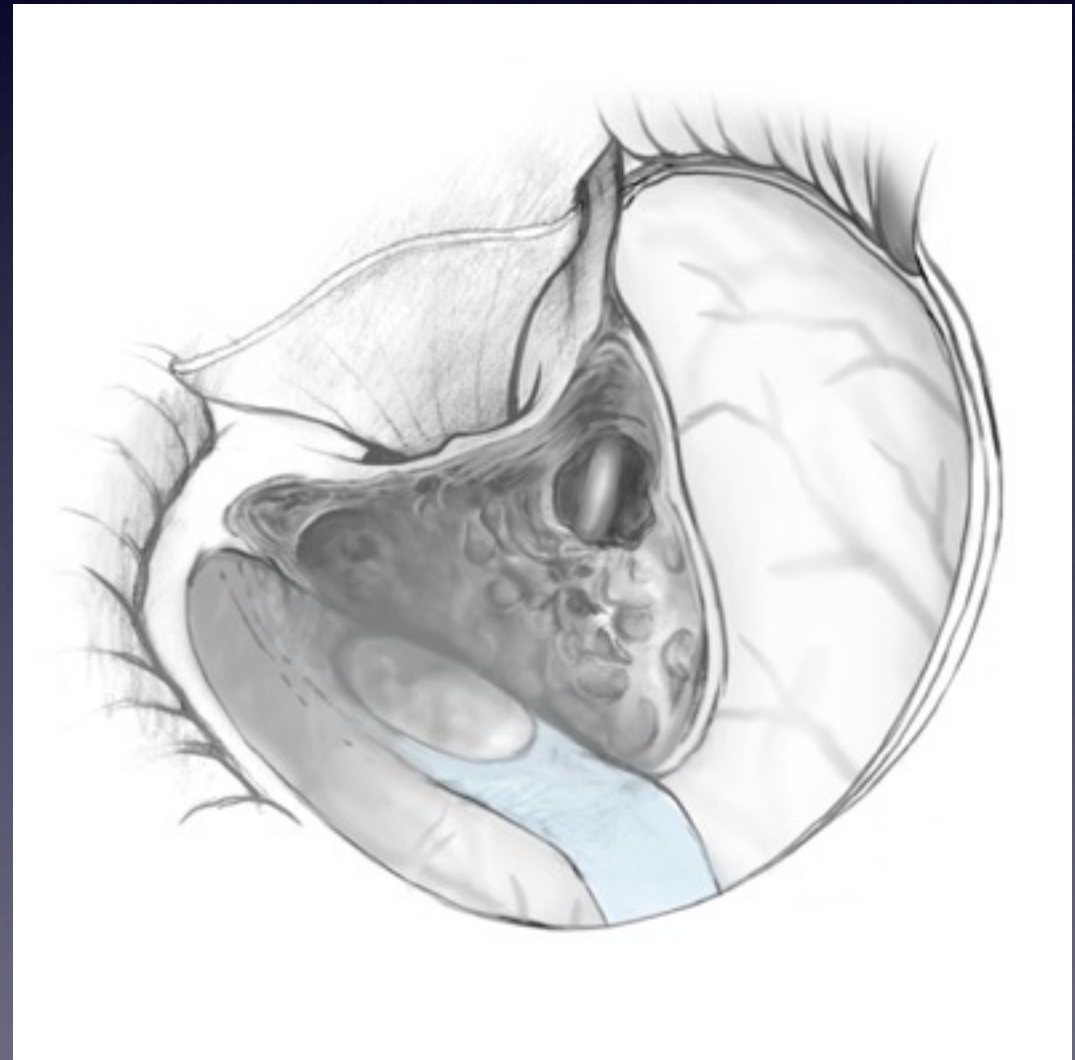
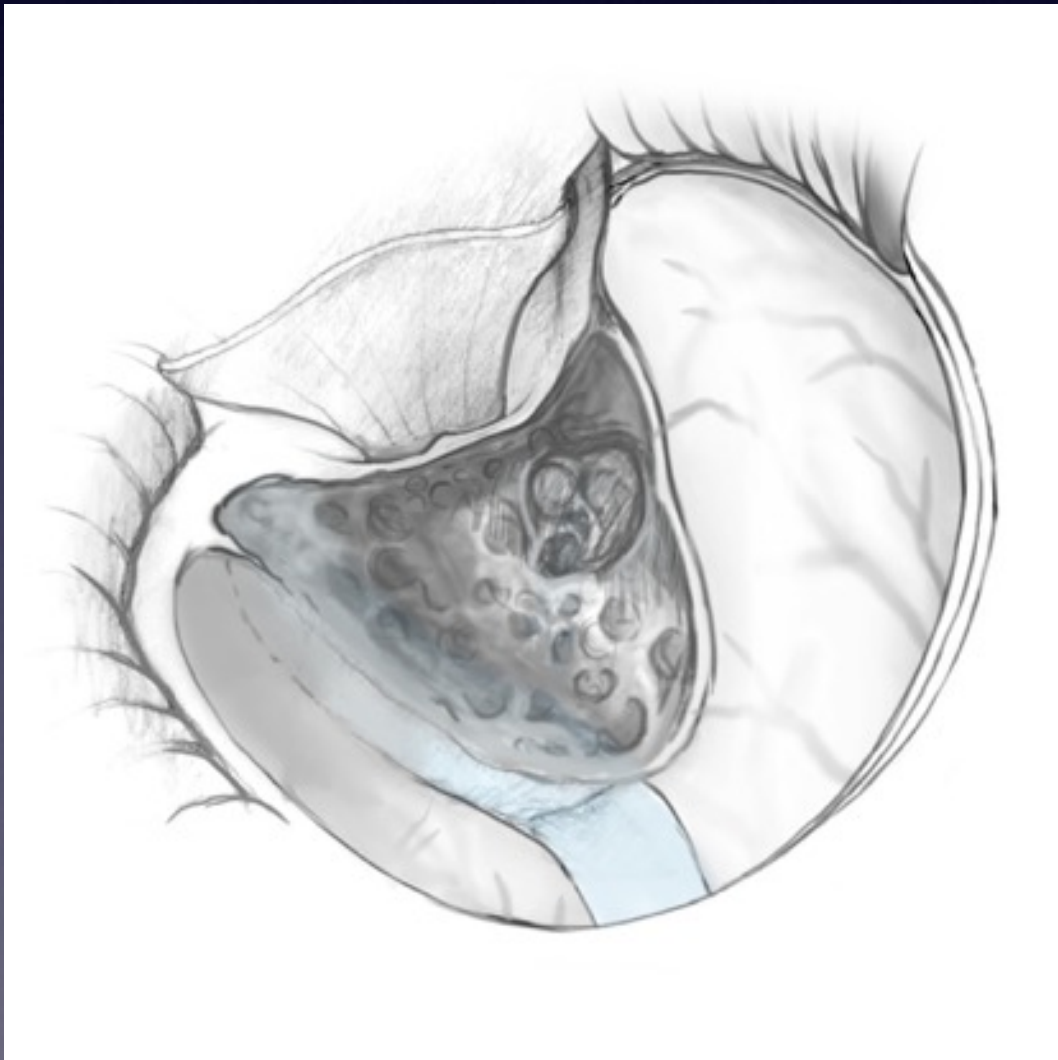


Translabyrinthine Resection of Acoustic Neuroma

Expanded Translabyrinthine Approach

Opening the antrum

Visualization lateral semicircular canal

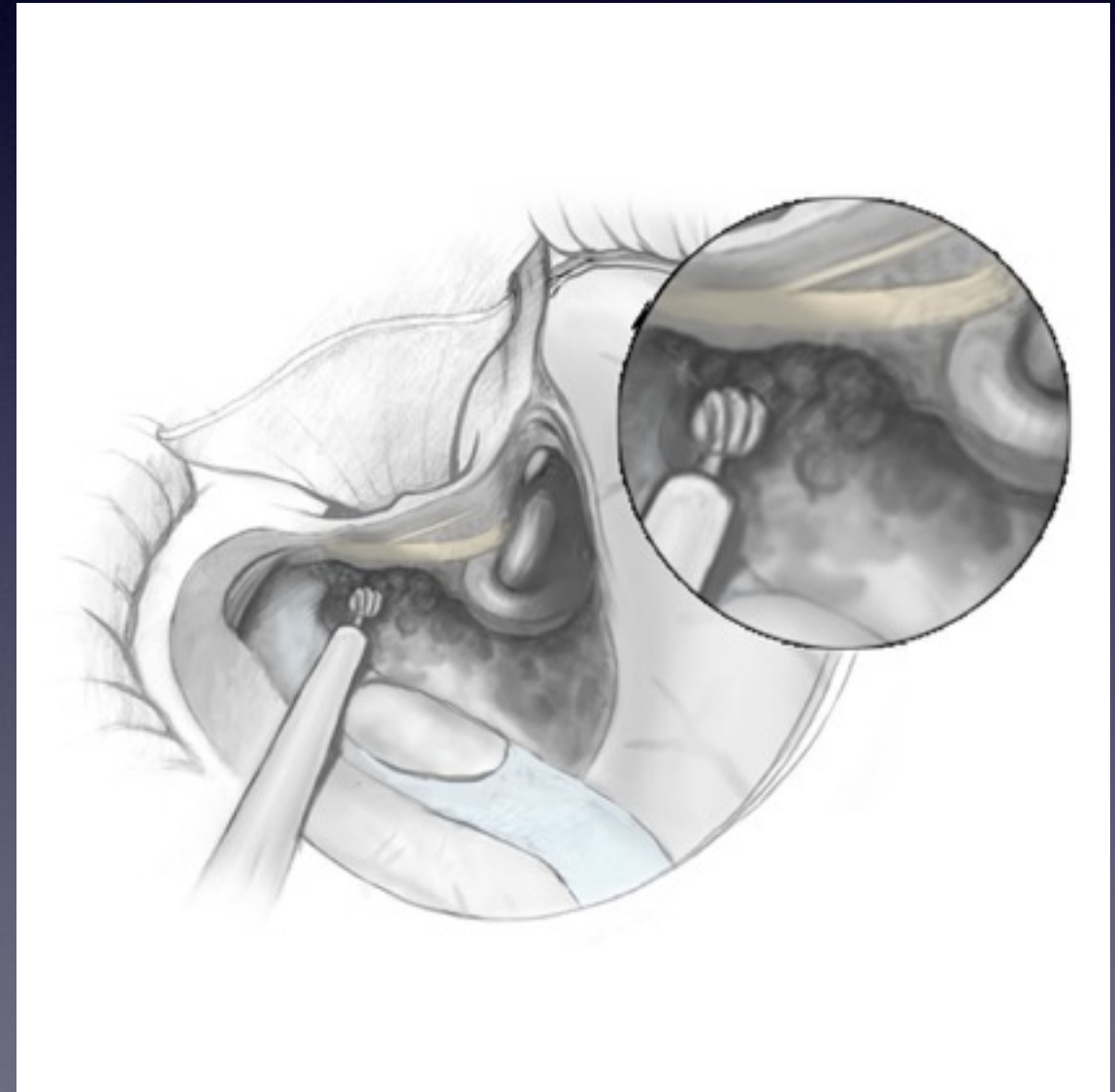
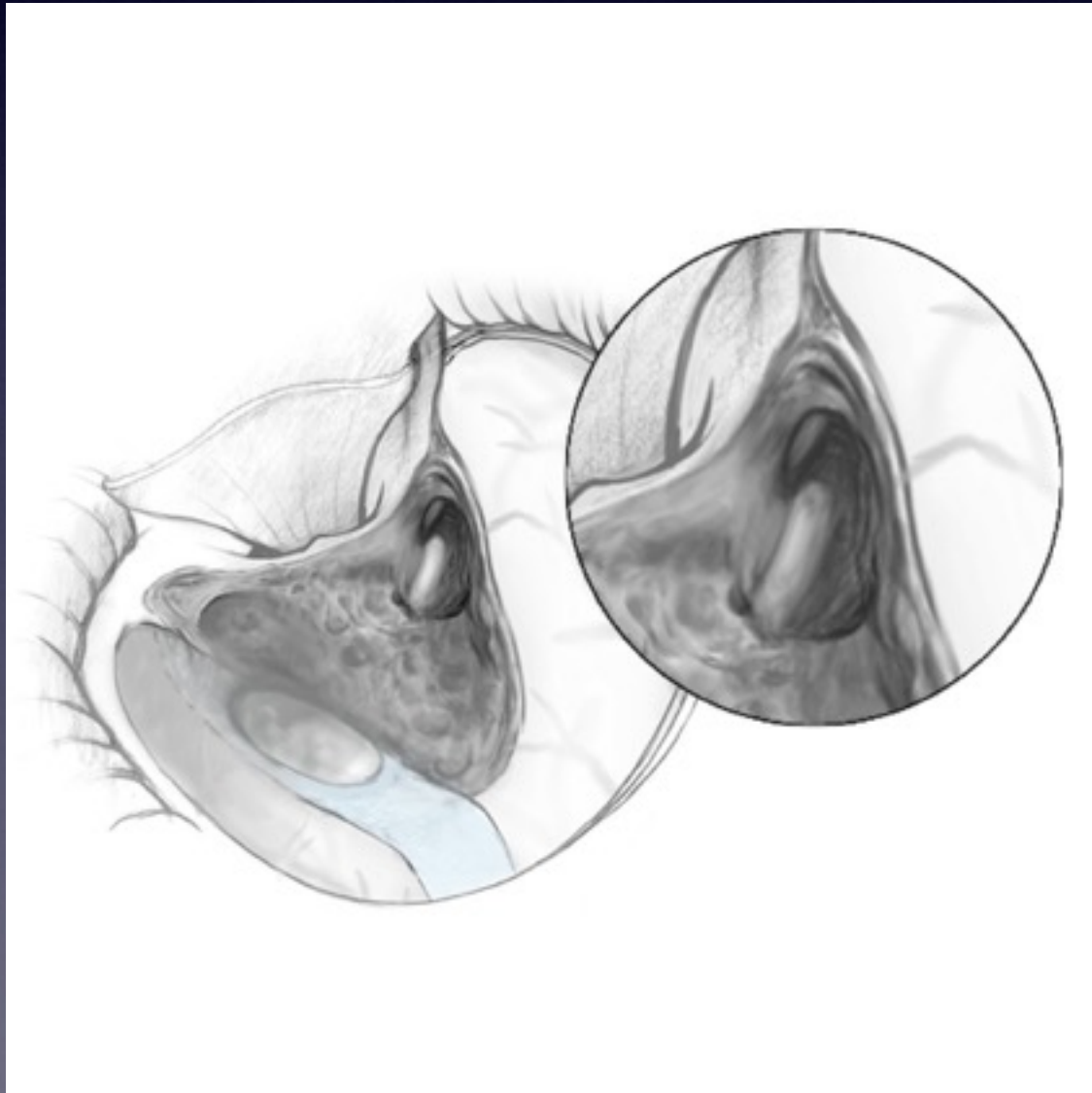


Translabyrinthine Resection of Acoustic Neuroma

Expanded Translabyrinthine Approach

Visualization of the Epitympanum

Removal of retro-facial air cell



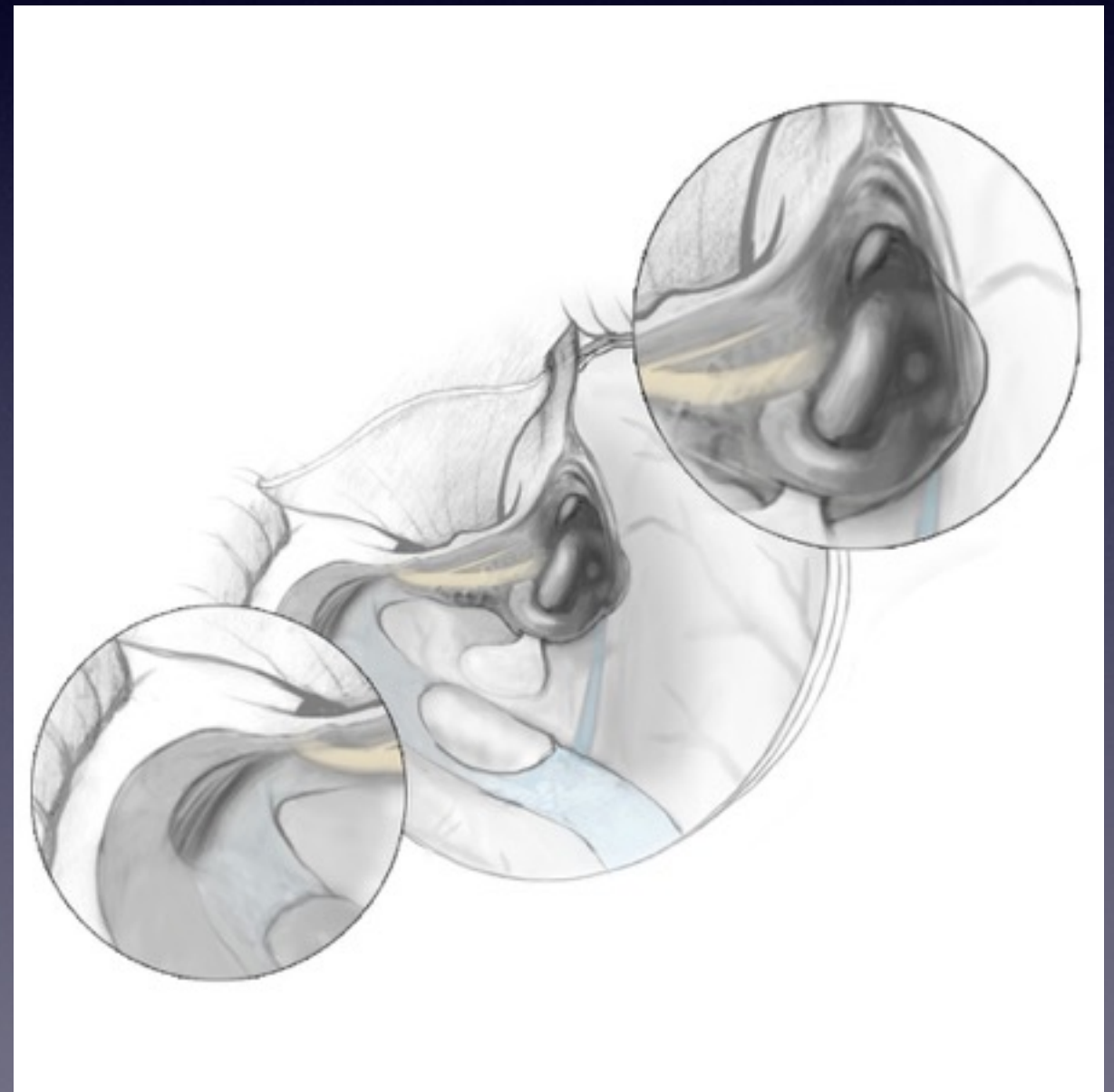
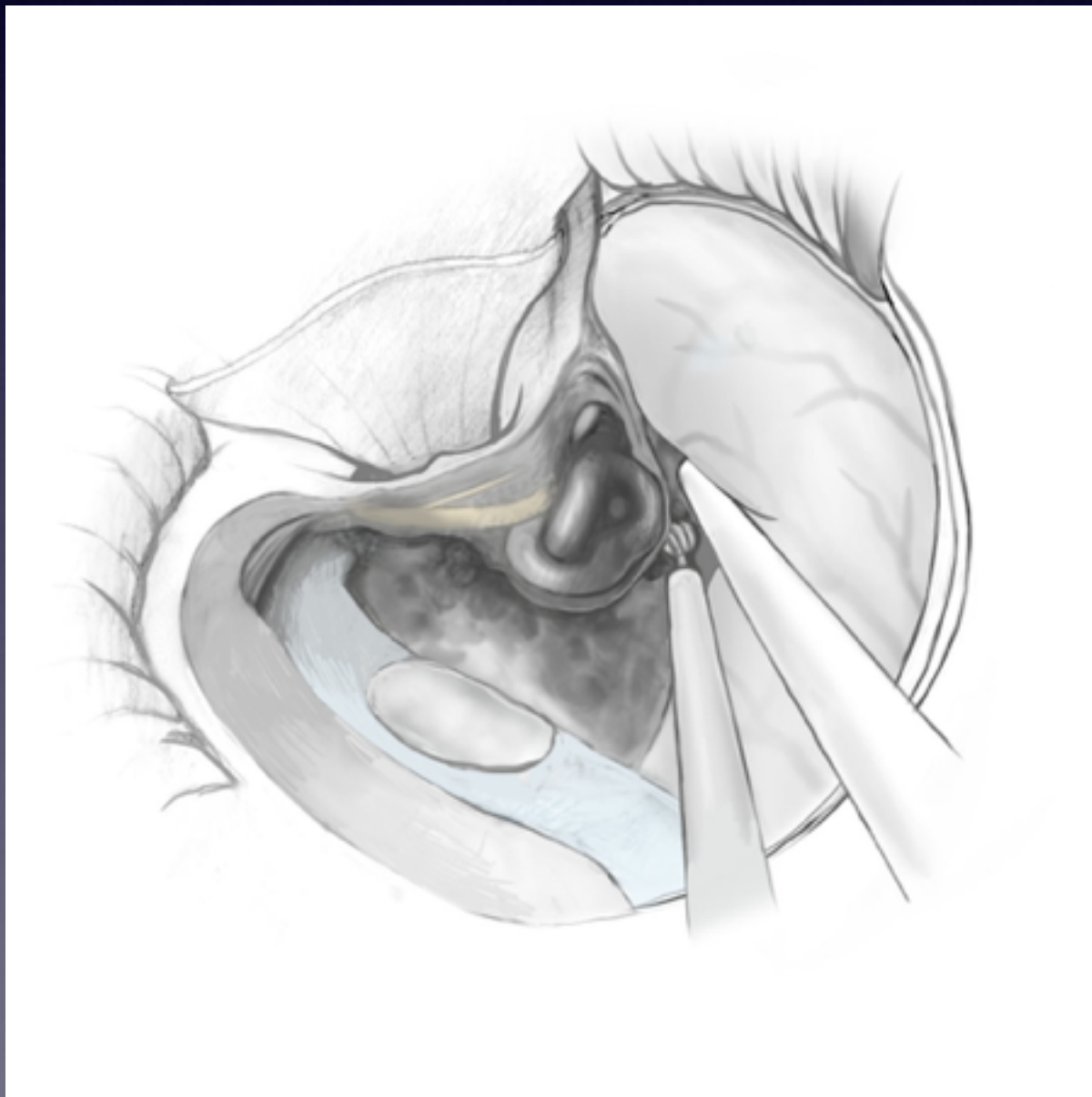
Translabyrinthine Resection of Acoustic Neuroma

Expanded Translabyrinthine Approach

Visualization the superior semicircular canal

Removal of the retro-labyrinthine air cell and cortex

Visualization of the digastric ridge, endolymphatic sac and pre-sigmoid dura

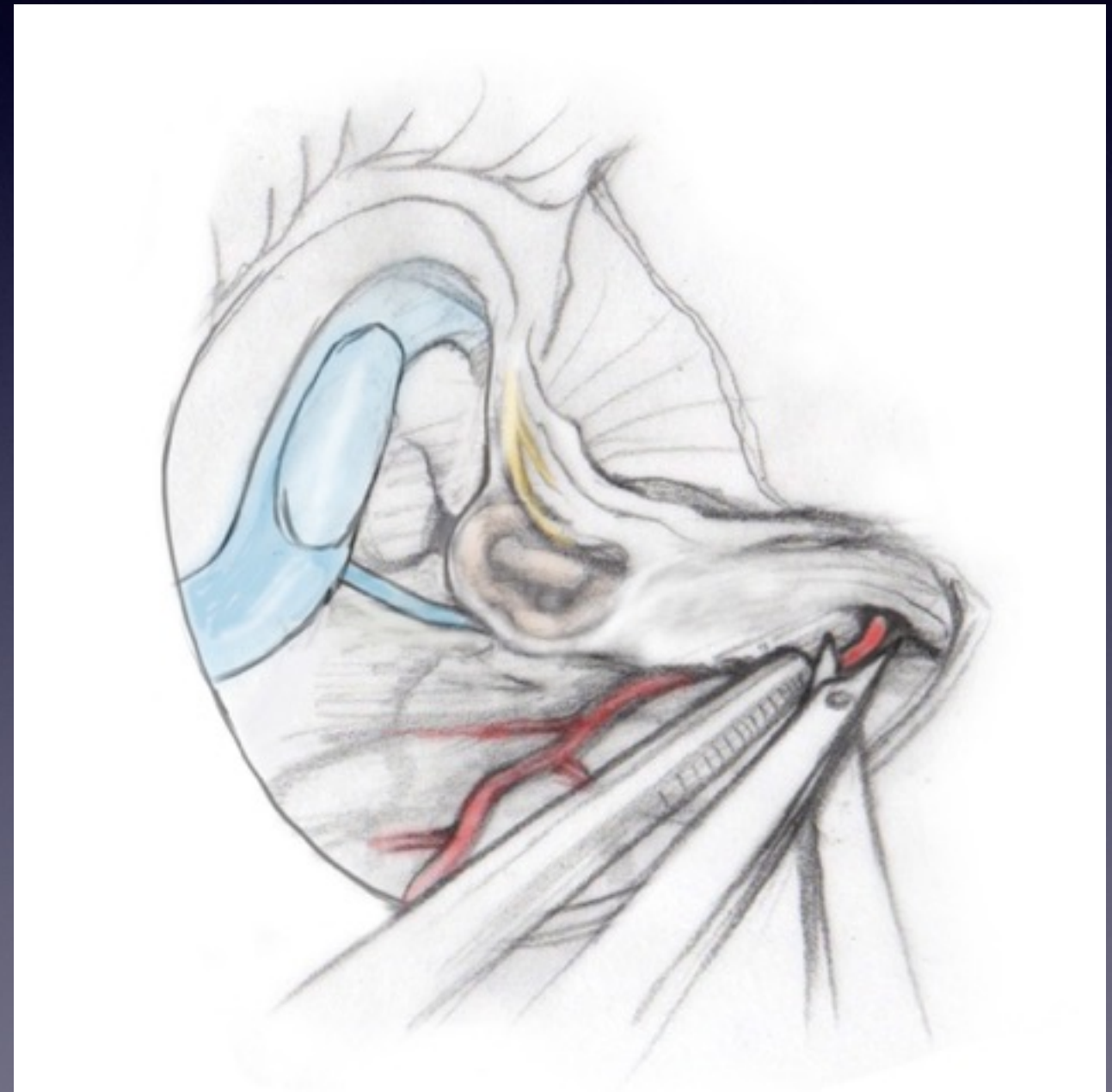
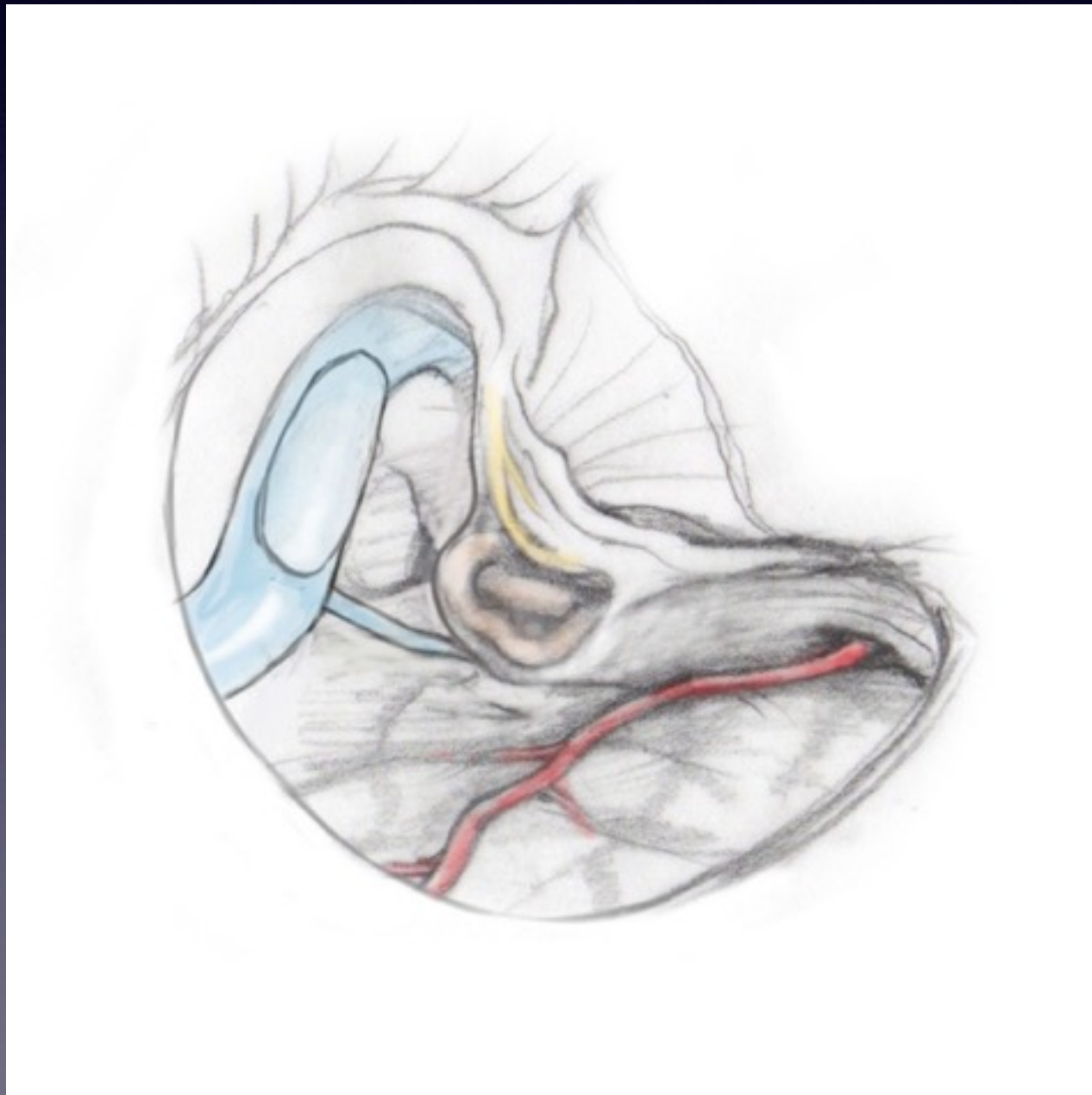


Translabyrinthine Resection of Acoustic Neuroma

Expanded Translabyrinthine Approach

Elevation of the middle fossa dura

Section of middle meningeal artery

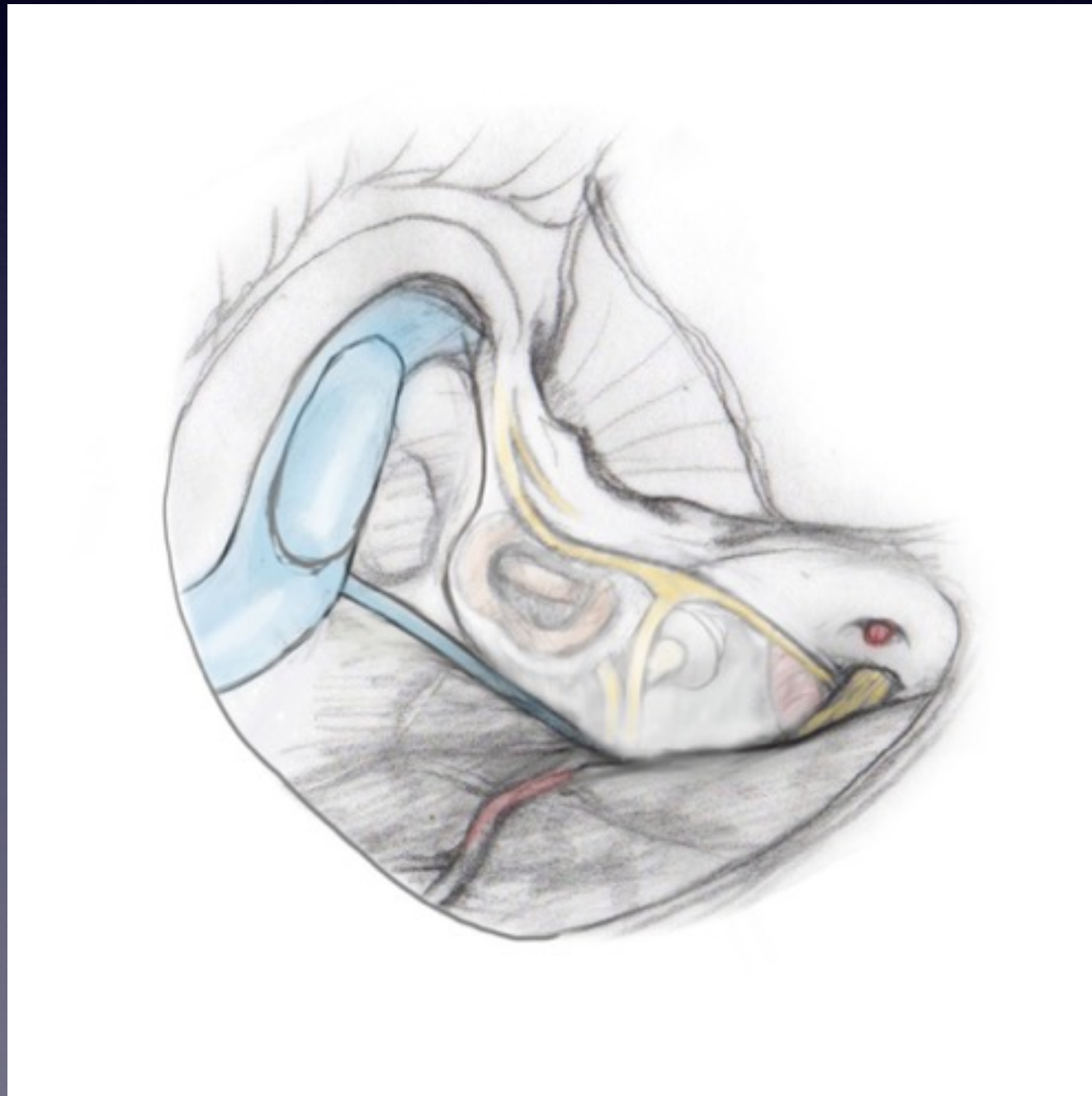


Translabyrinthine Resection of Acoustic Neuroma

Expanded Translabyrinthine Approach

Elevation of the middle fossa dura

Visualization of V3



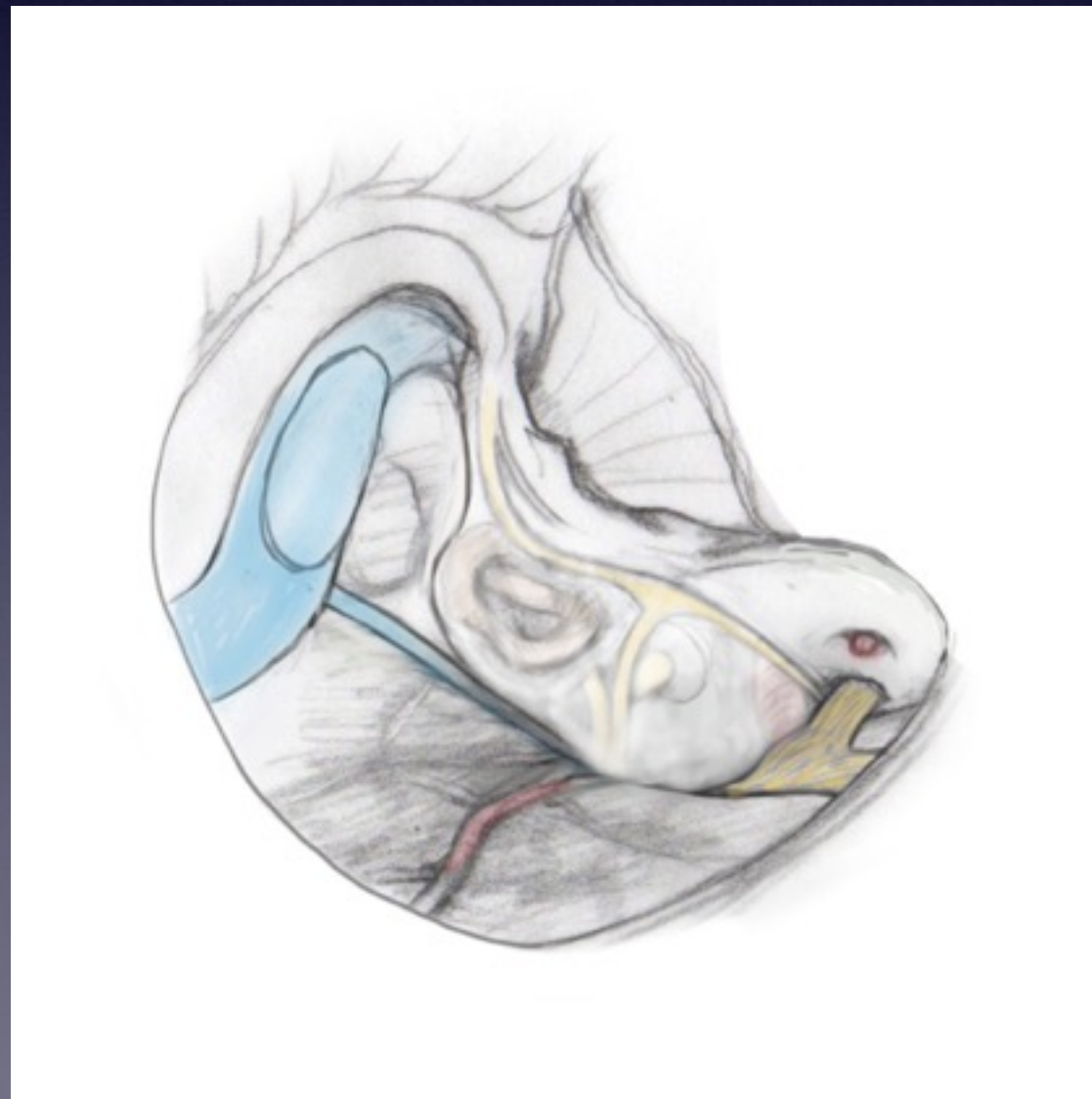
Translabyrinthine Resection of Acoustic Neuroma

Expanded Translabyrinthine Approach

Elevation of the middle fossa dura

Visualization of the arcuate eminence and anterior petrous bone

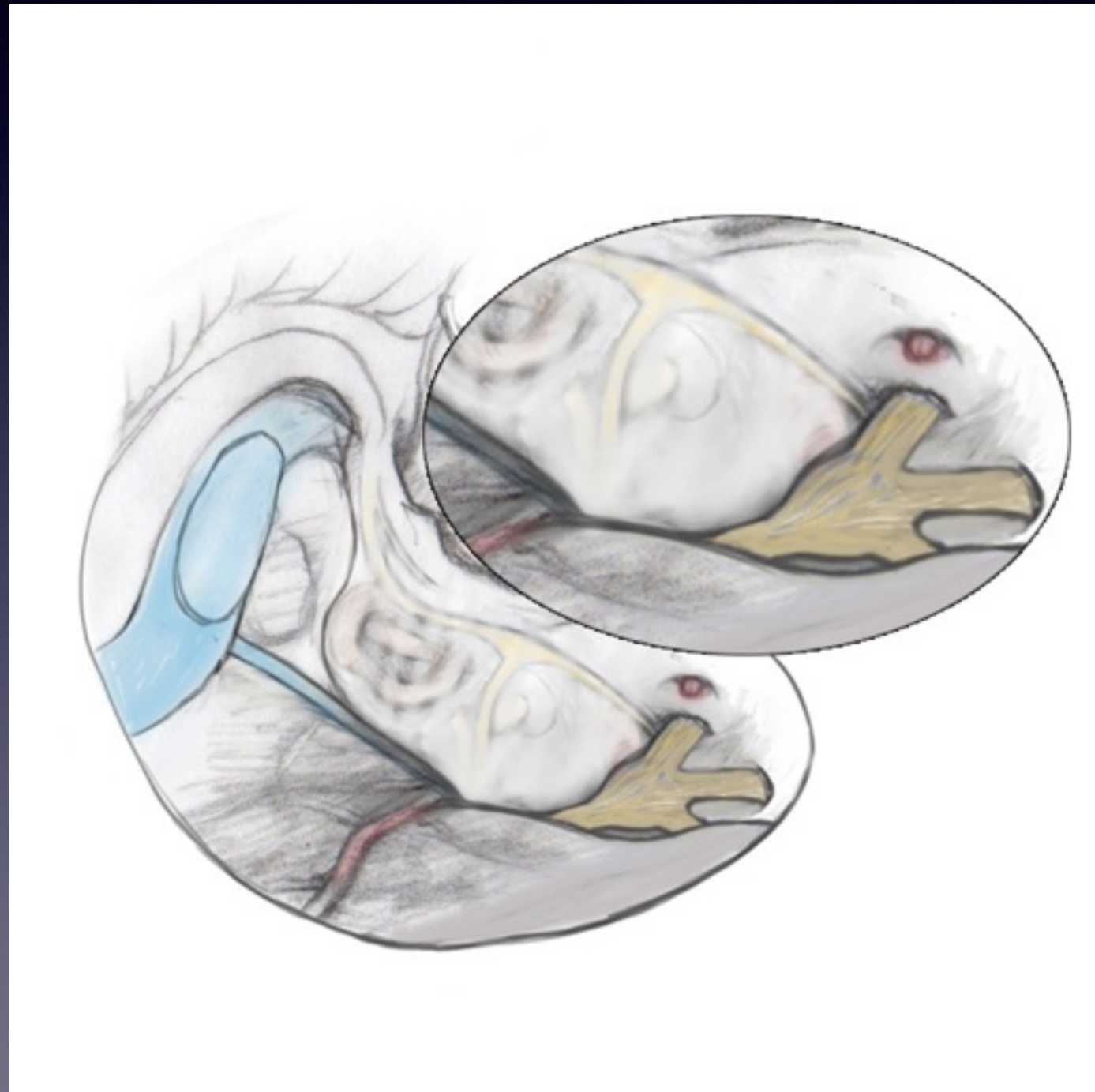
Visualization of gasserian ganglion



Translabyrinthine Resection of Acoustic Neuroma

Expanded Translabyrinthine Approach

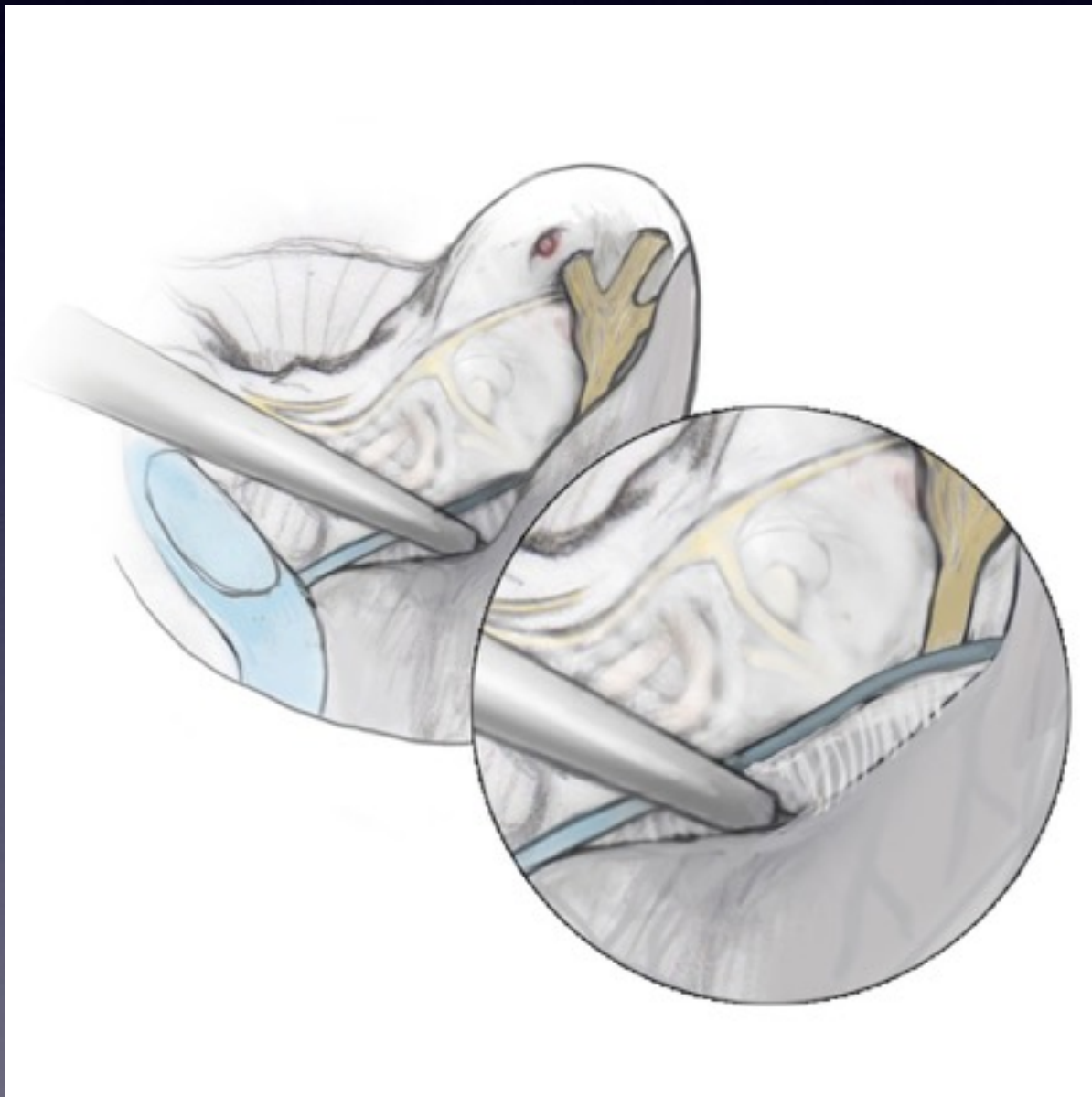
Further visualization of the middle fossa anatomy



Translabyrinthine Resection of Acoustic Neuroma

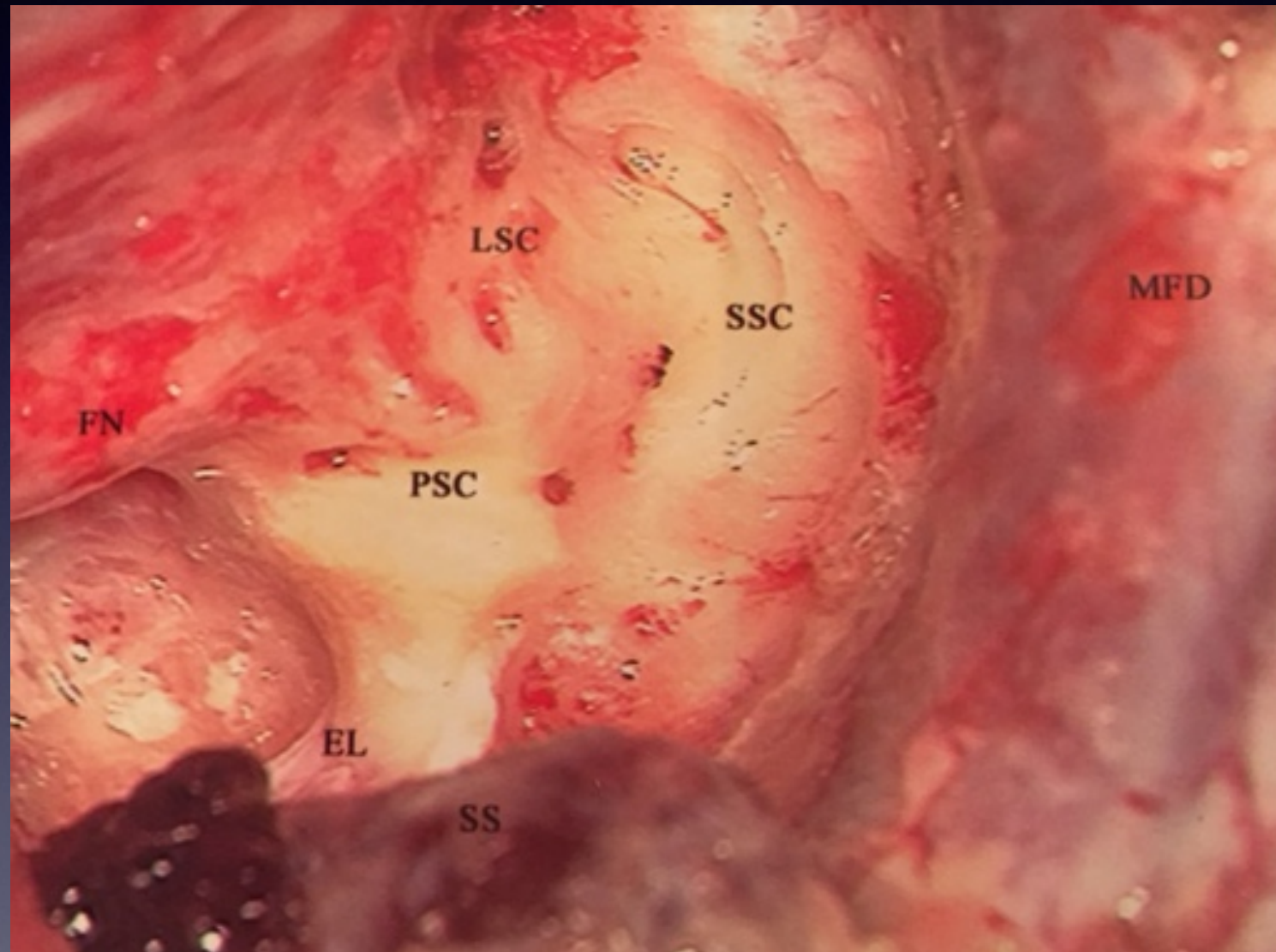
Expanded Translabyrinthine Approach

Splitting of the layers of the tentorium



Translabyrinthine Resection of Acoustic Neuroma

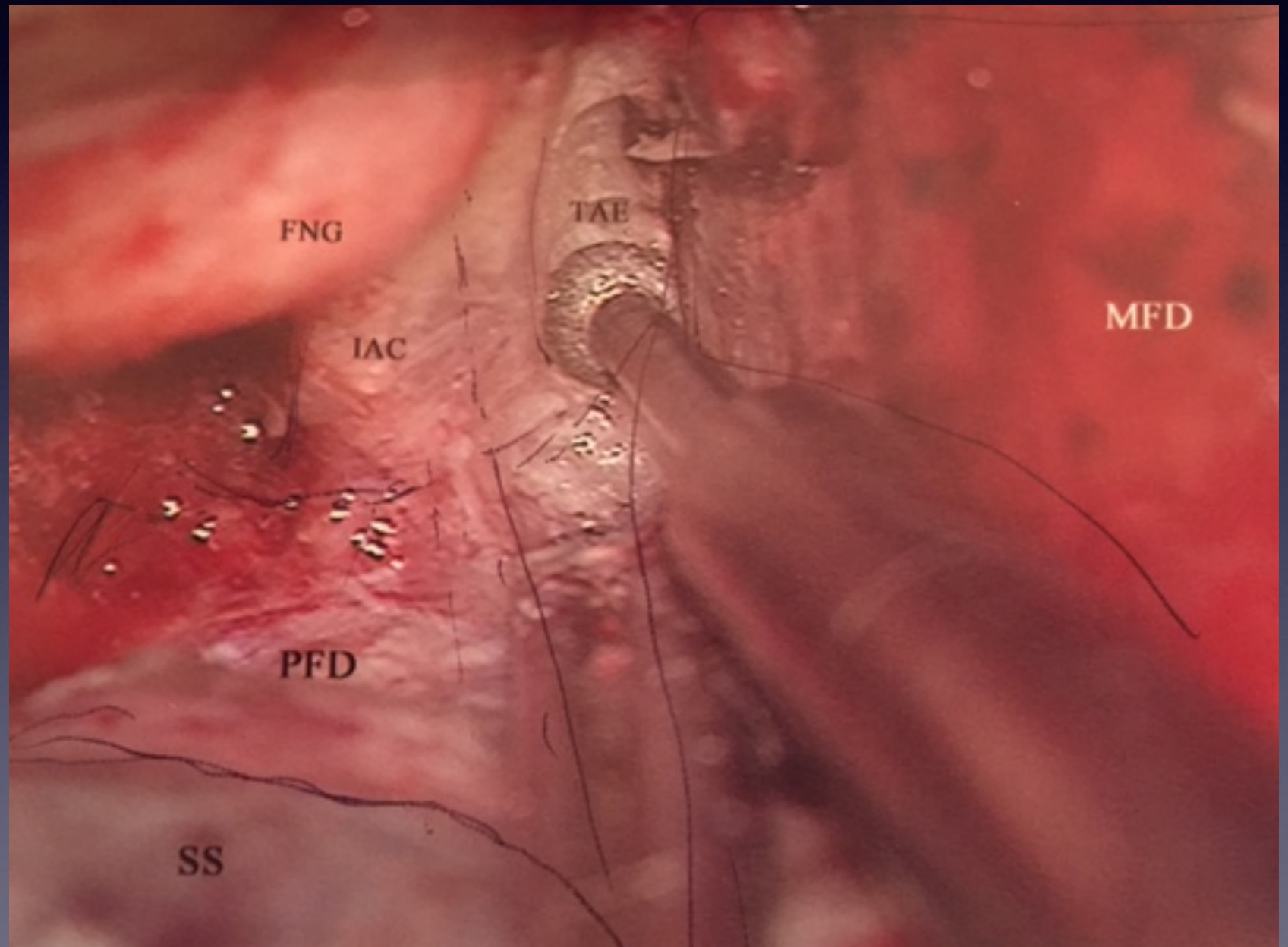
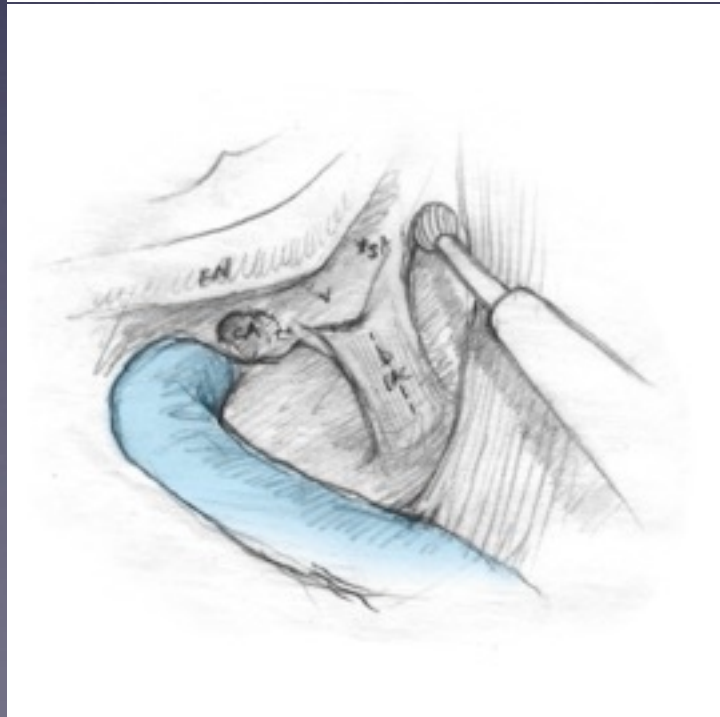
Expanded Translabyrinthine Approach Labyrinthectomy



Translabyrinthine Resection of Acoustic Neuroma

Expanded Translabyrinthine Approach

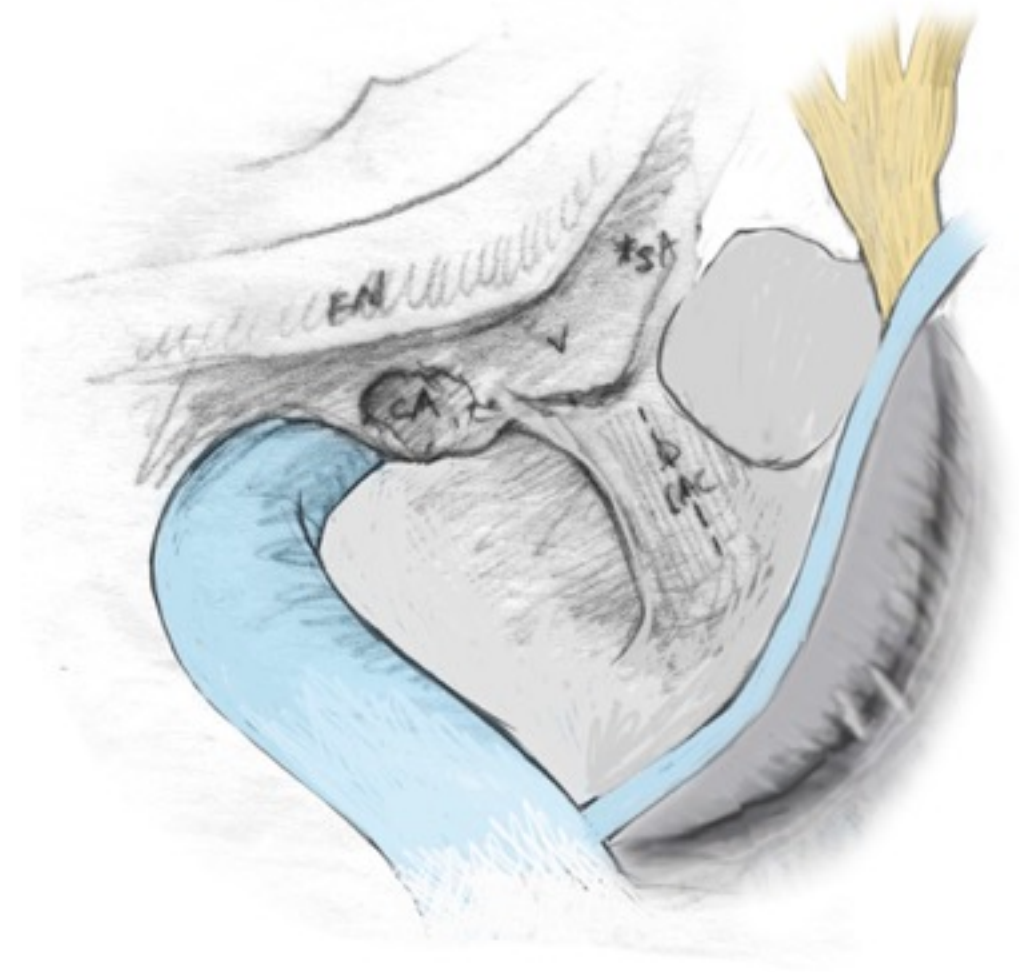
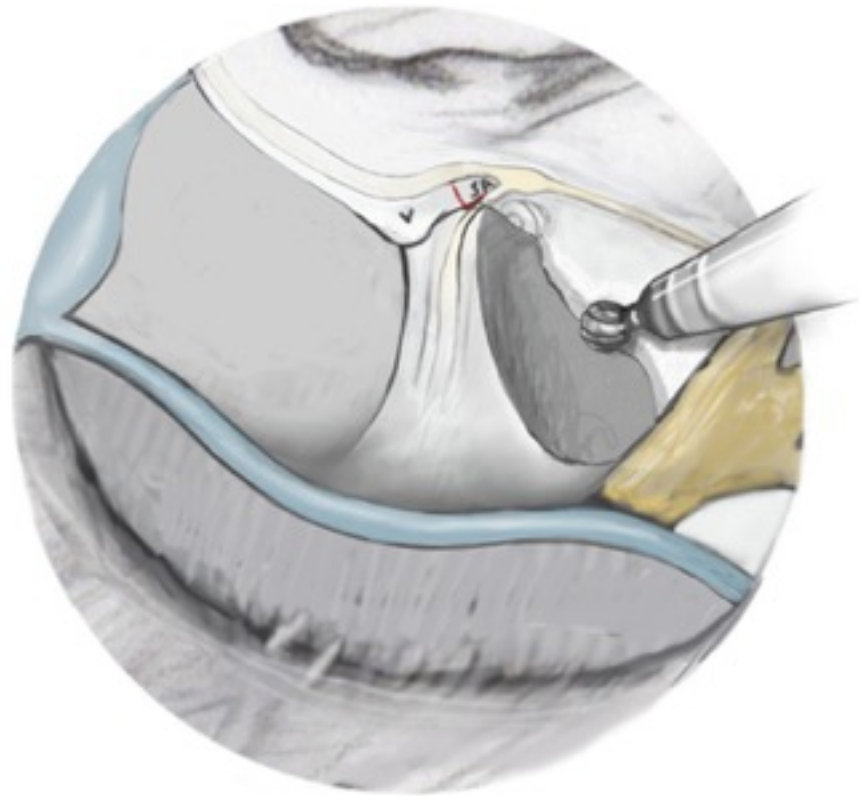
Exposure of the vestibule and internal auditory canal



Translabyrinthine Resection of Acoustic Neuroma

Expanded Translabyrinthine Approach

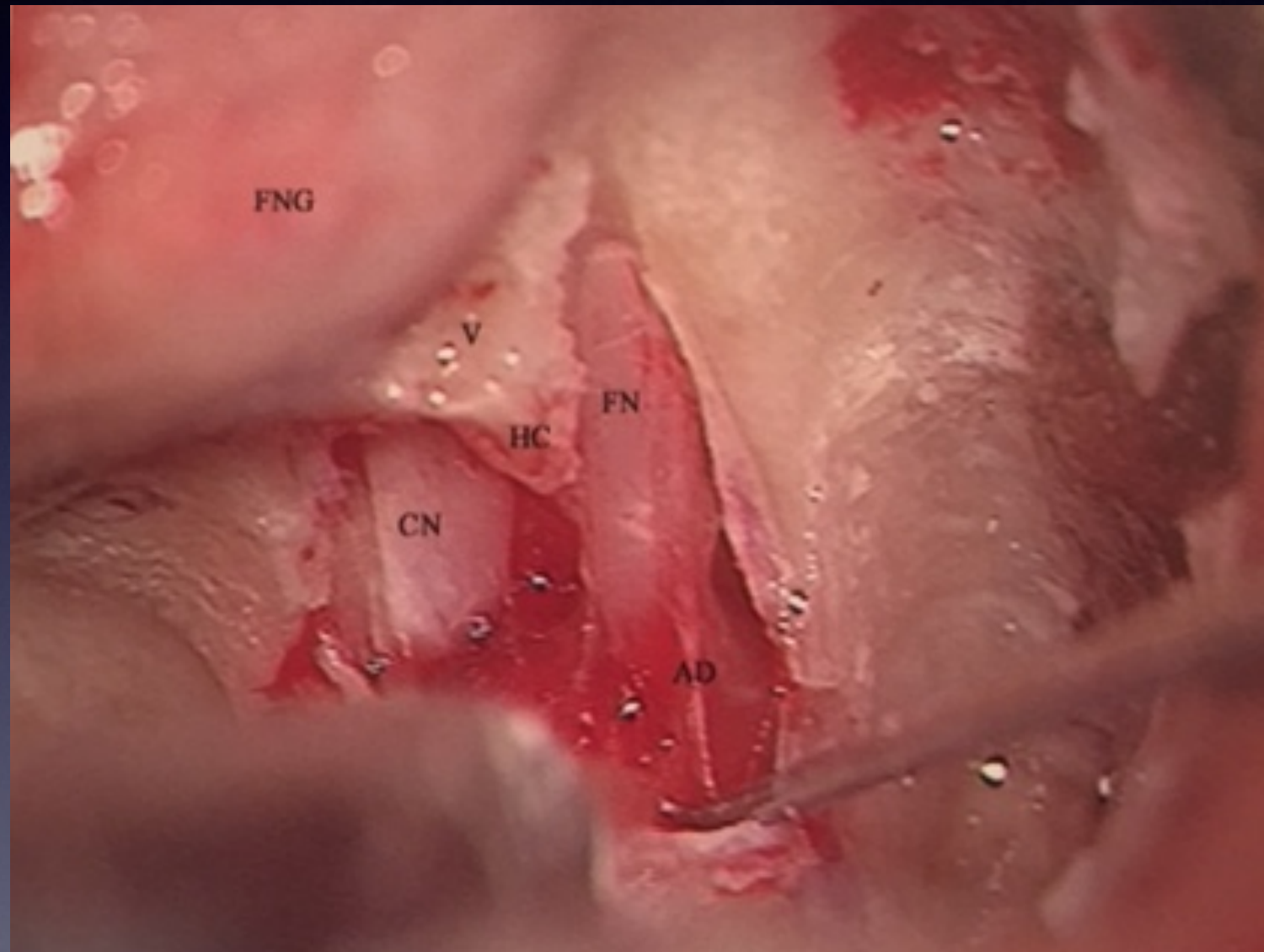
Removal of bone anterior and around the IAC



Translabyrinthine Resection of Acoustic Neuroma

Expanded Translabyrinthine Approach

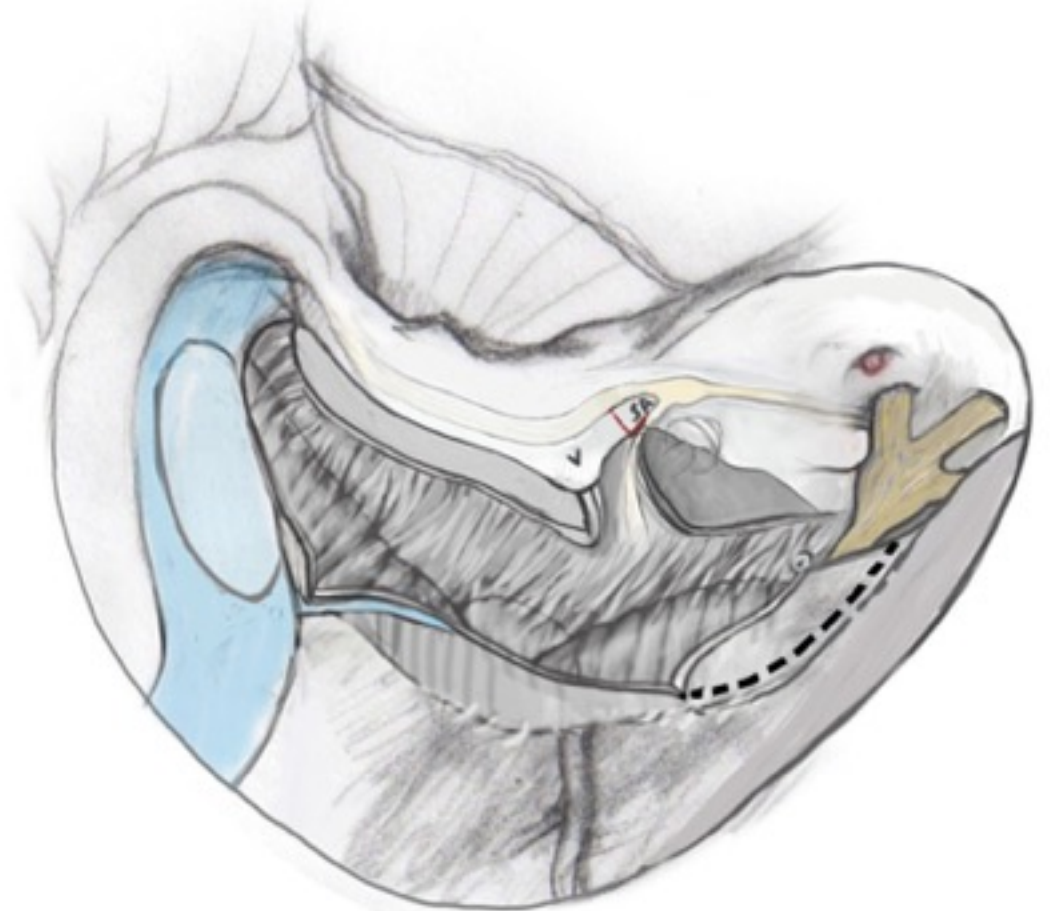
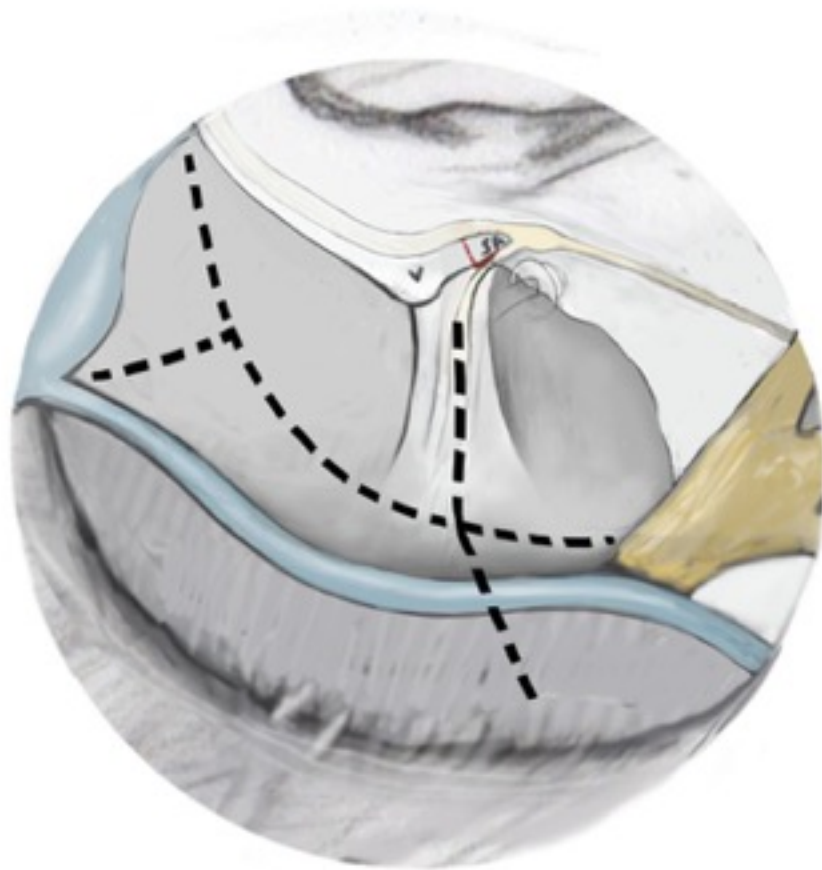
The anatomy of the fundus of the IAC



Translabyrinthine Resection of Acoustic Neuroma

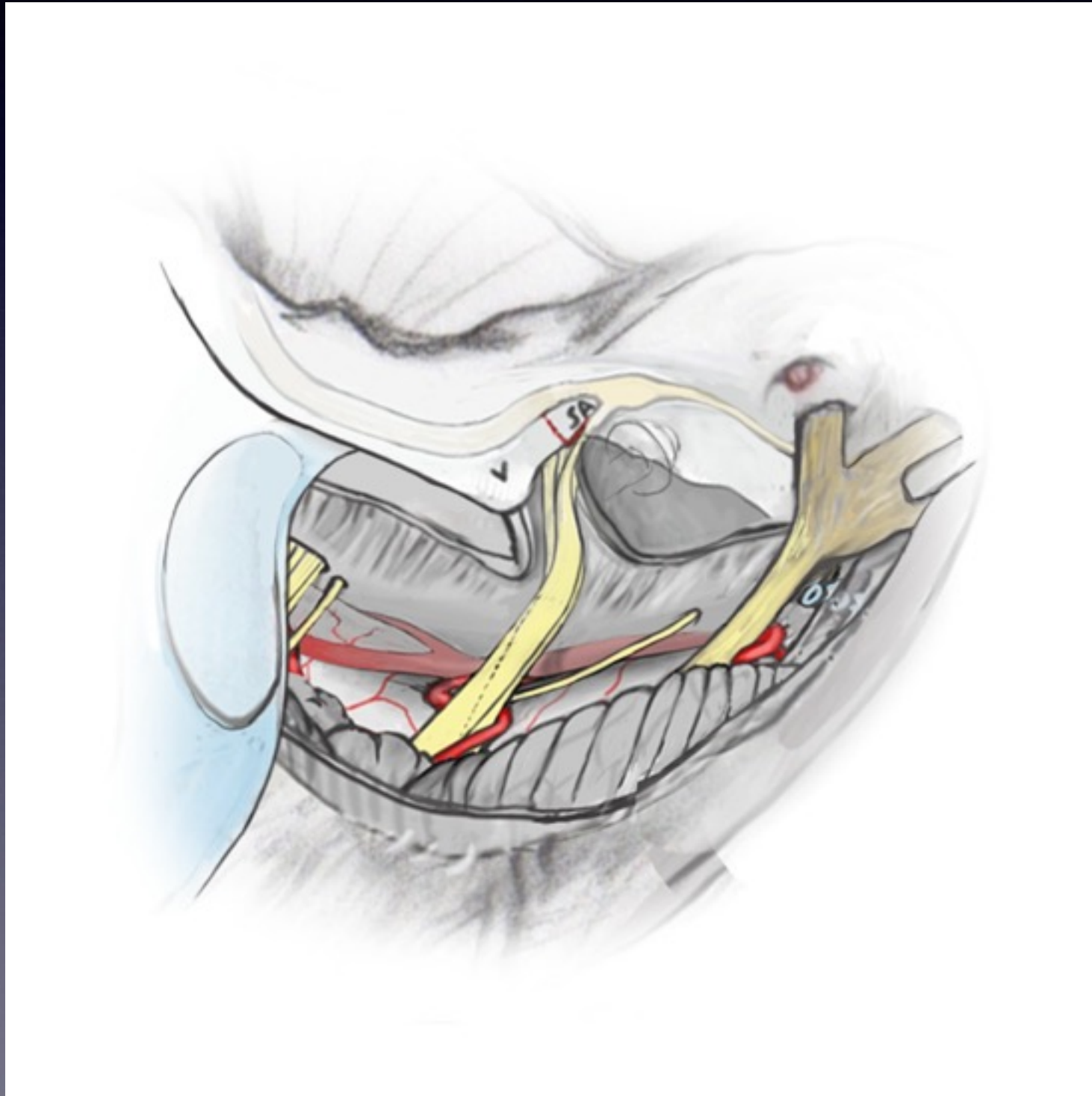
Expanded Translabyrinthine Approach

Dural opening



Translabyrinthine Resection of Acoustic Neuroma

Expanded Translabyrinthine Approach View of the CPA

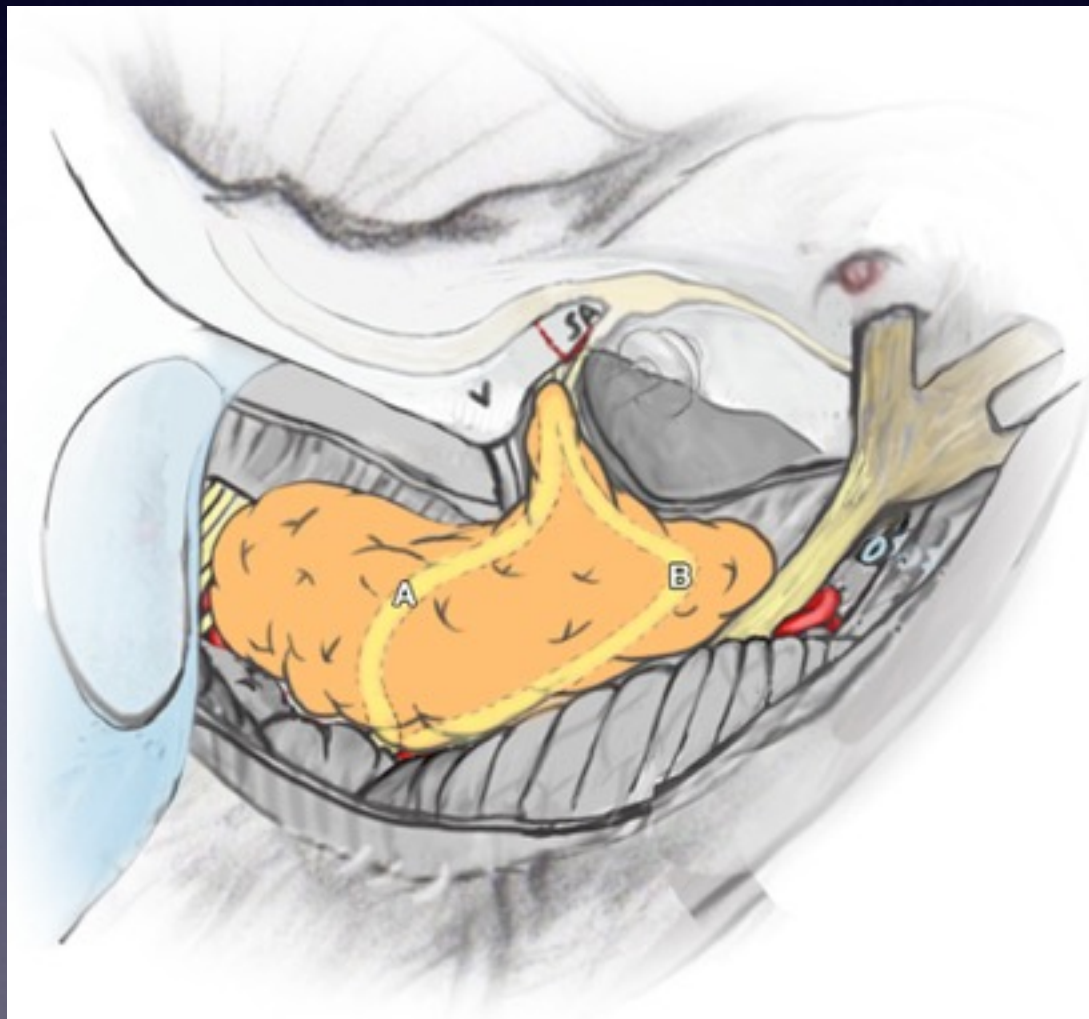


Translabyrinthine Resection of Acoustic Neuroma

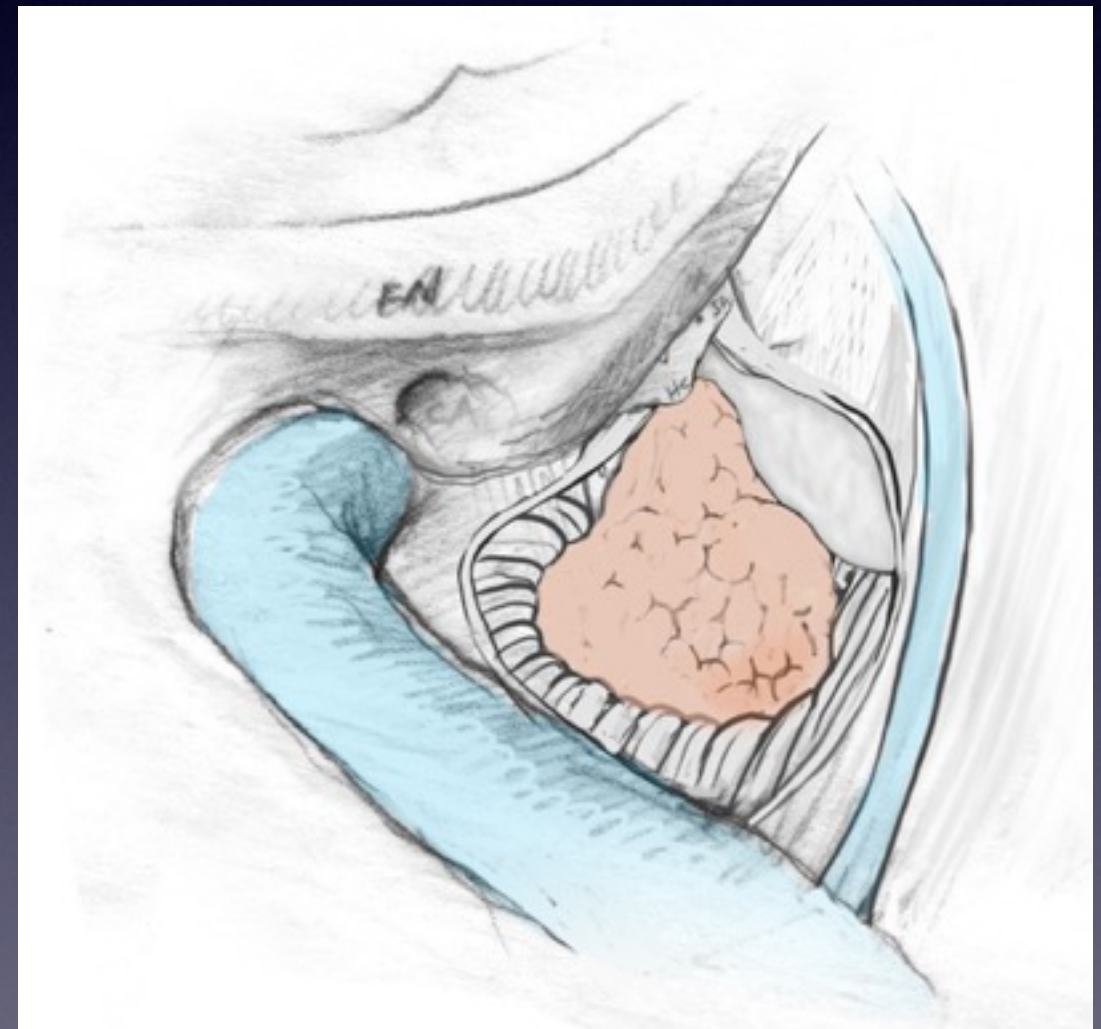
Expanded Translabyrinthine Approach

Tumor view

Expanded TL



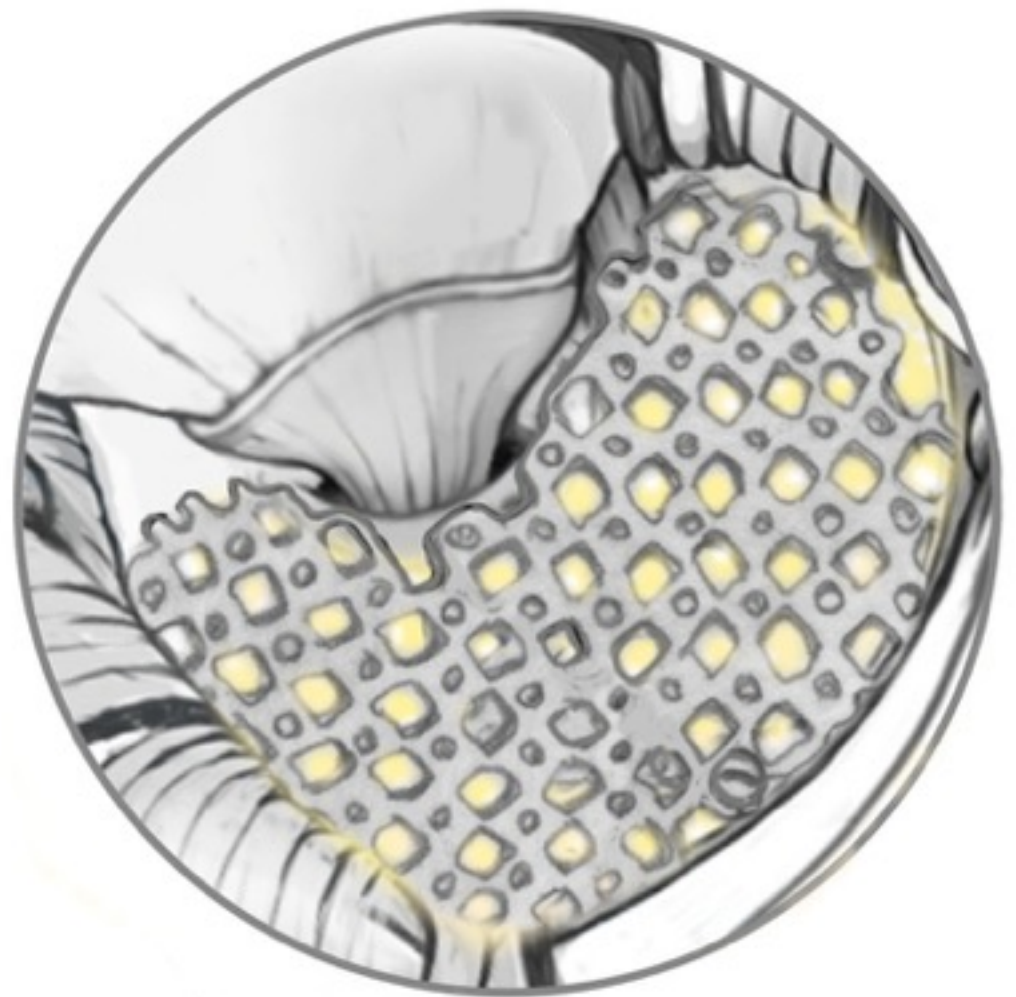
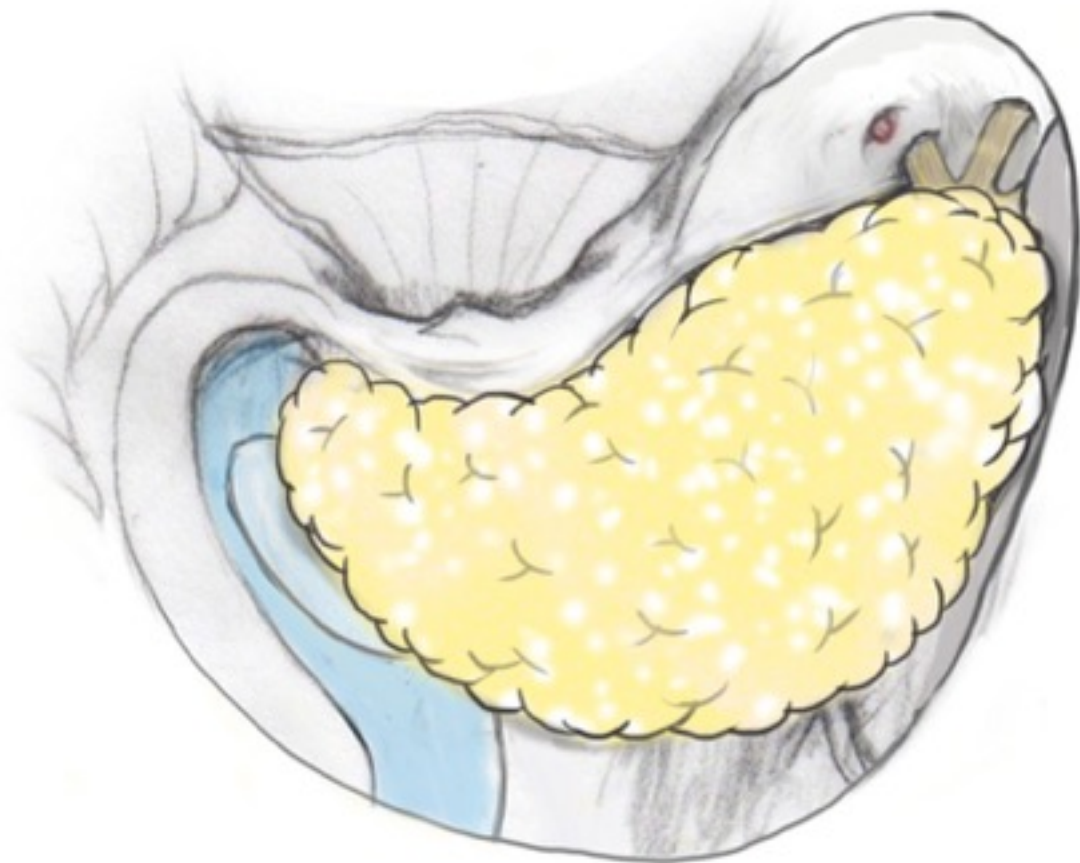
TL



Translabyrinthine Resection of Acoustic Neuroma

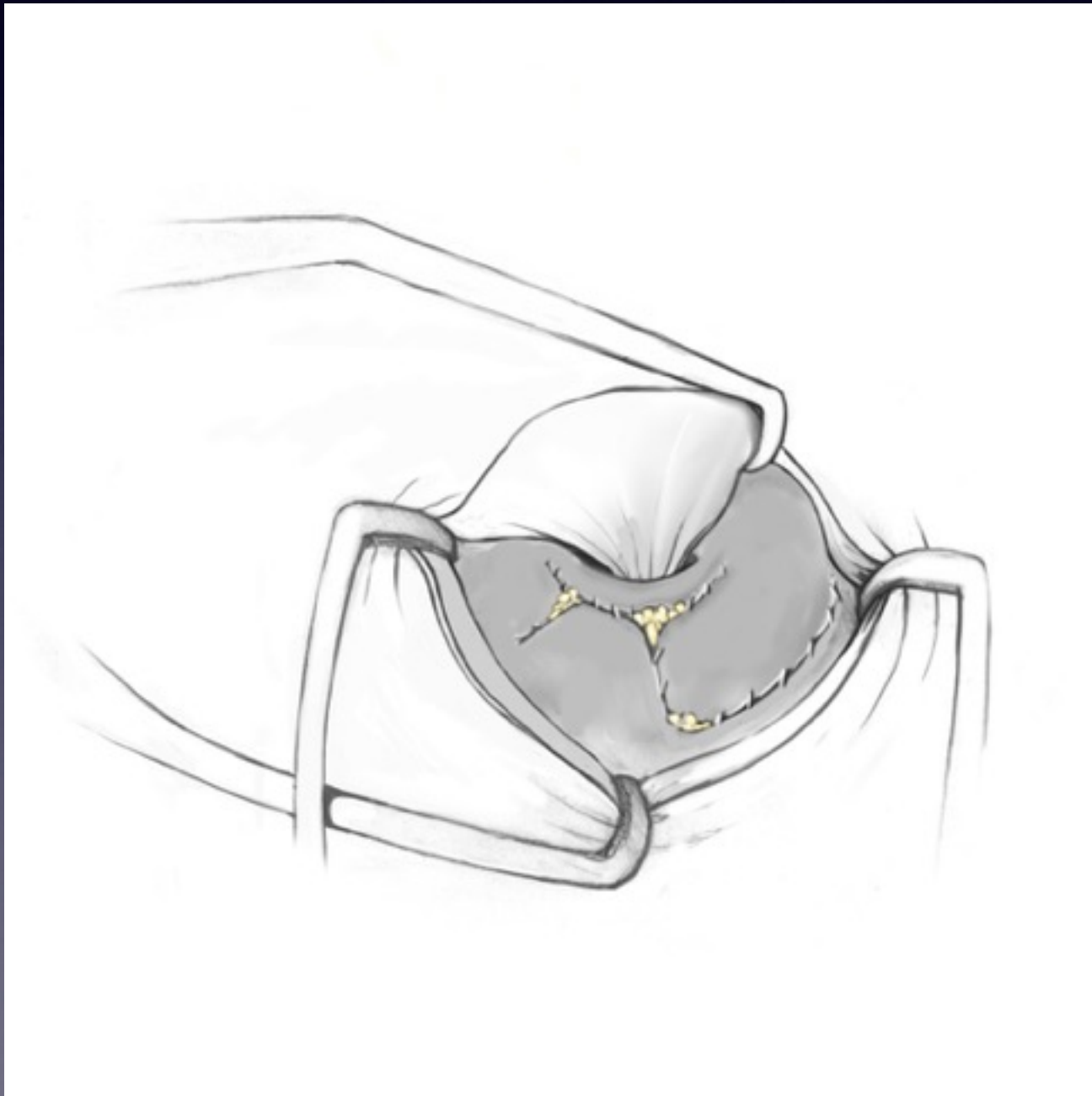
Expanded Translabyrinthine Approach

Closure



Translabyrinthine Resection of Acoustic Neuroma

Expanded Translabyrinthine Approach Closure



Translabyrinthine Resection of Acoustic Neuroma

Patient EB

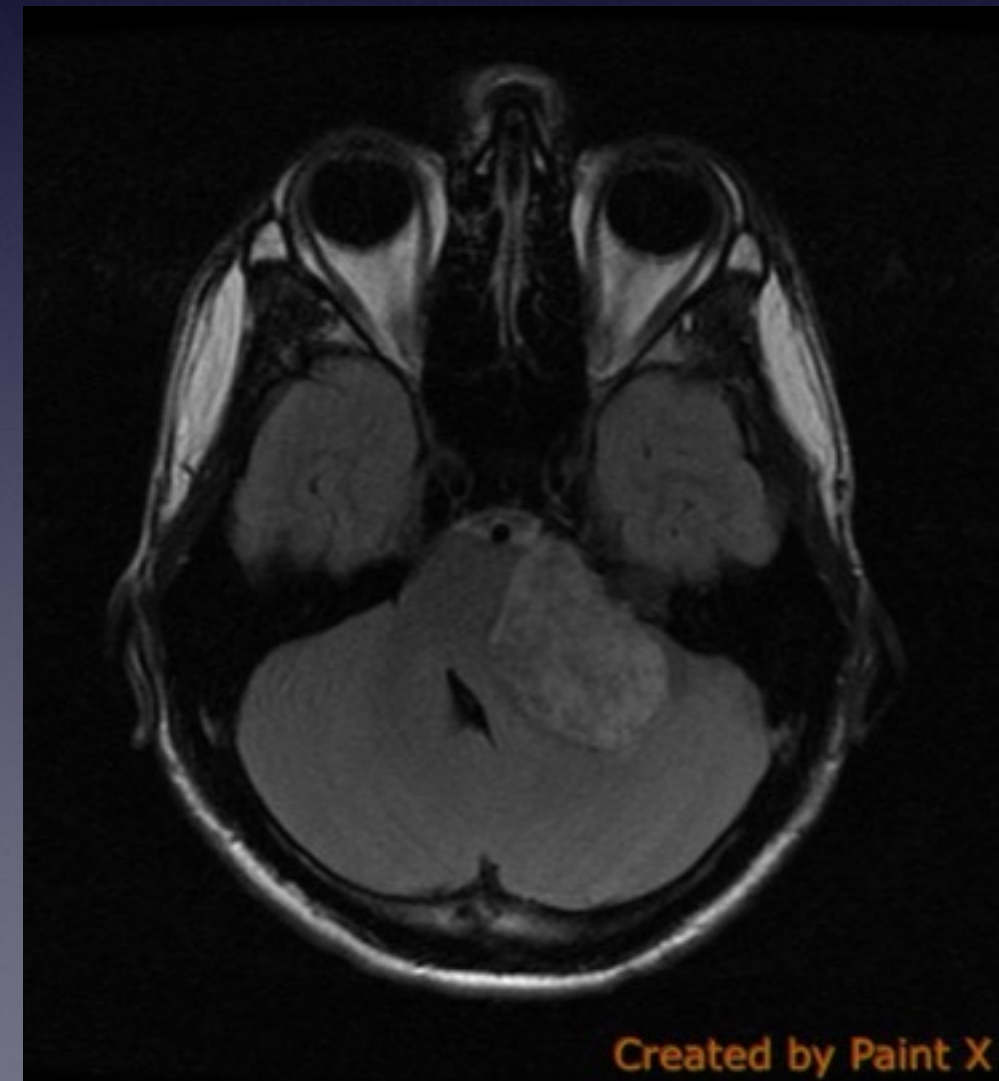
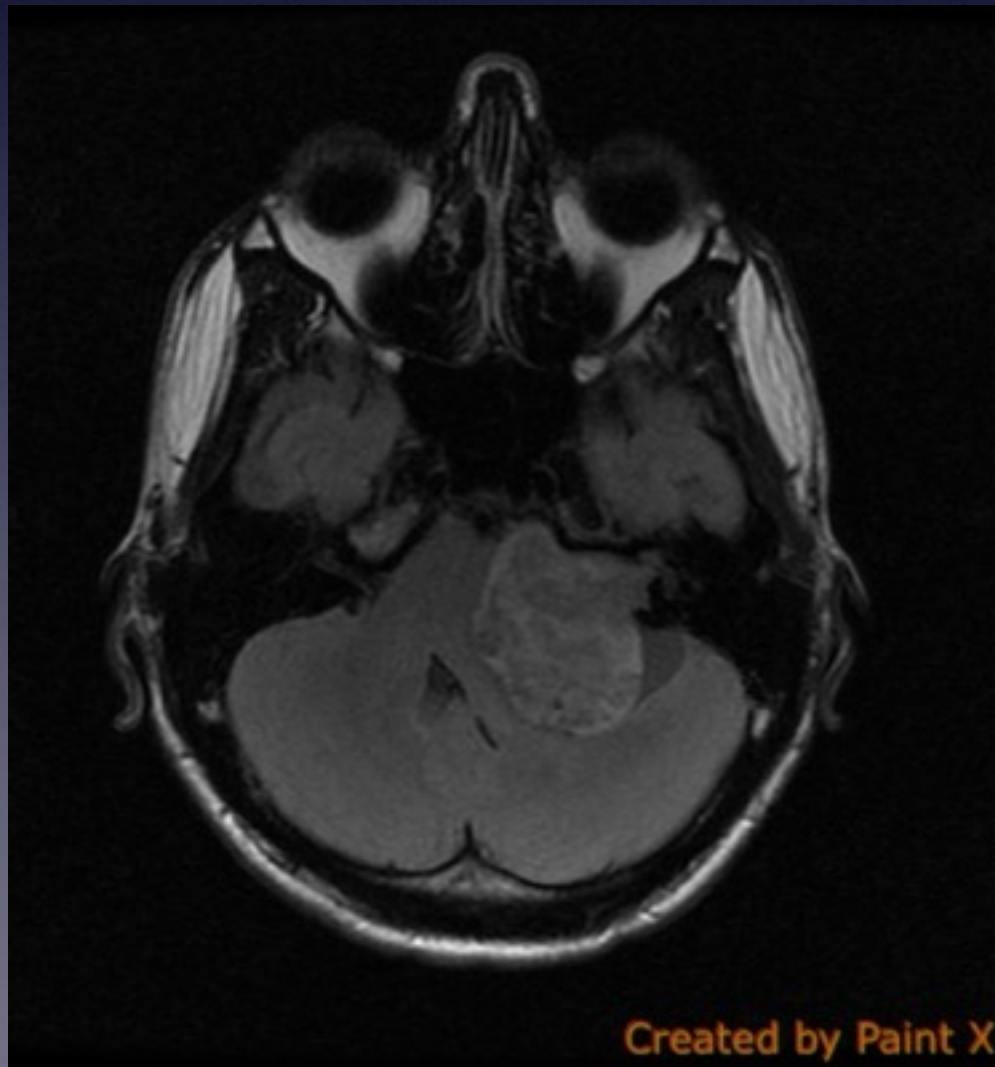
21 yo male

severe left hearing loss

Occipital headache

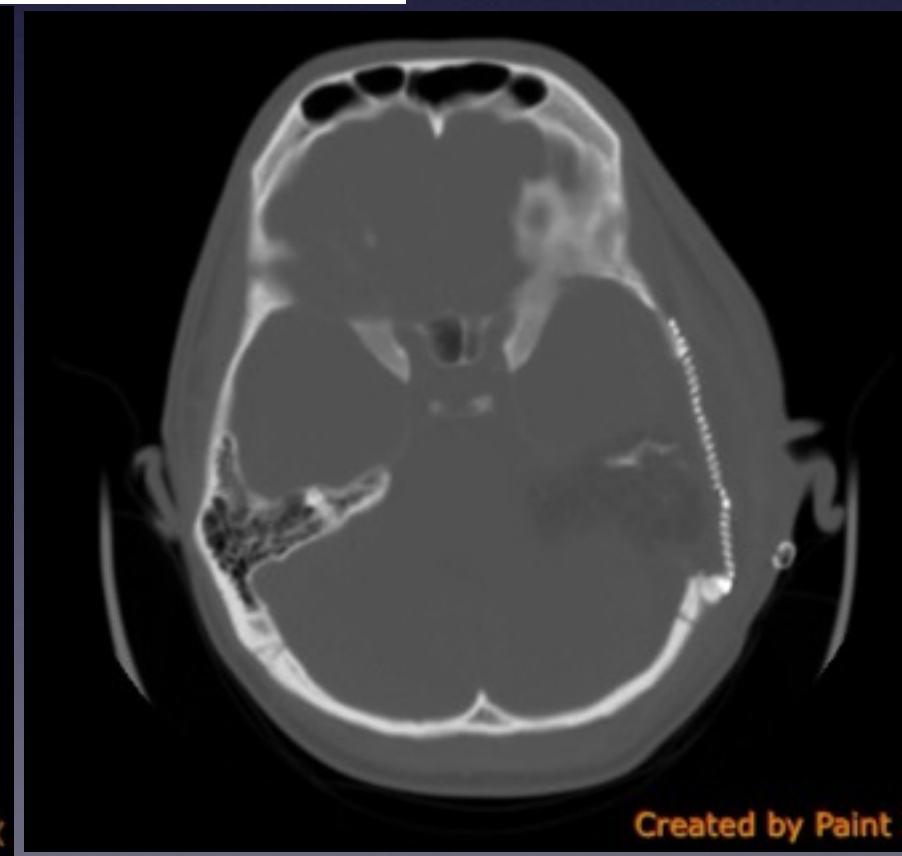
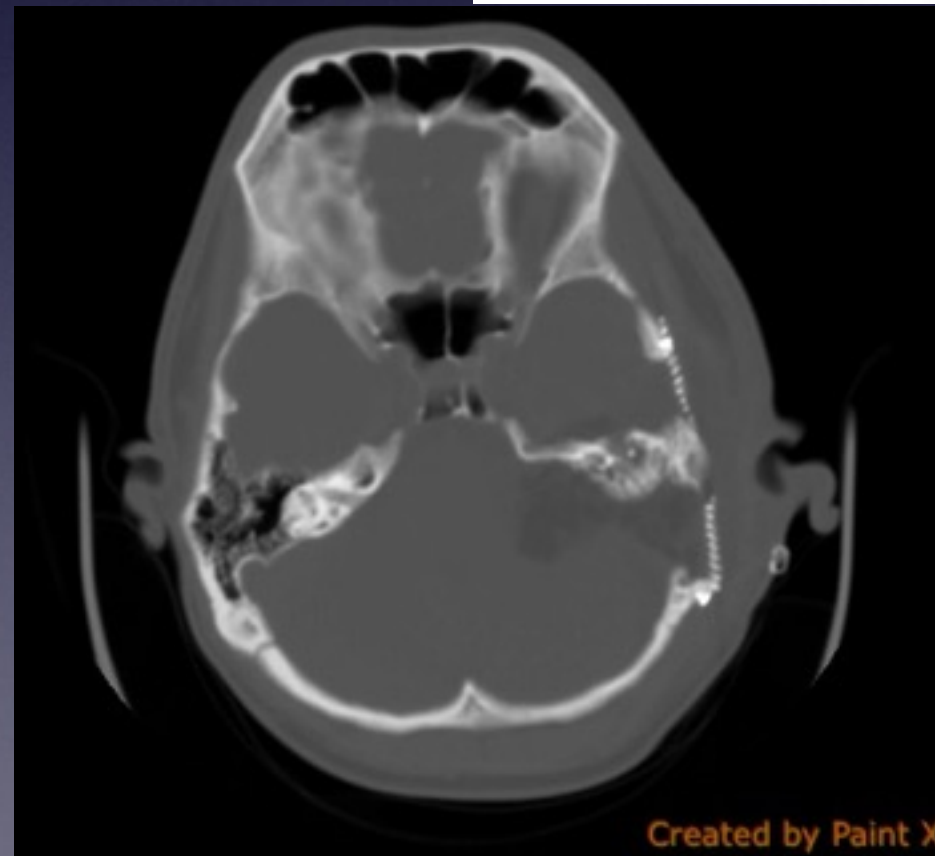
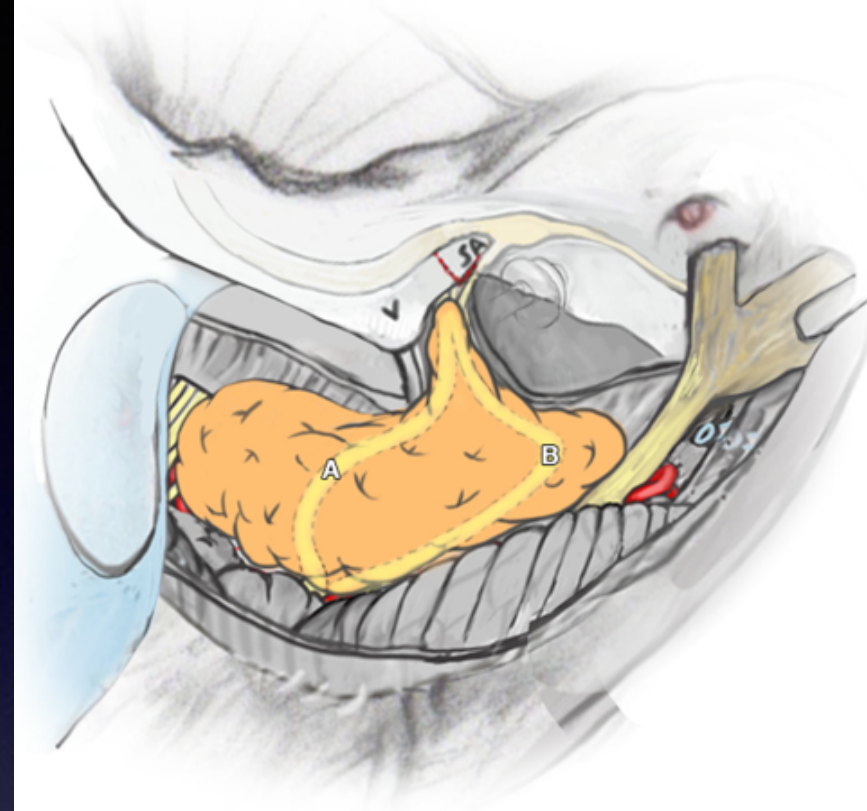
Balance difficulties

(MRI pre op)



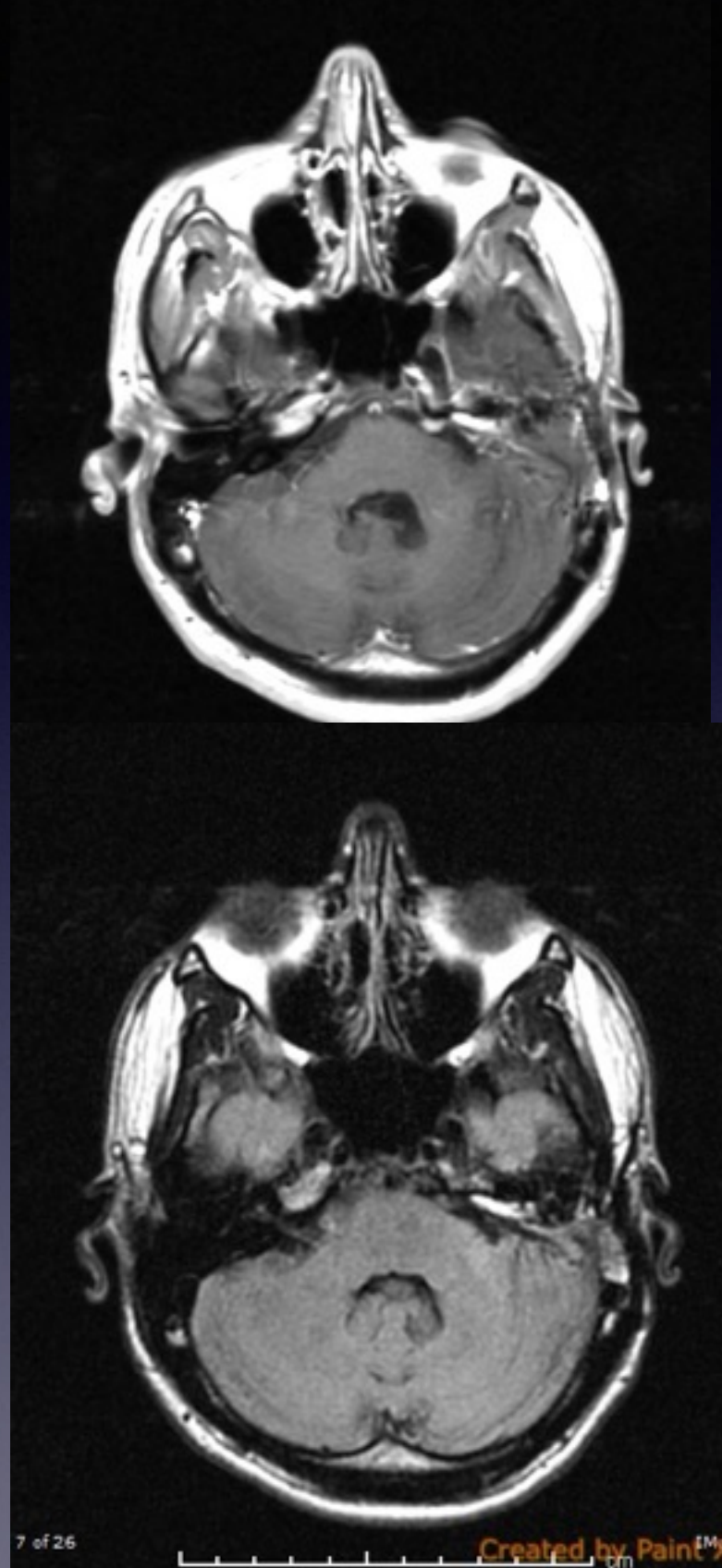
Translabyrinthine Resection of Acoustic Neuroma

Patient EB
Surgery -Expanded
Translab with
tentorial split
Facial nerve - inferior
course



Translabyrinthine Resection of Acoustic Neuroma

Patient EB
Discharged to home in
three days
Facial nerve - I/VI
patient has finished
college and is fully
employed
MRI 3 years post op -
no residual
no T2 or Flair
abnormal signal



Translabyrinthine Resection of Acoustic Neuroma

Patient CD

22 yo

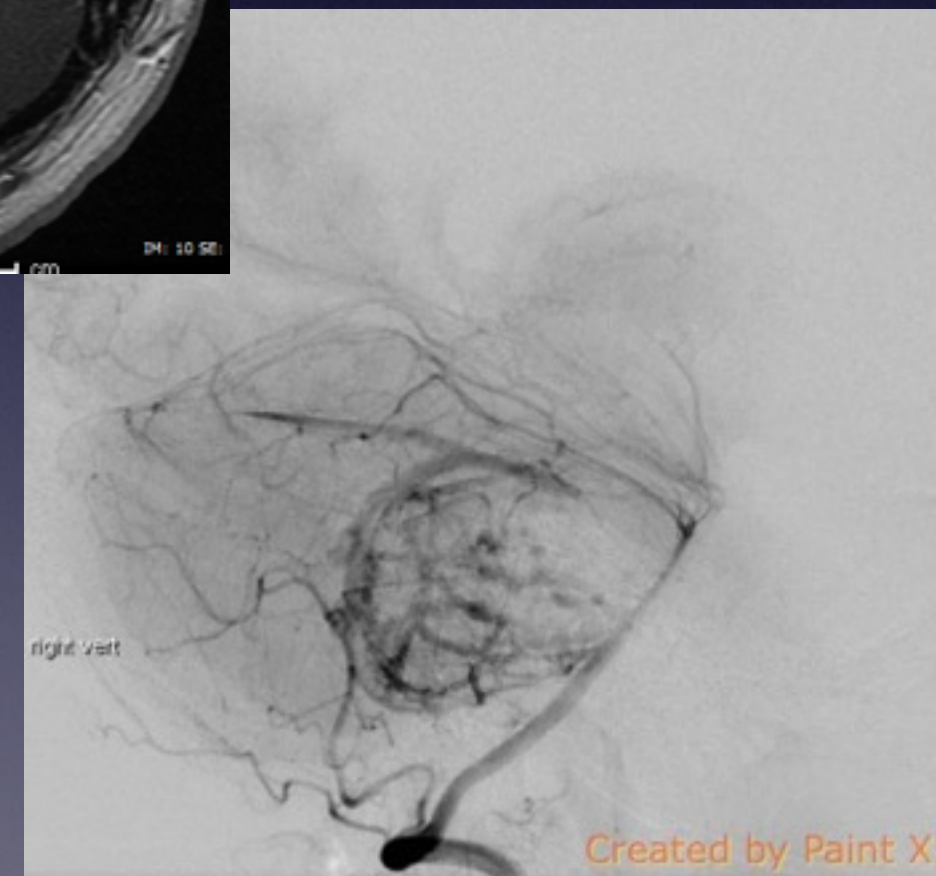
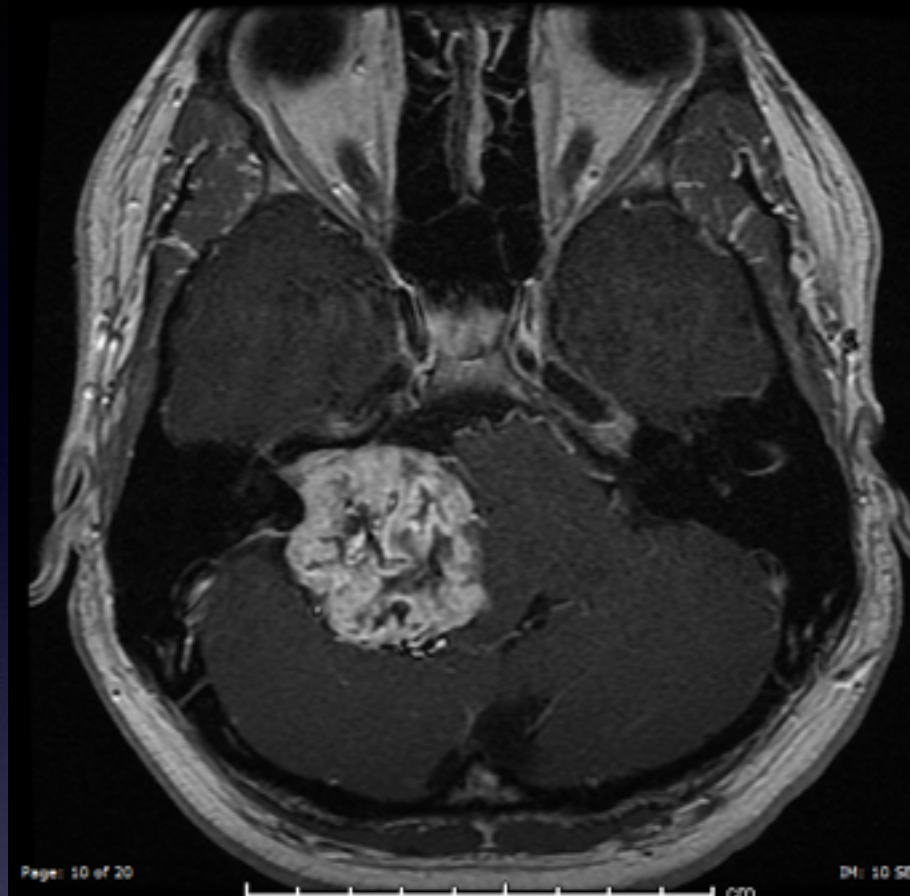
Incidental finding

Near normal hearing

Retro-auricular pain

Tinnitus

No balance difficulty



Translabyrinthine Resection of Acoustic Neuroma

Patient CD

Surgery - Expanded translab
with tentorial splitting

Blood loss 100cc

No transfusion

Facial nerve - superior course

Minimal splaying

Adequate plane

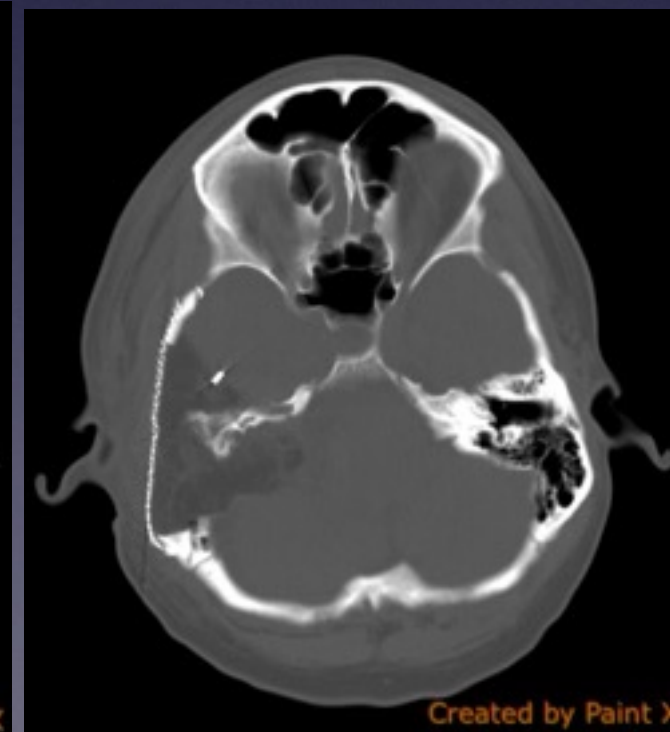
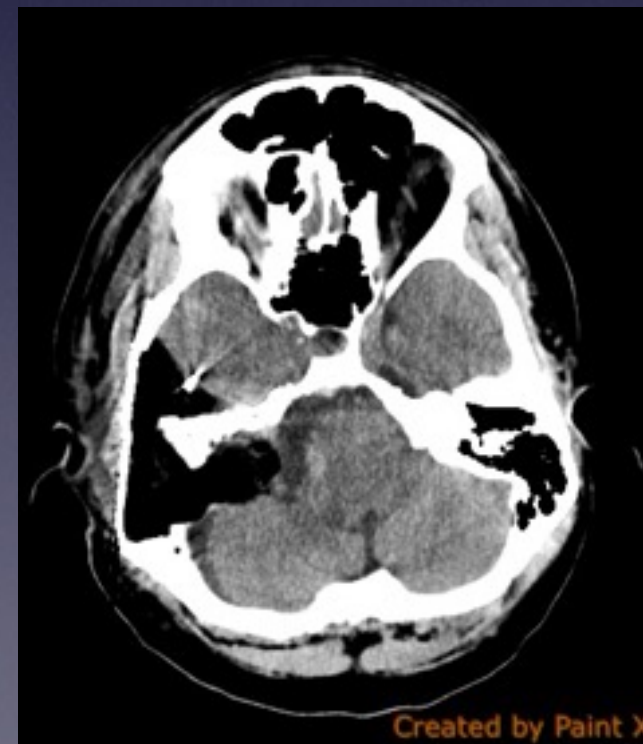
Resection - near complete

Thin layer left over the nerve

Facial nerve - Early 3/6

3 months - 2/6

Living independently at 3
months



Translabyrinthine Resection of Acoustic Neuroma

Patient KH

17 yo

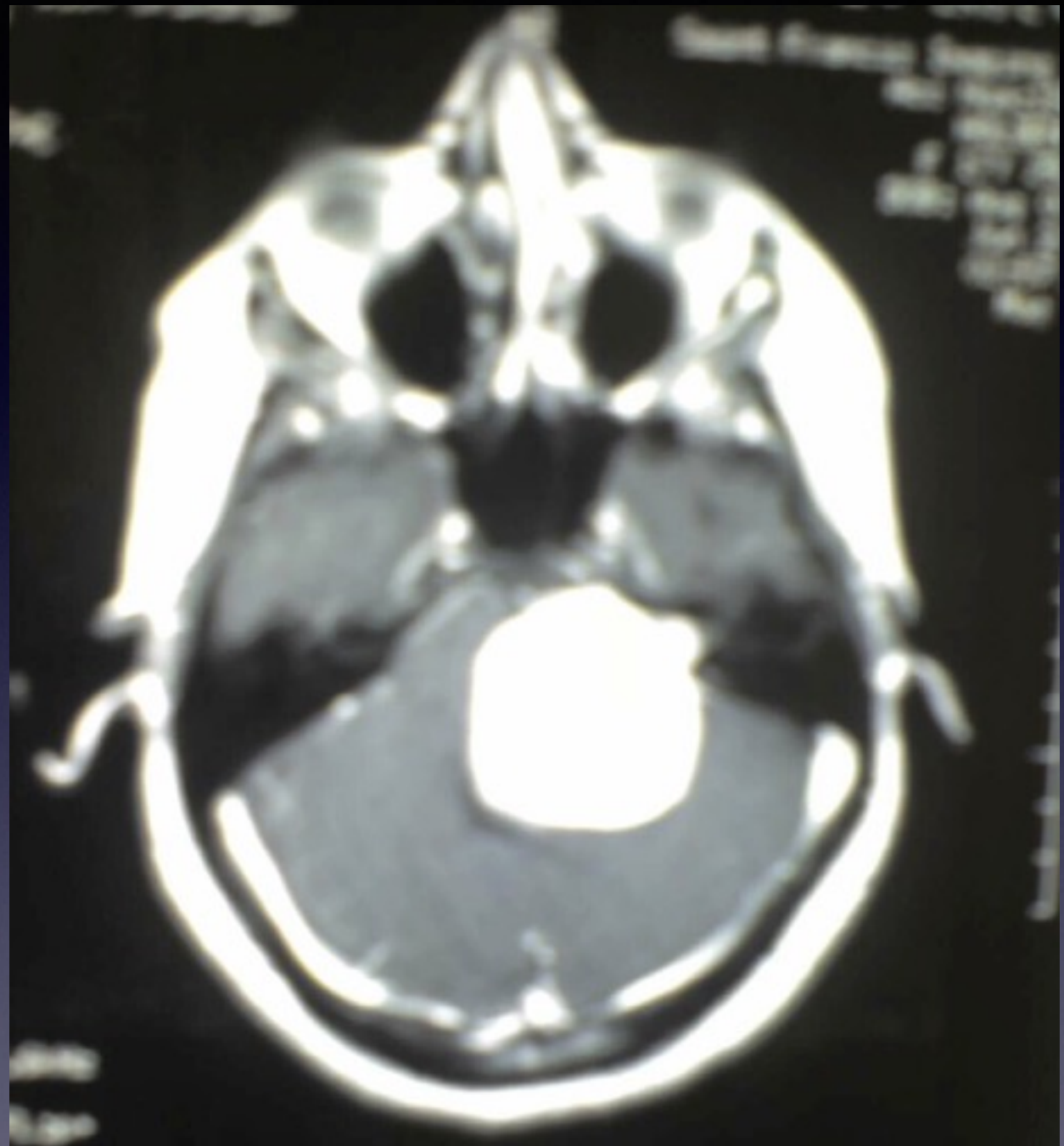
Difficulties using the
left leg during tennis
practice

Hearing - near normal

Facial nerve -
decreased blinking on
the left

No headache

No tinnitus



Translabyrinthine Resection of Acoustic Neuroma

Patient KH

Surgery - Expanded
translab without
tentorial splitting

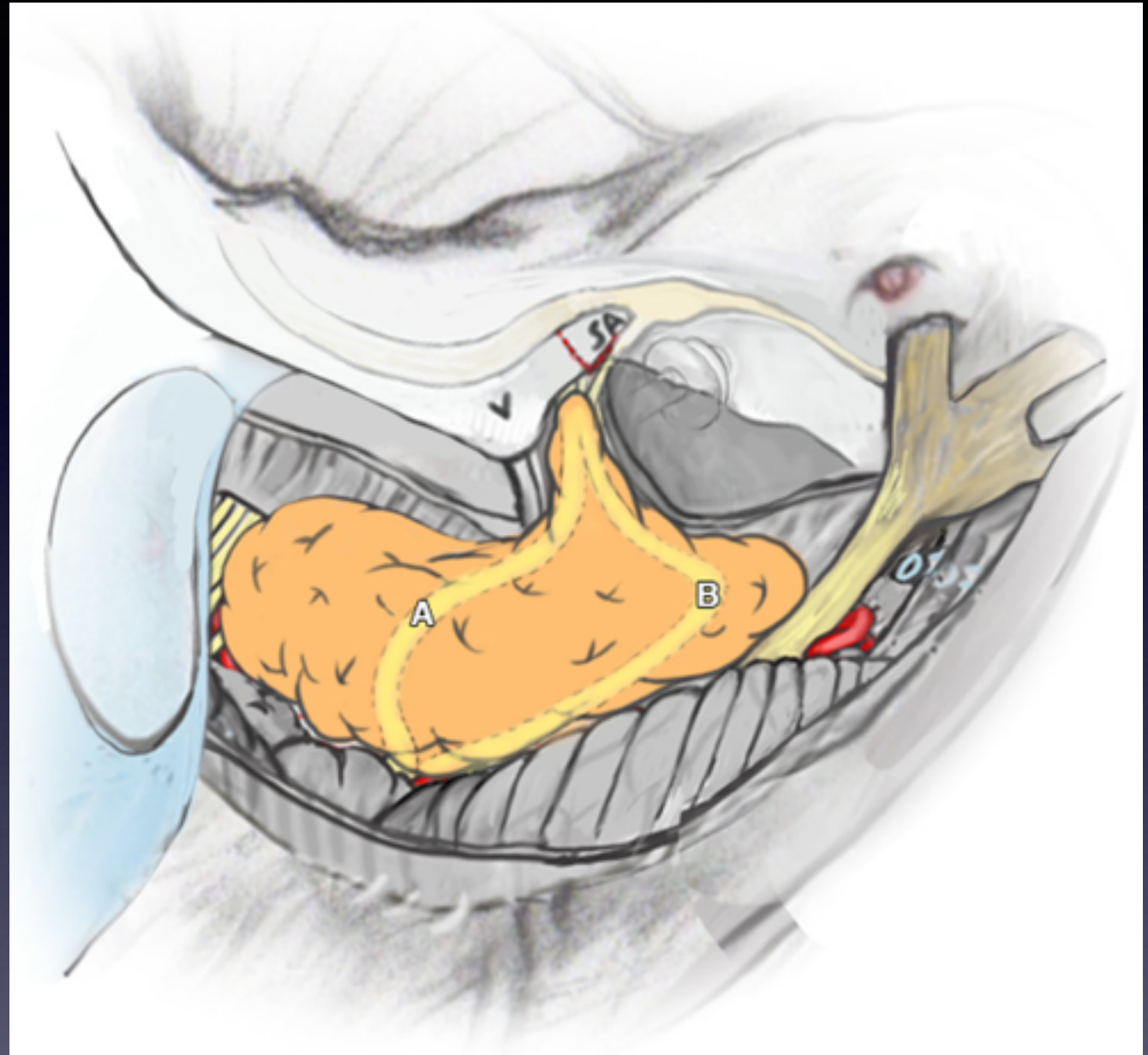
Facial nerve -

inferior course

Mild splaying

Difficult dissection

Resection - small
residual at the facial
nerve in CPA



Translabyrinthine Resection of Acoustic Neuroma

Patient KH

Discharged to home POD # 4

Facial nerve -

early 2/6

6 months - Normal 1/6

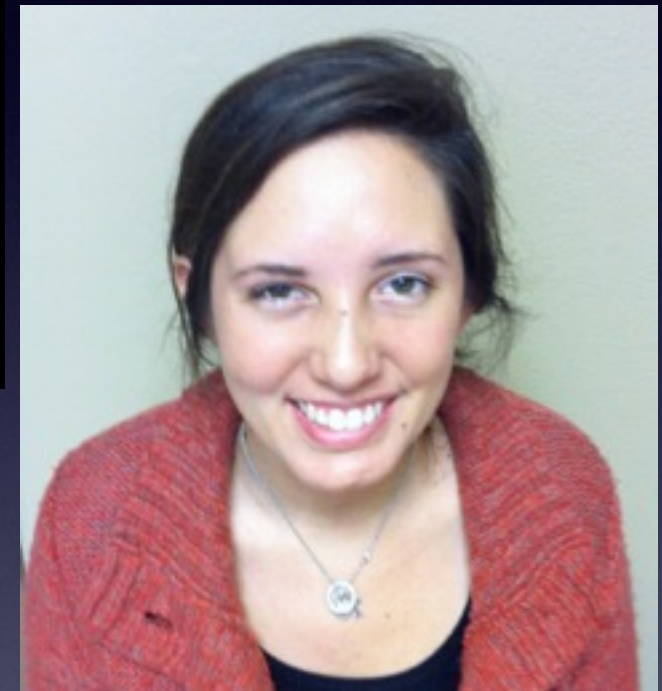
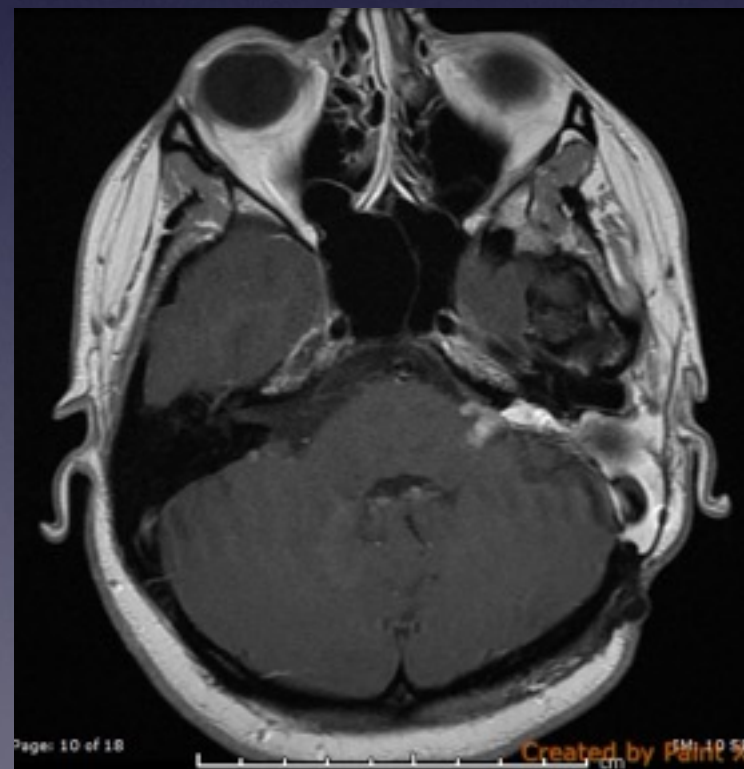
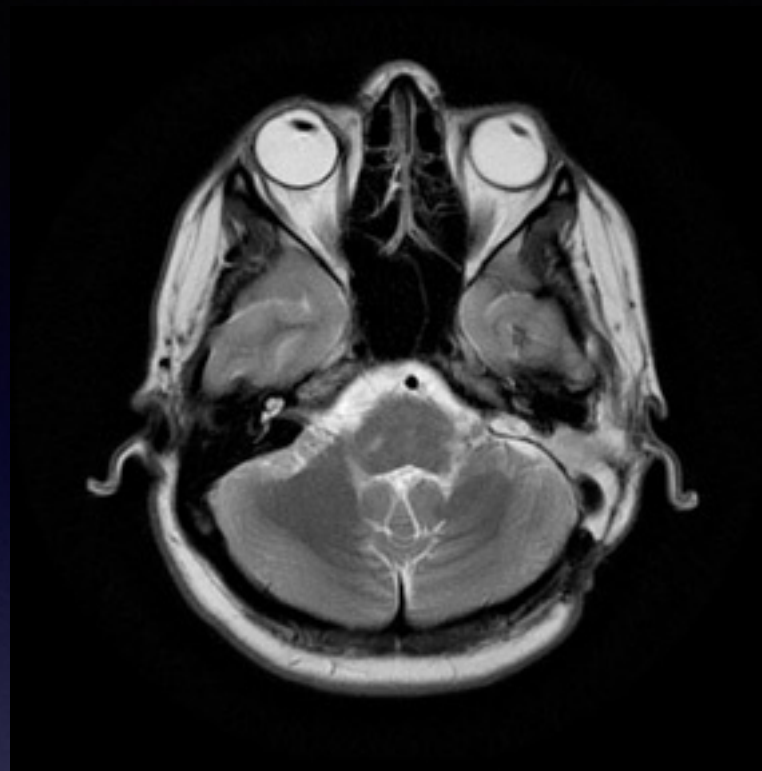
Normal blinking

7 years post op - graduated
from Nursing school

Fully employed as a nurse

MRI - stable small residual

No RT



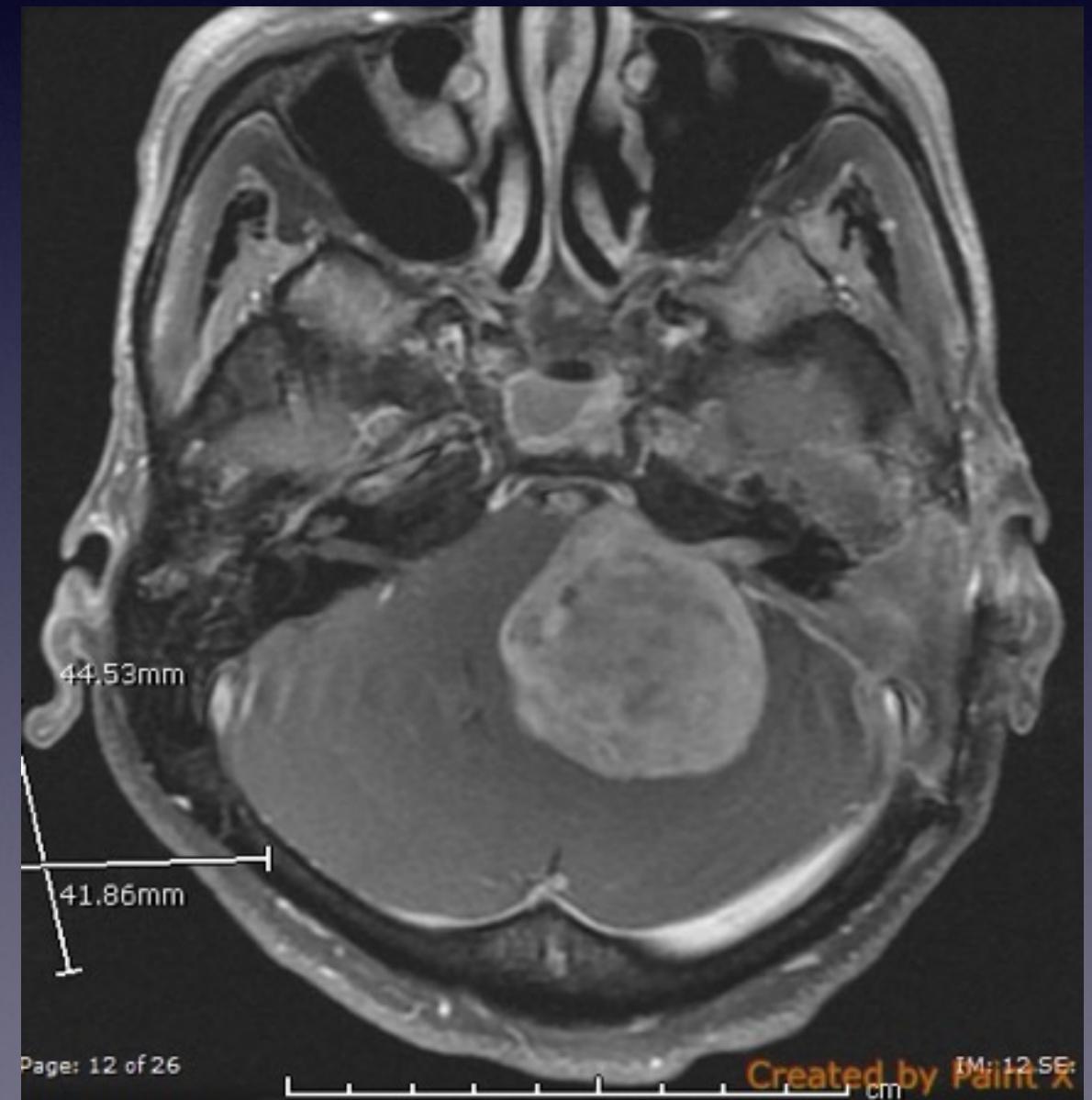
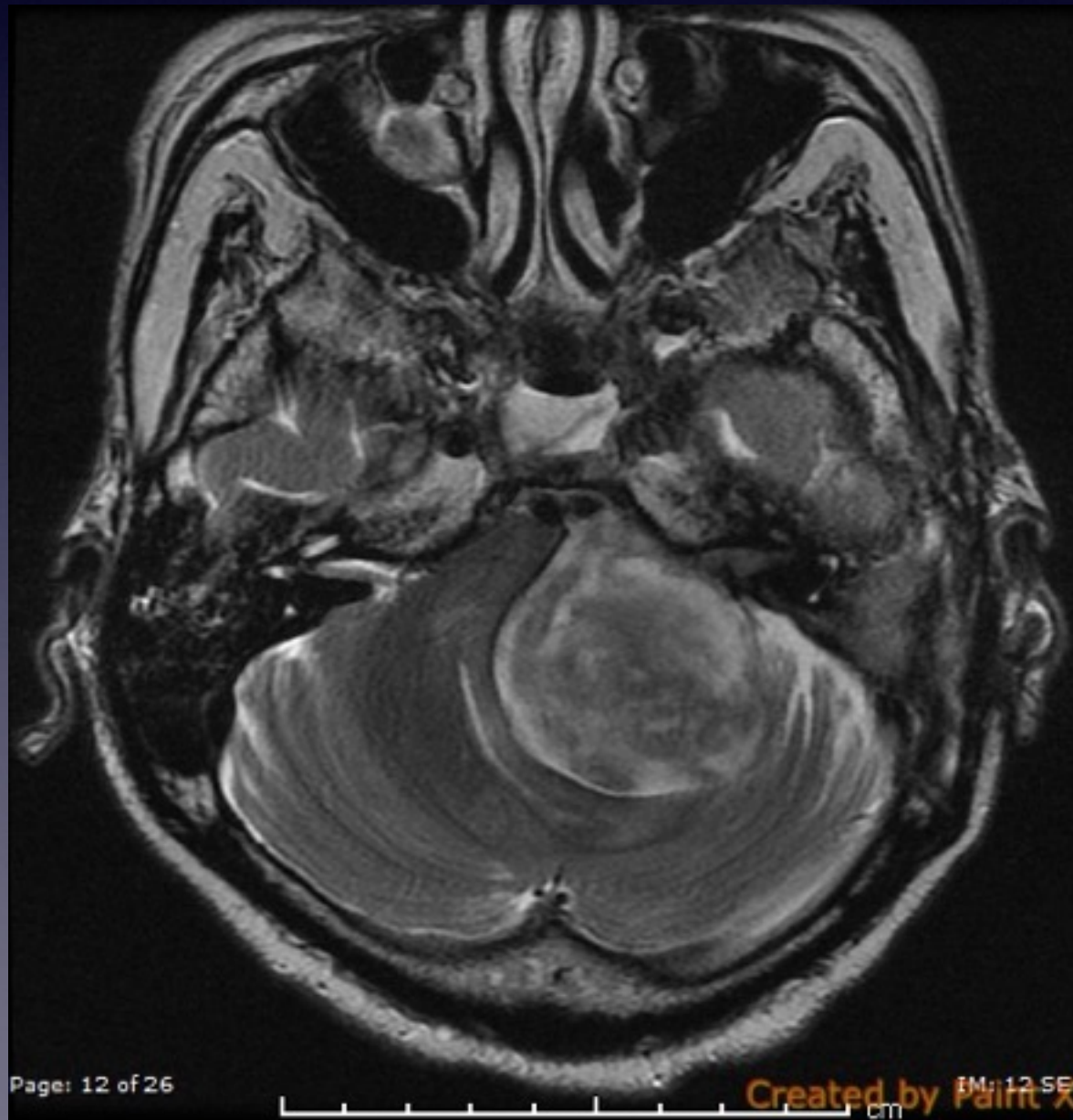
Translabyrinthine Resection of Acoustic Neuroma

Patient SS

63 yo male

Left sided weakness

Near normal hearing



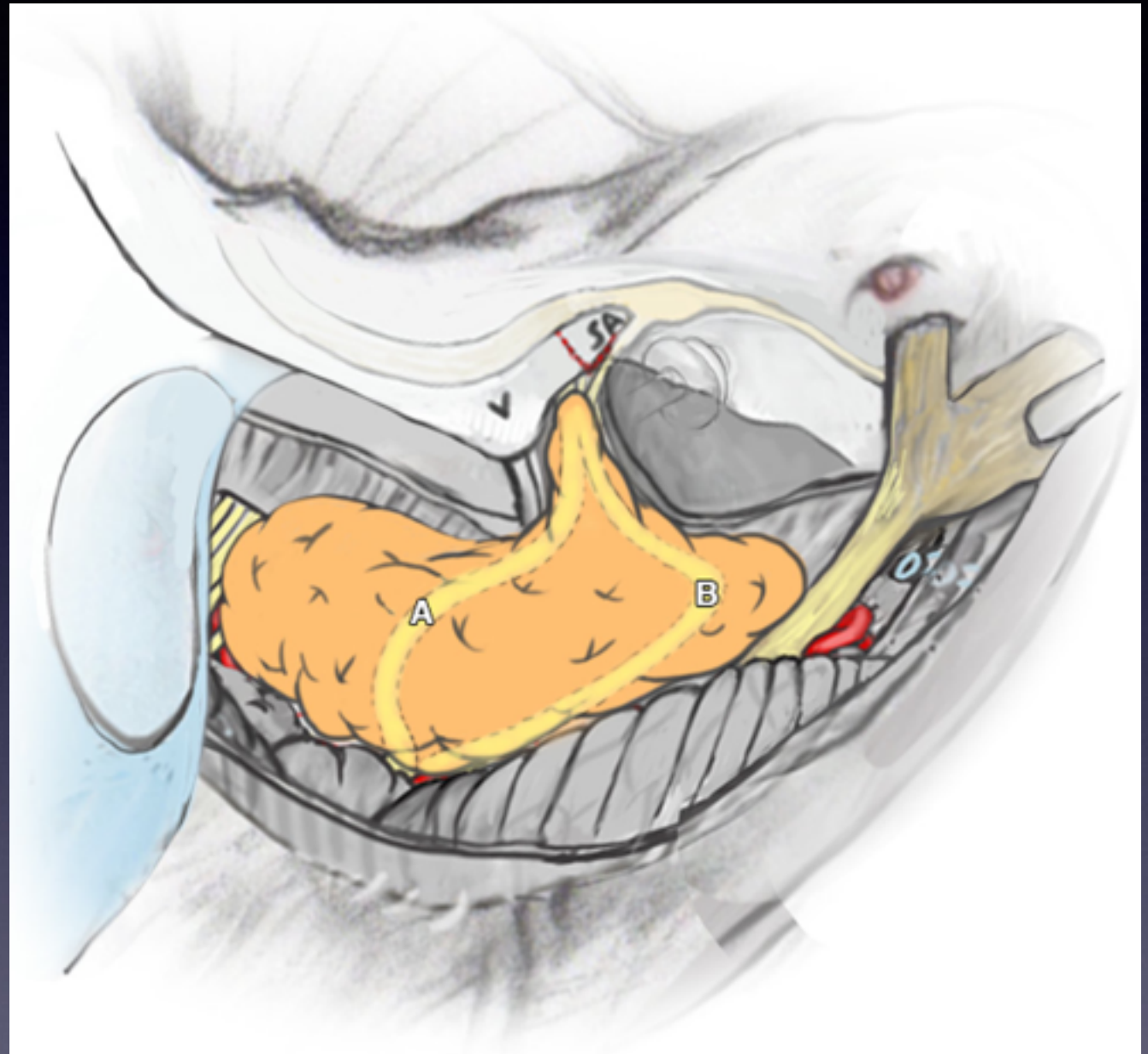
Translabyrinthine Resection of Acoustic Neuroma

Patient SS

Surgery - expanded
translab

Facial nerve - inferior
course, good plane

Resection - near
complete



Translabyrinthine Resection of Acoustic Neuroma

Patient SS

Post-op facial nerve - 2/7

Normal motor function

MRI one year - complete
resection

