

# Hipoacusia de Transmisión y Mixta Revisión

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## Objetivos:

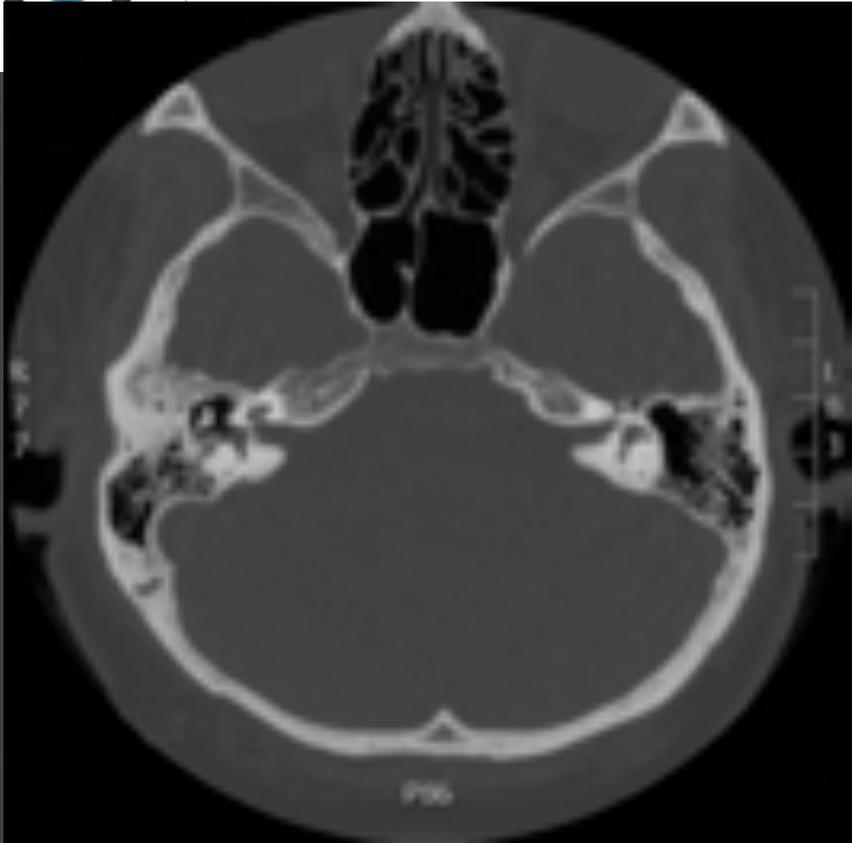
Aspectos técnicos de la imagen.

Revisión hallazgos responsables de una hipoacusia de transmisión o mixta y sus implicaciones terapéuticas

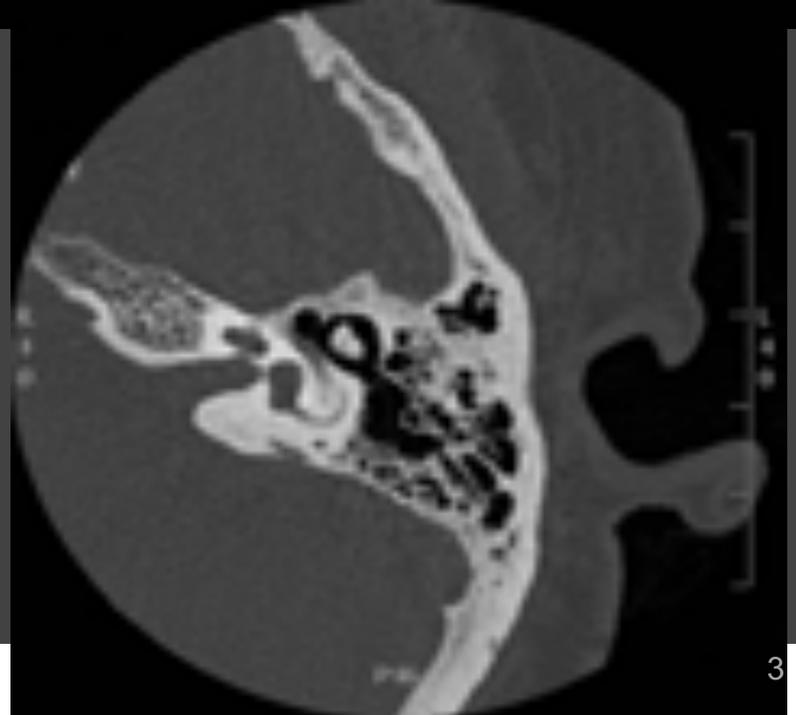
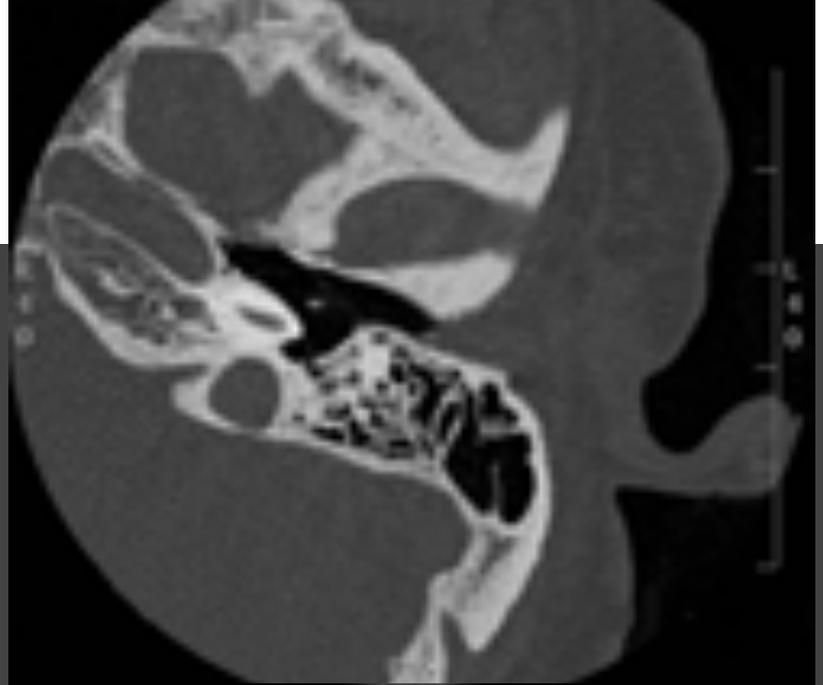
Diagnóstico diferencial

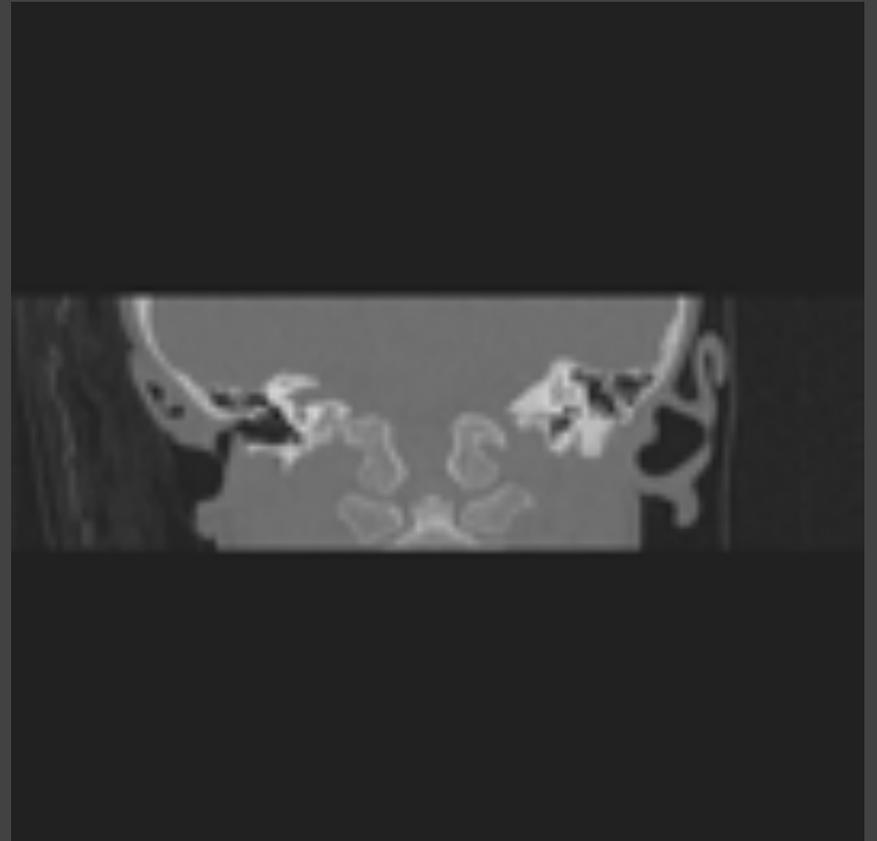
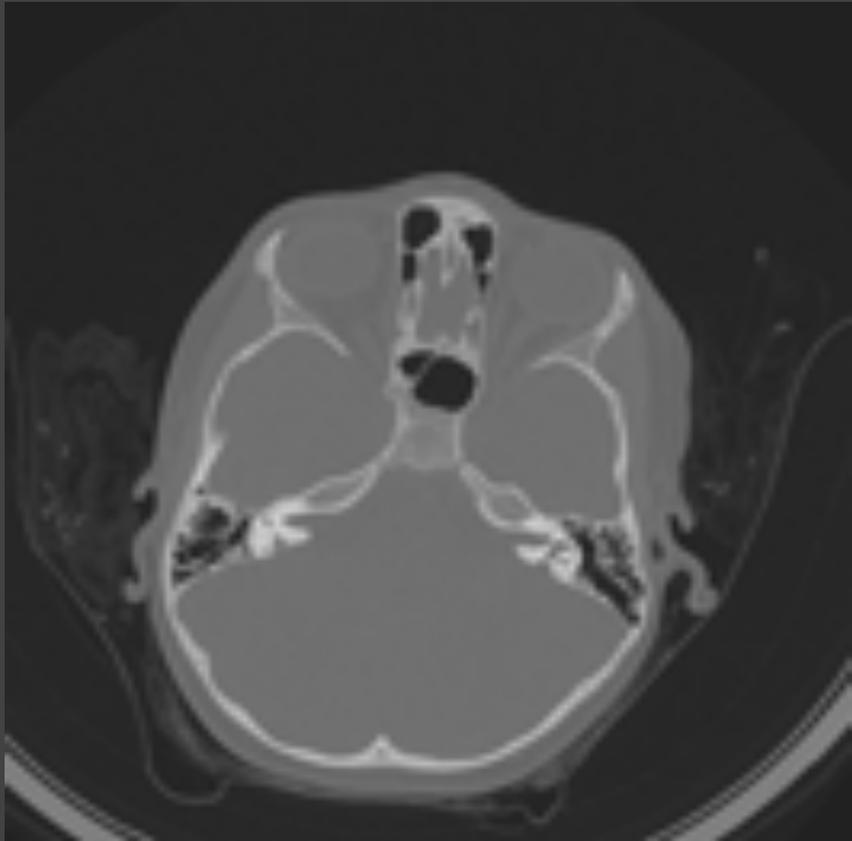
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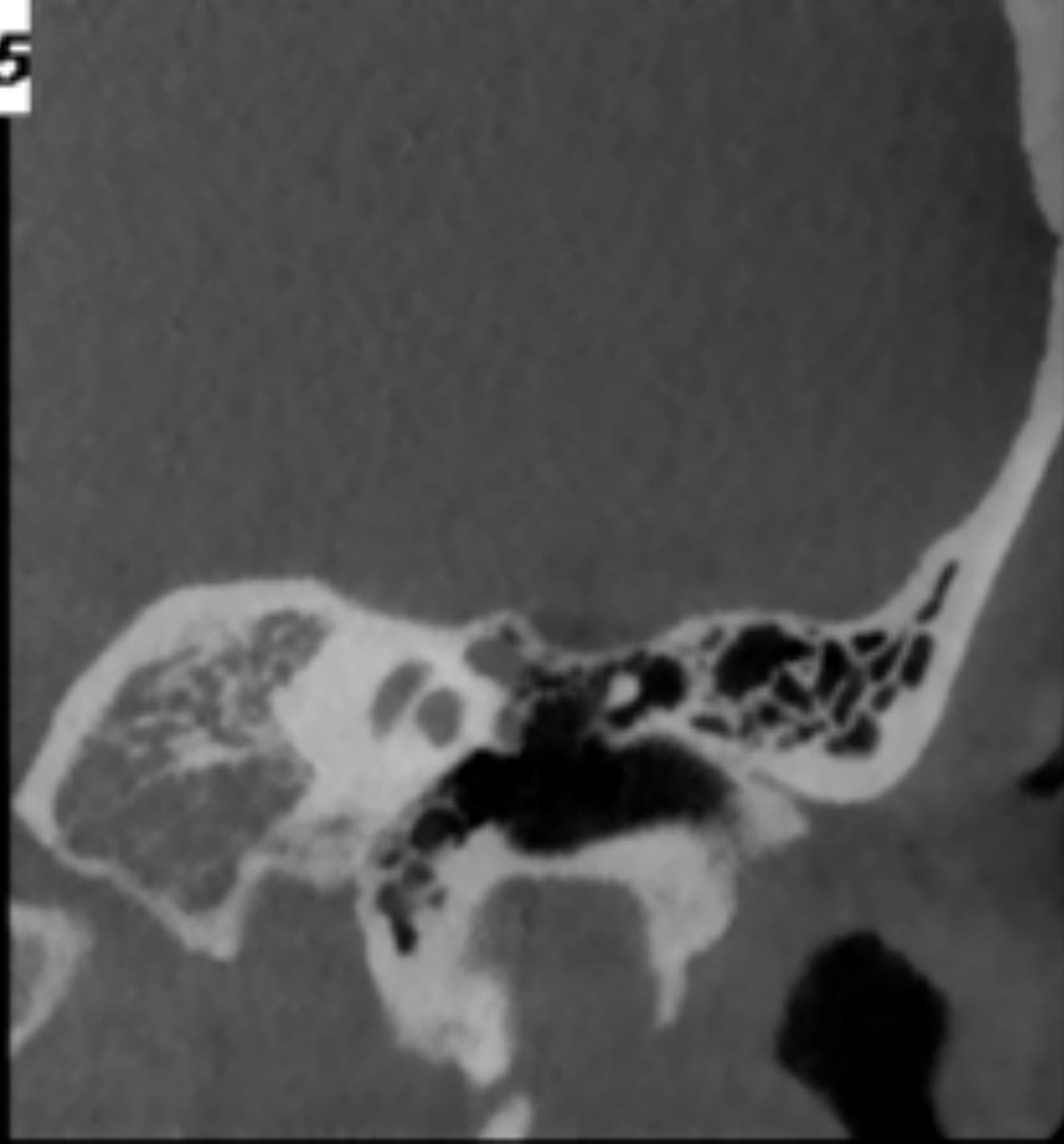


Reconstruccions axials amb FOV de 10 cm centrades en l'òida esquerra.

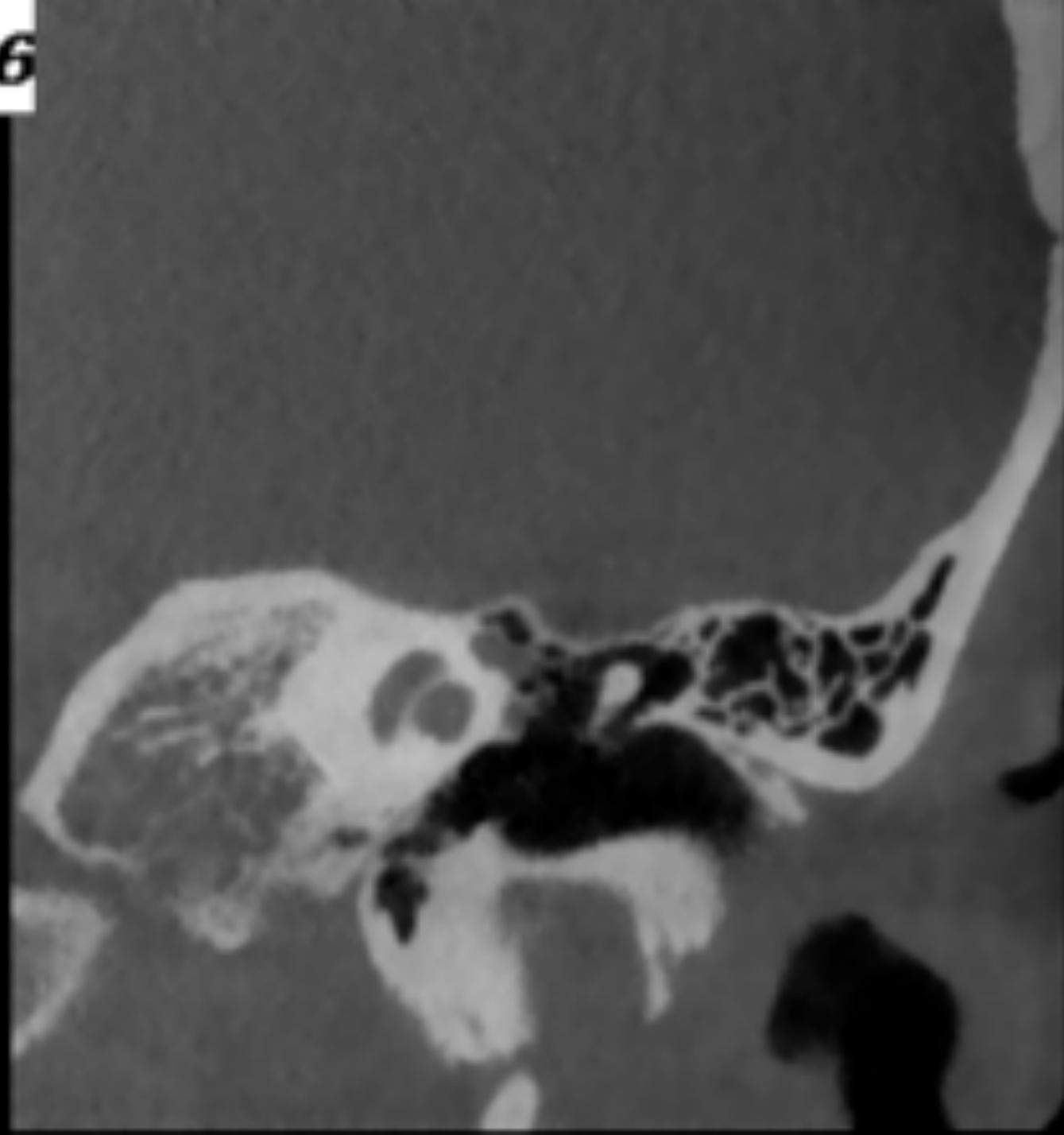




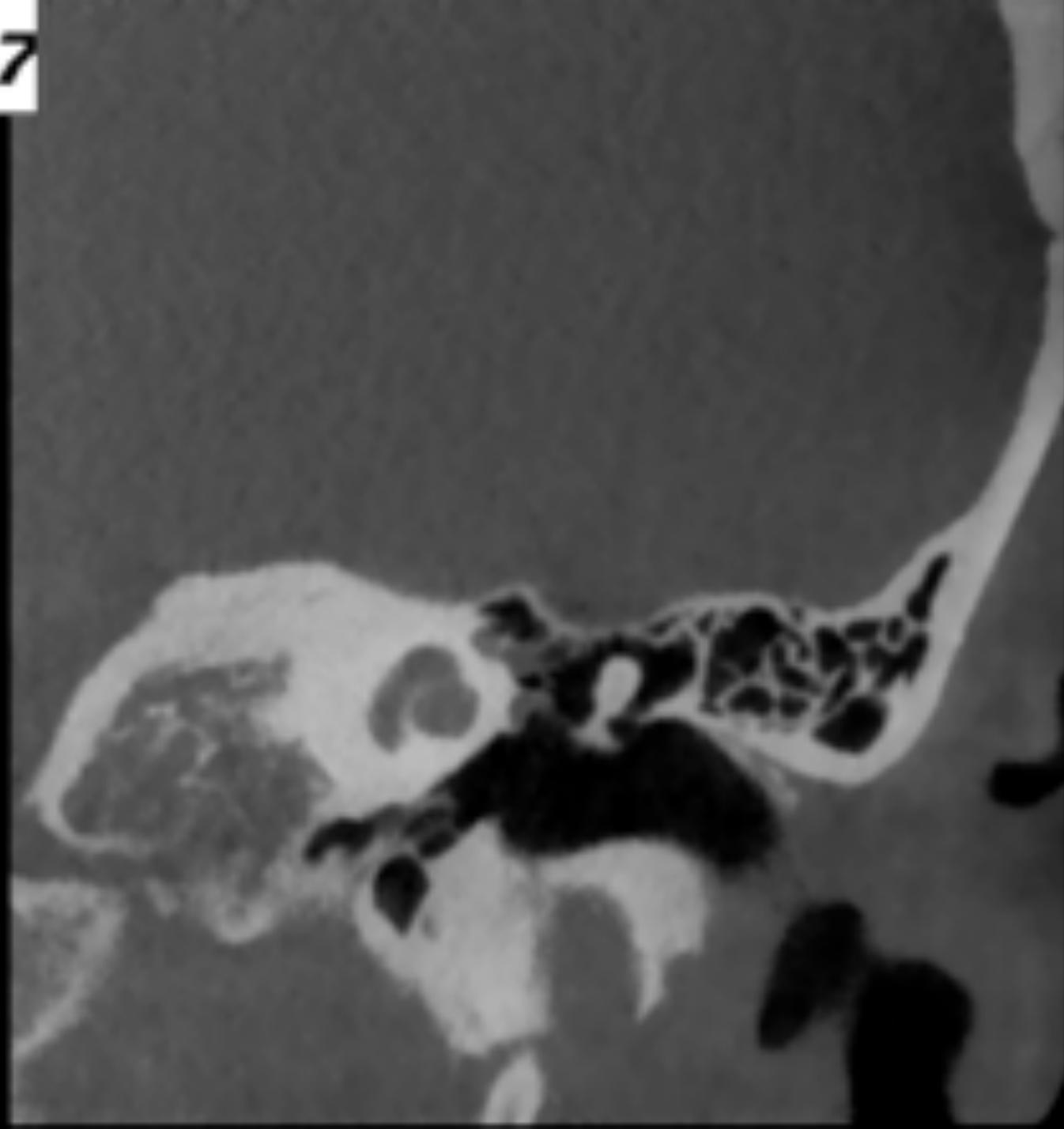
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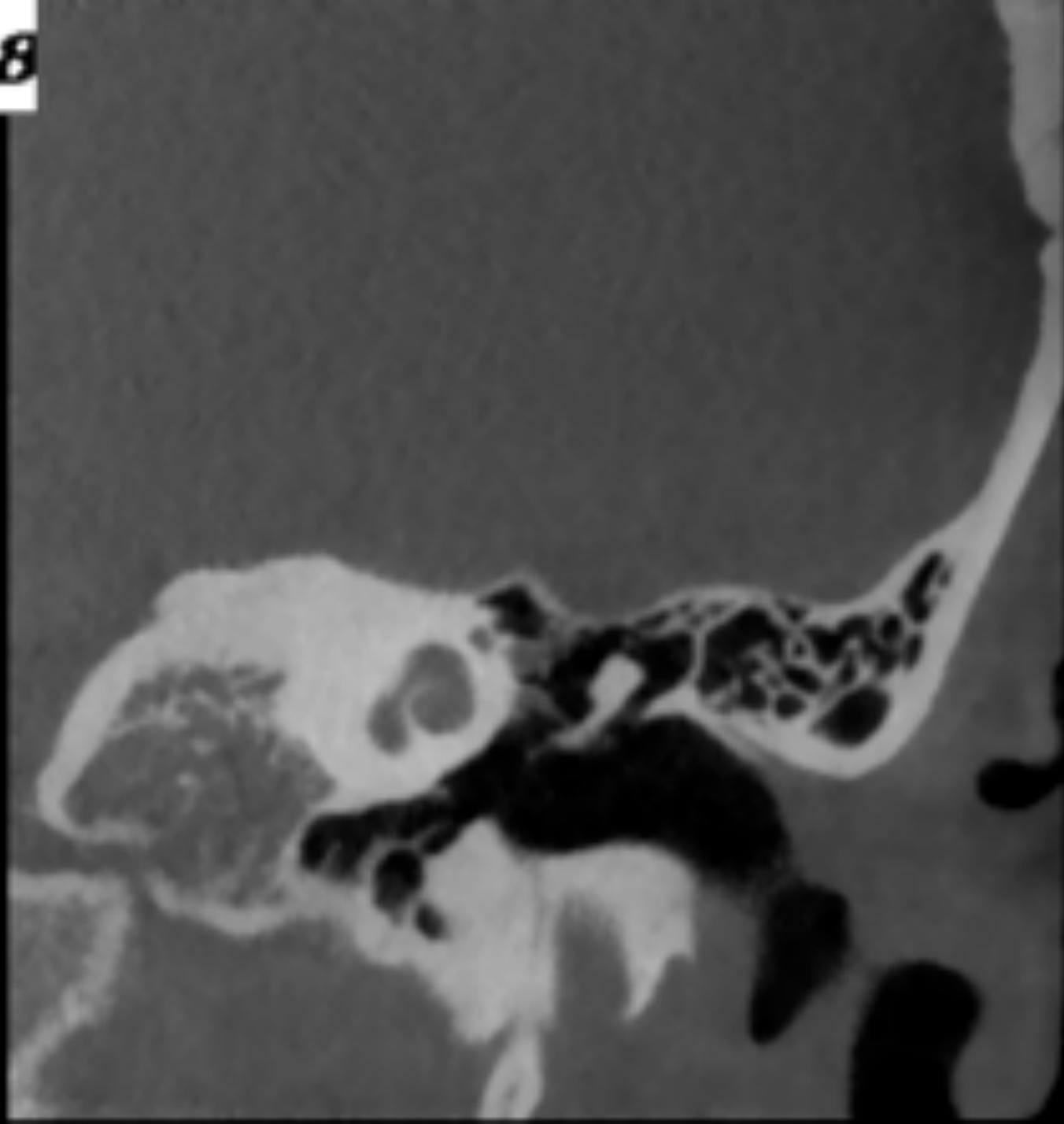


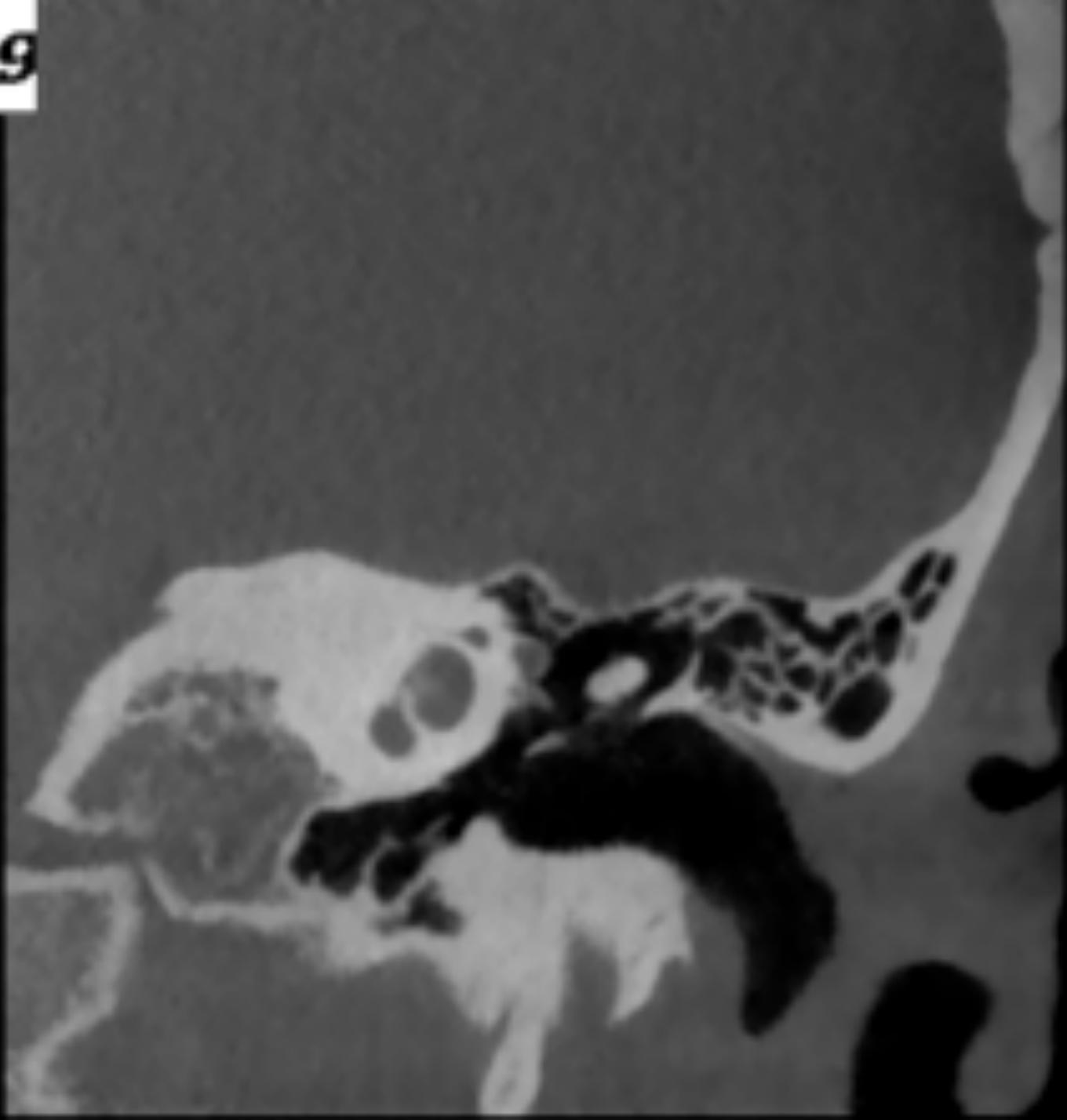
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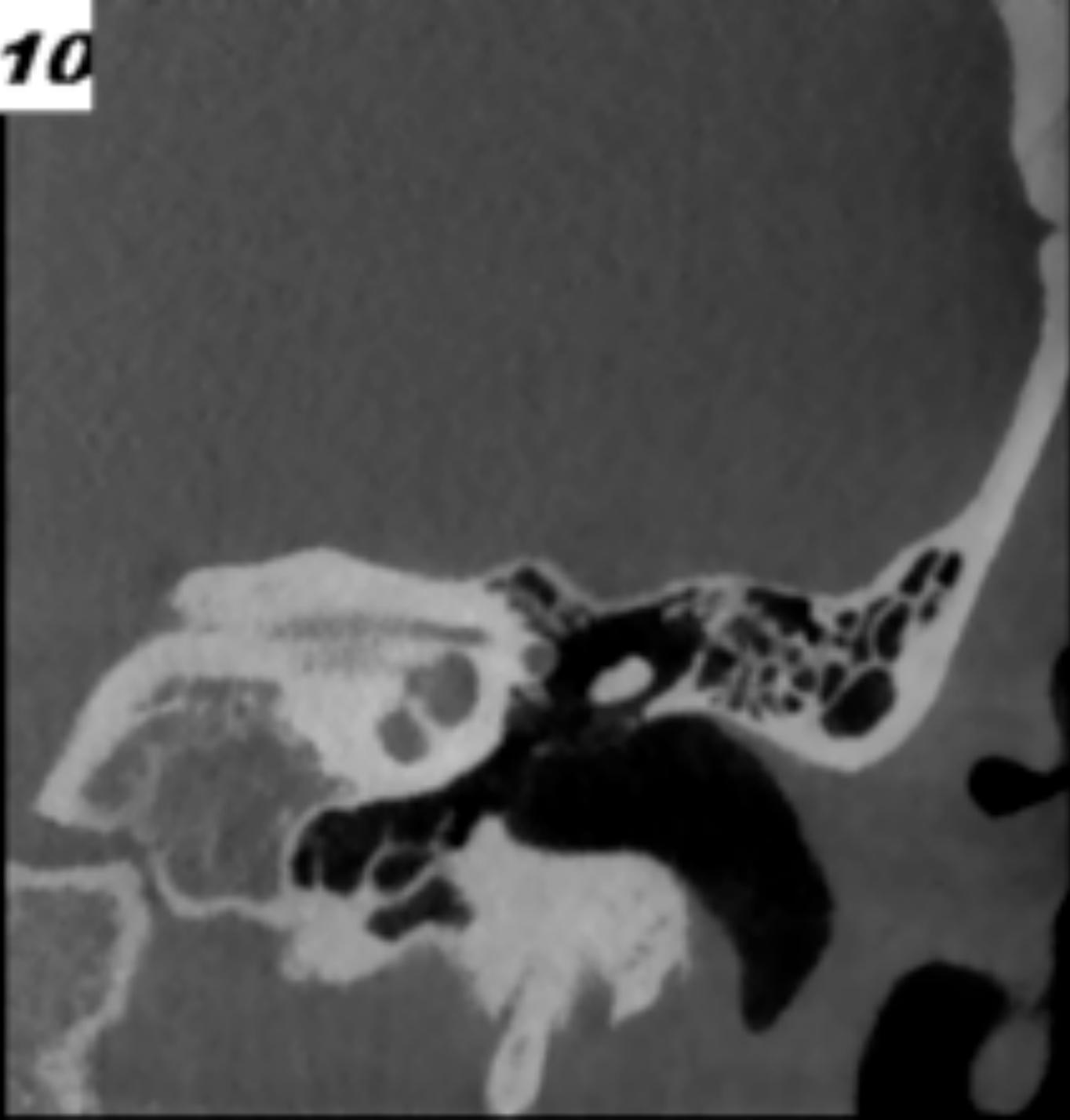


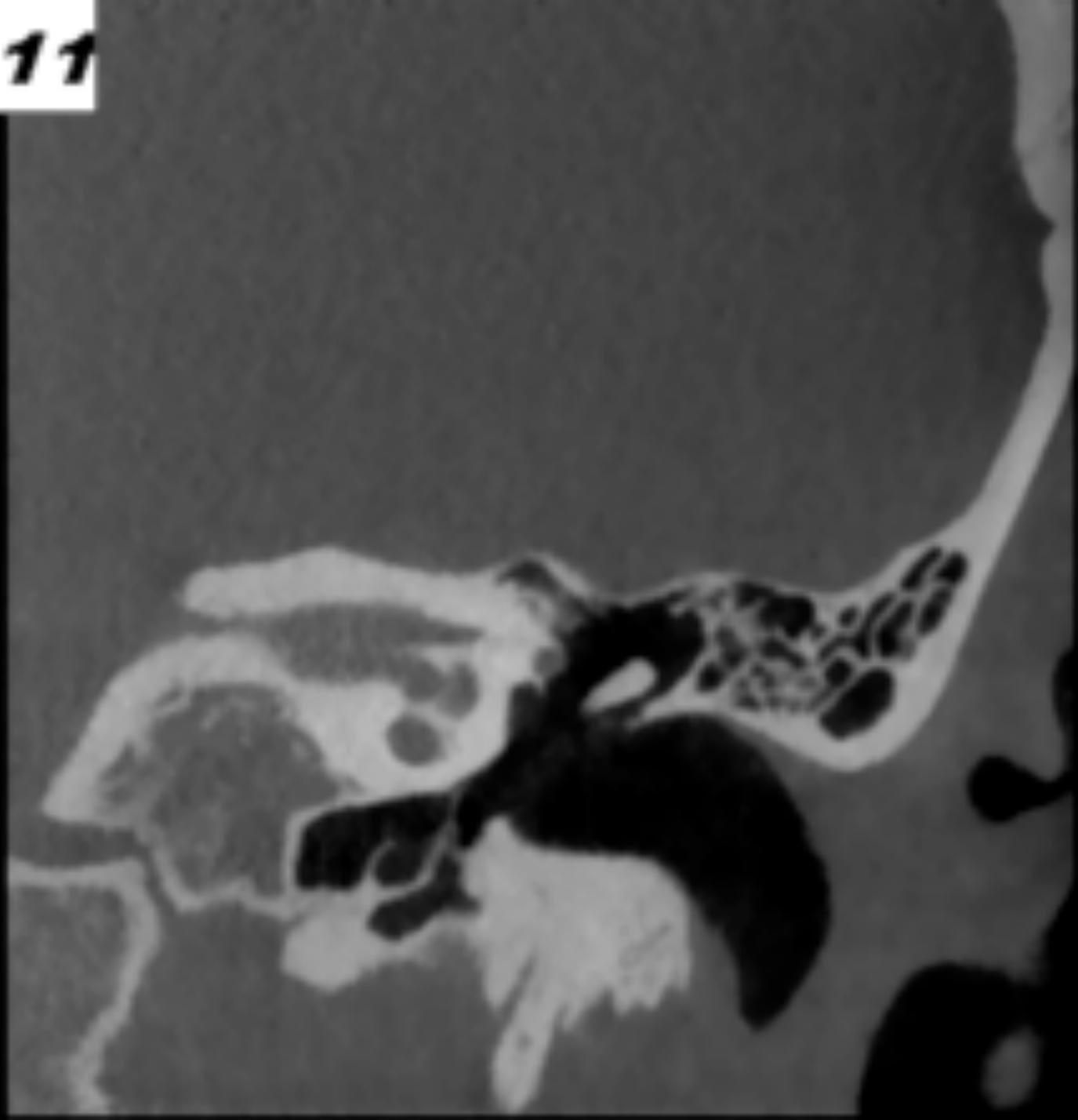
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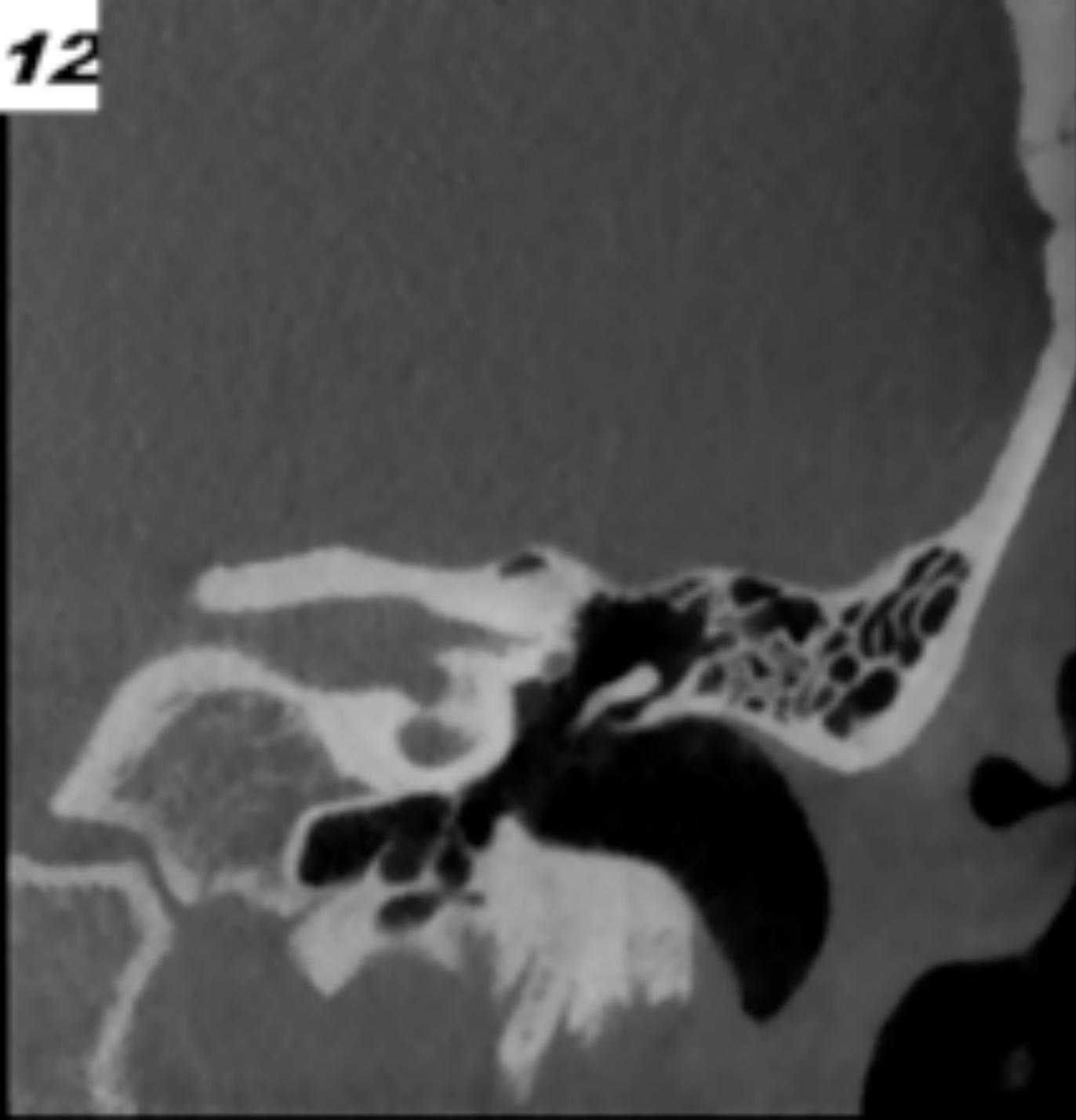


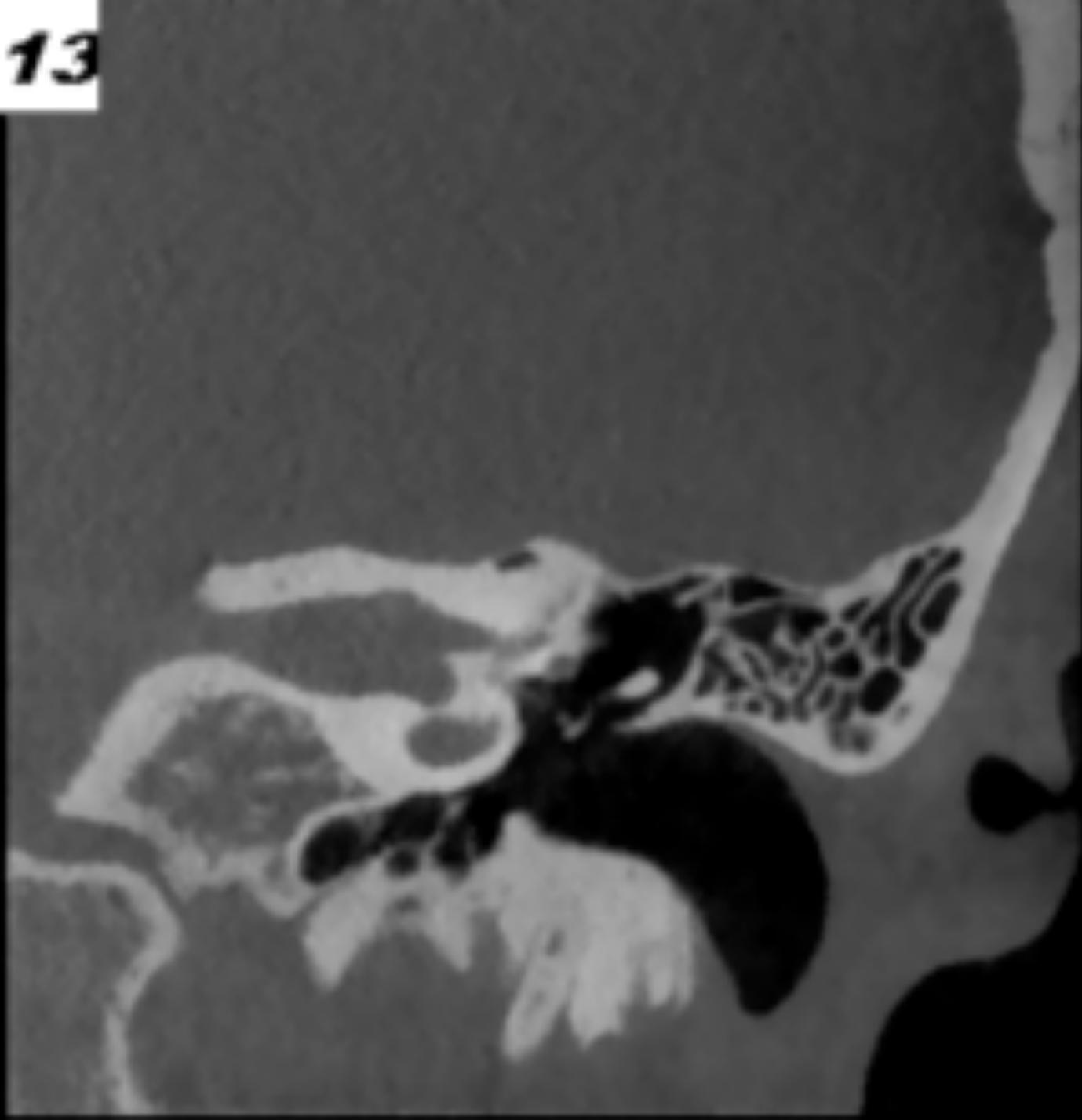


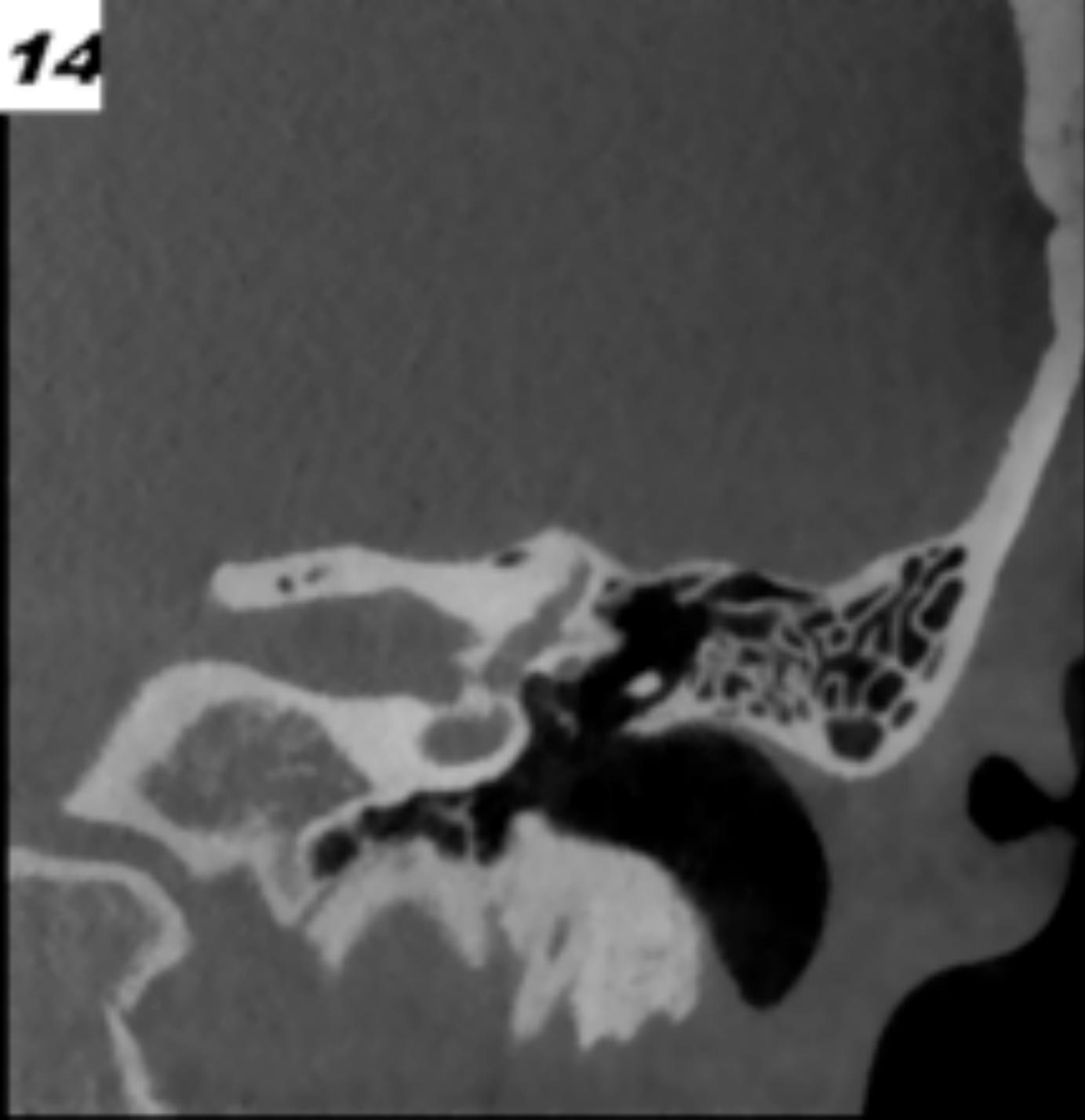


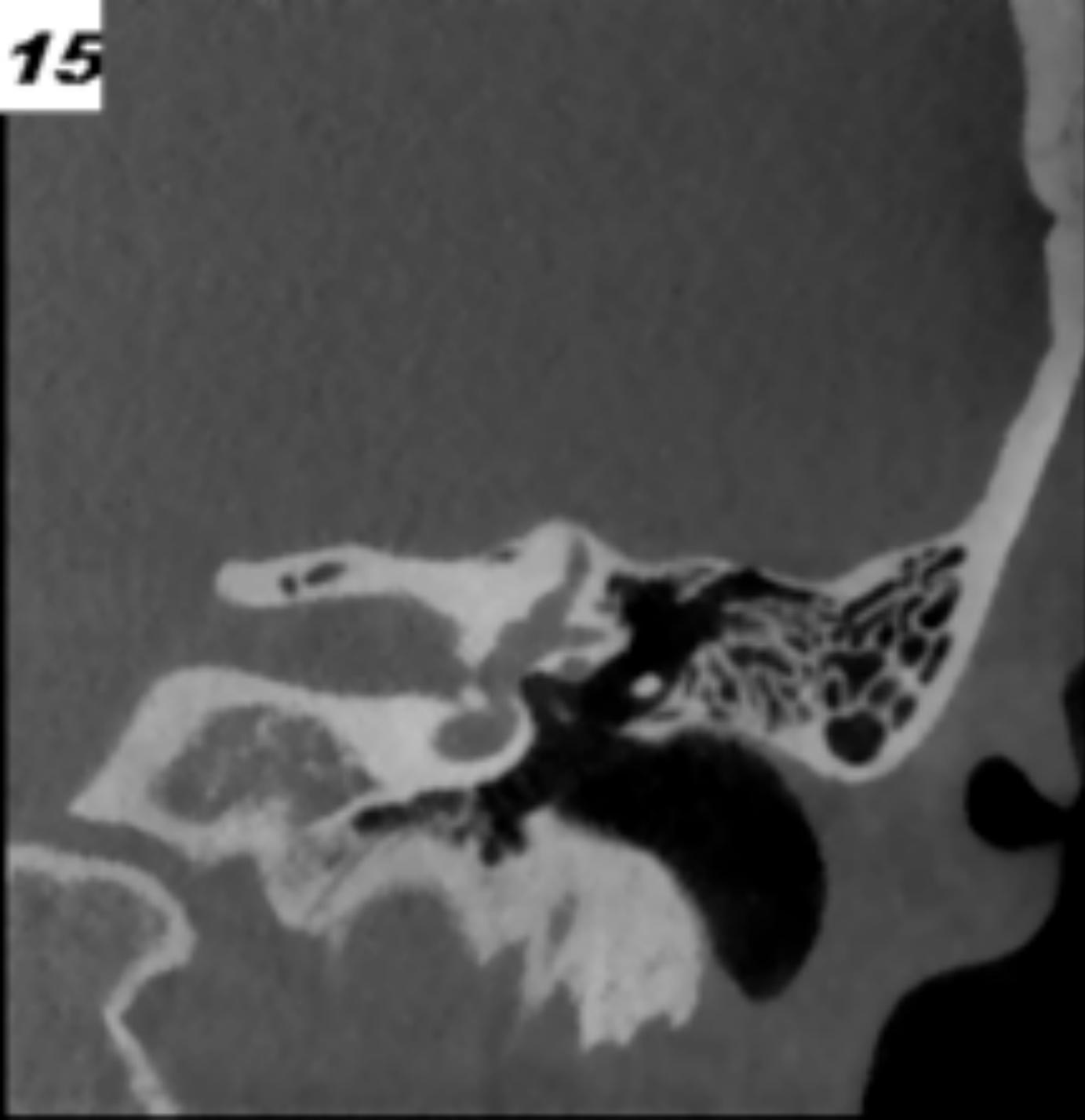


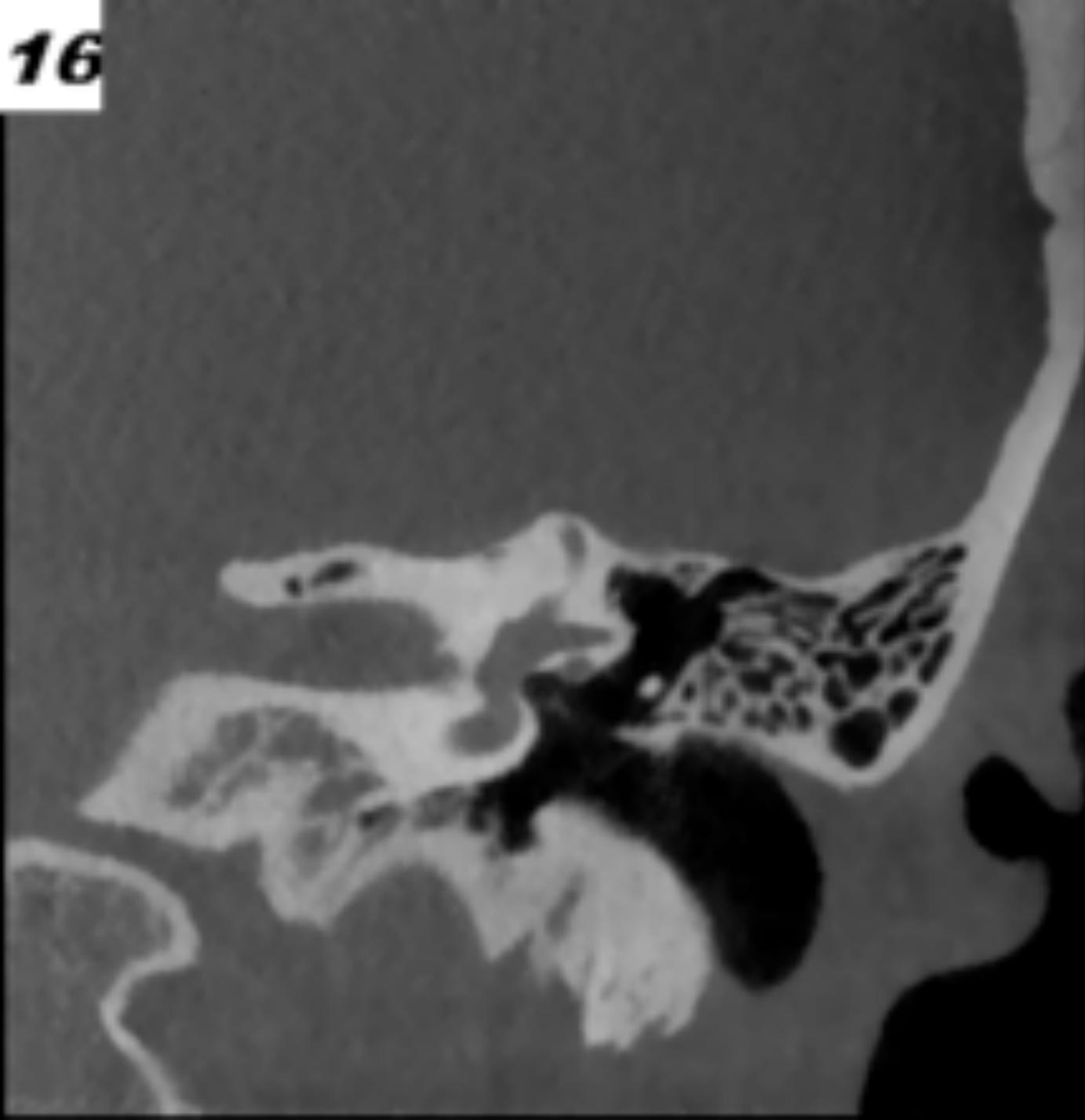


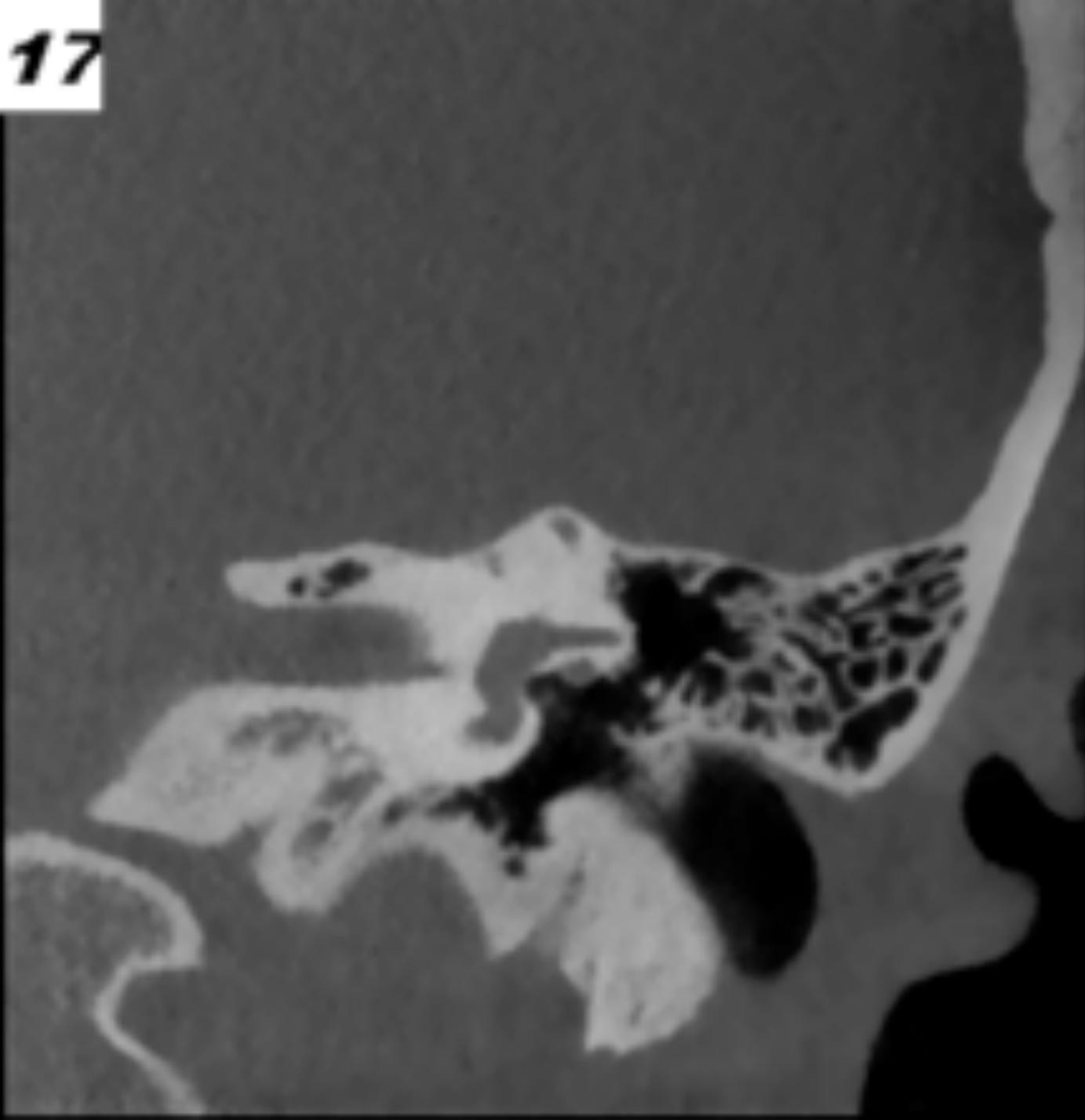


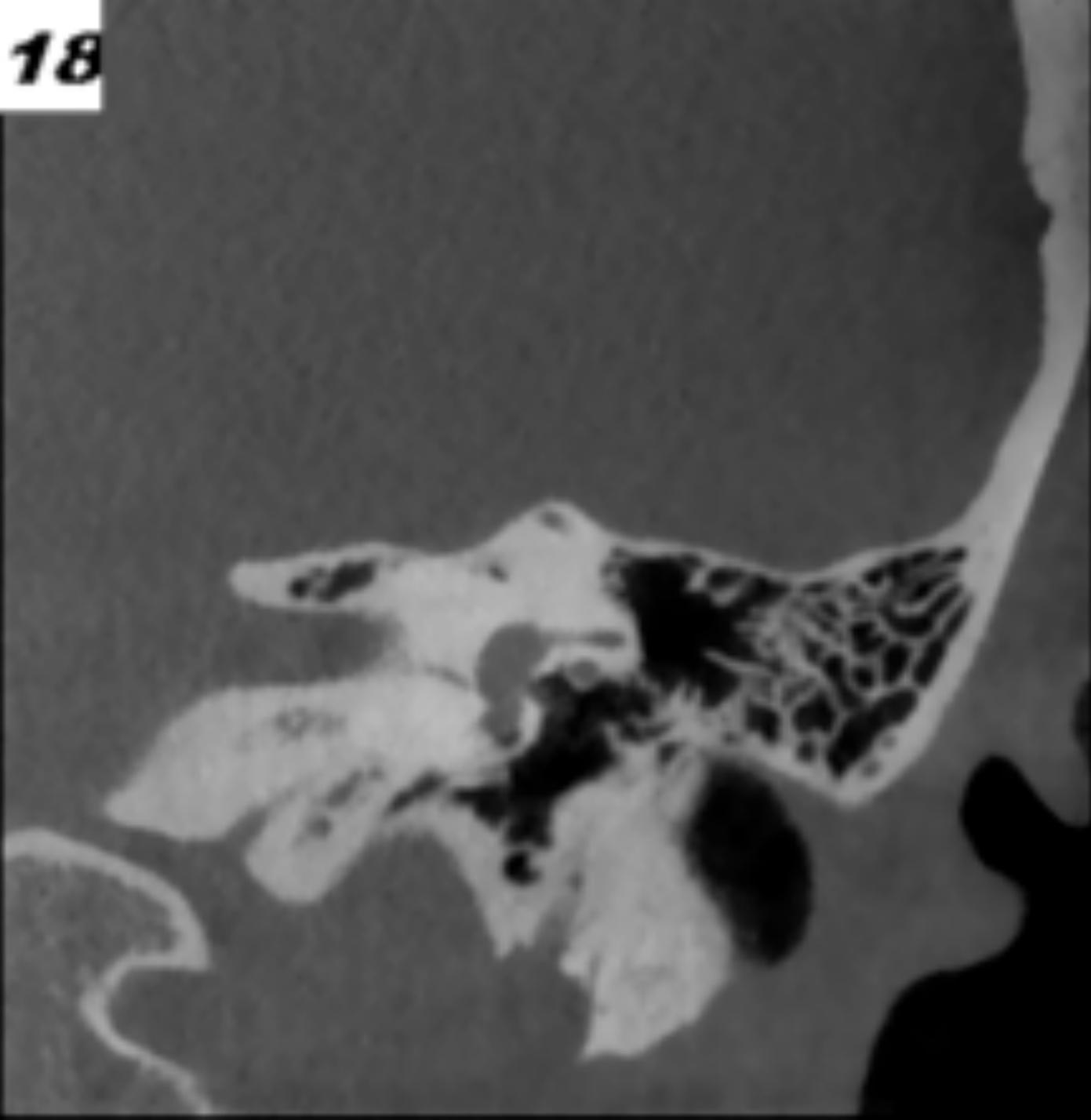


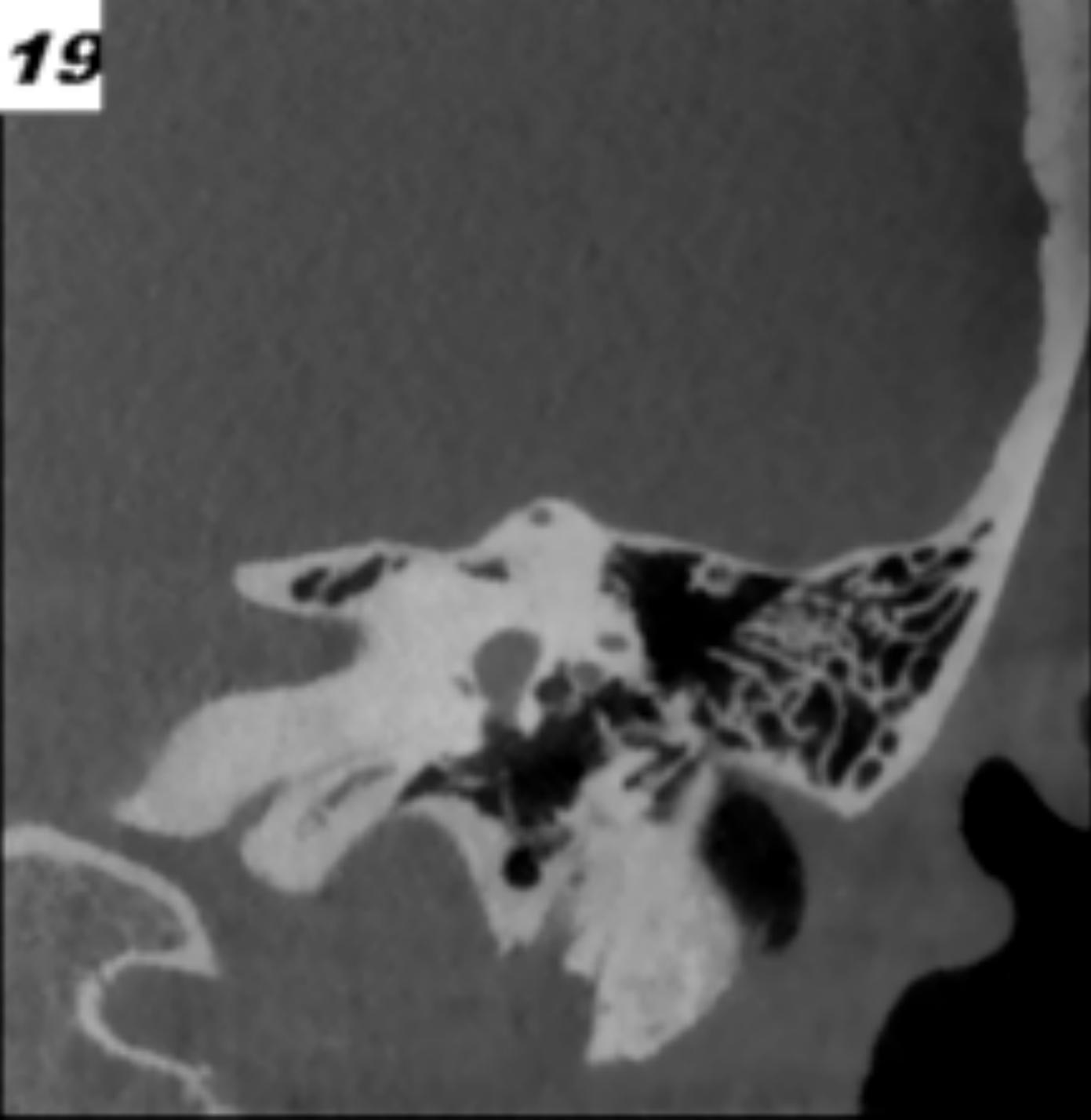


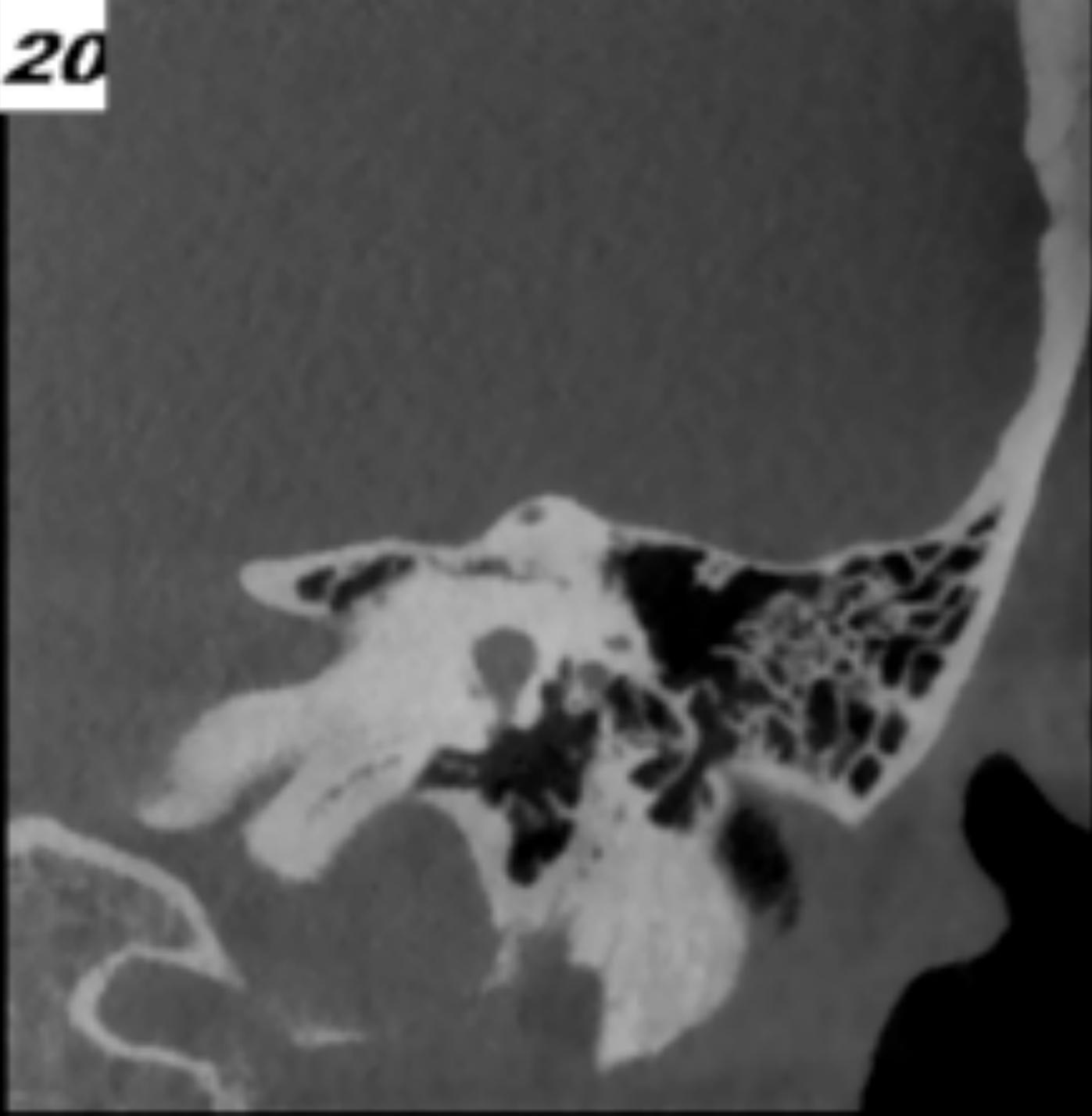




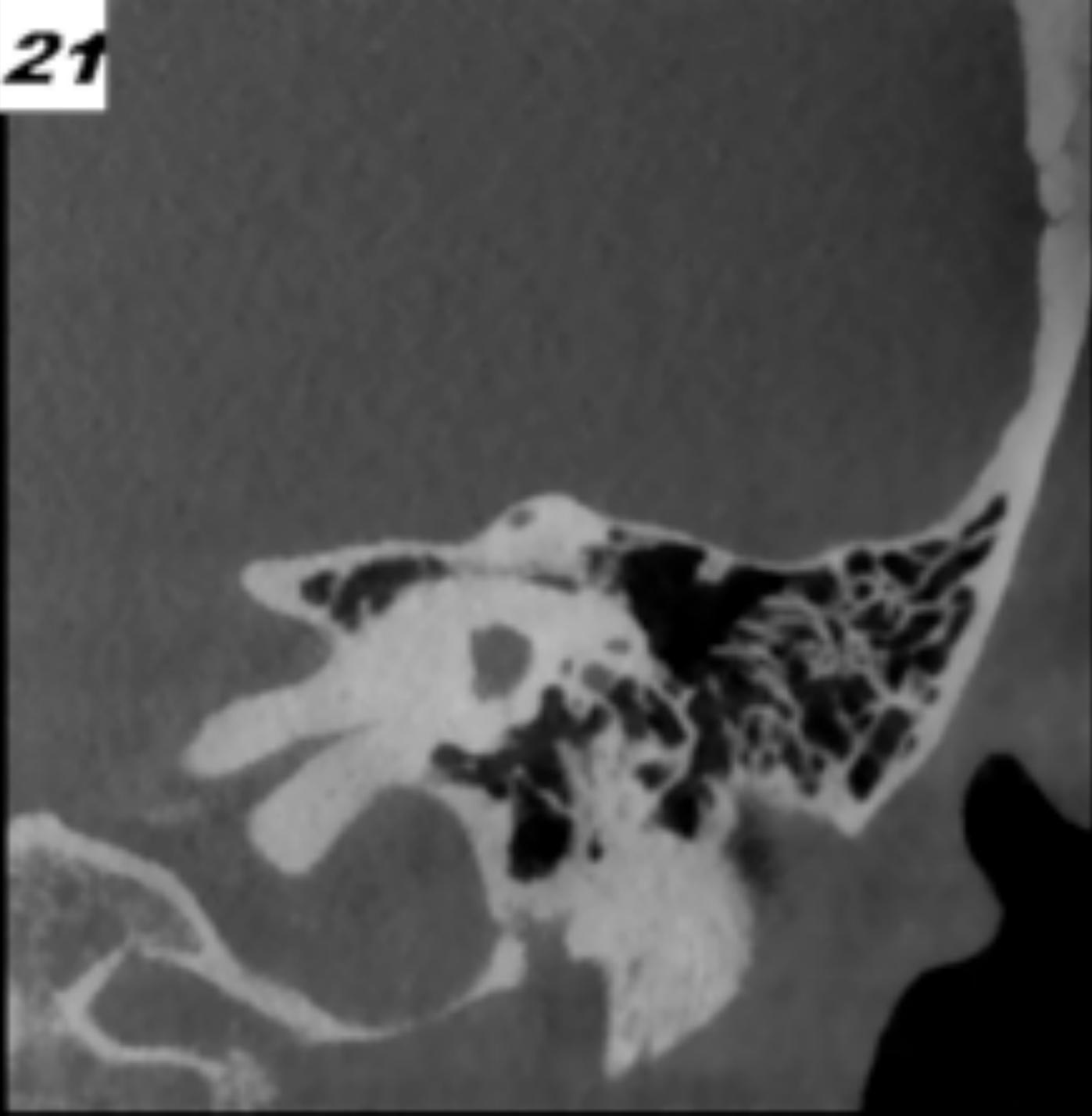


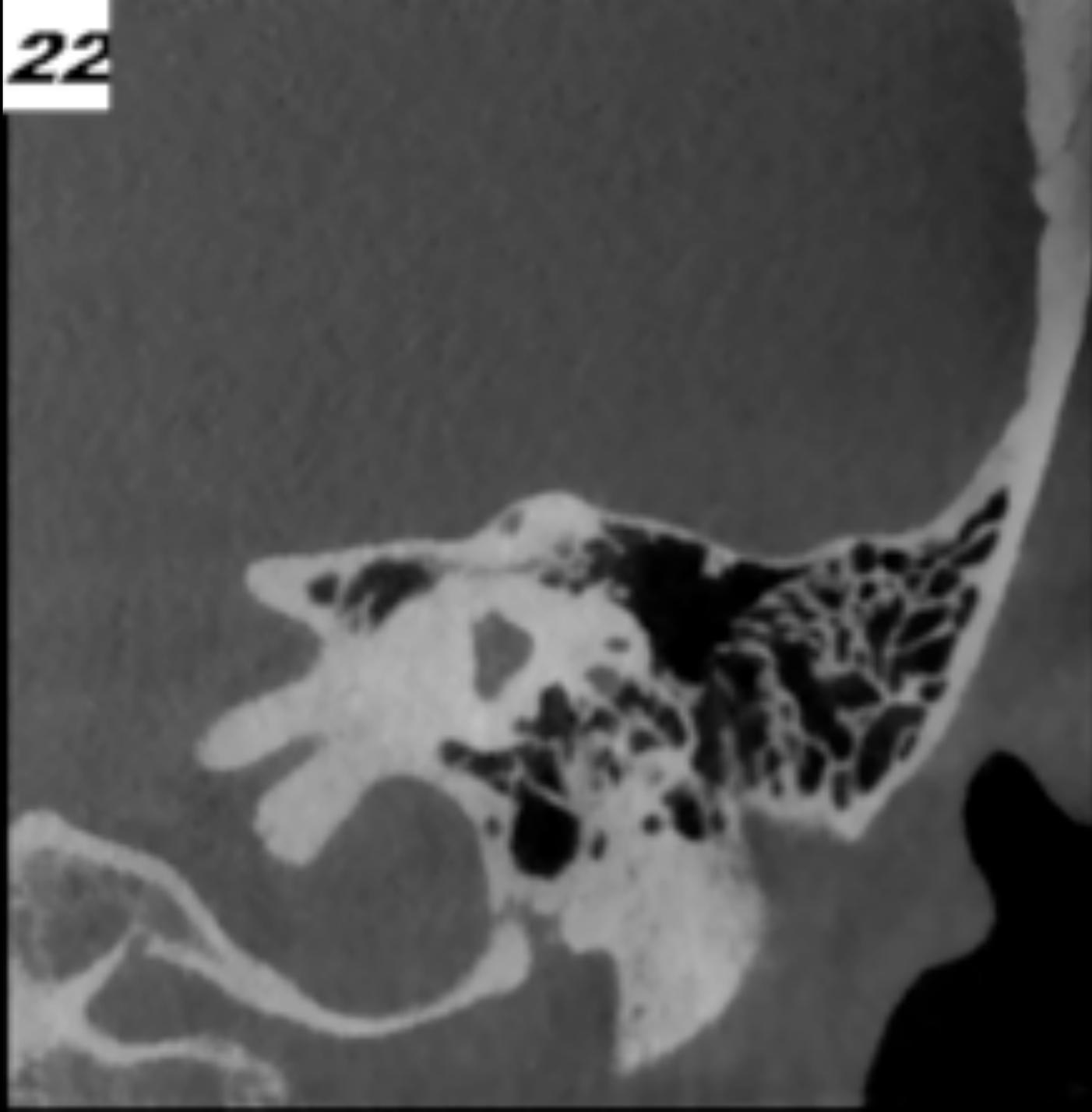


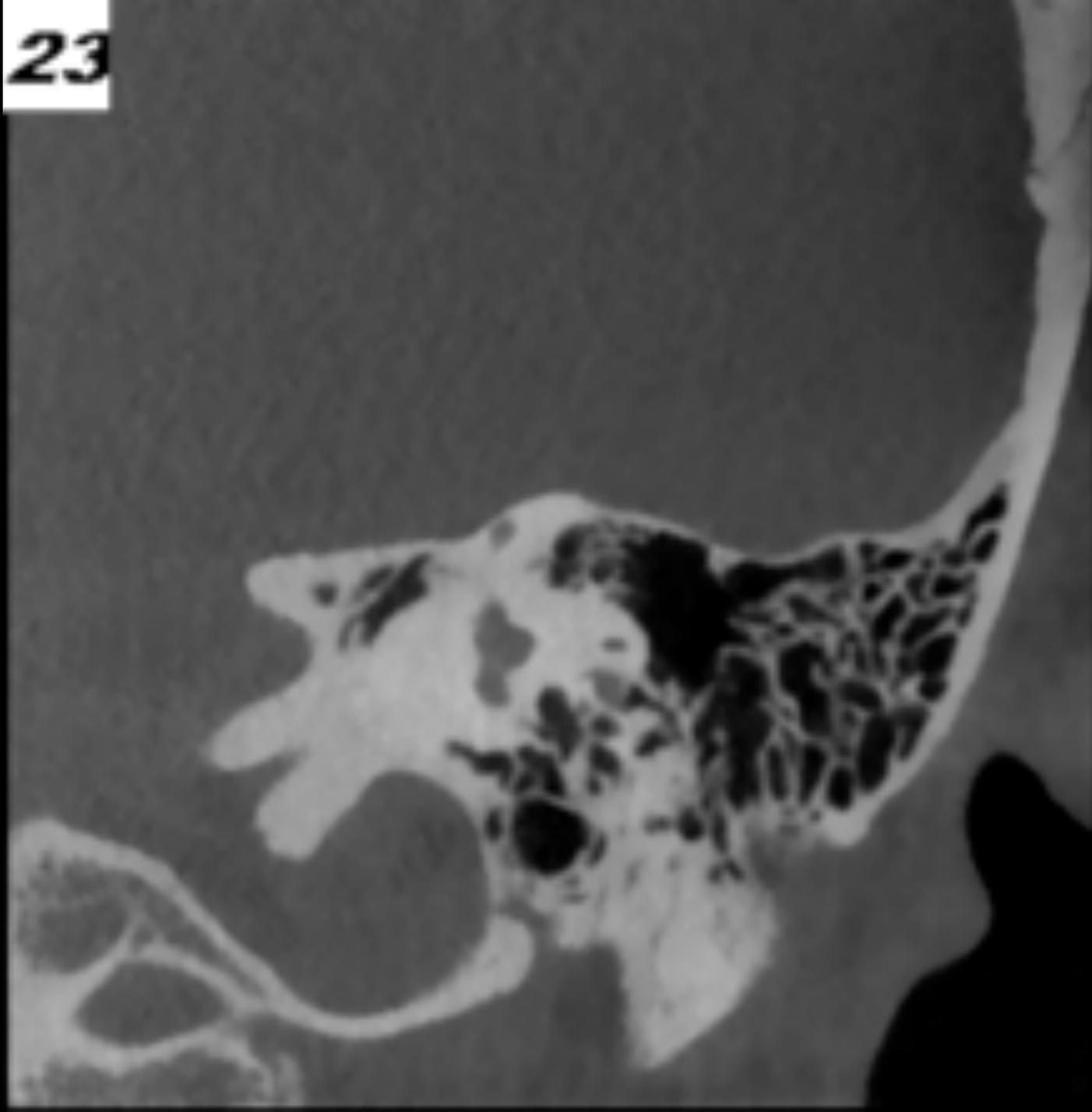


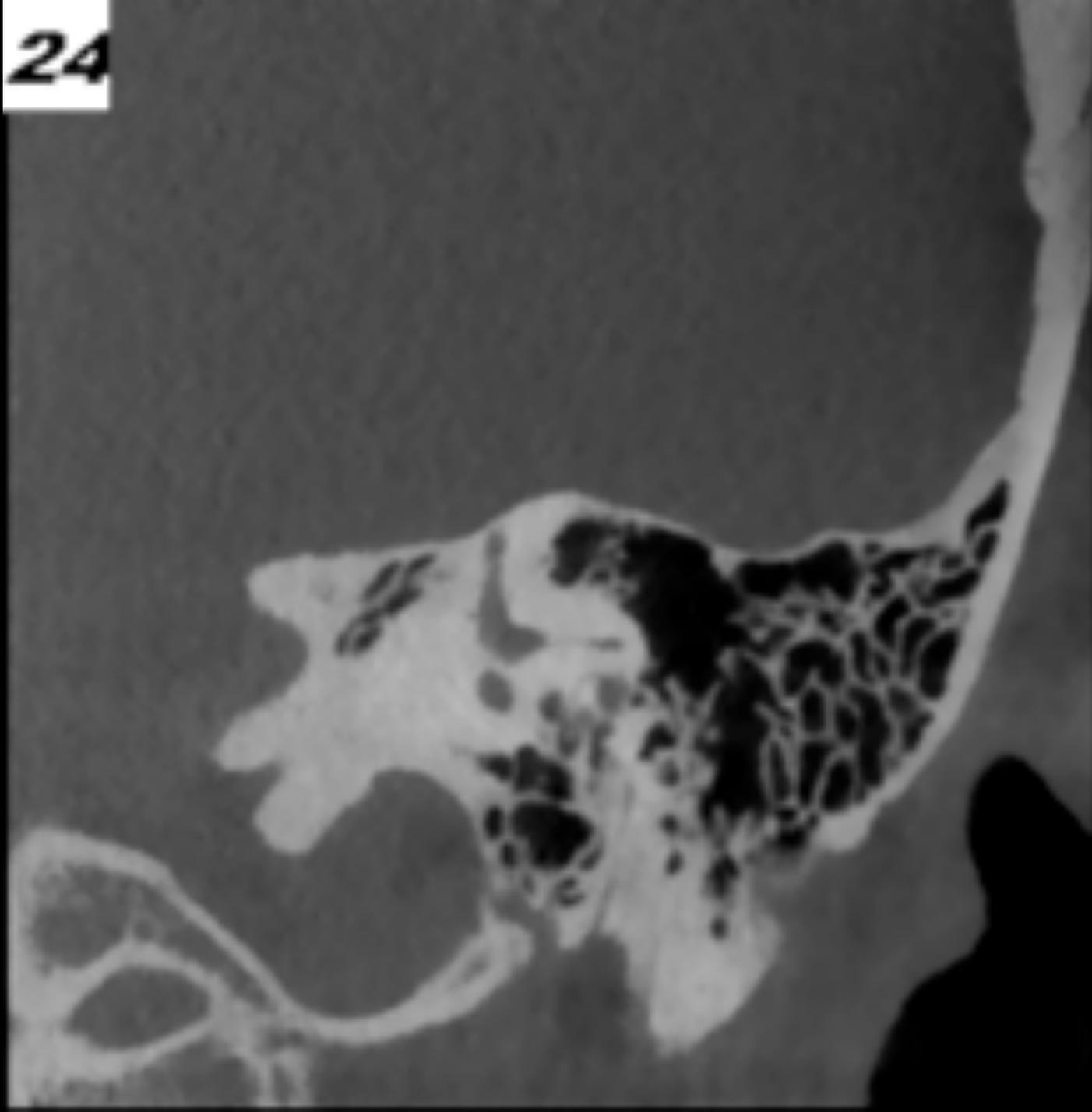


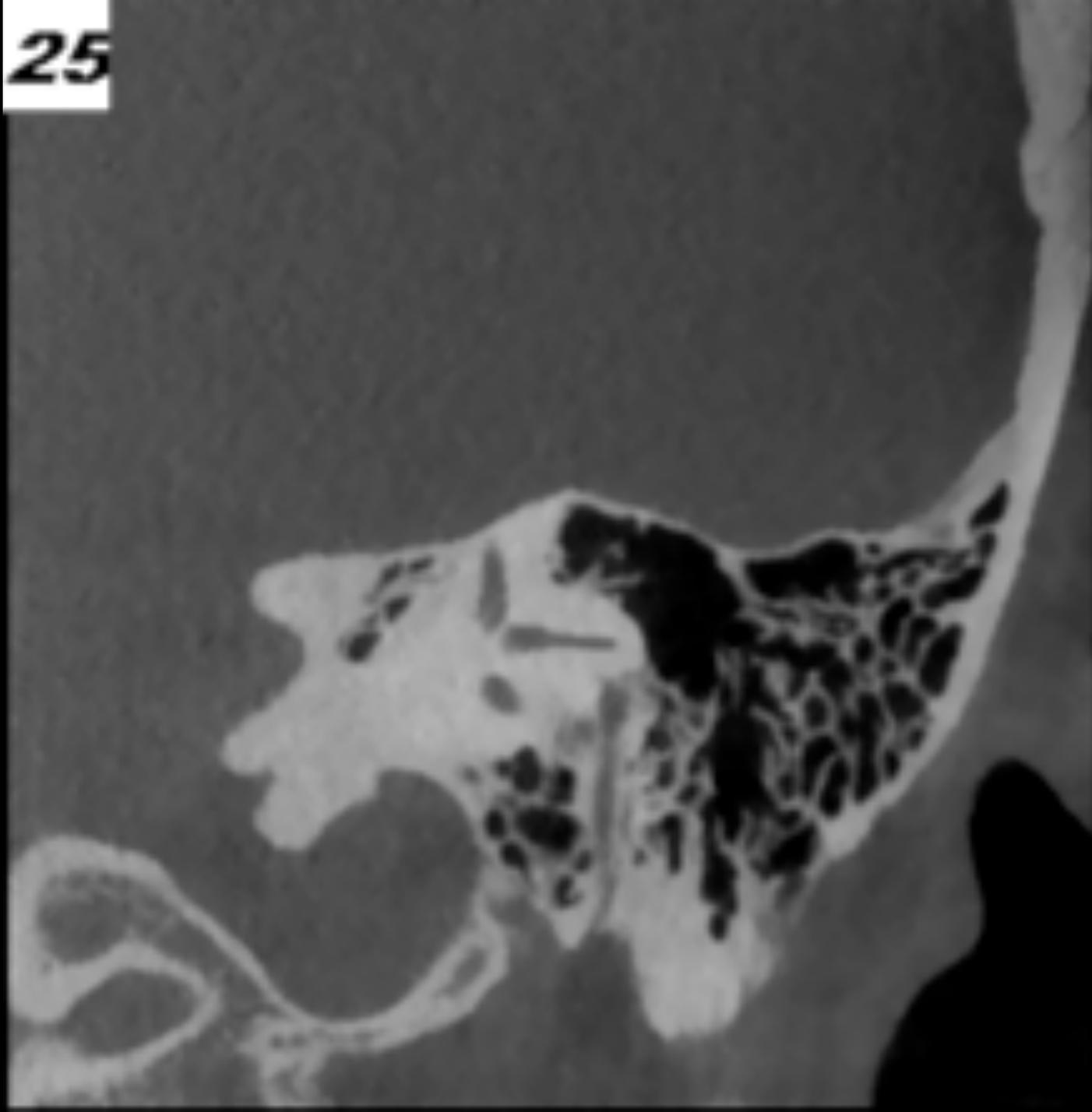
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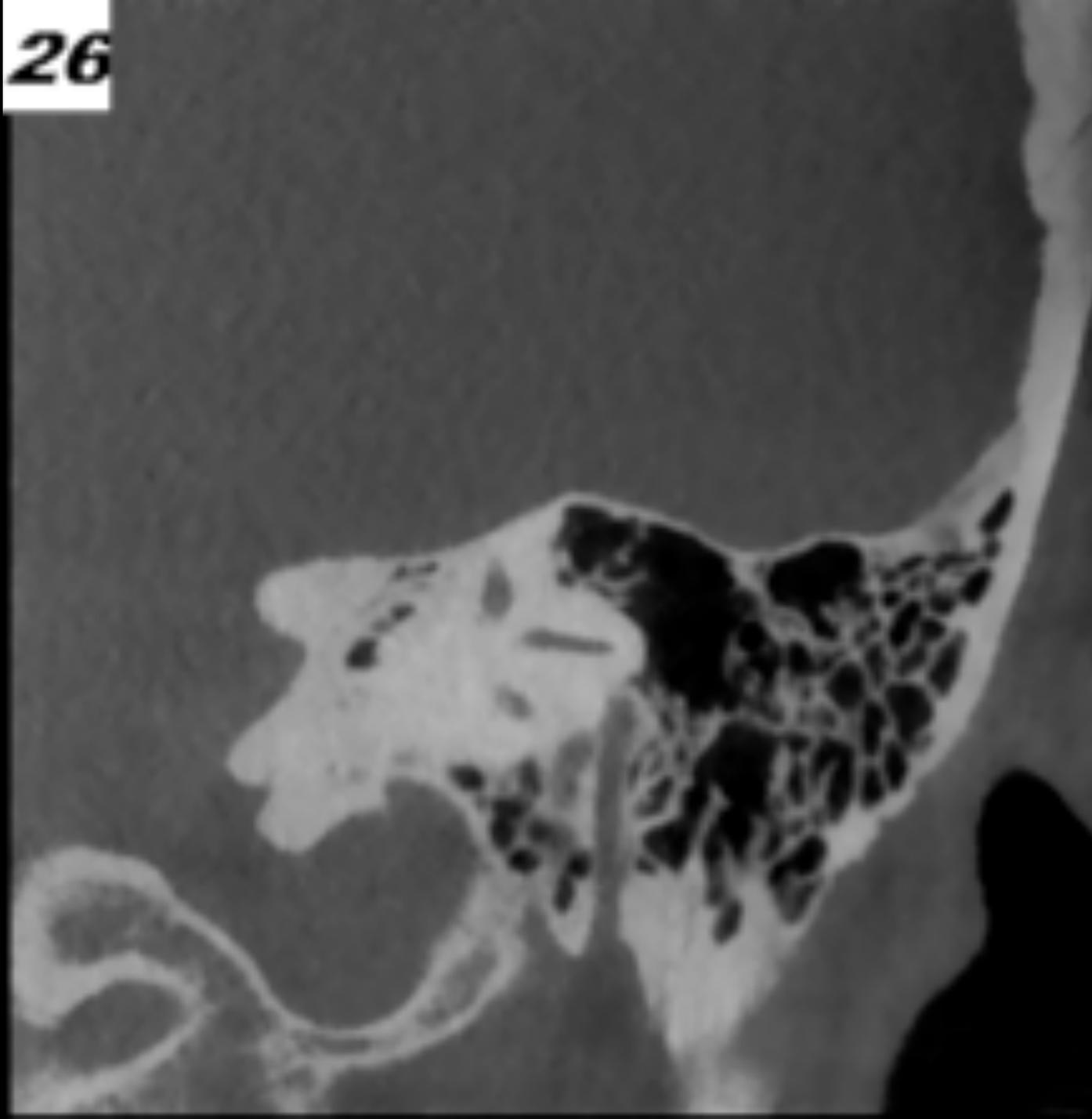


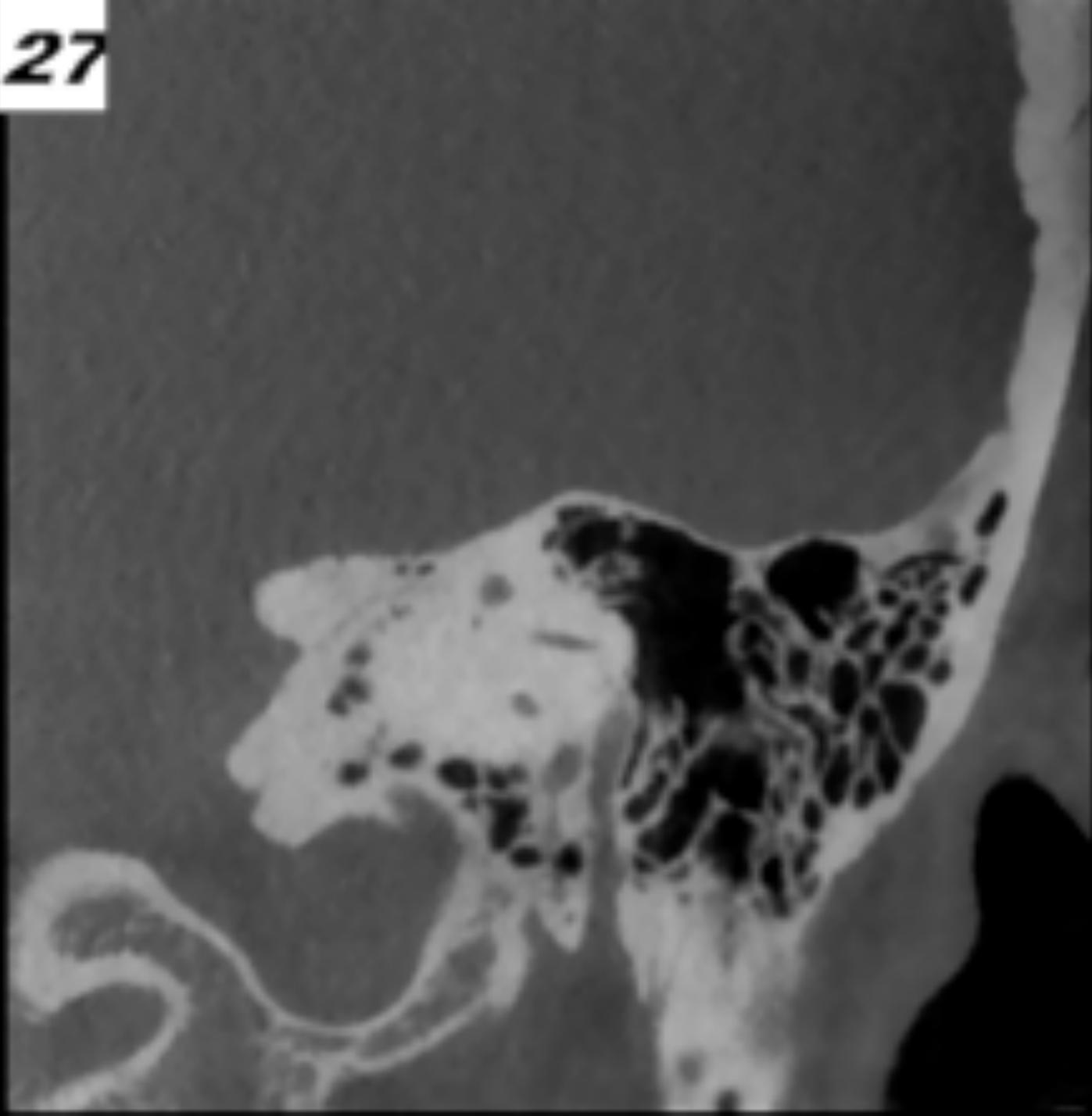


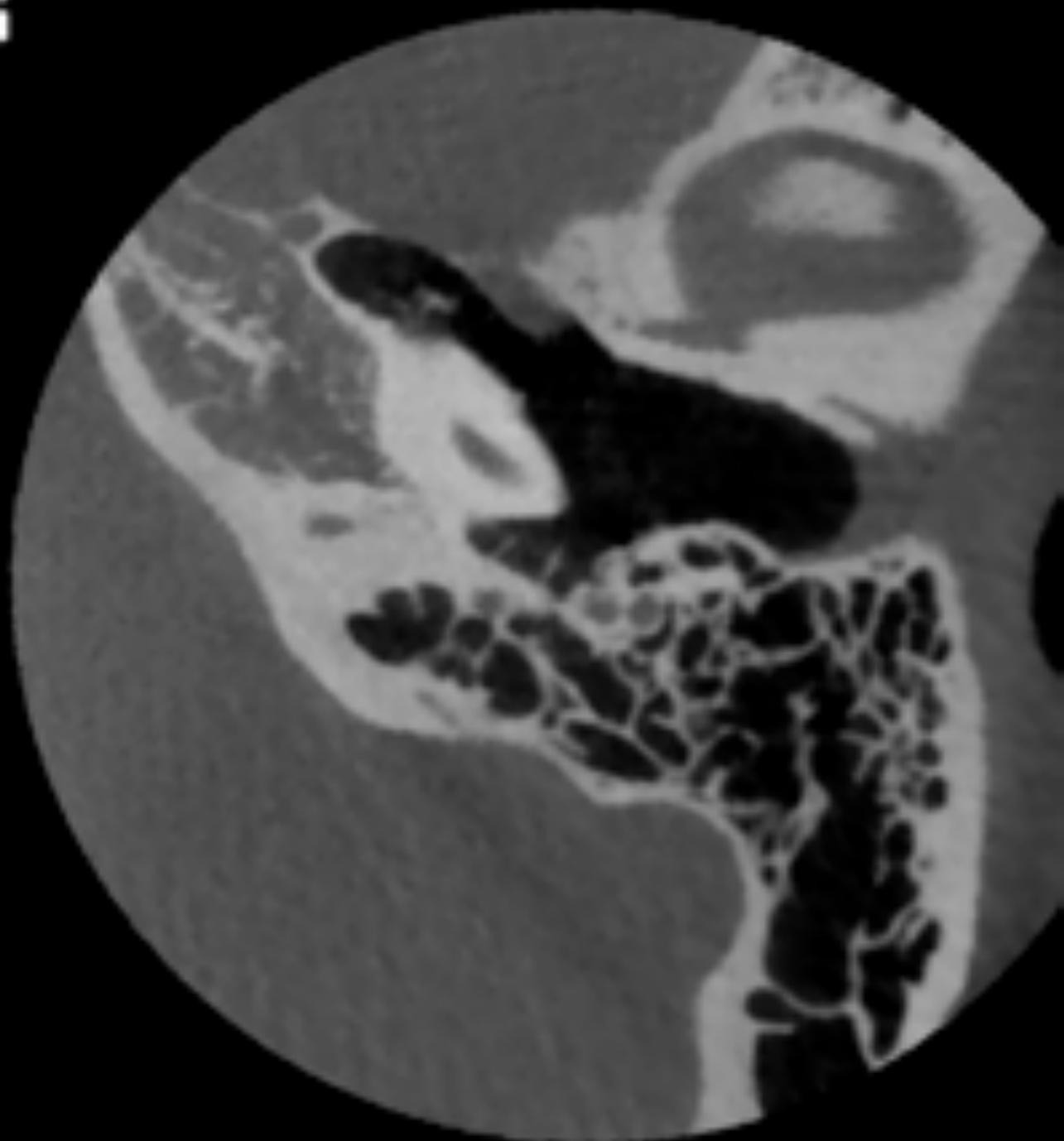


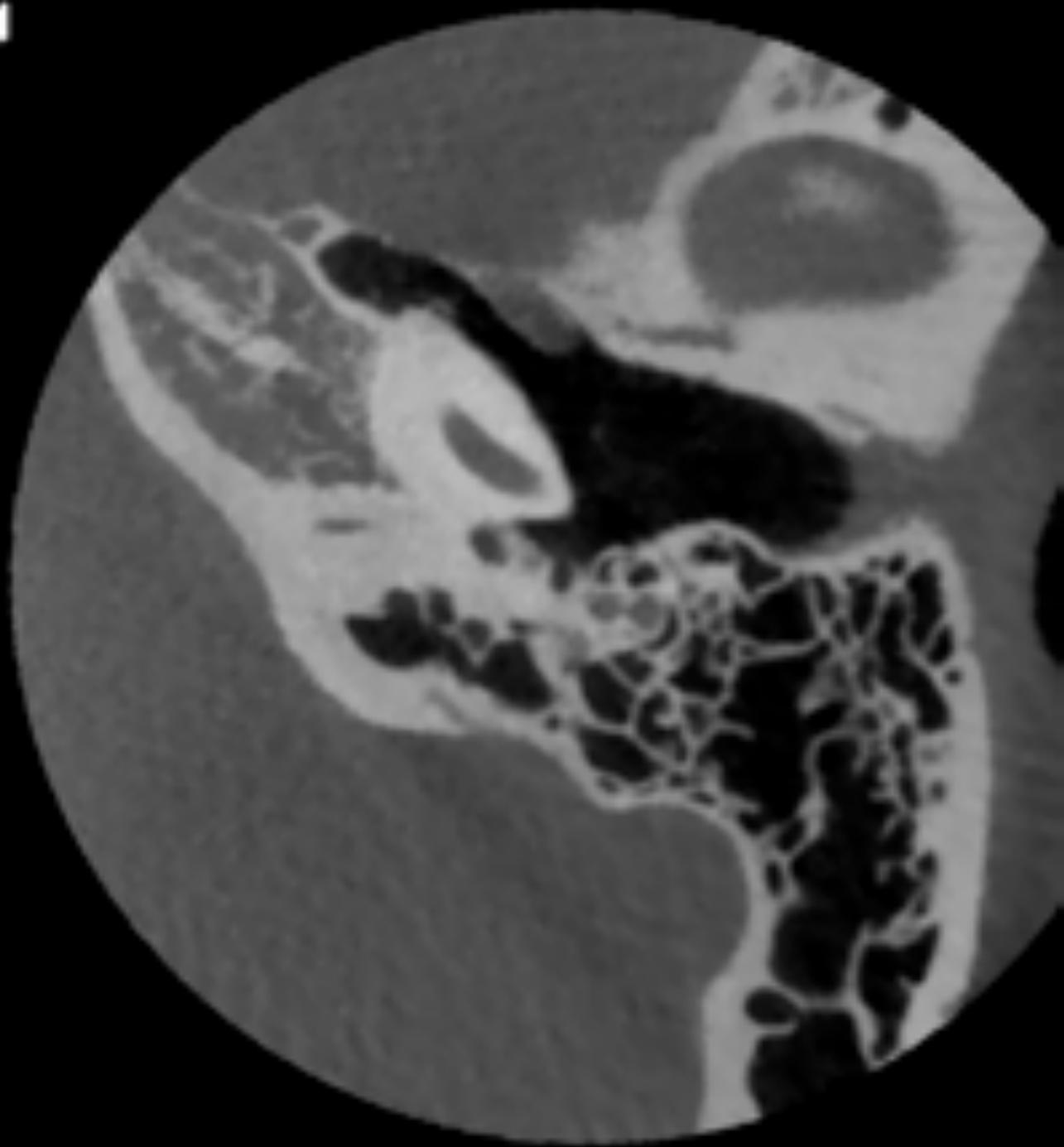


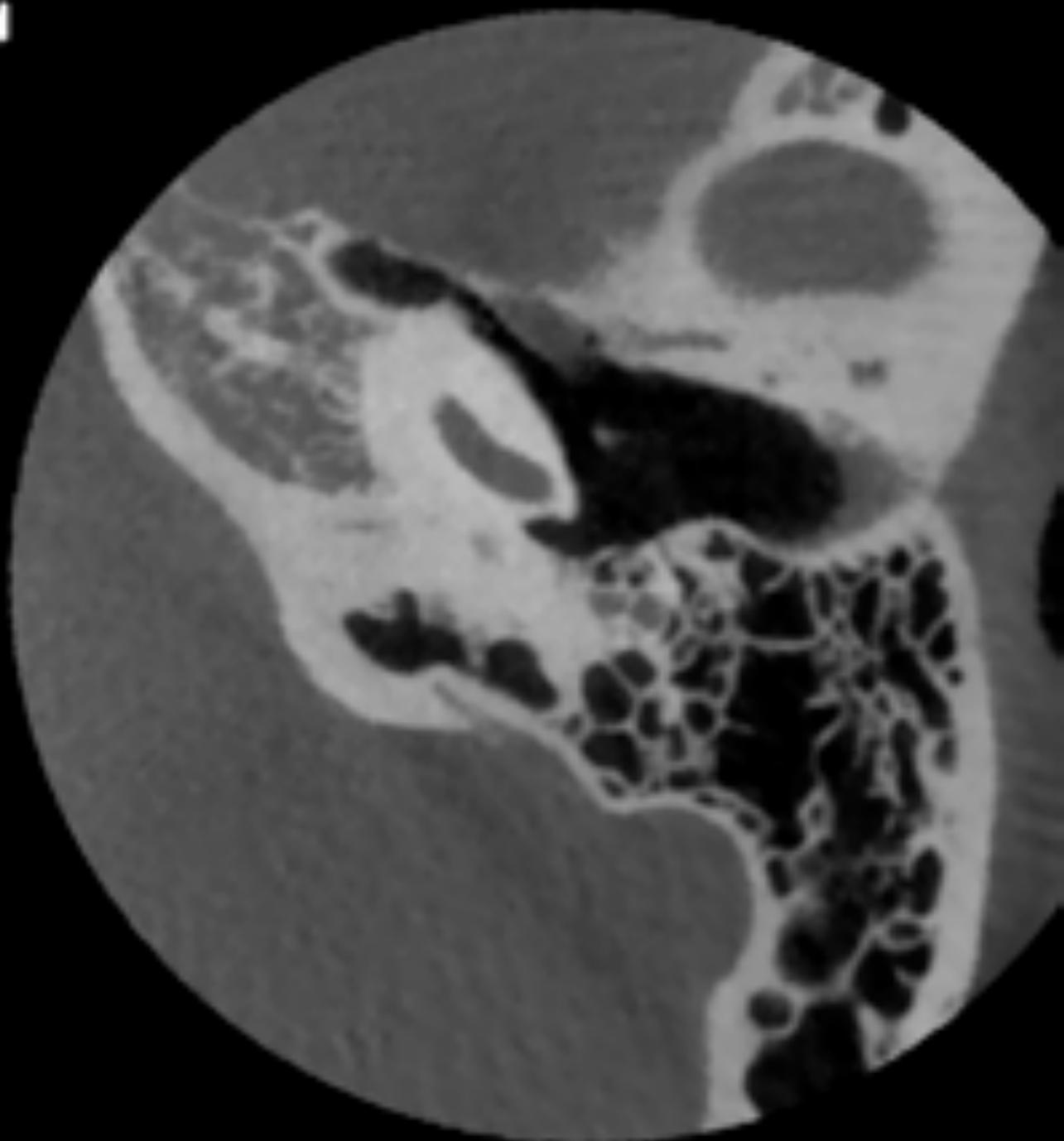


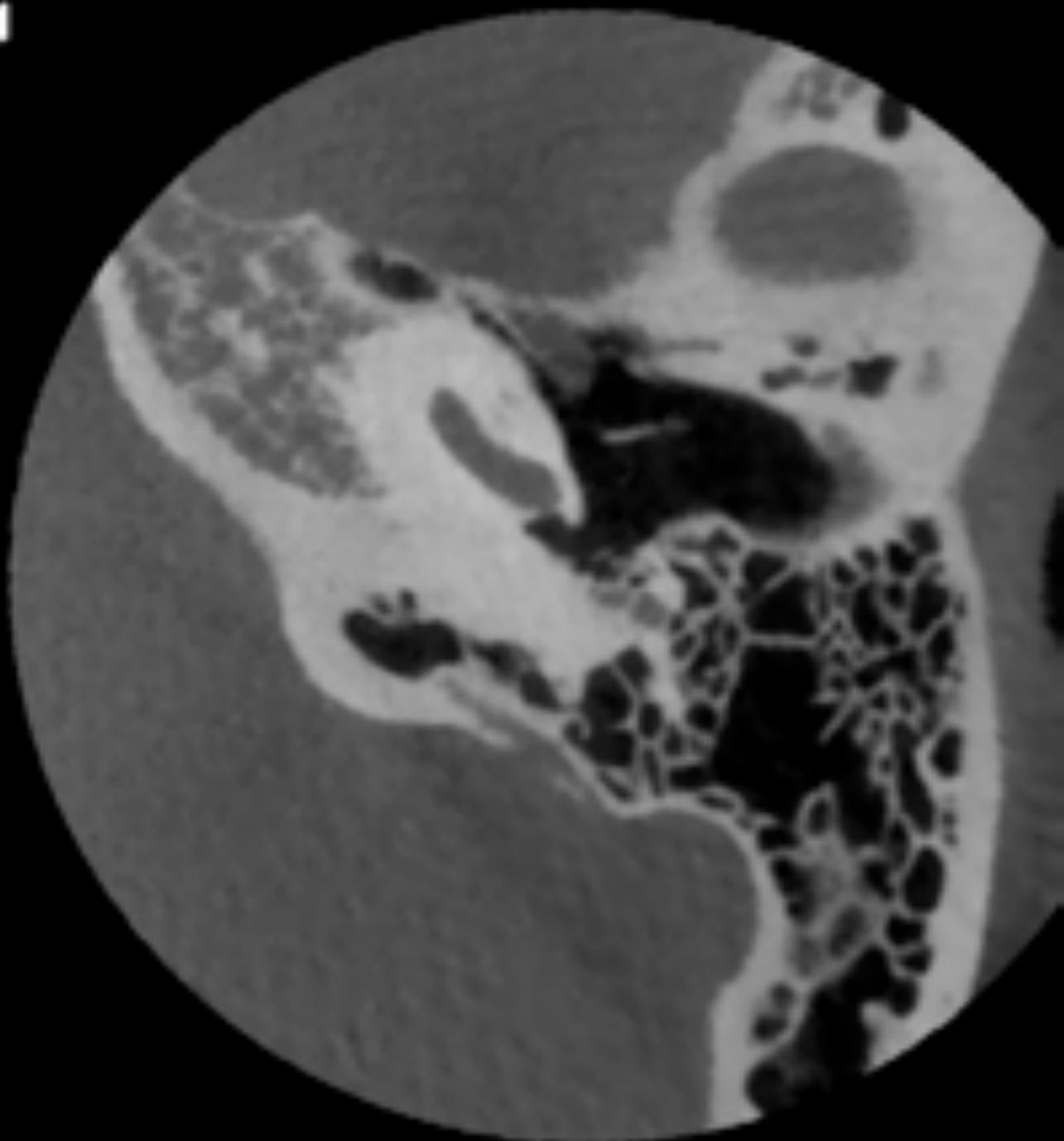


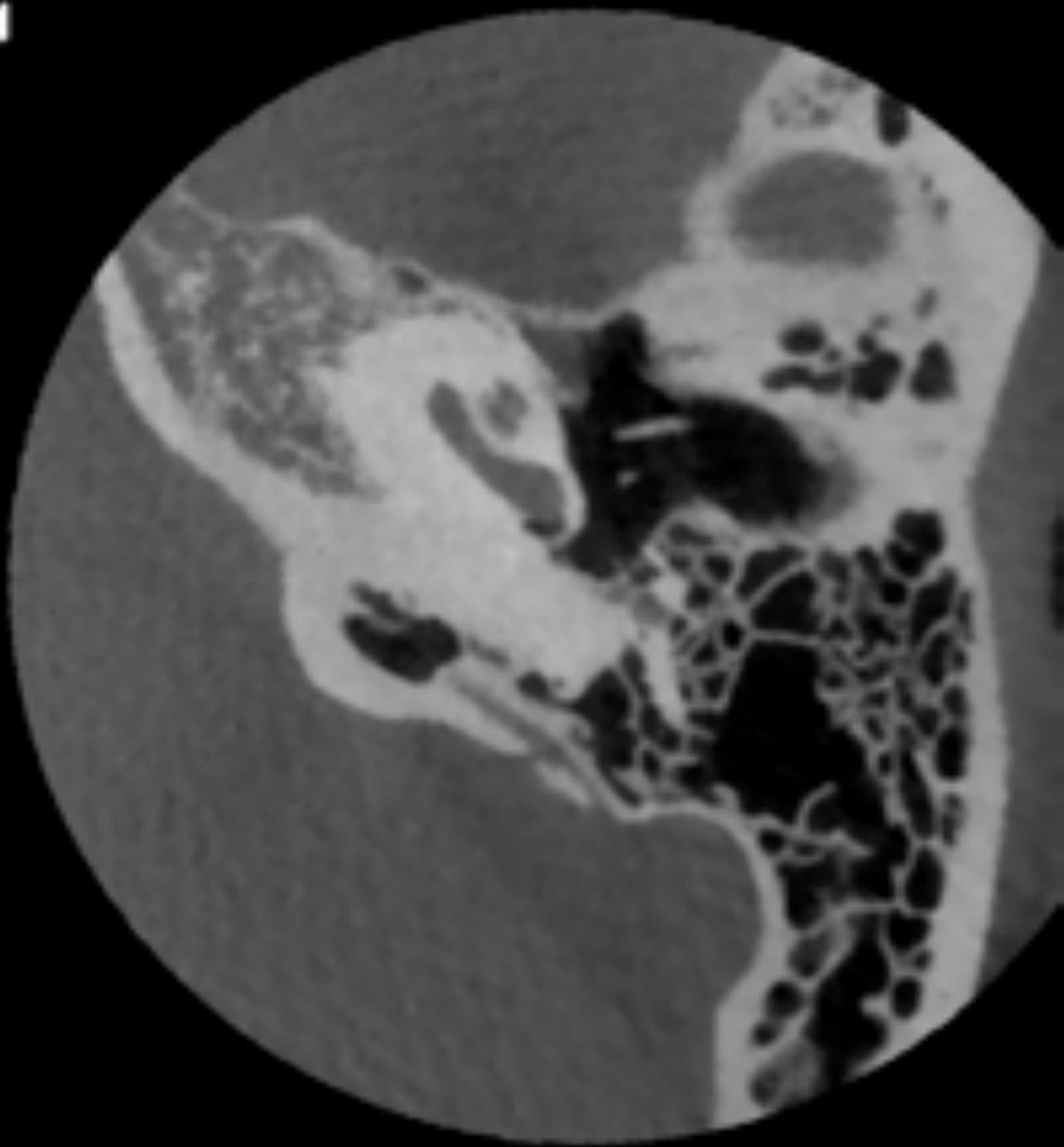


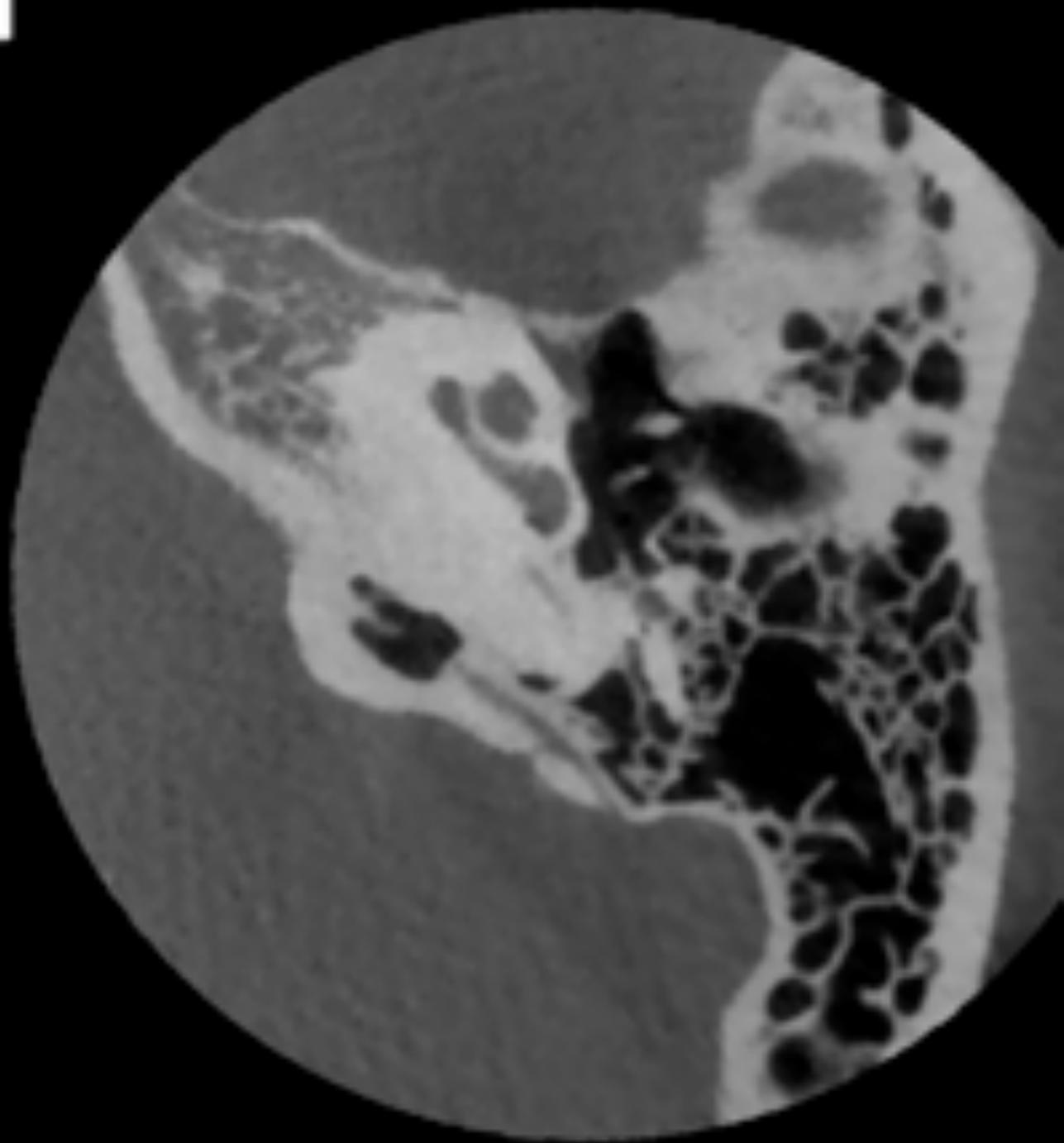


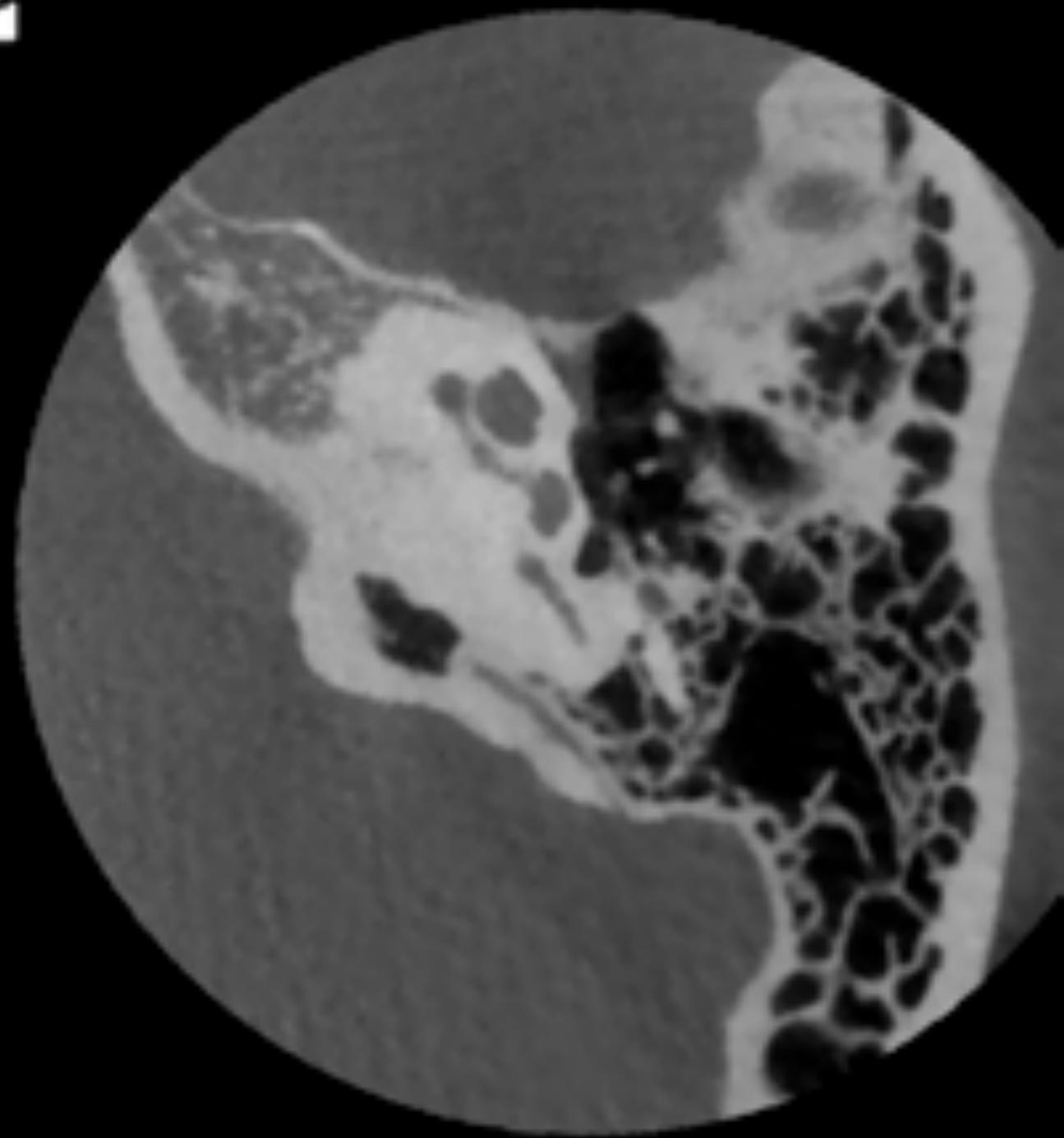


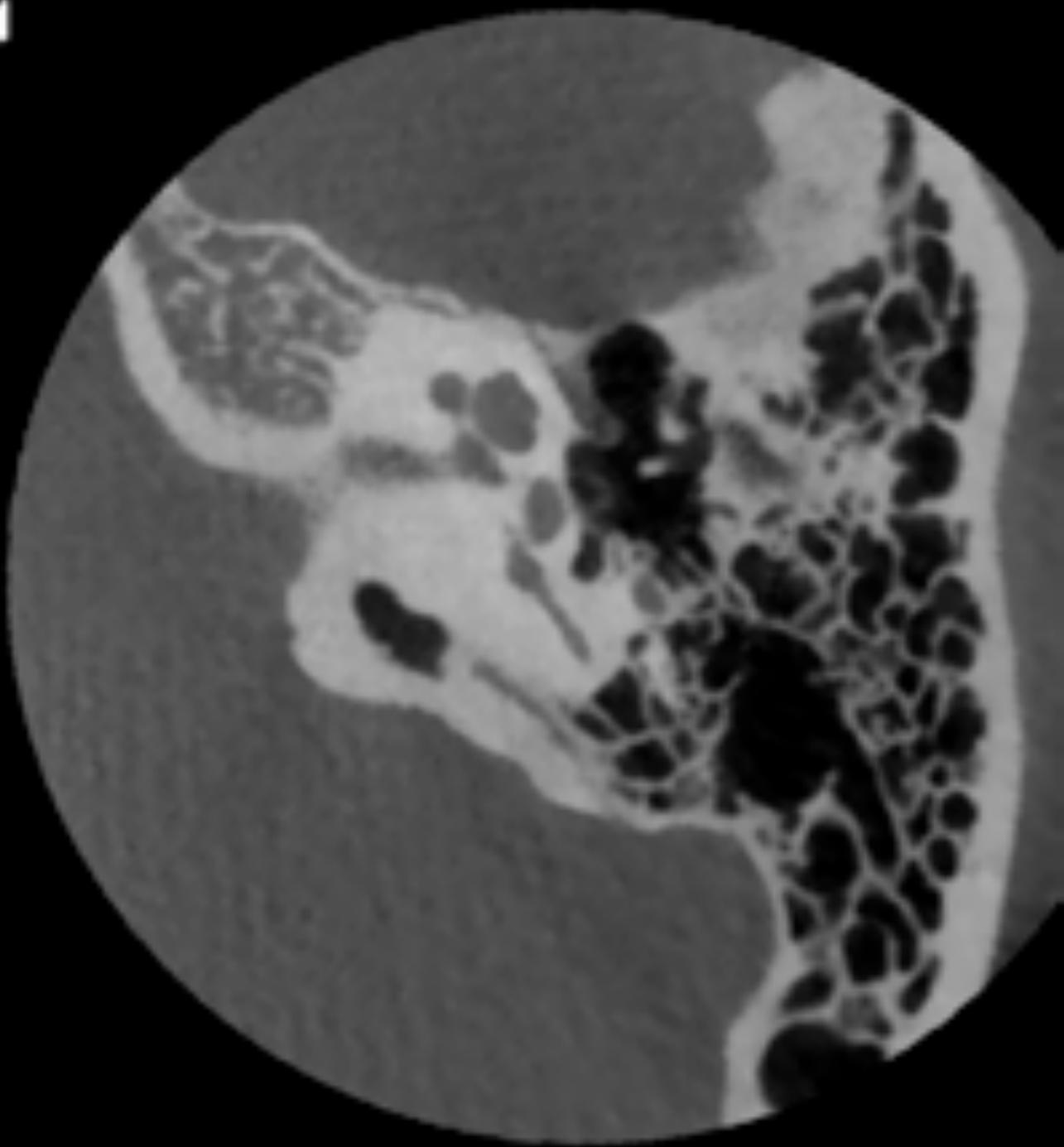


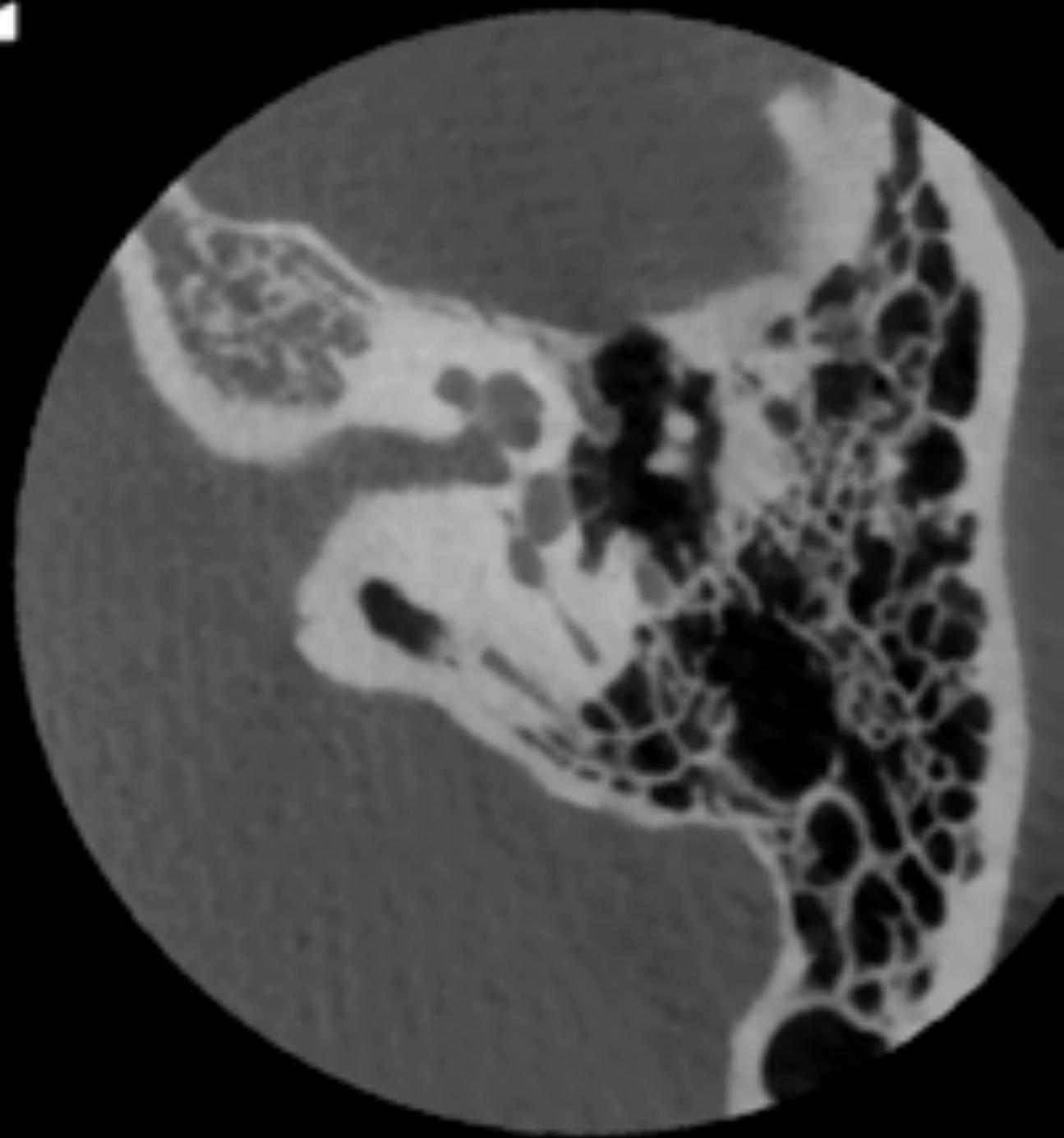


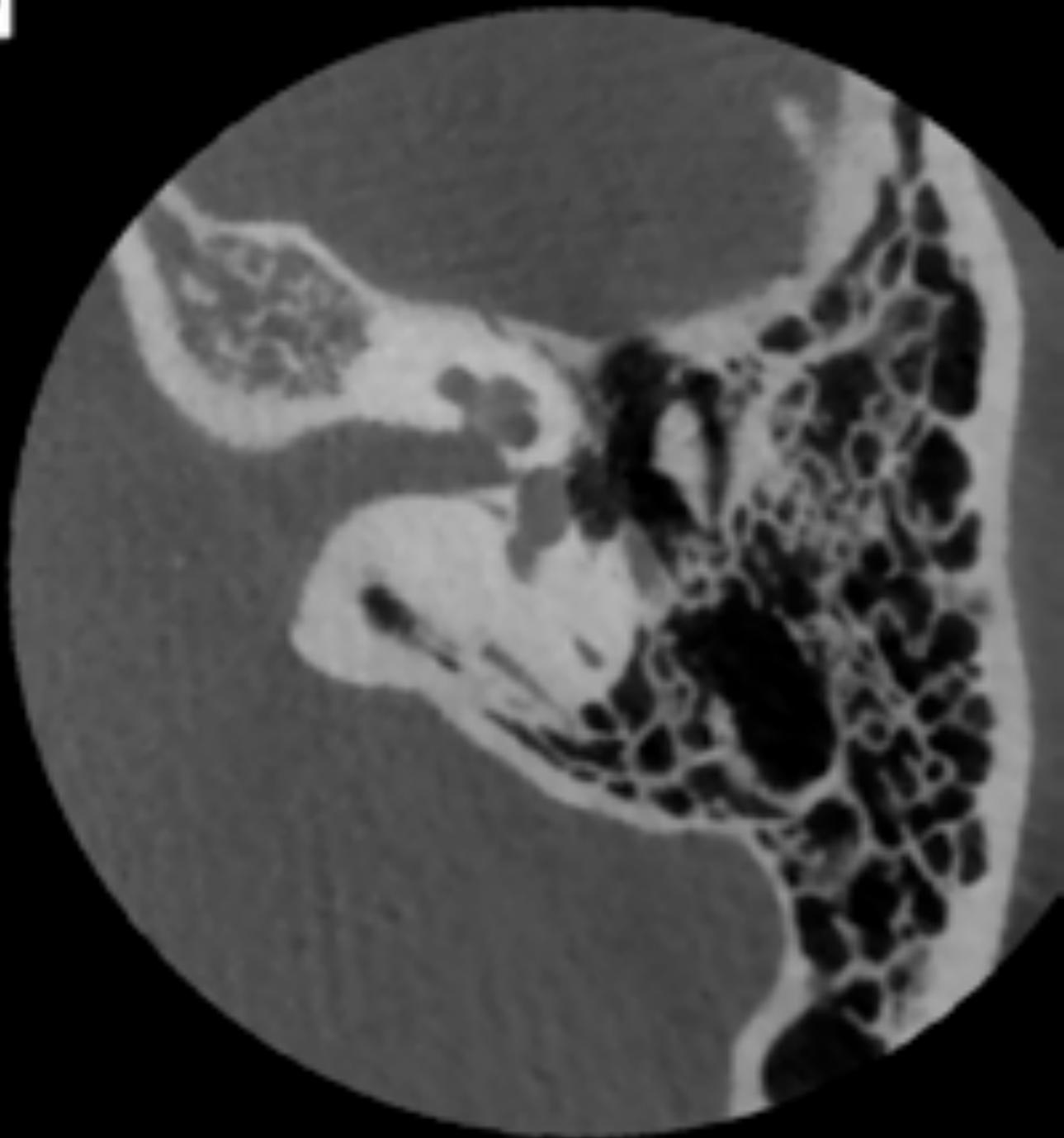


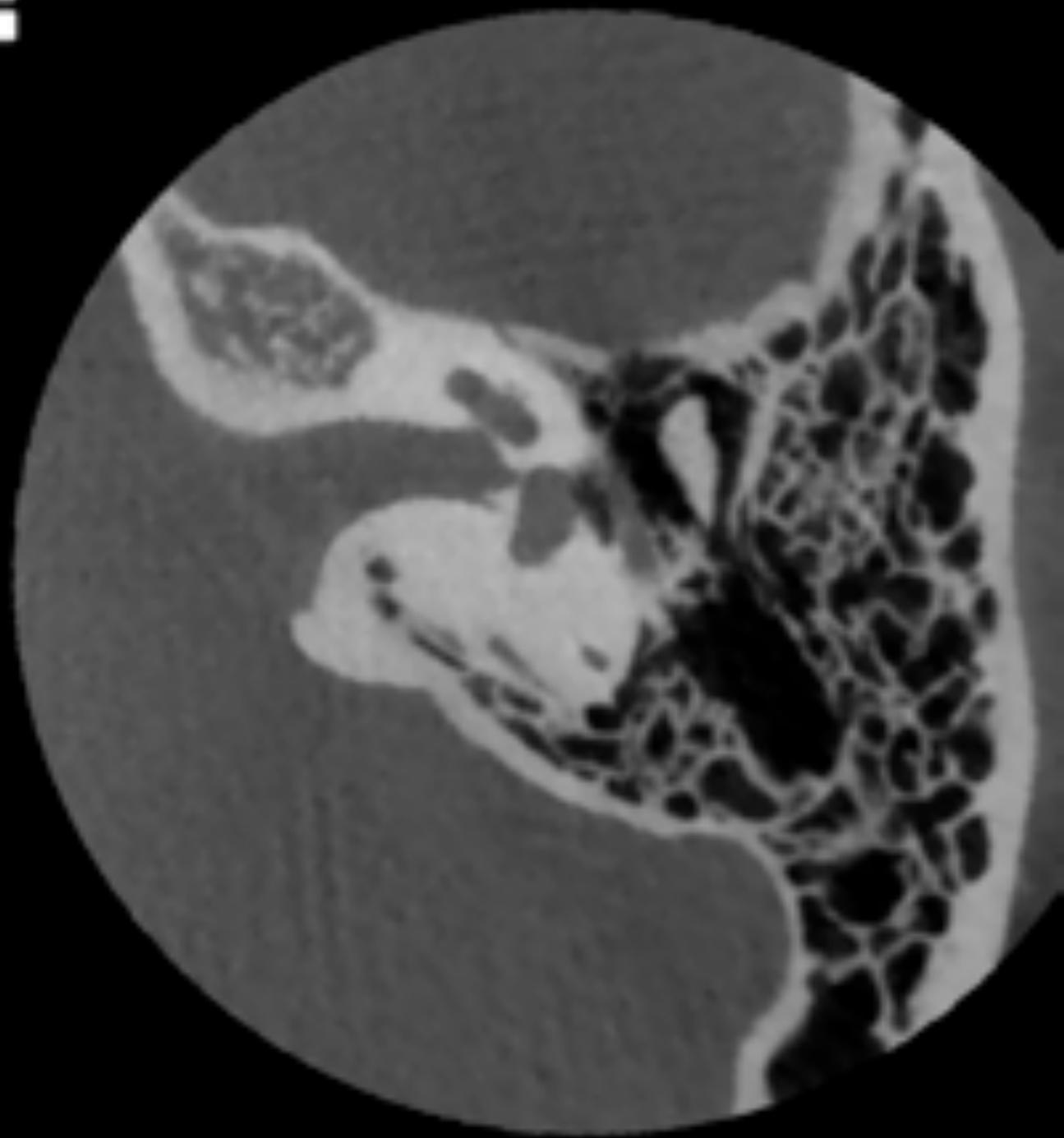


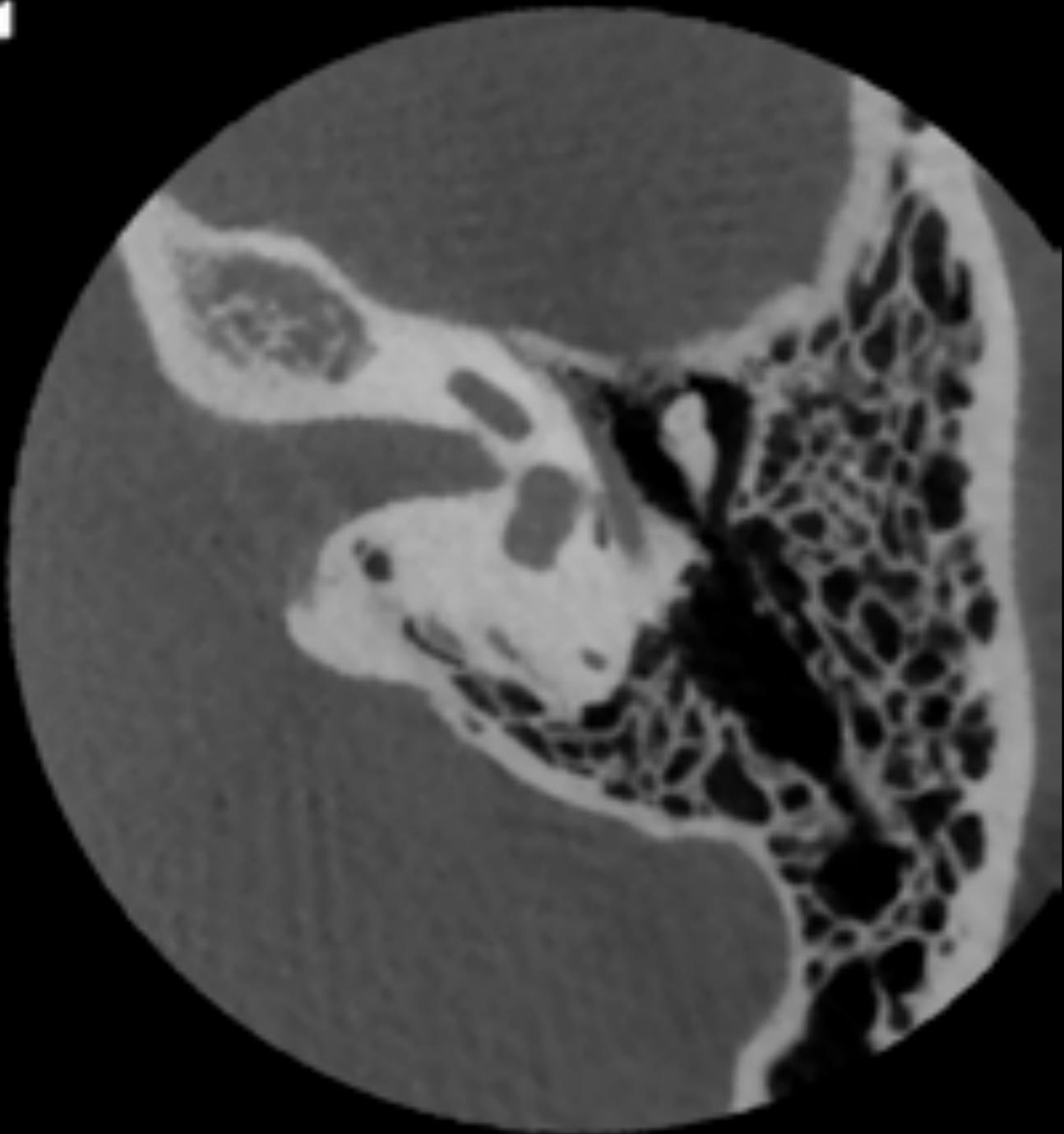


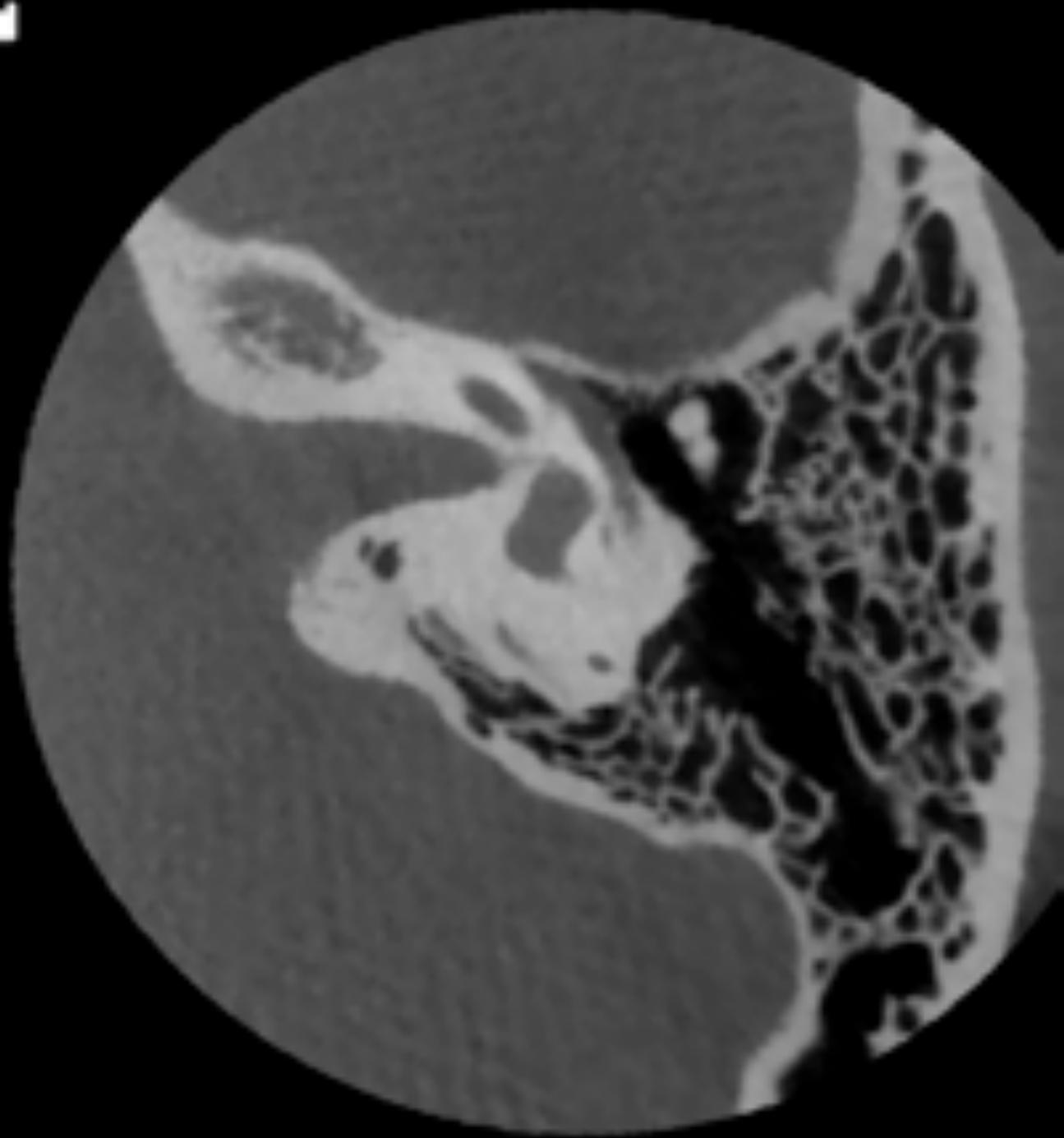


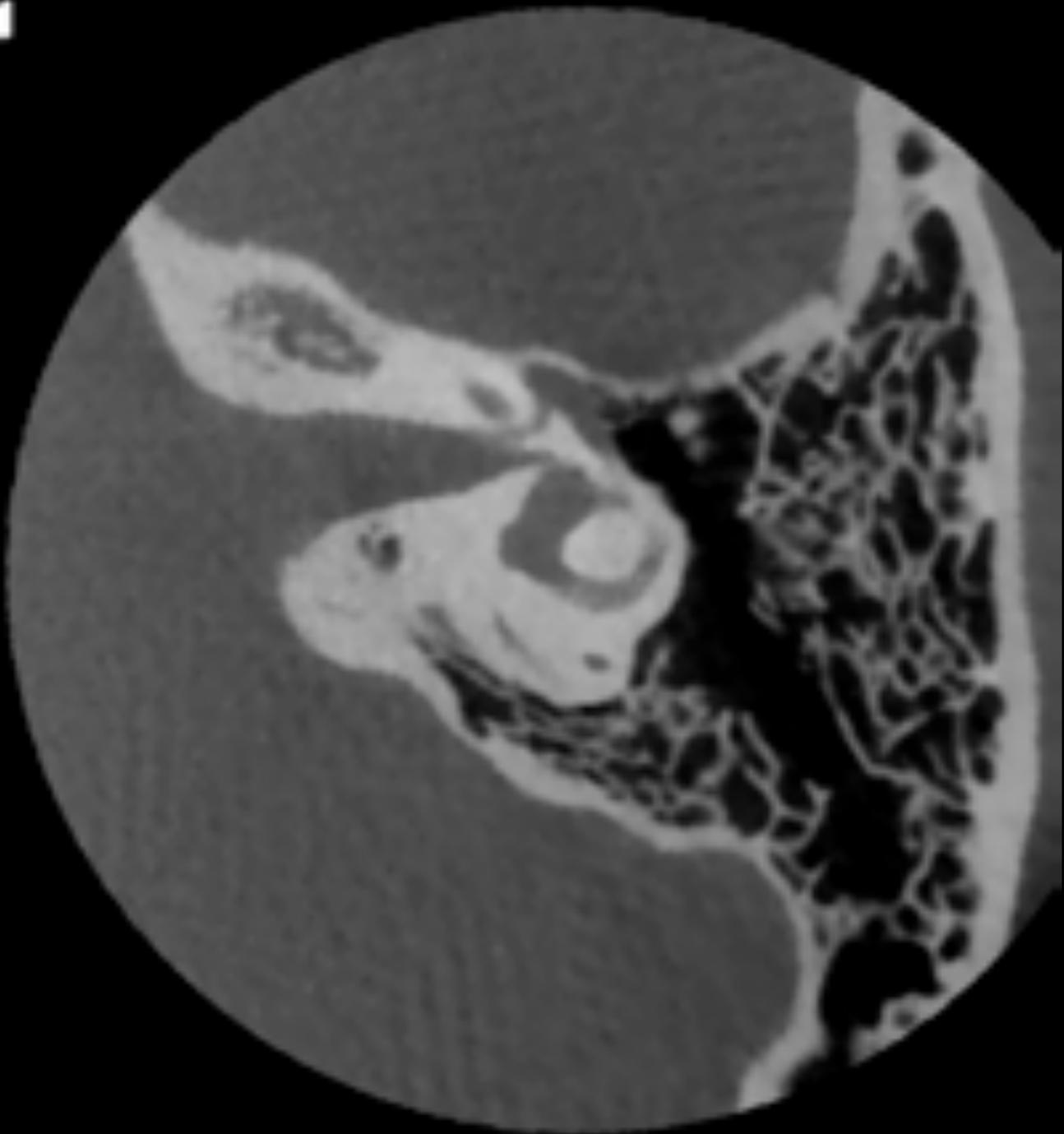


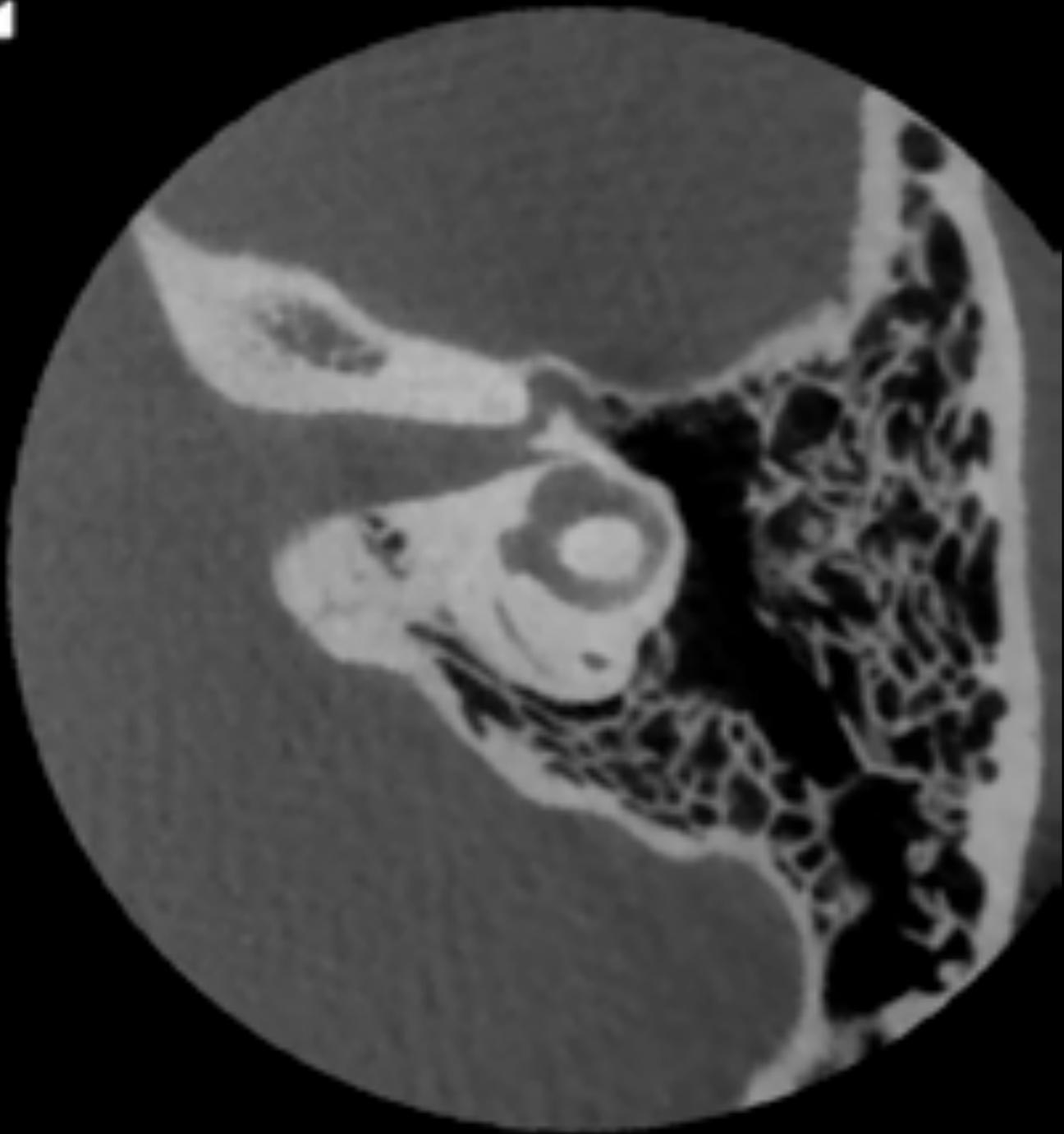


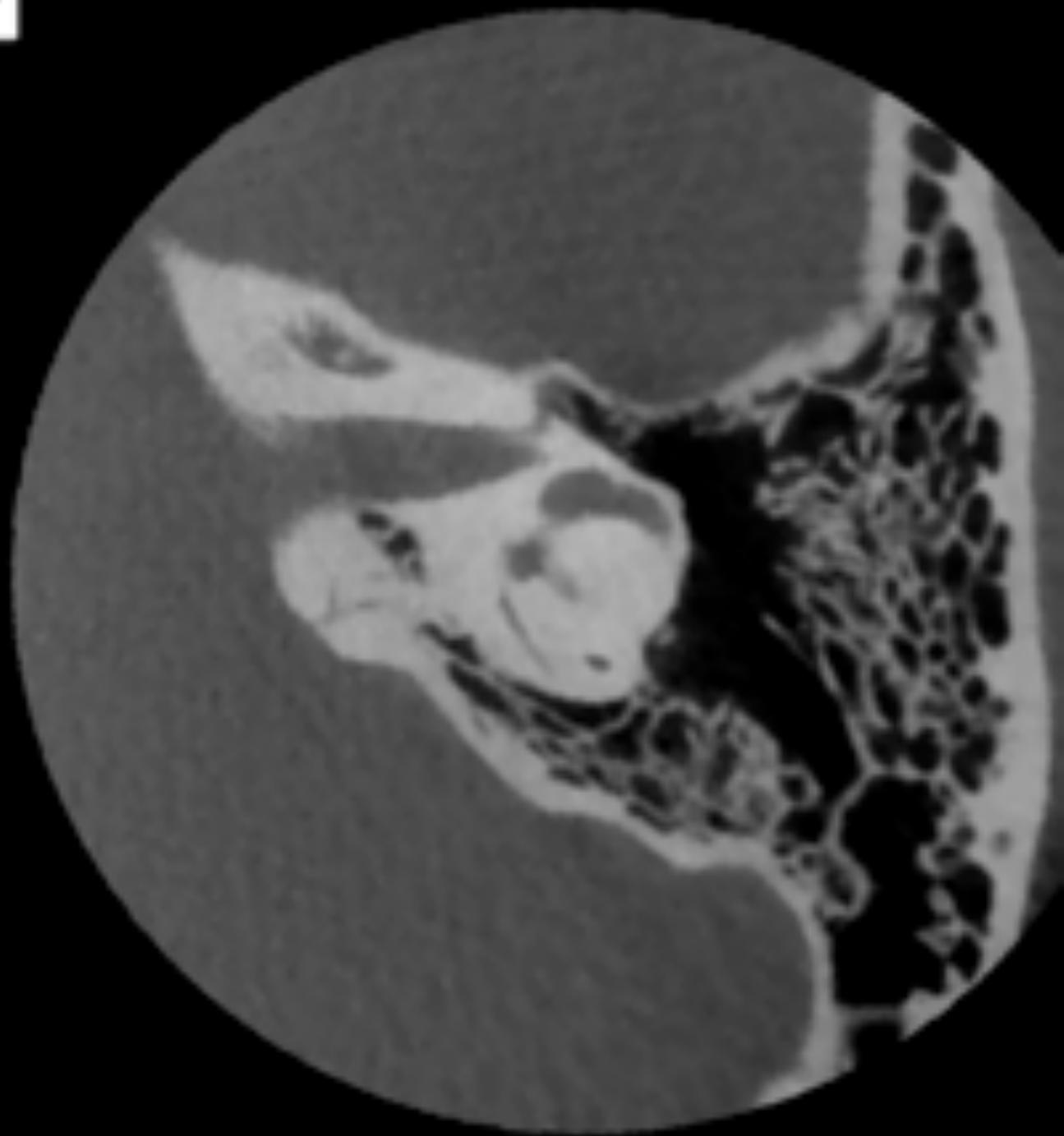


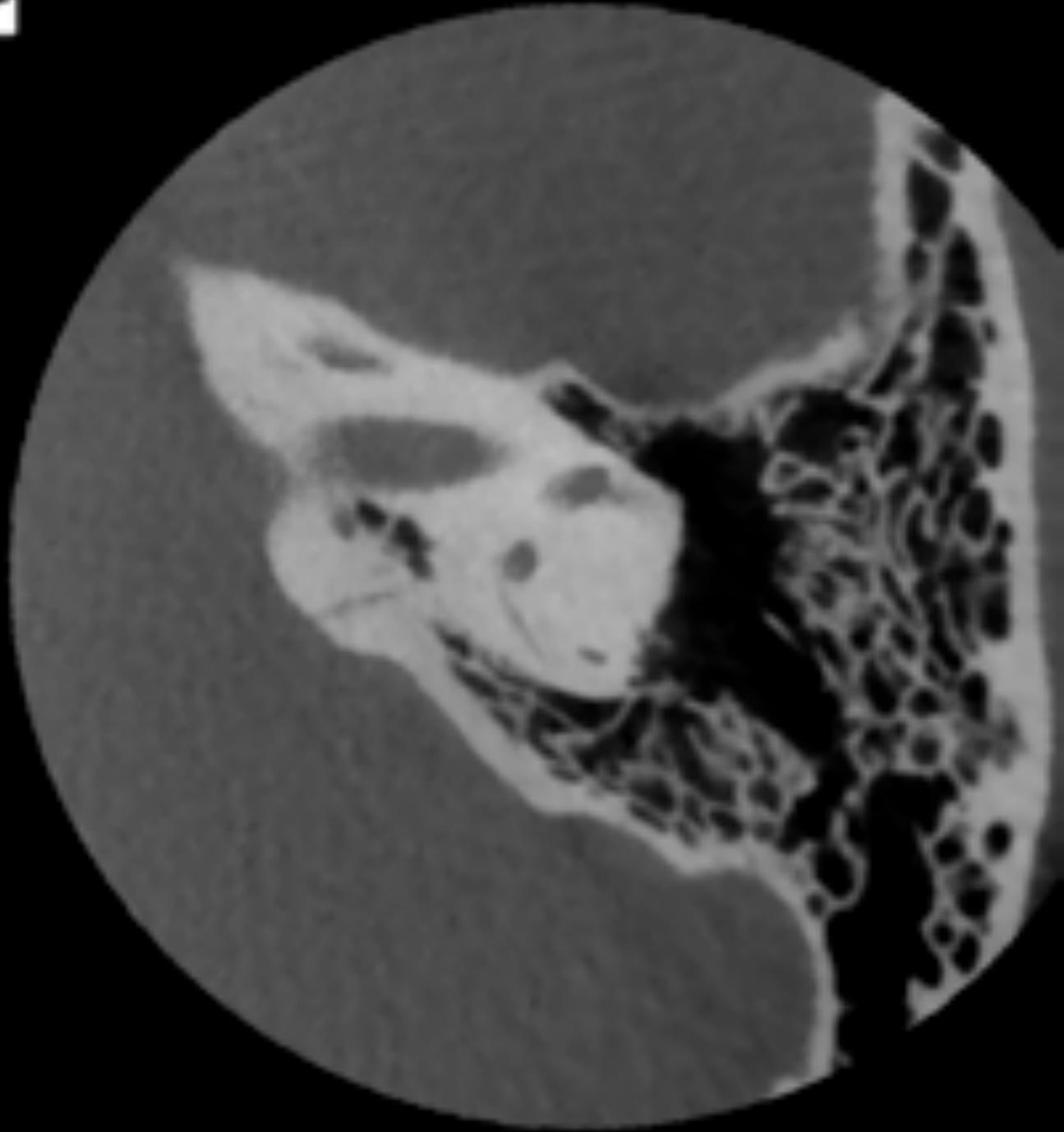


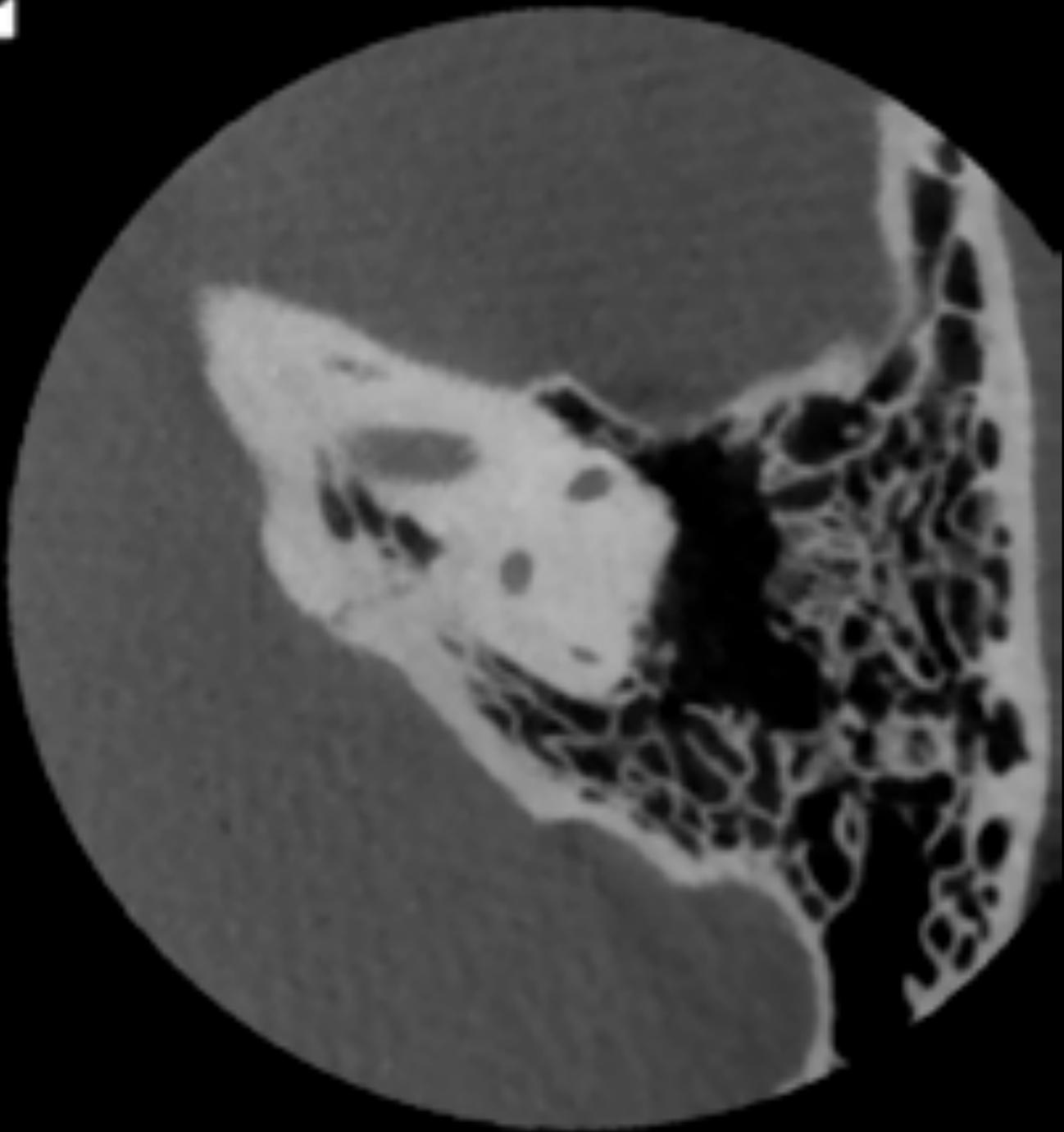


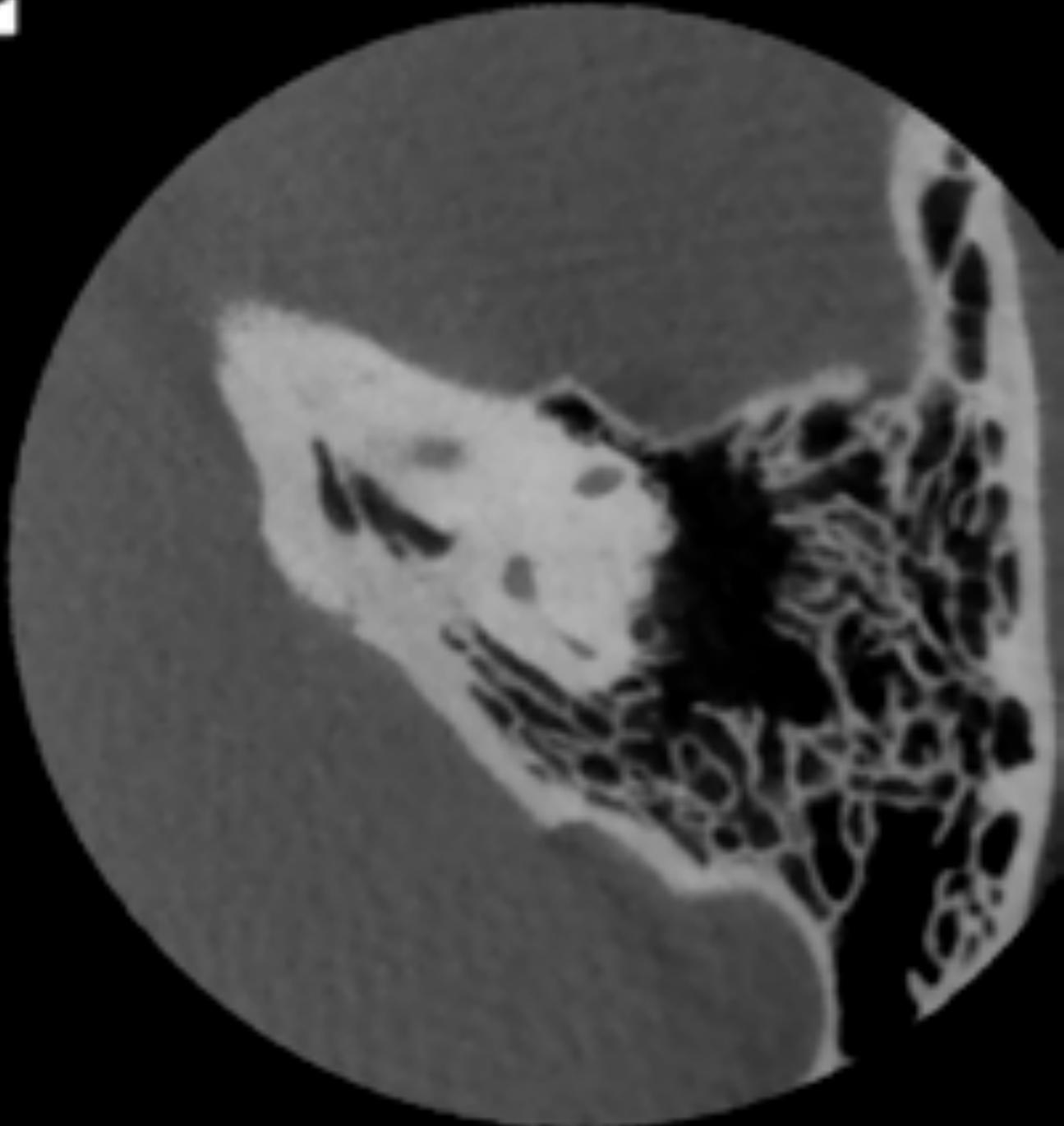


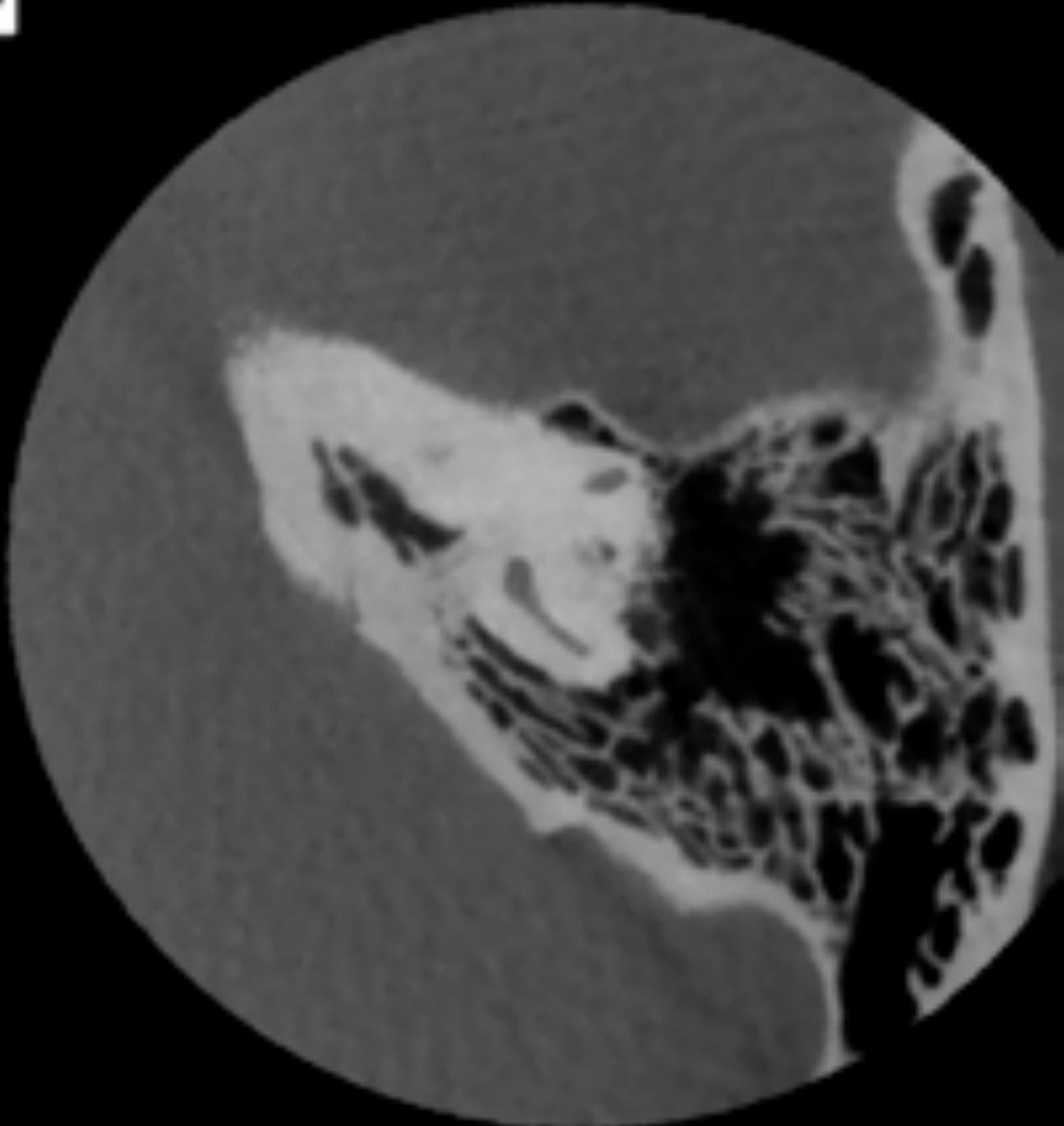




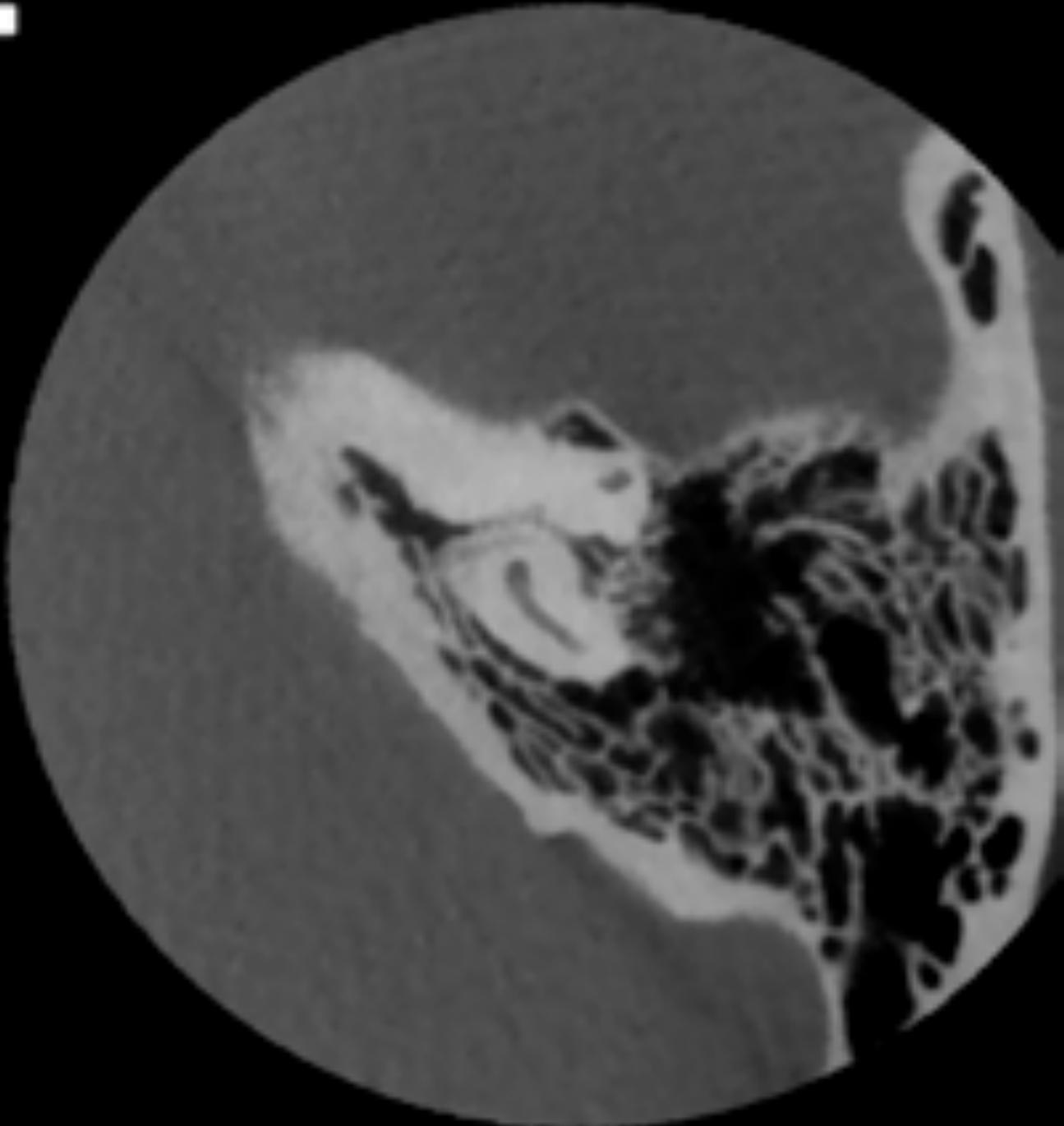


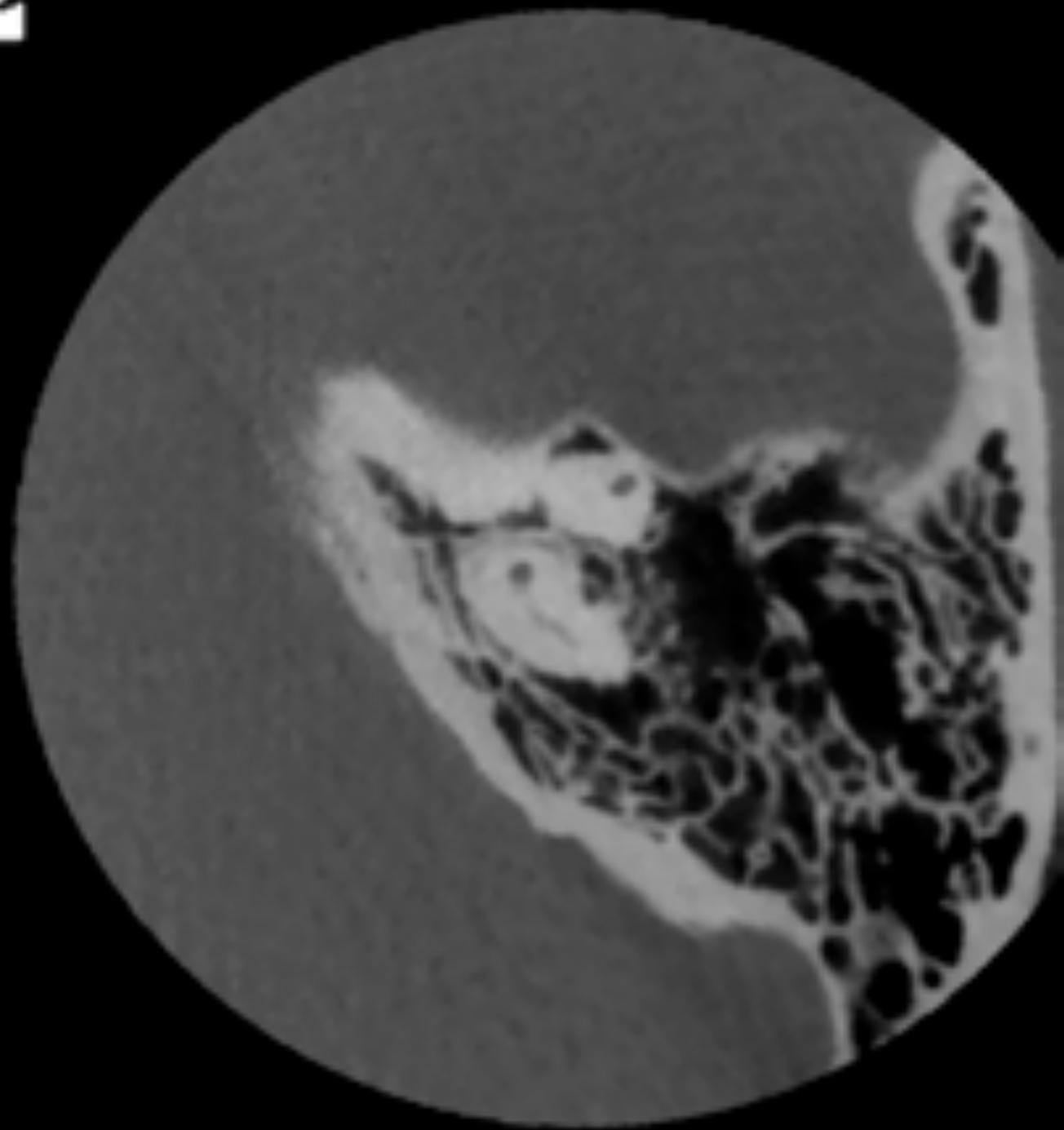


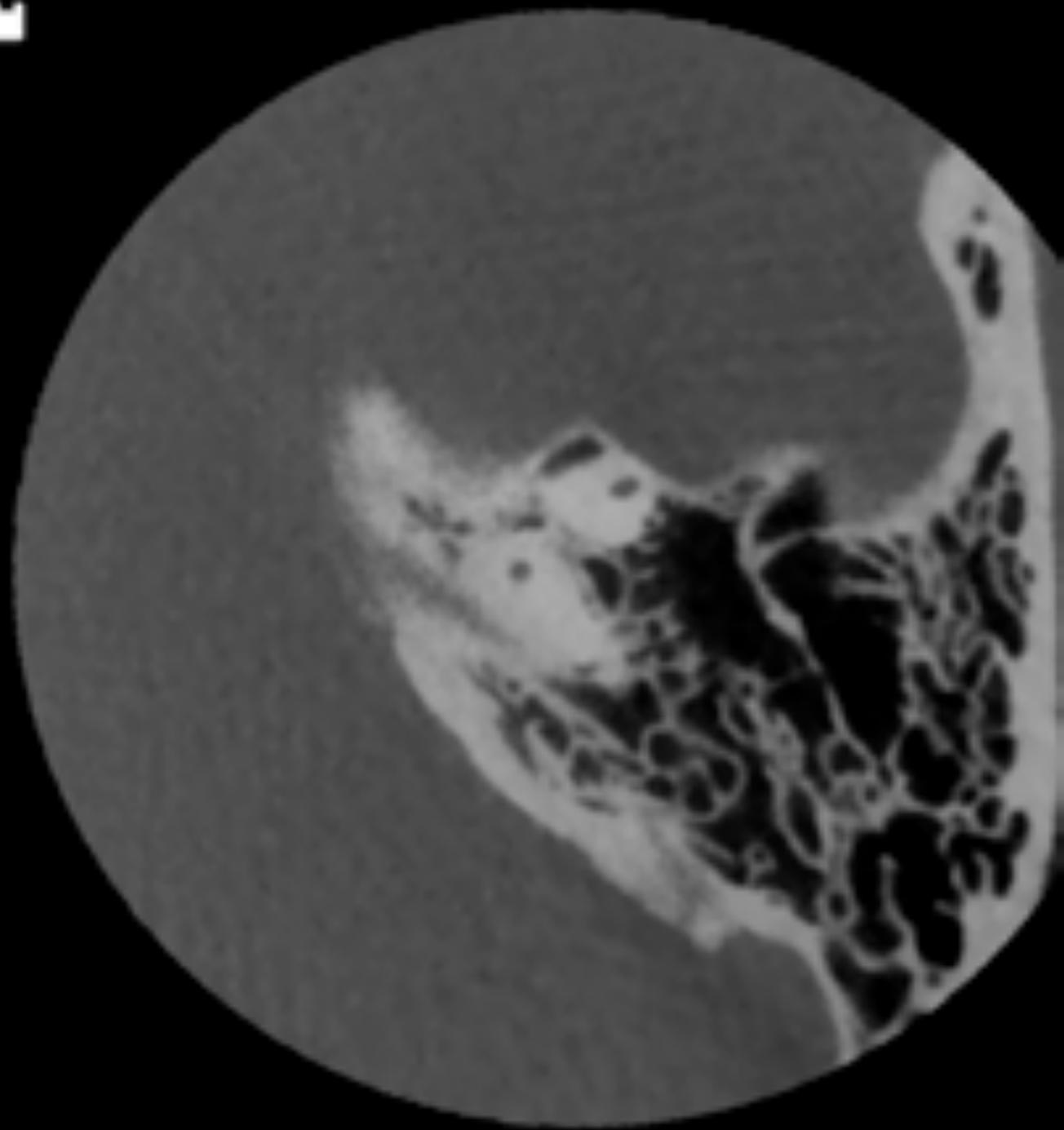


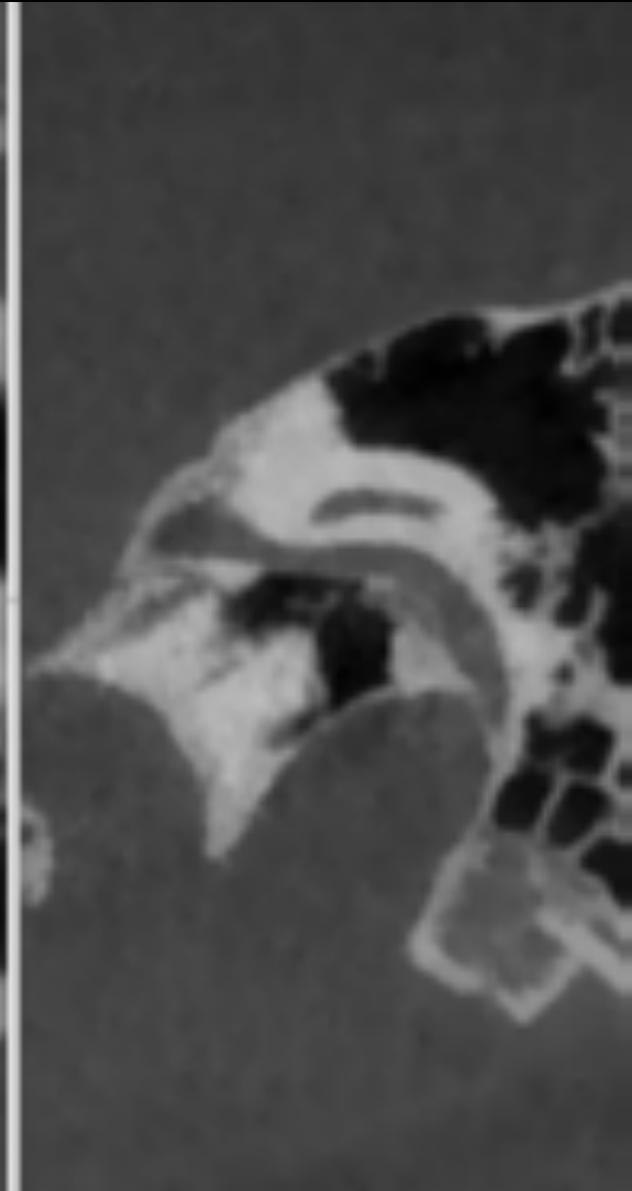
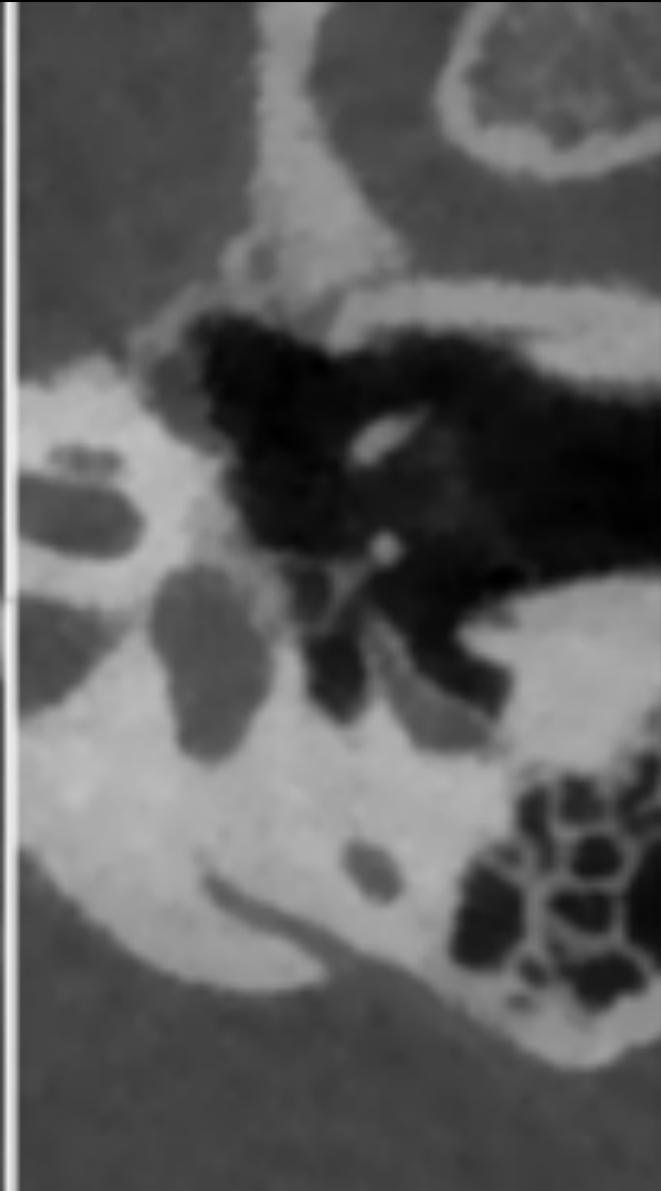


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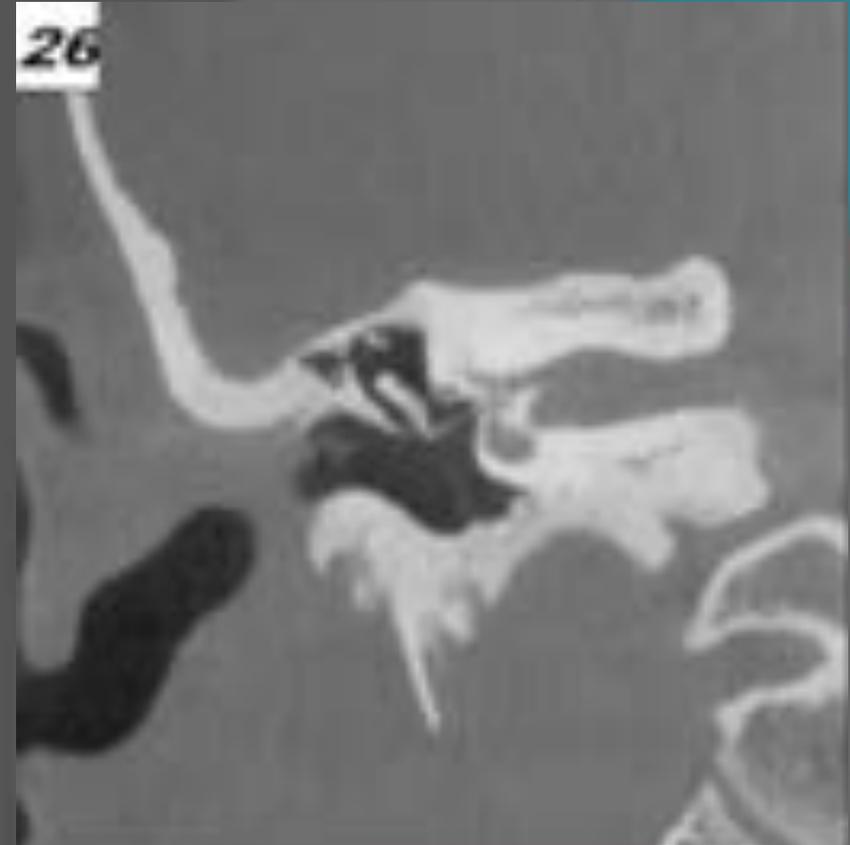
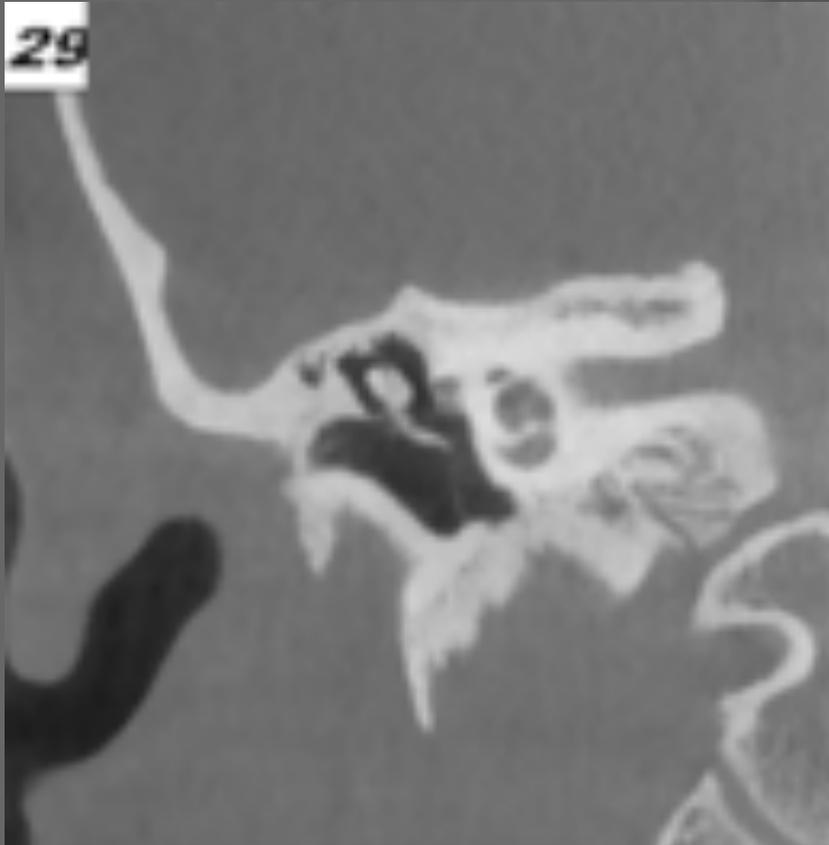




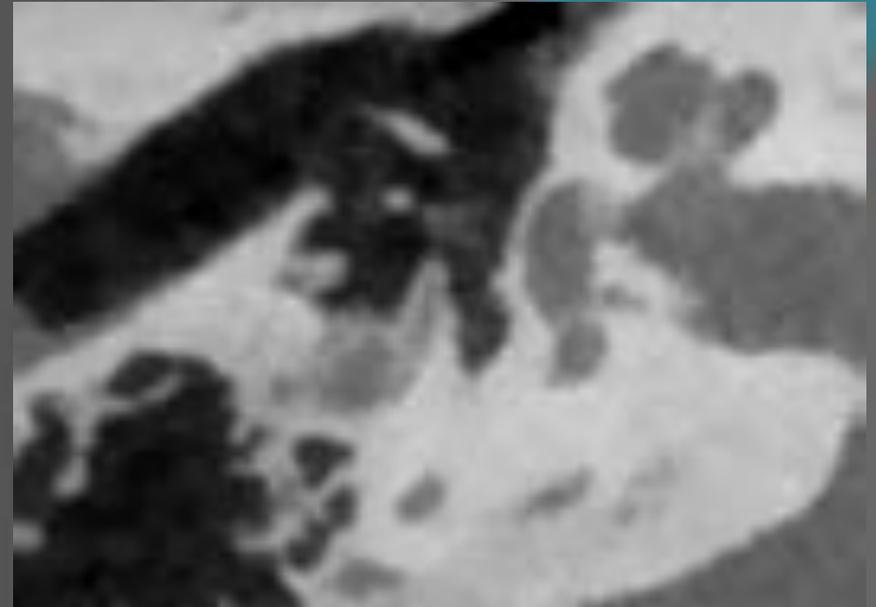
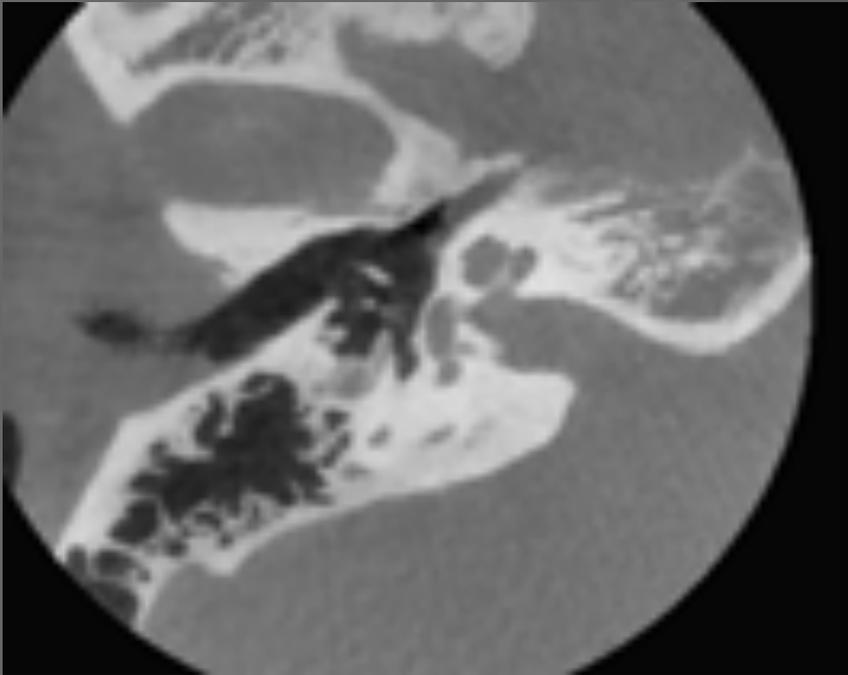


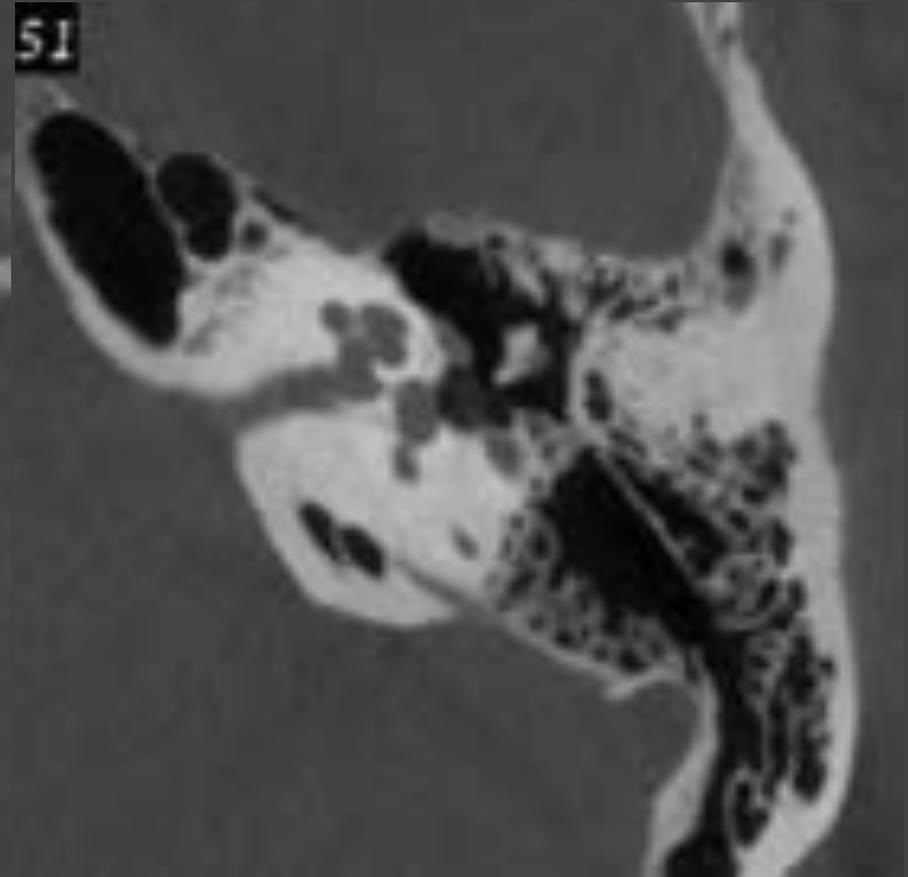
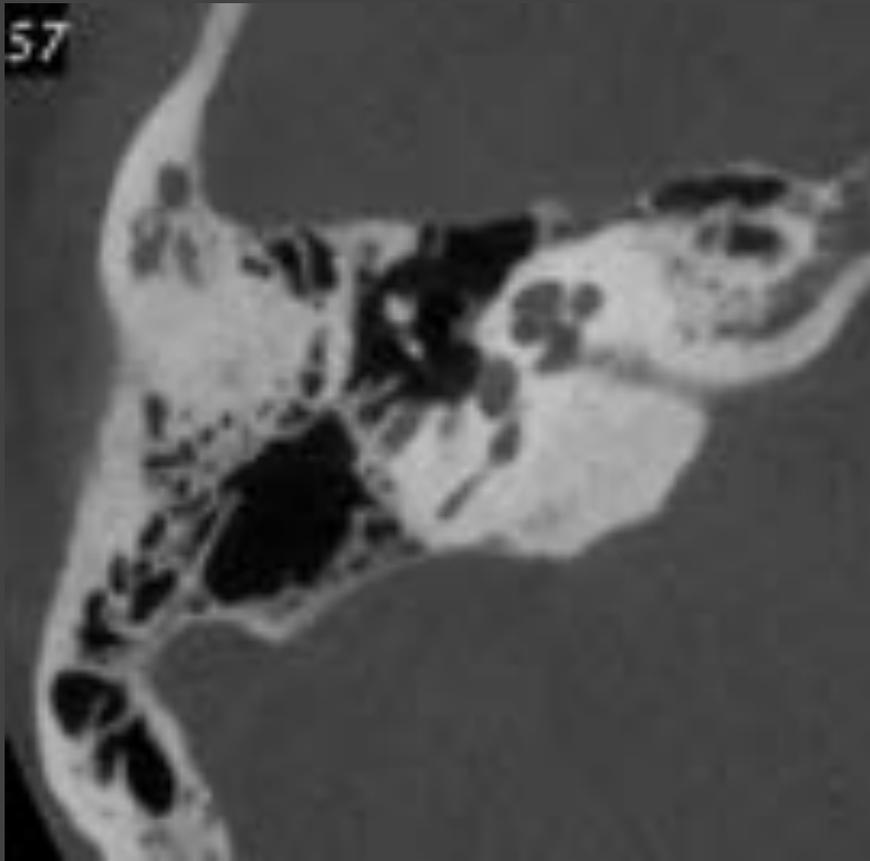


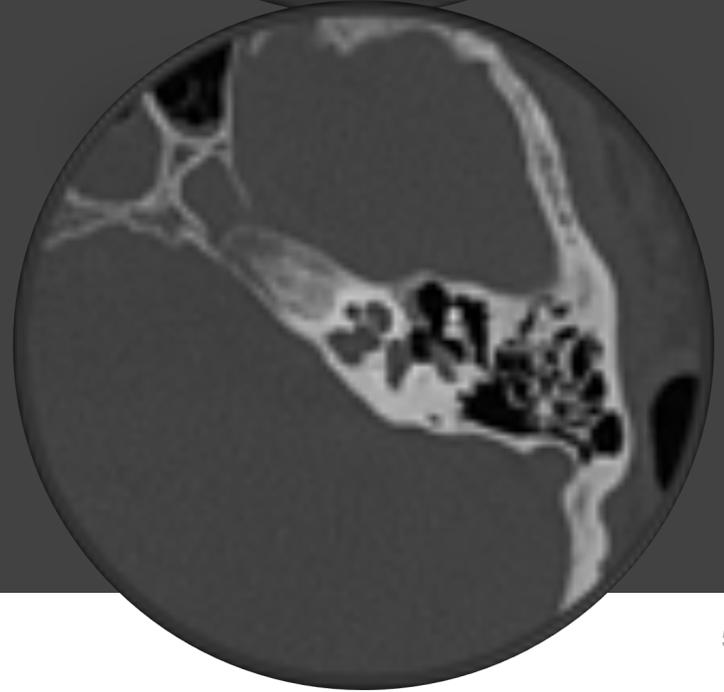
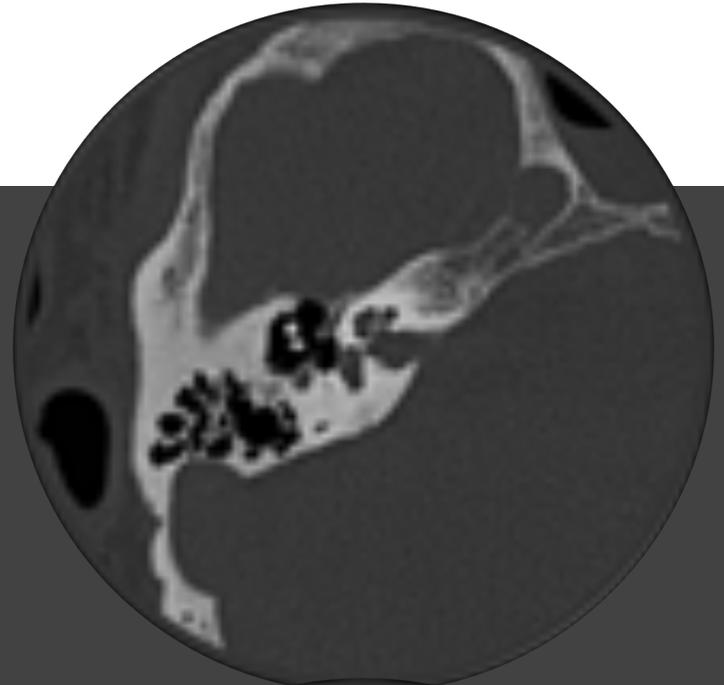
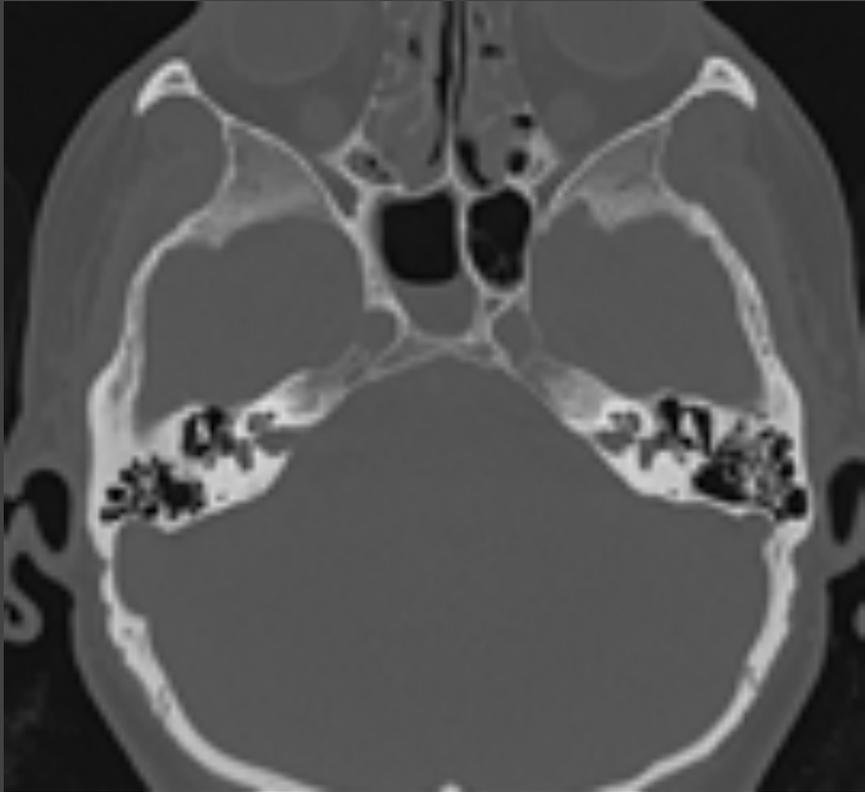
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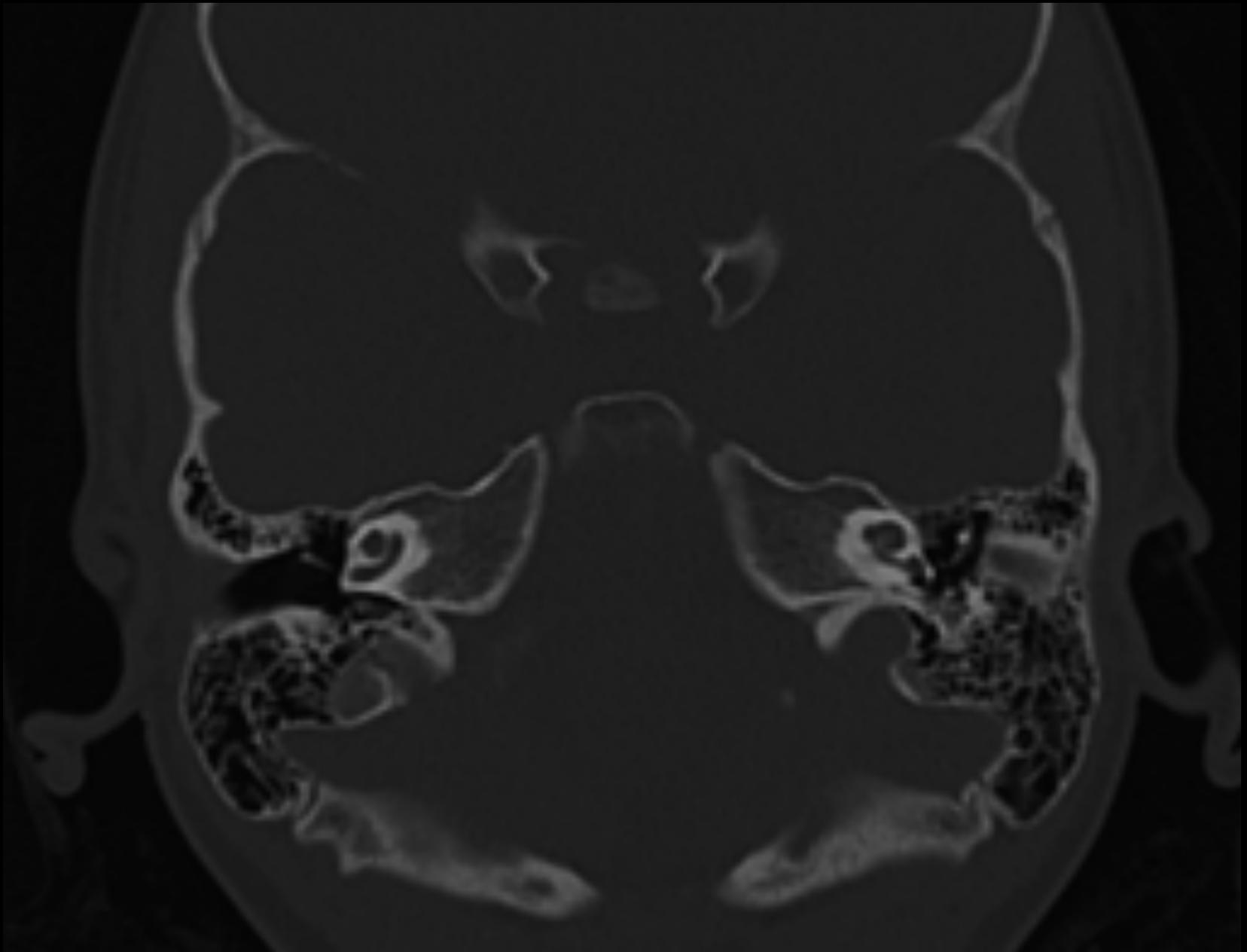


# Stapes muscle tendon









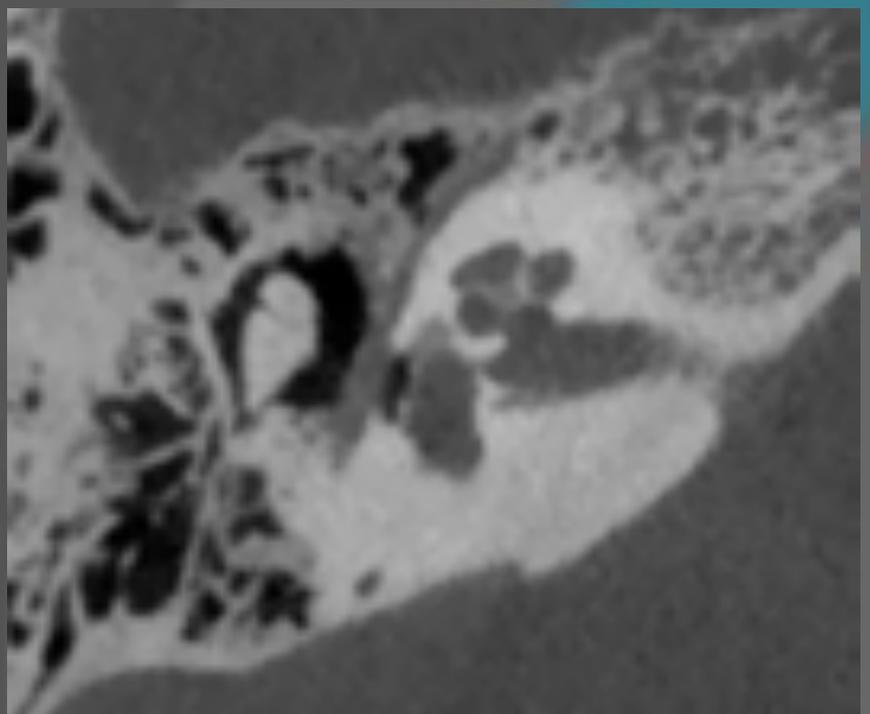
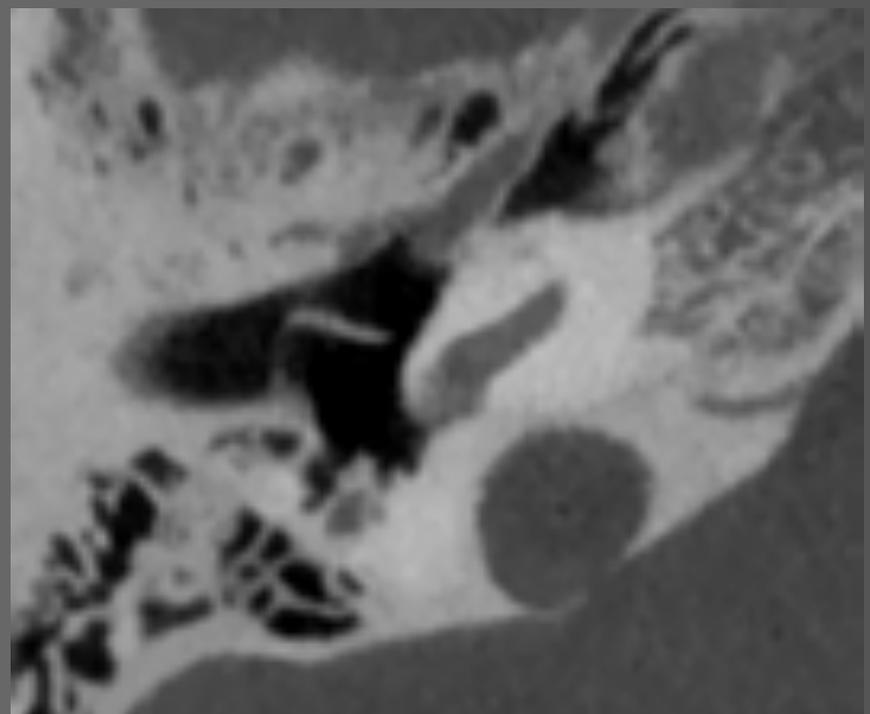
- Paciente de 62 años
- Hipoacusia mixta severa OD
- Hipoacusia de transmisión OI.
- 

62 year old patient.

- Severe mixed hearing loss (Left Ear).
- Conductive hearing loss.

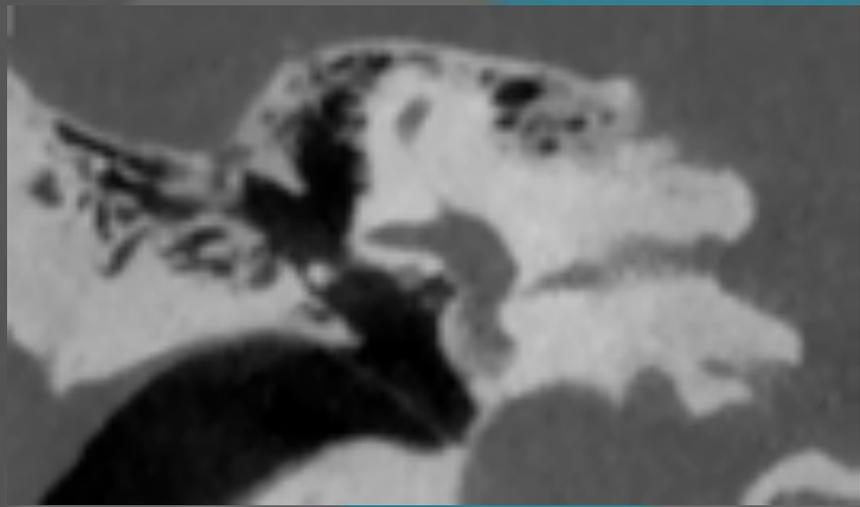
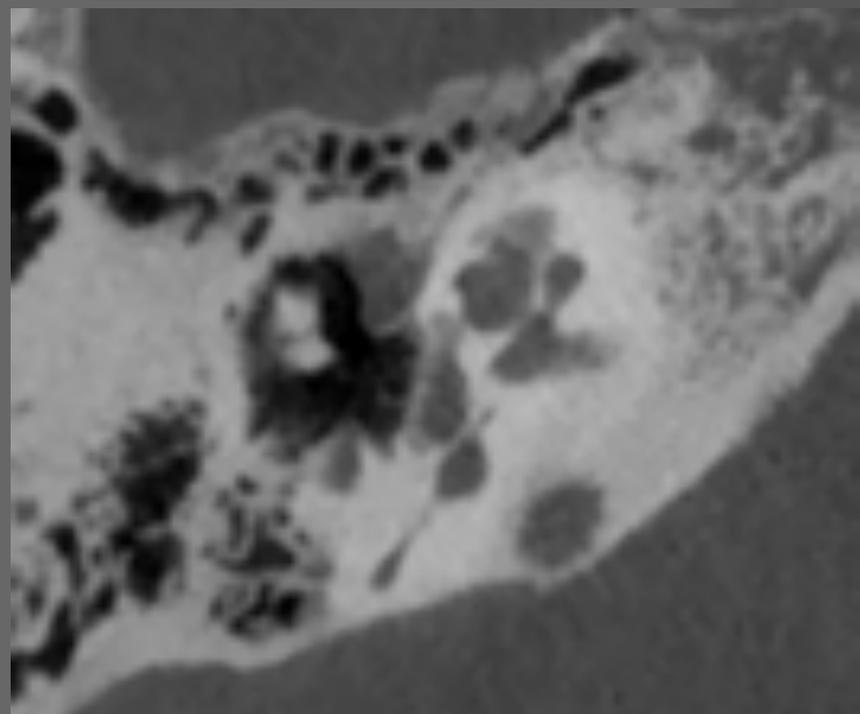


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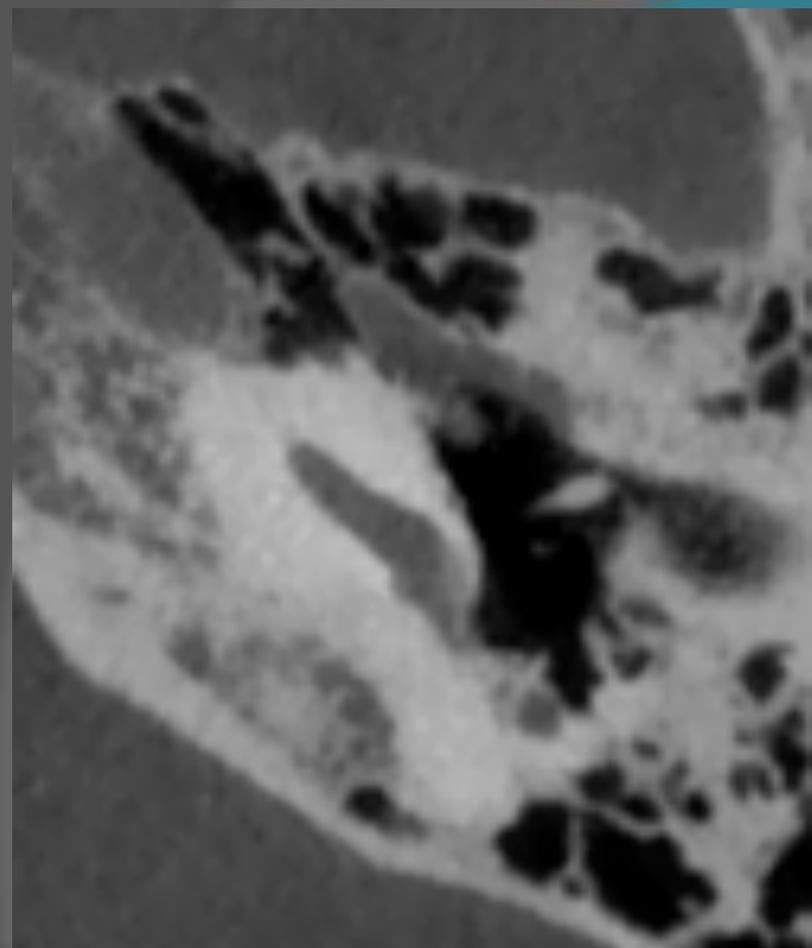
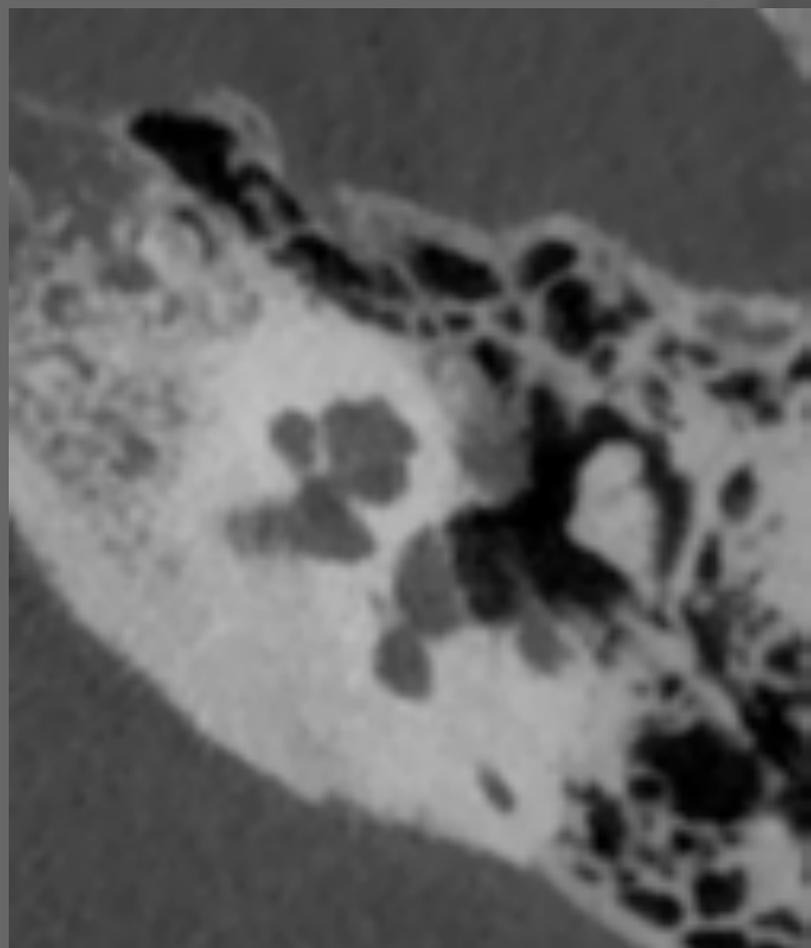


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INSTITUTS  
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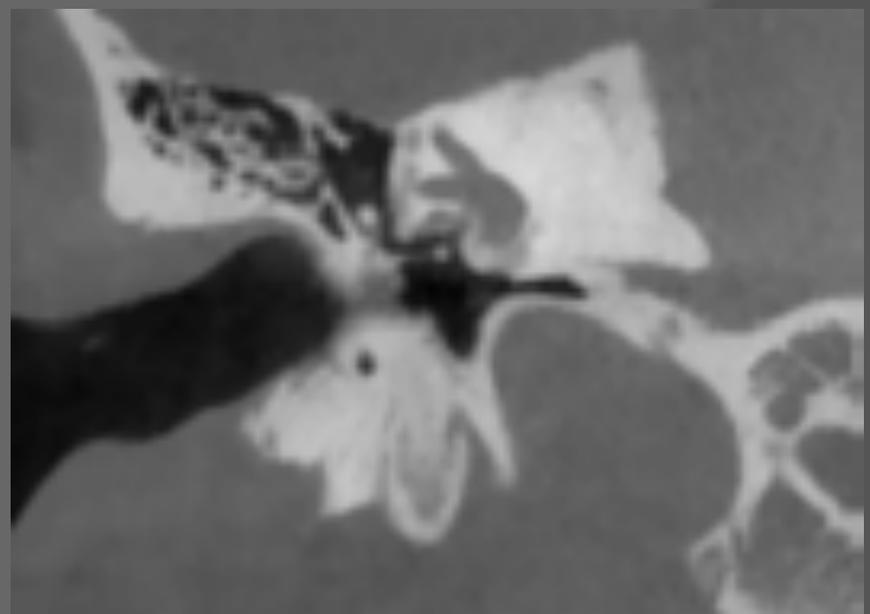
INSTITUTS  
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- Paciente de 48 años de edad con severa hipoacusia mixta OD.
- 48-year-old patient with severe mixed hearing loss.

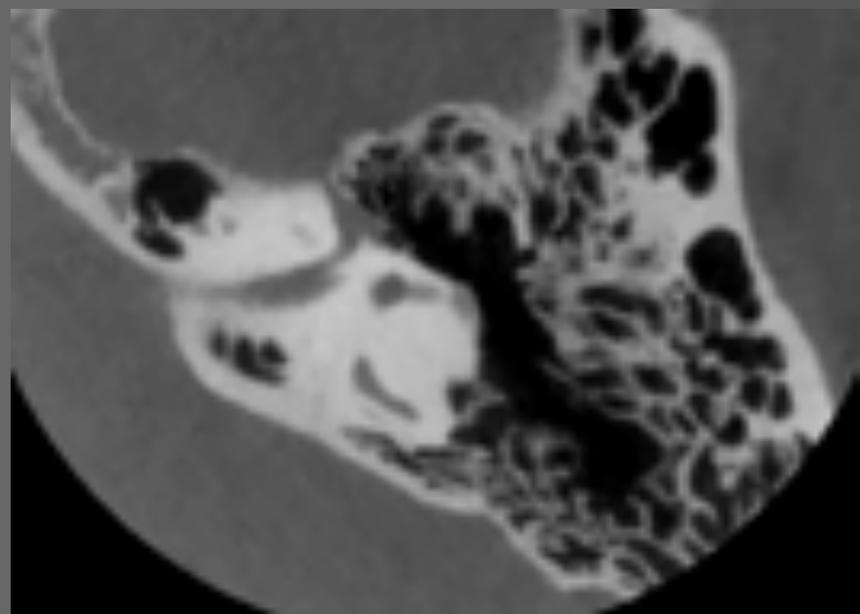


INSTITUTS  
GUIRADO





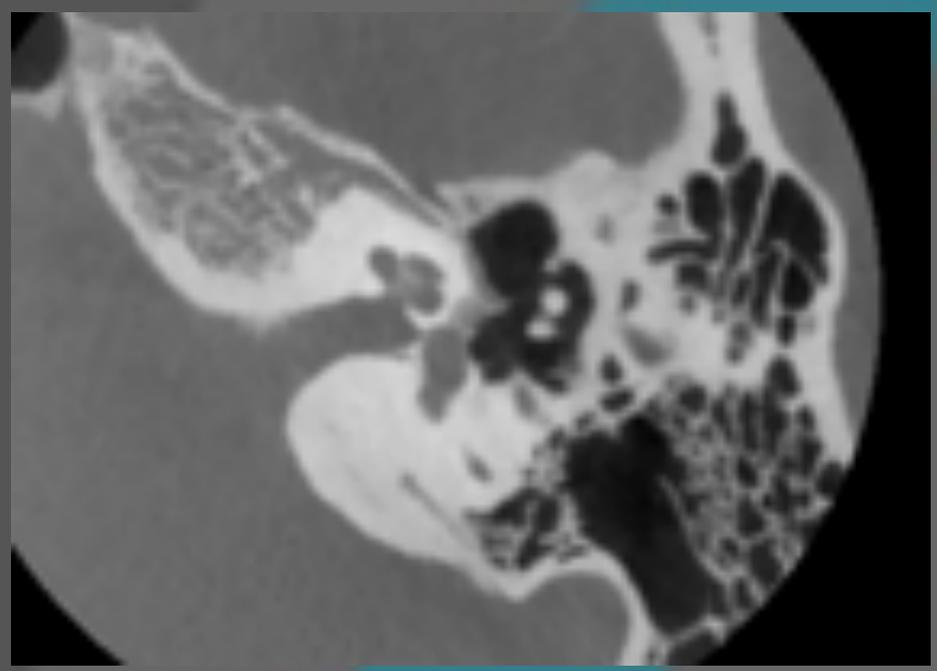
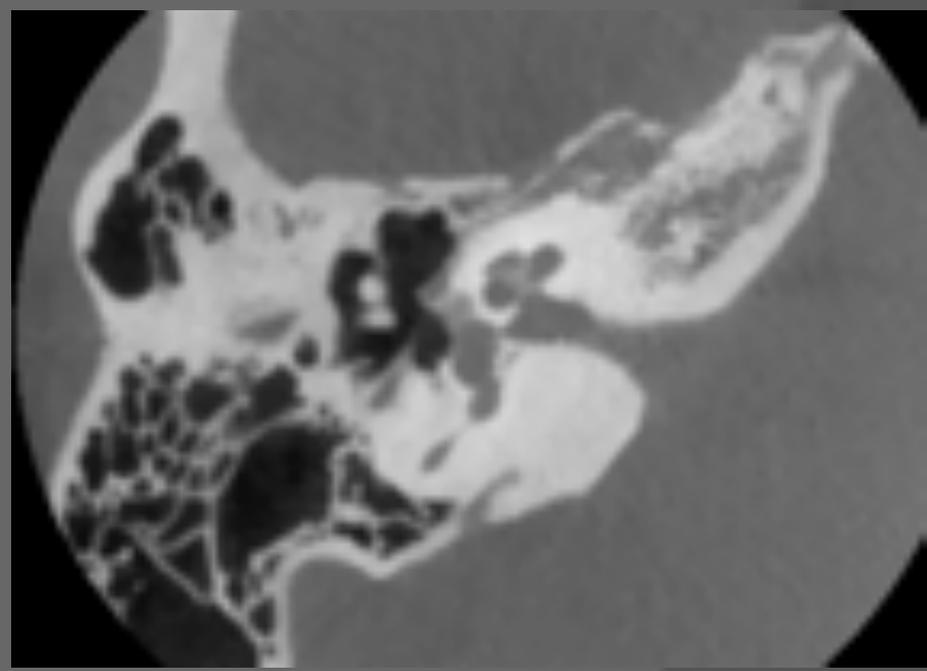
INSTITUTS  
GUIRADO



- Paciente de 35 años de edad con hipoacusia de transmisión bilateral.
- 35 year-old patient with bilateral conductive hearing loss.

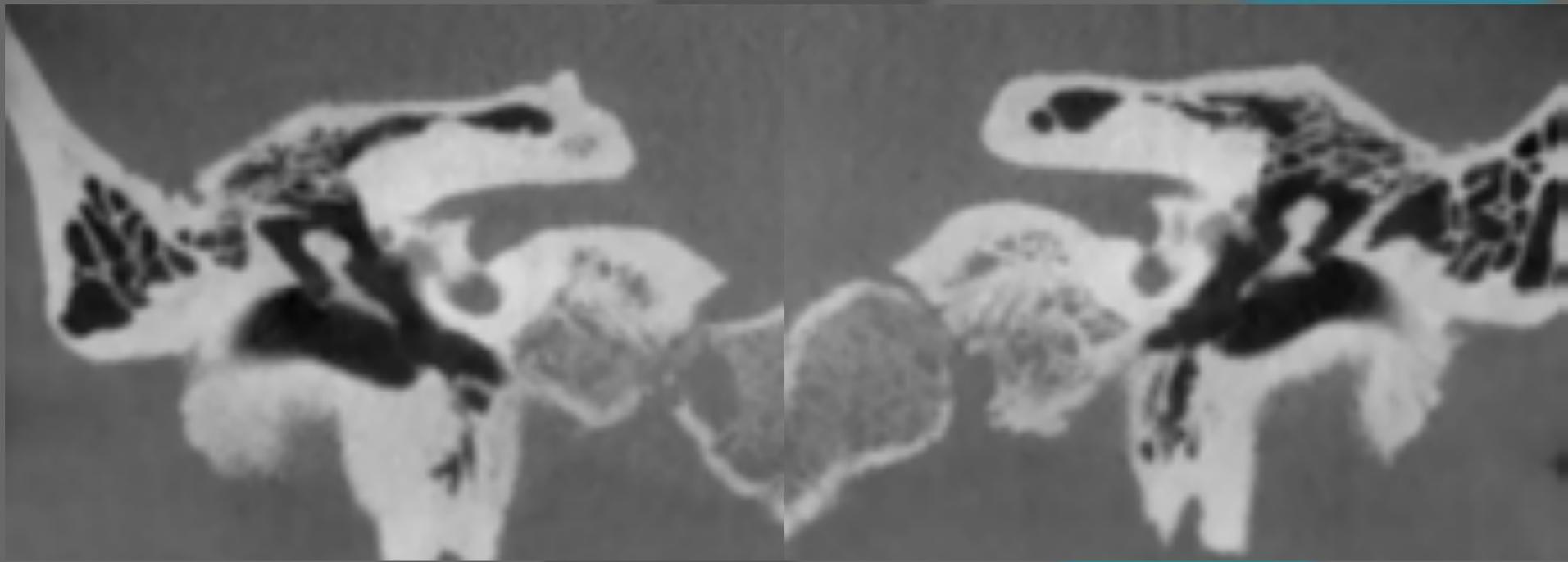


INSTITUTS  
GUIRADO



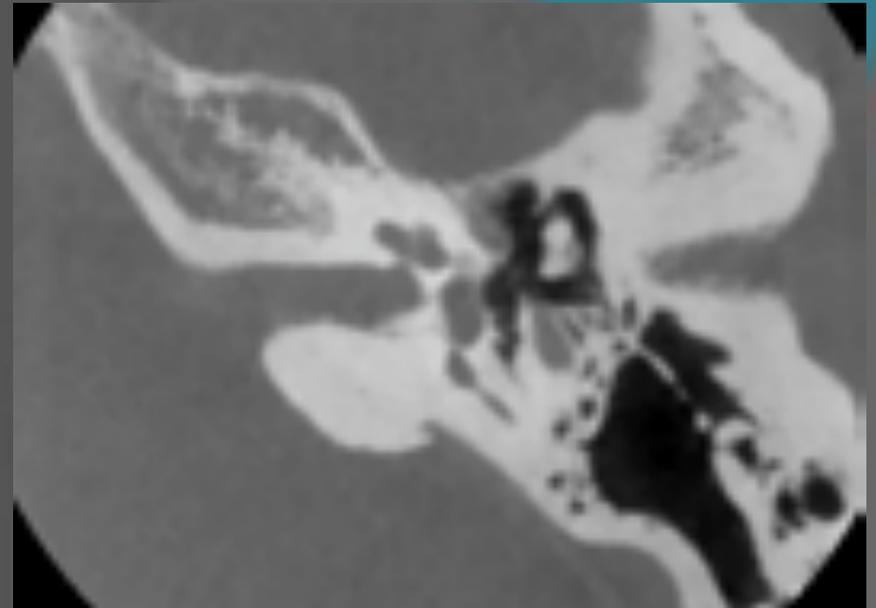
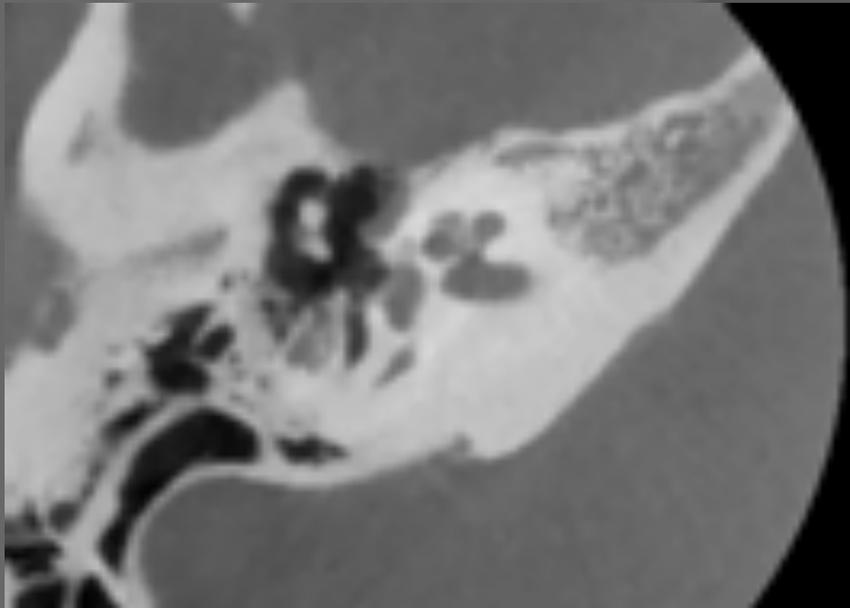


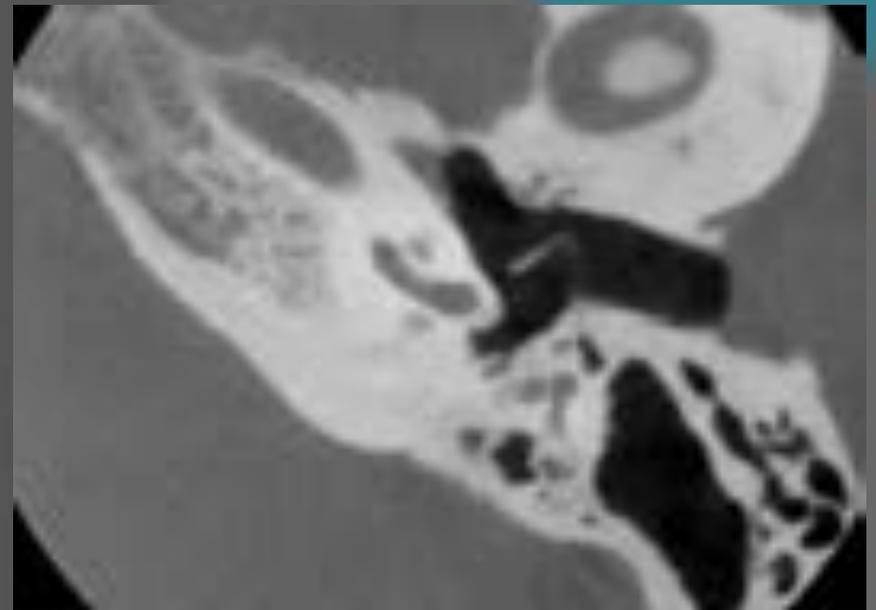
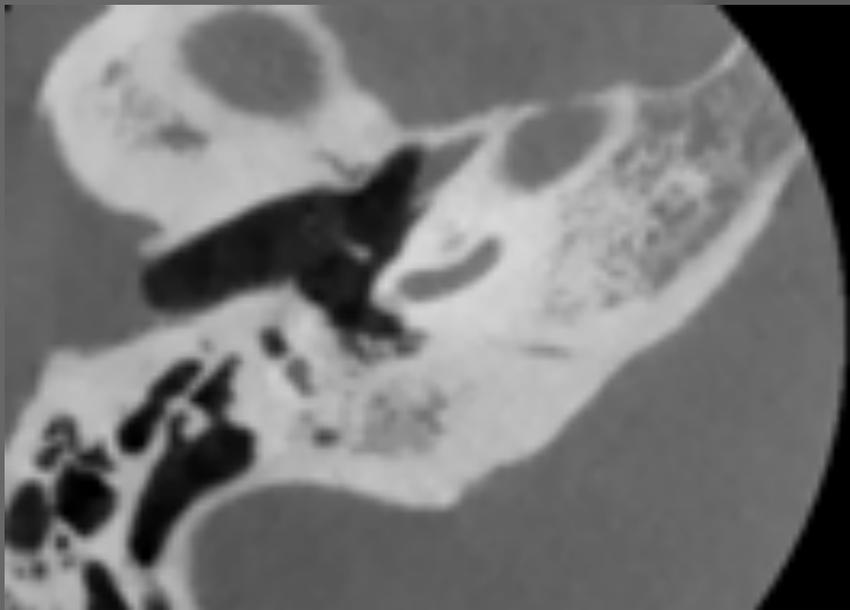
INSTITUTS  
GUIRADO



- Paciente de 33 años. Hipoacusia  
Otosclerosis .
- 33 yo patient. Hearing loss. Otosclerosis

OTLV 33 años





47 años

# Mixed bilateral Hearing Loss

Anamnesis

consulta x l hiposusia OD en 2 años. No menopausia.

Exploración

otomior no aparente cirugía

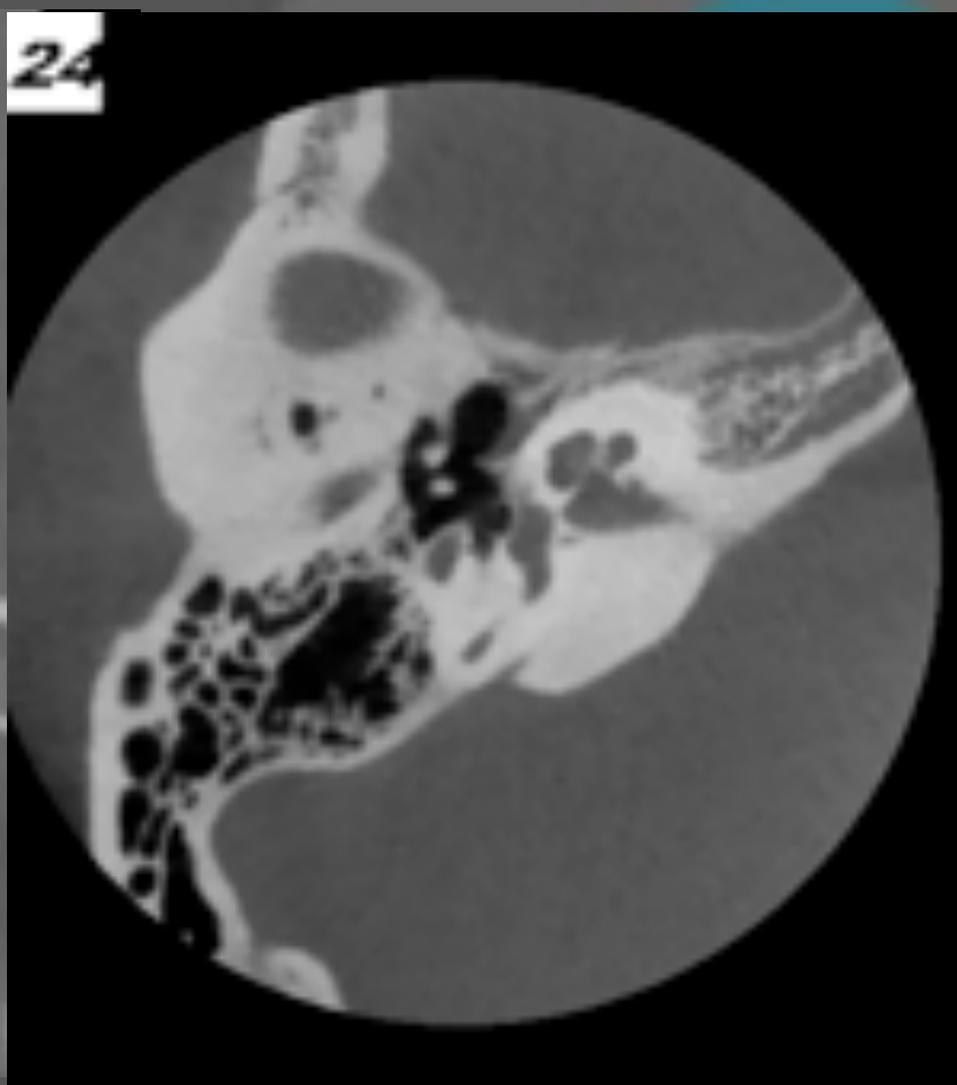
audio: perceptiva OD, transmisiva OI (sic) > recomiendo TC de oído medio.

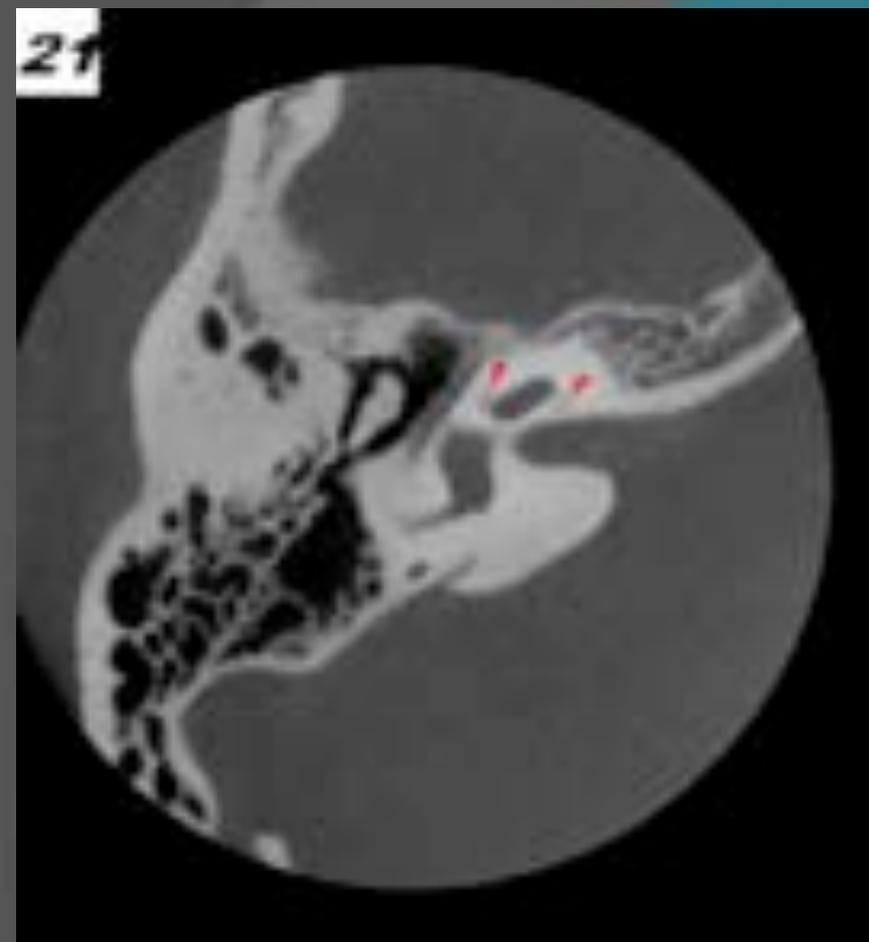


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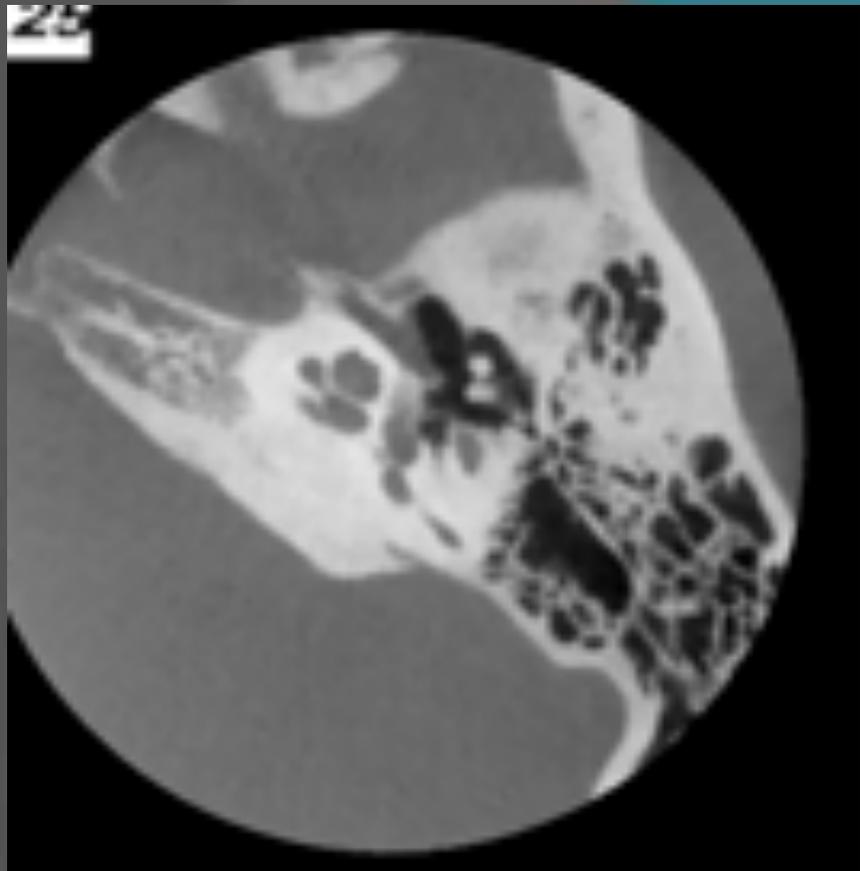


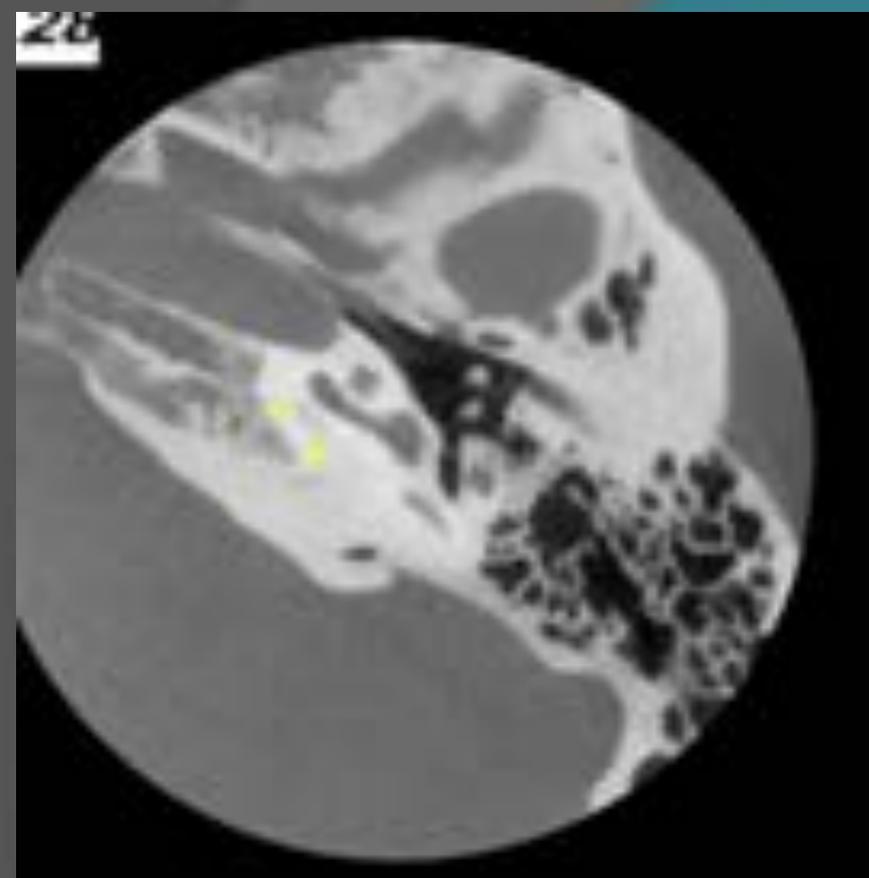
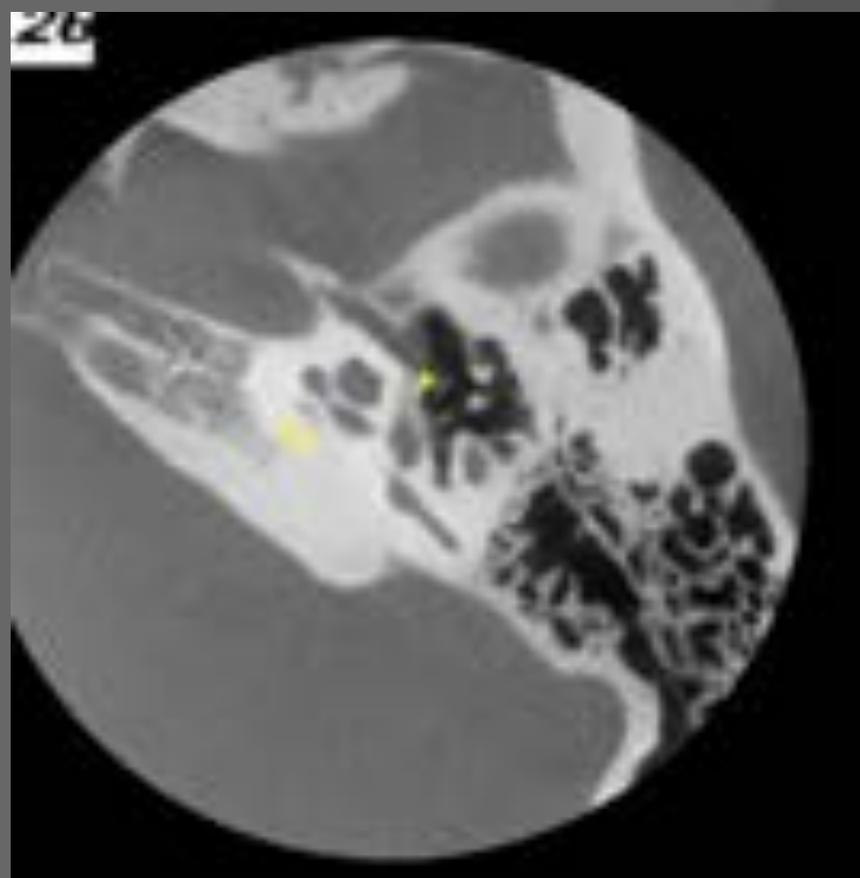


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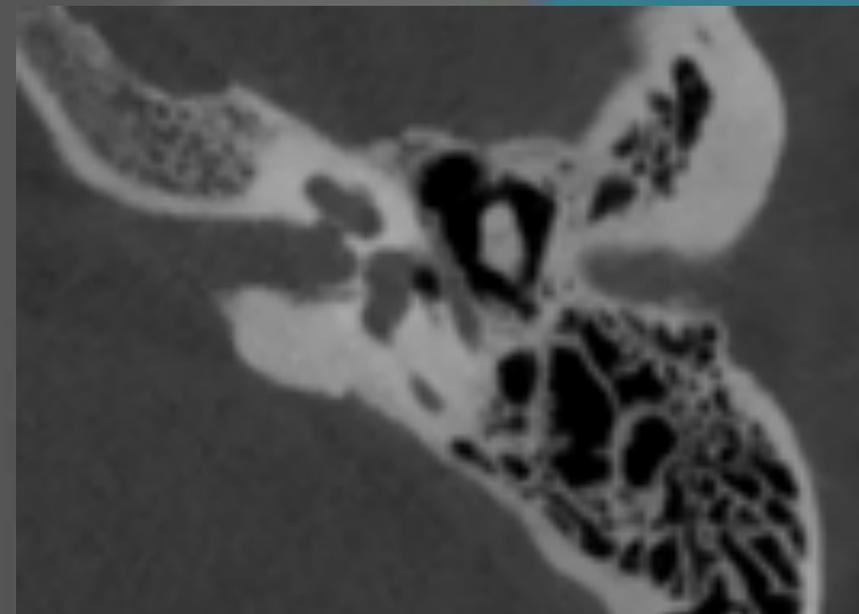
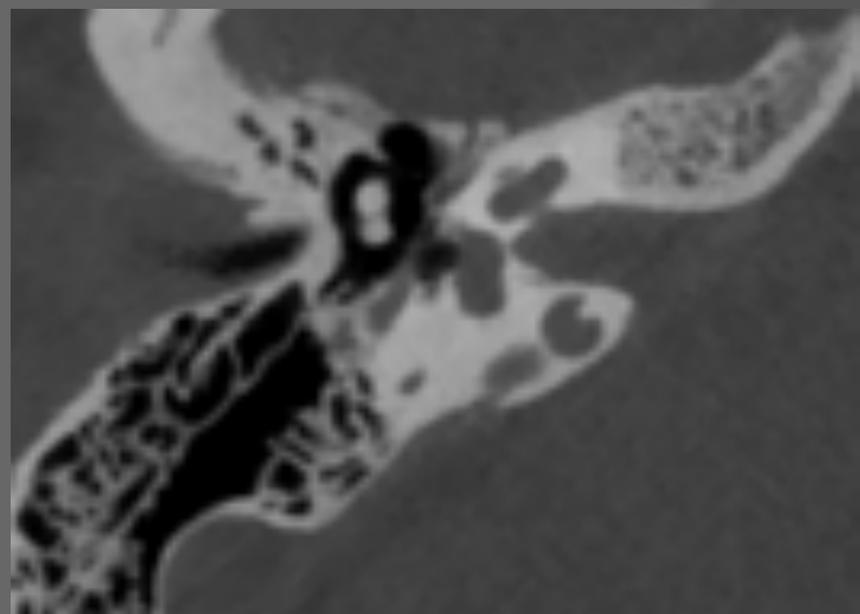




- Mujer de 44 años de edad.  
Hipoacusia de transmisión bilateral.
- Reflejo estapedial disminuidos.
- Otoscopia exóstosis de CAE bilaterales.
- Caja sin hallazgos.

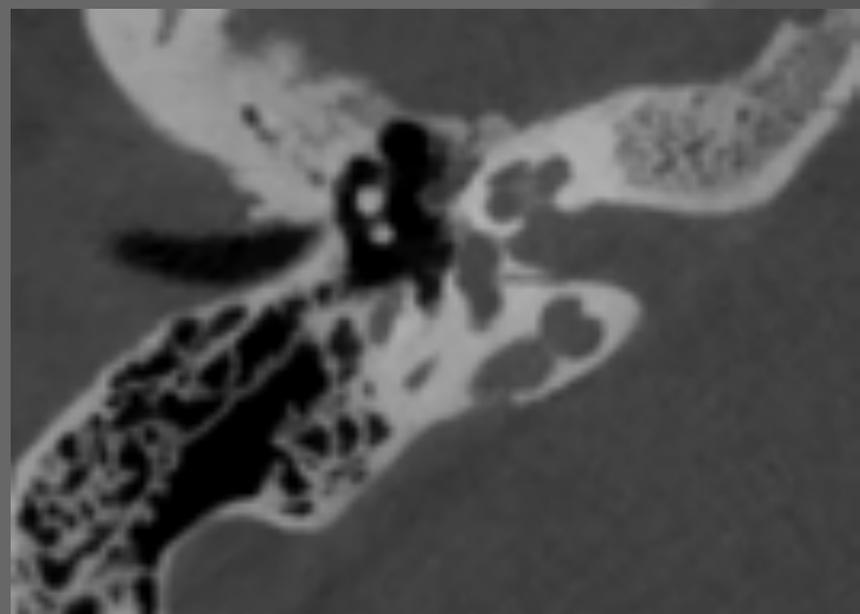


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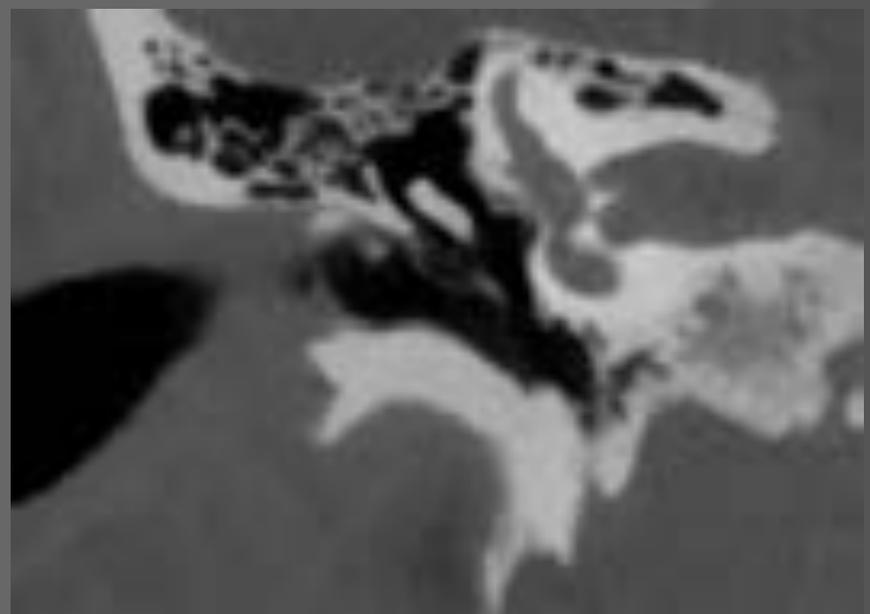


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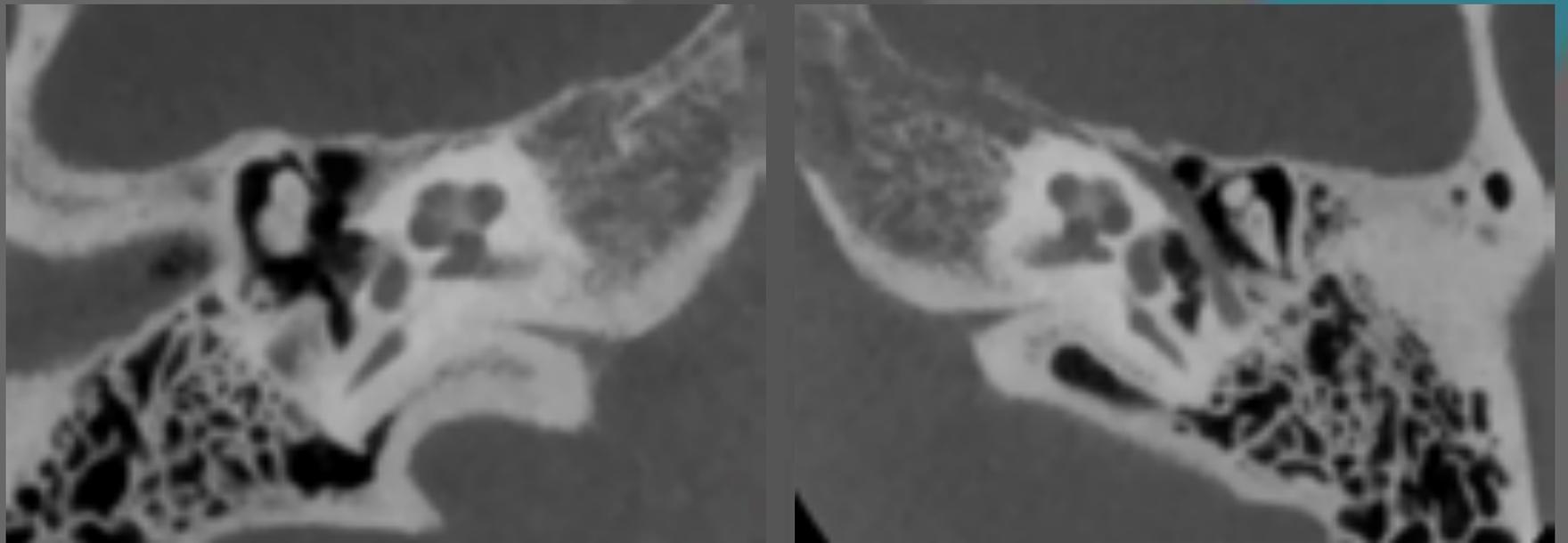
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GUIRADO



- 47 años de edad con hipoacusia de transmisión bilateral, timpanometría y otoscopia normales. GAP 30 dB. Reflejo estapedial derecho disminuido.

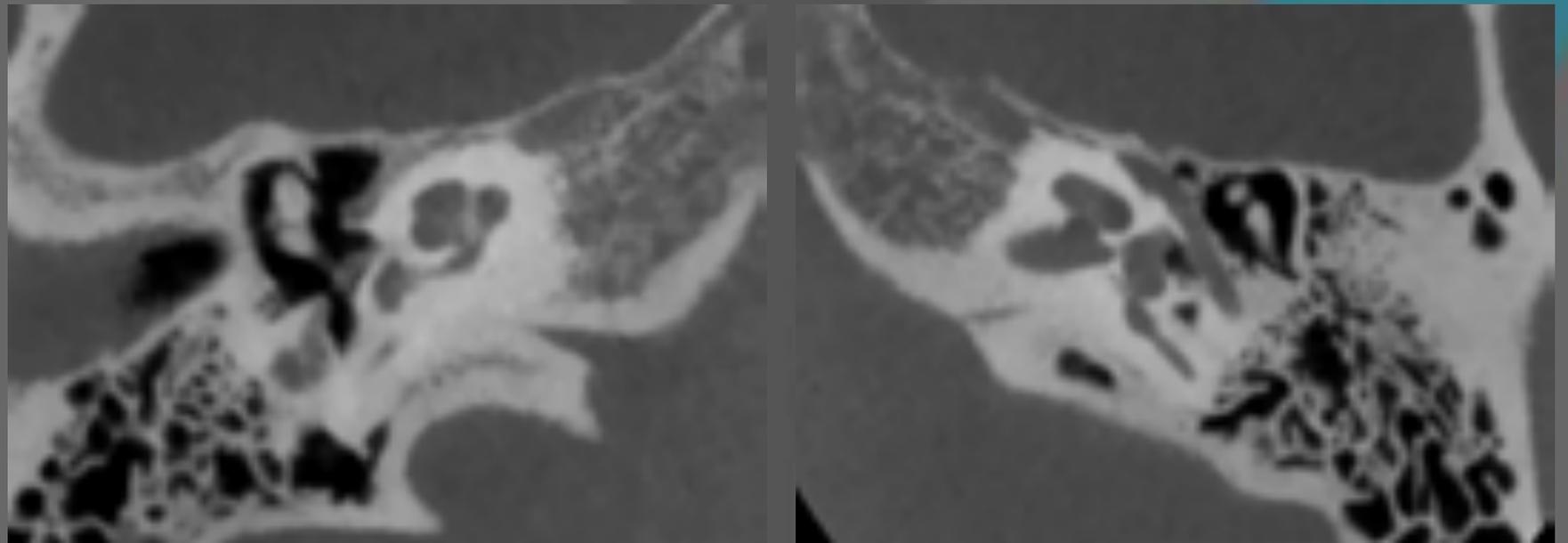


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Varón 70 años de edad

Hipoacusia mixta bilateral >OD

Acúfenos y tinnitus

Male 70 year old

Mixed bilateral hearing loss > OD

Pulsatile Tinnitus



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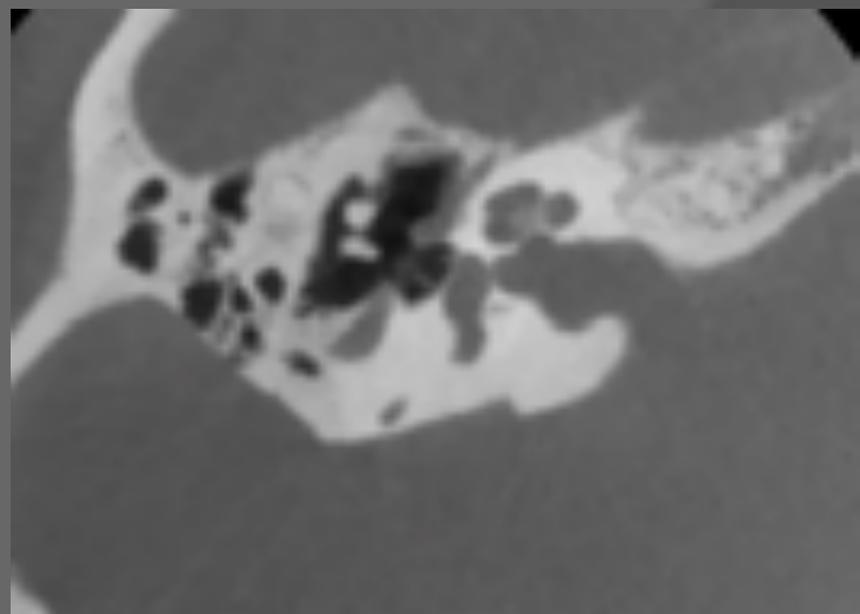


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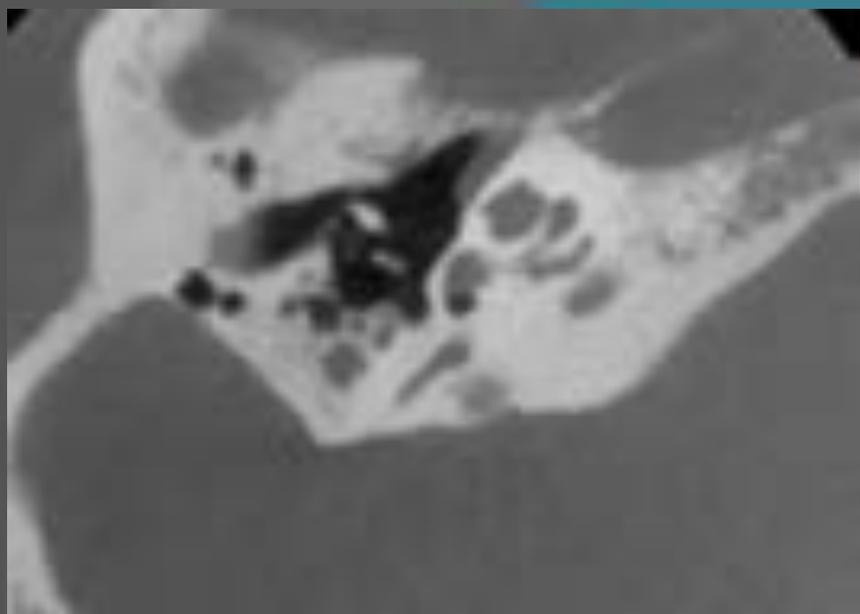
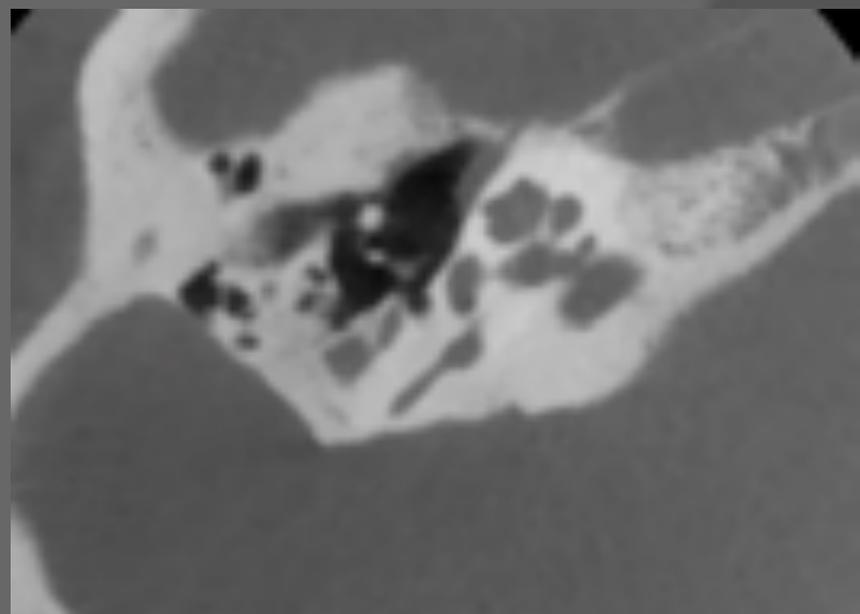


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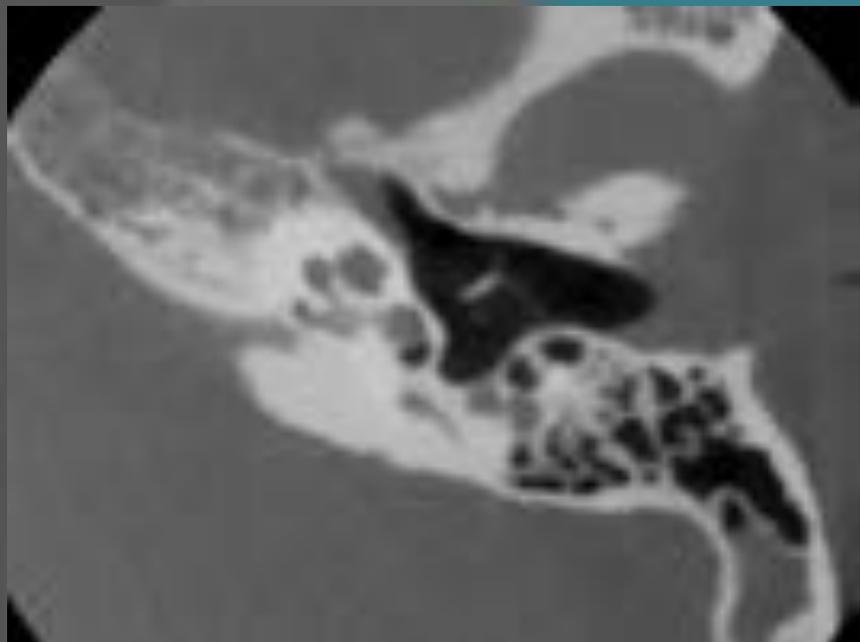
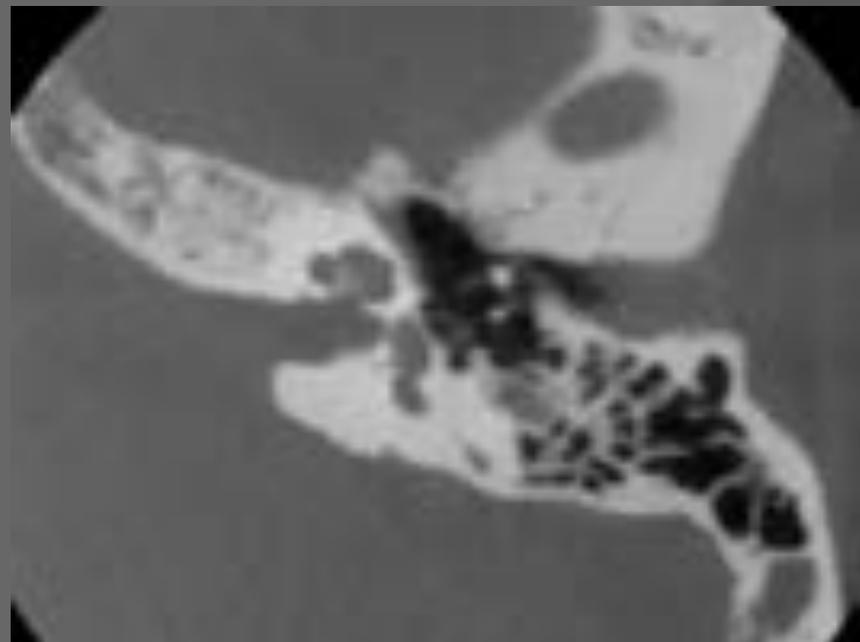


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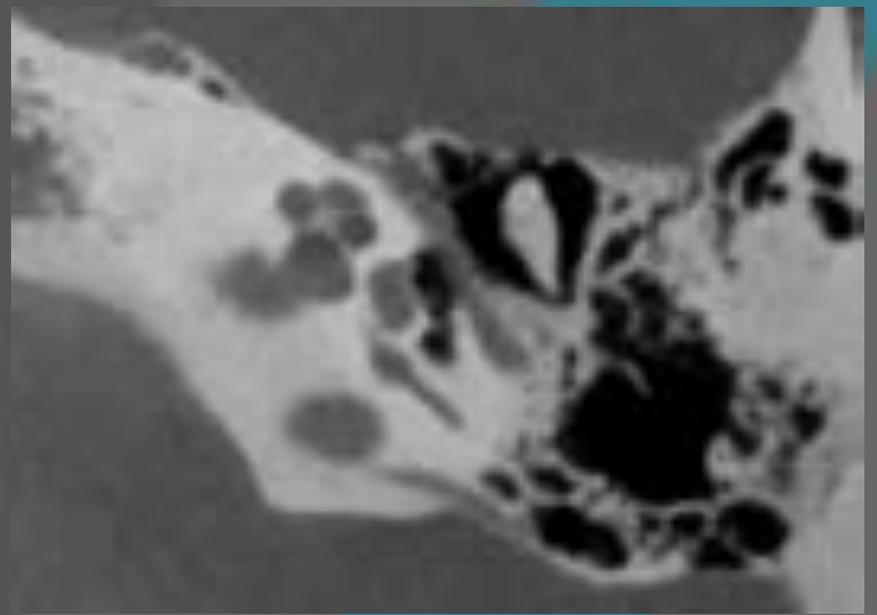
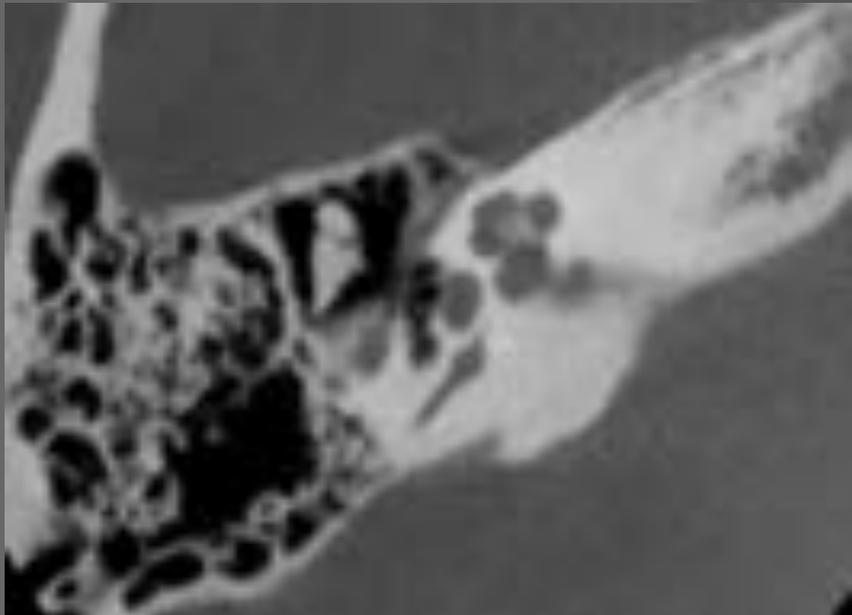
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Qué oído?



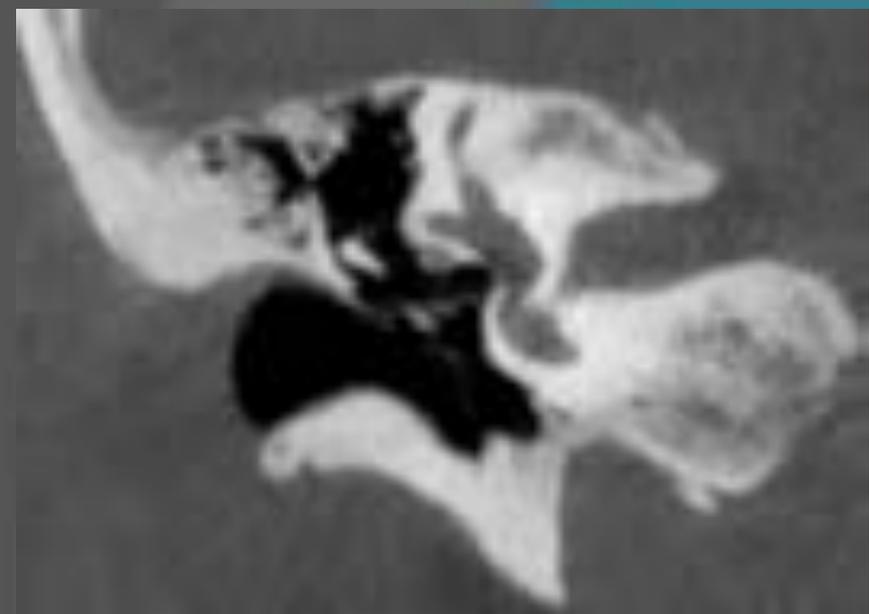
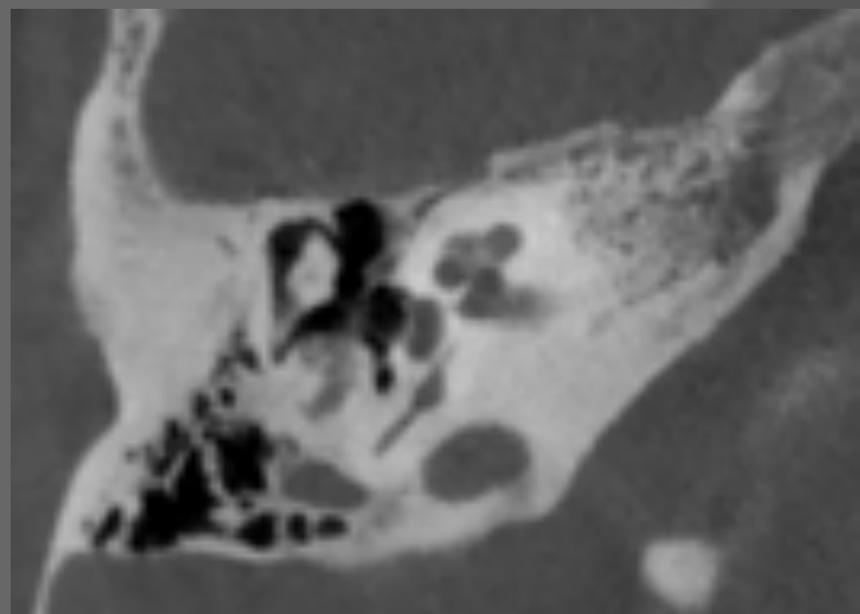


# Atentos!!

- Hipoacusia conductiva bilateral de predominio izquierdo. GAP 40 dB OI.
- Reflejo estapedial izquierdo abolido.
- Antecedentes de otitis en la infancia.
- Valorar otosclerosis.

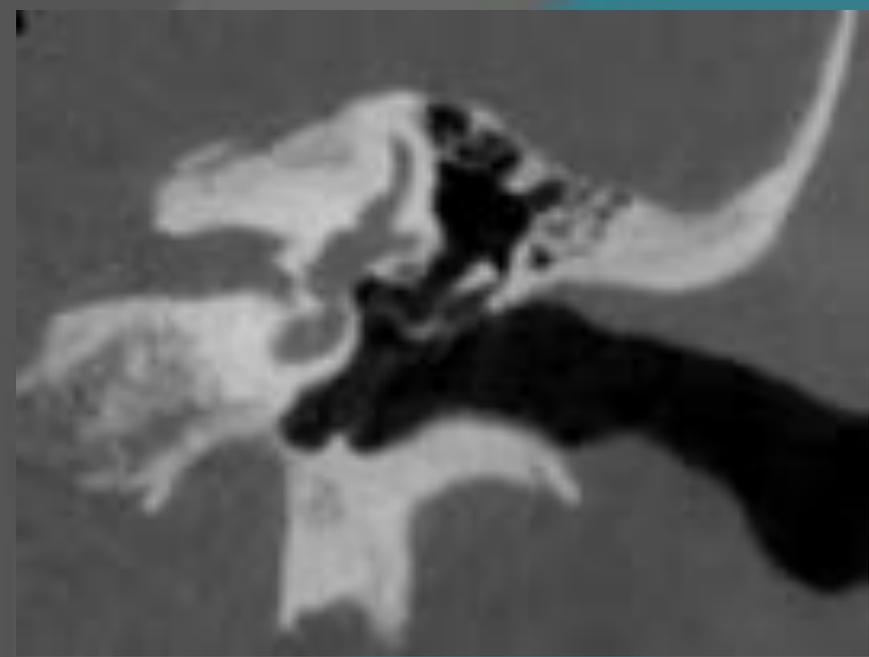
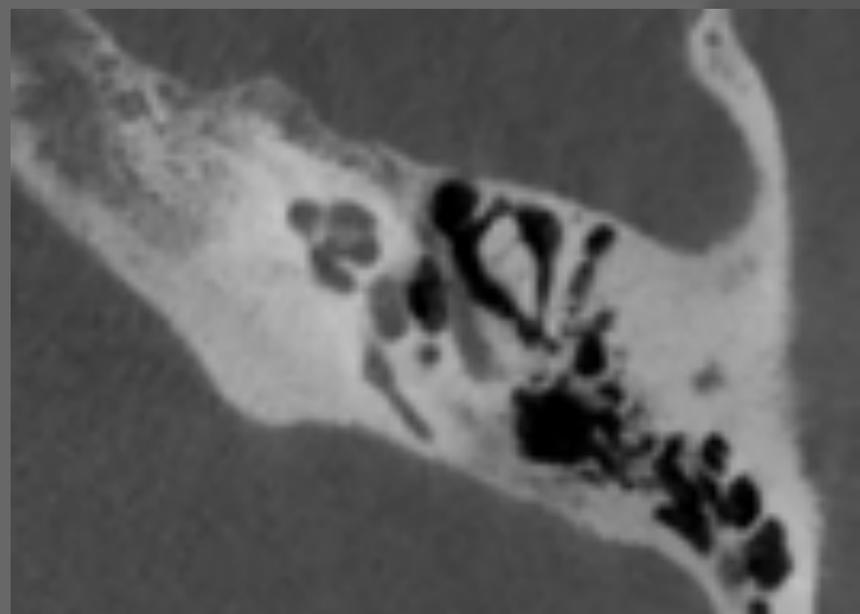


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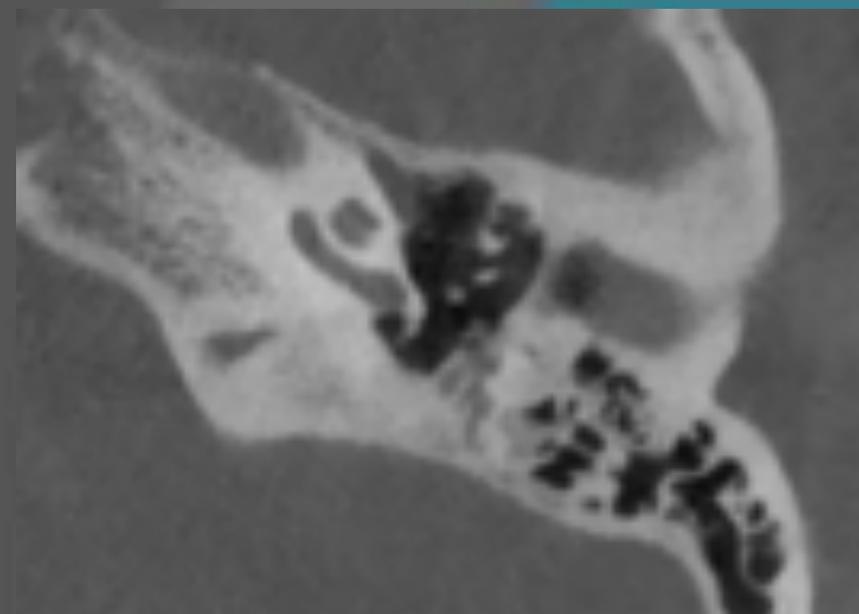
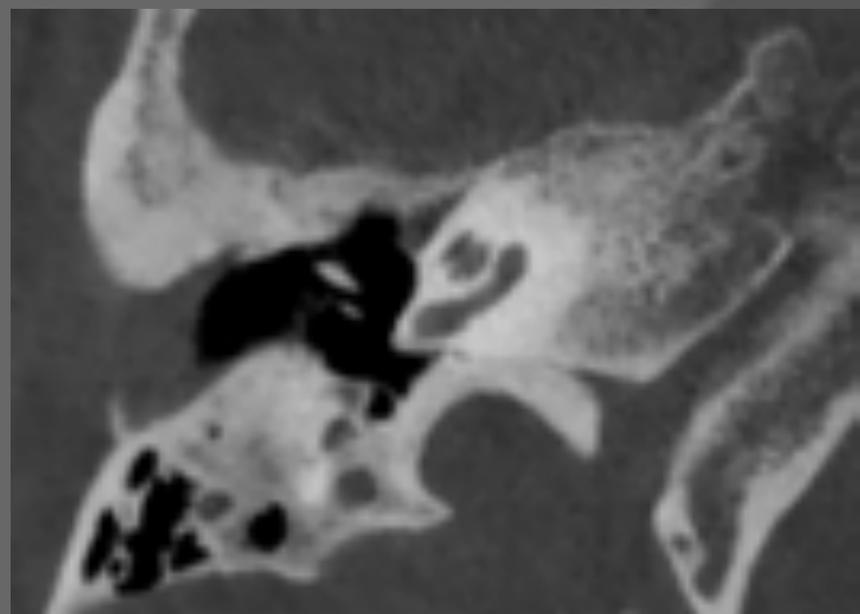


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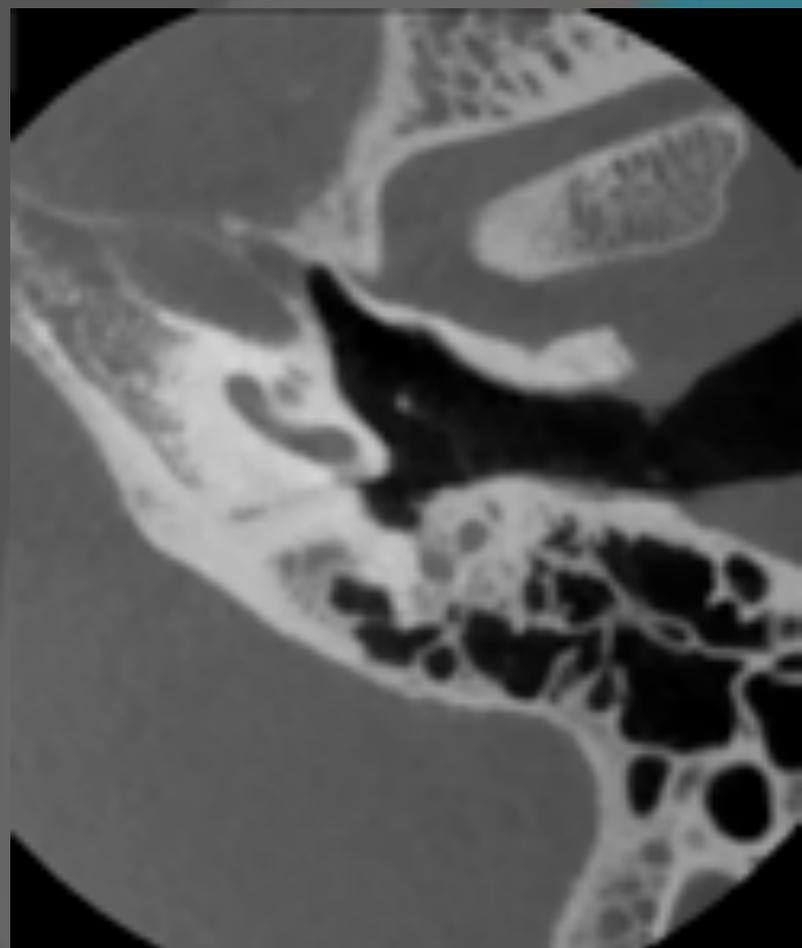
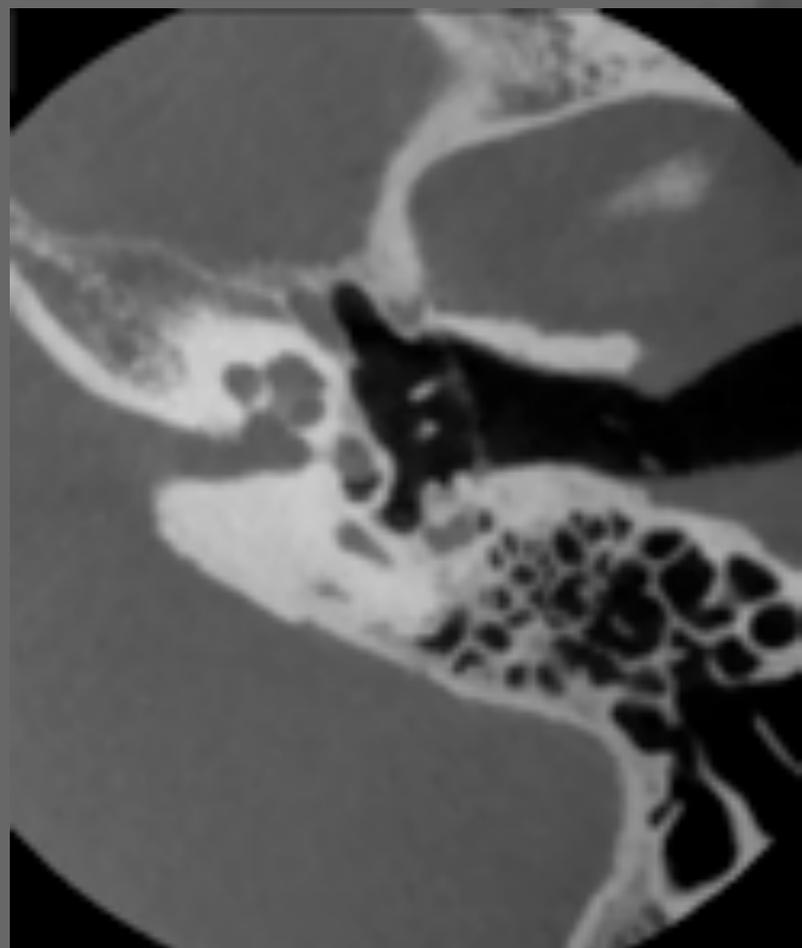


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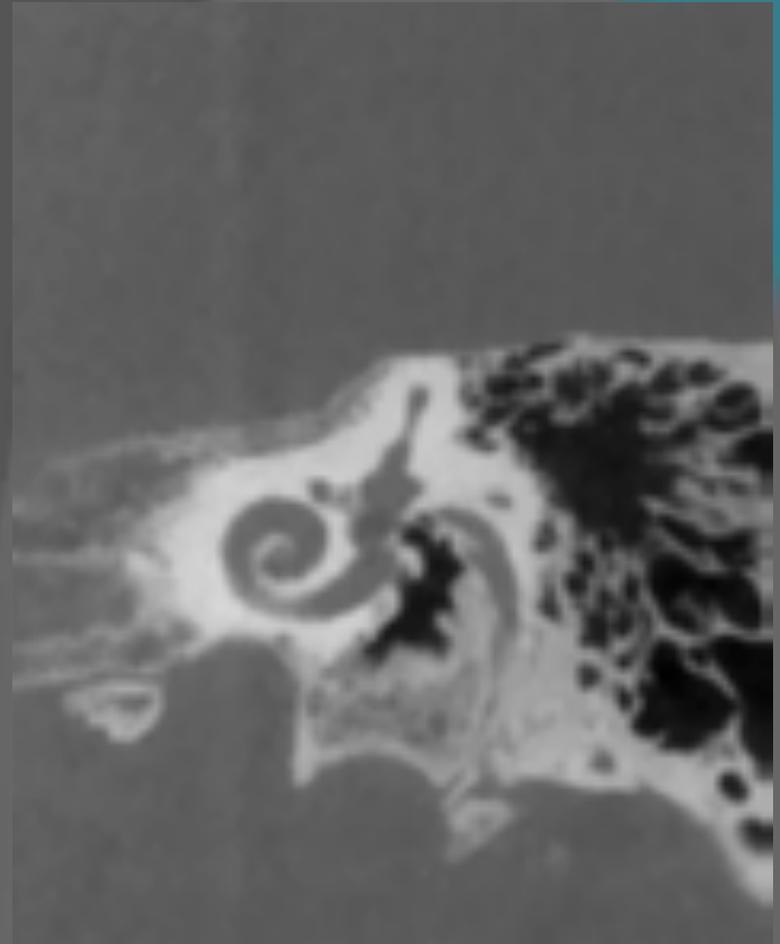
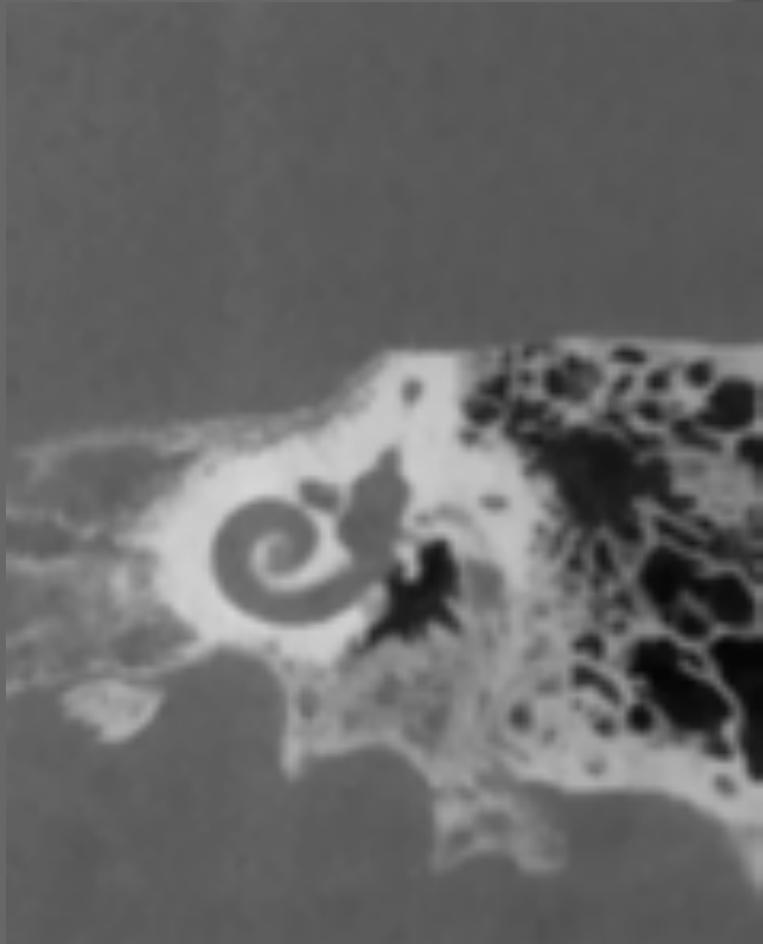


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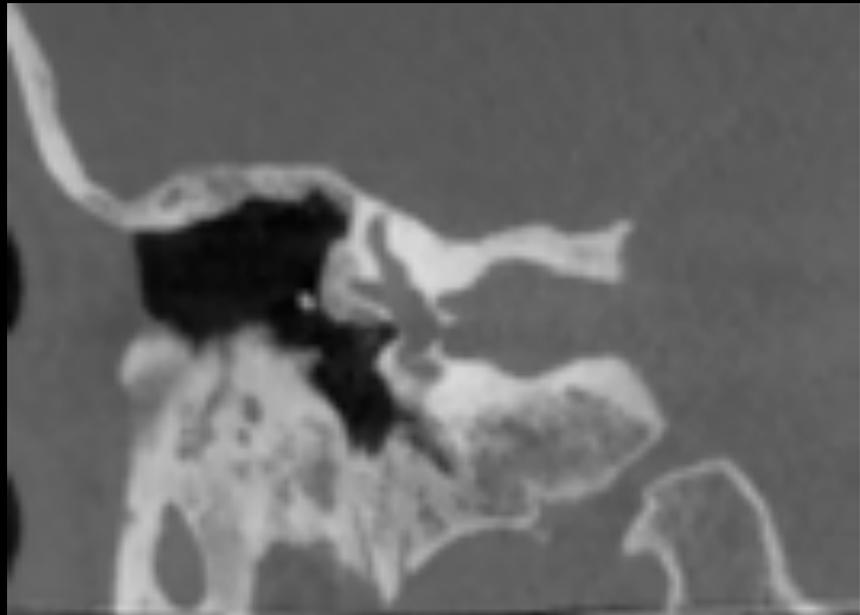
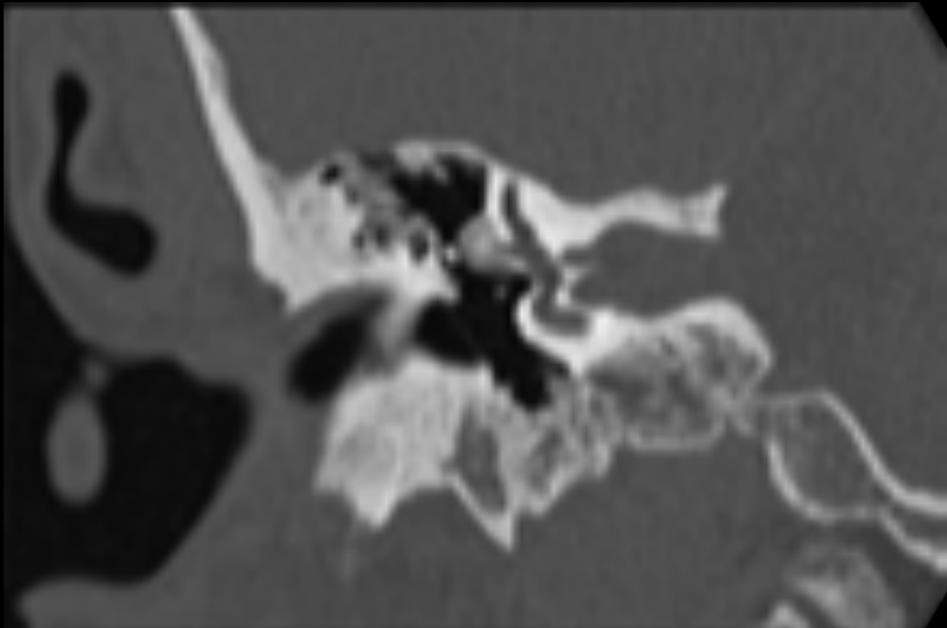
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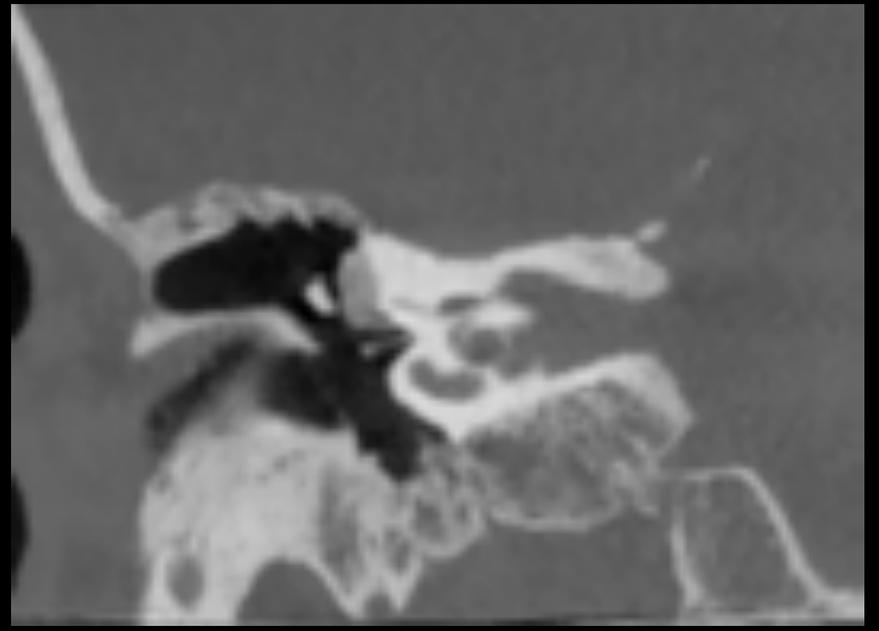
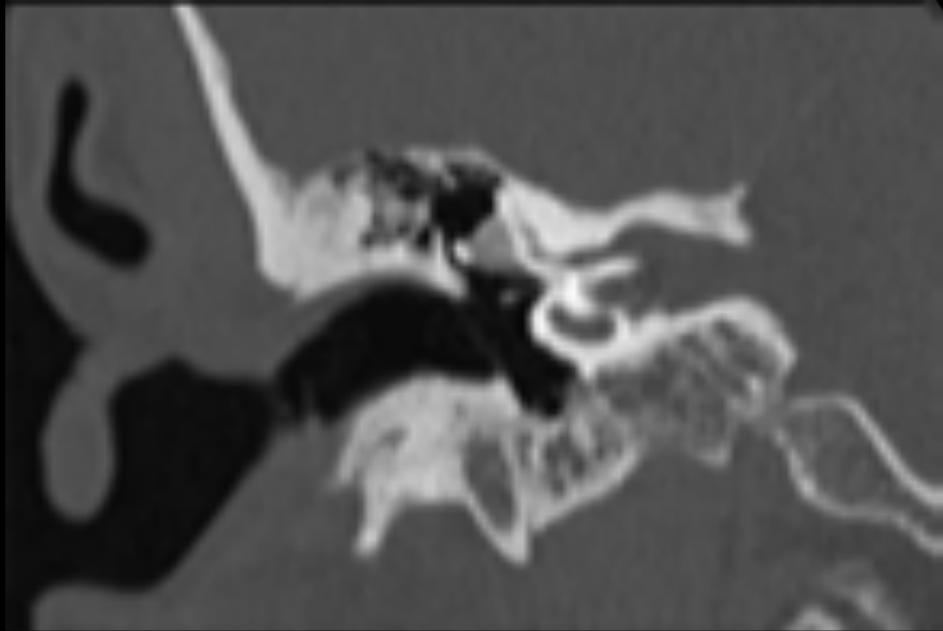


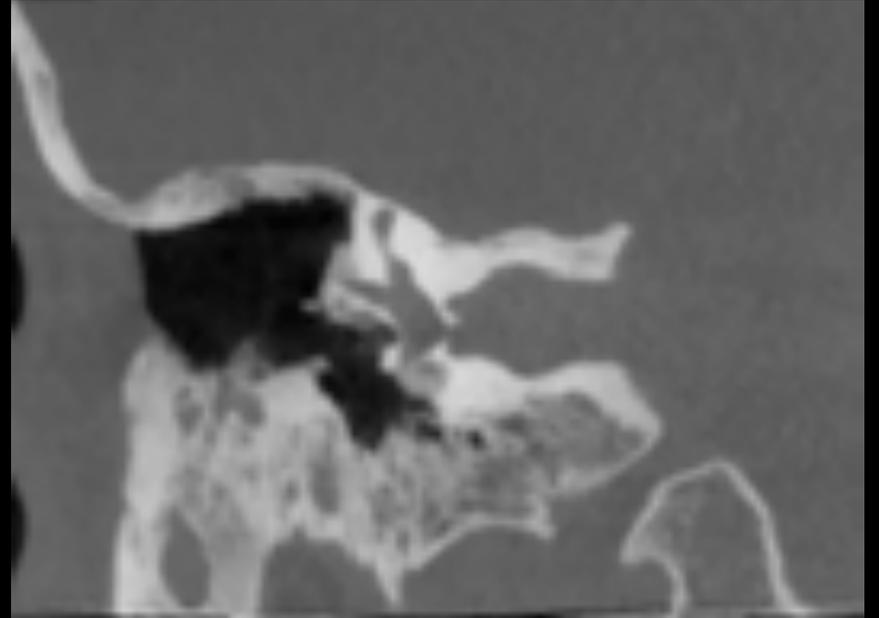
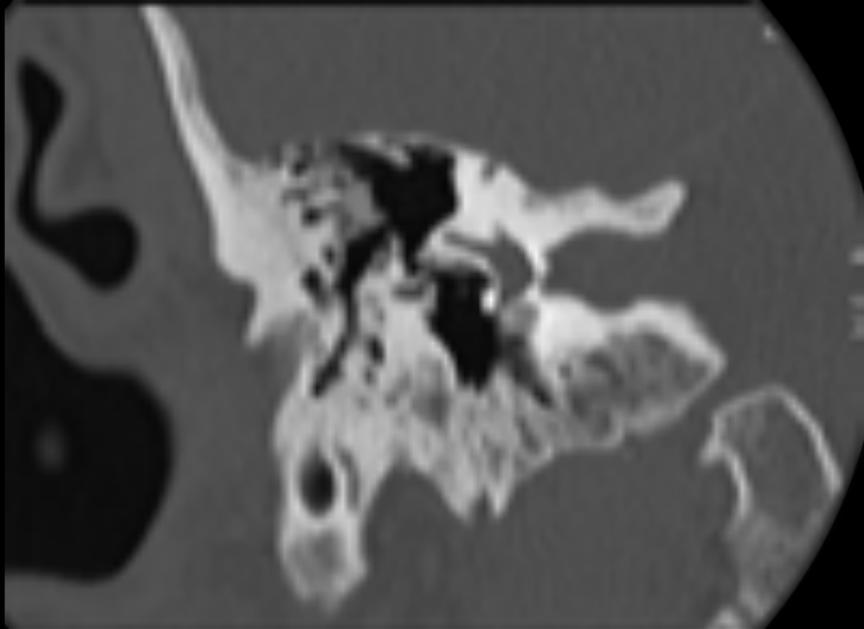
Otosclerosis agresiva

Aggressive otosclerosis

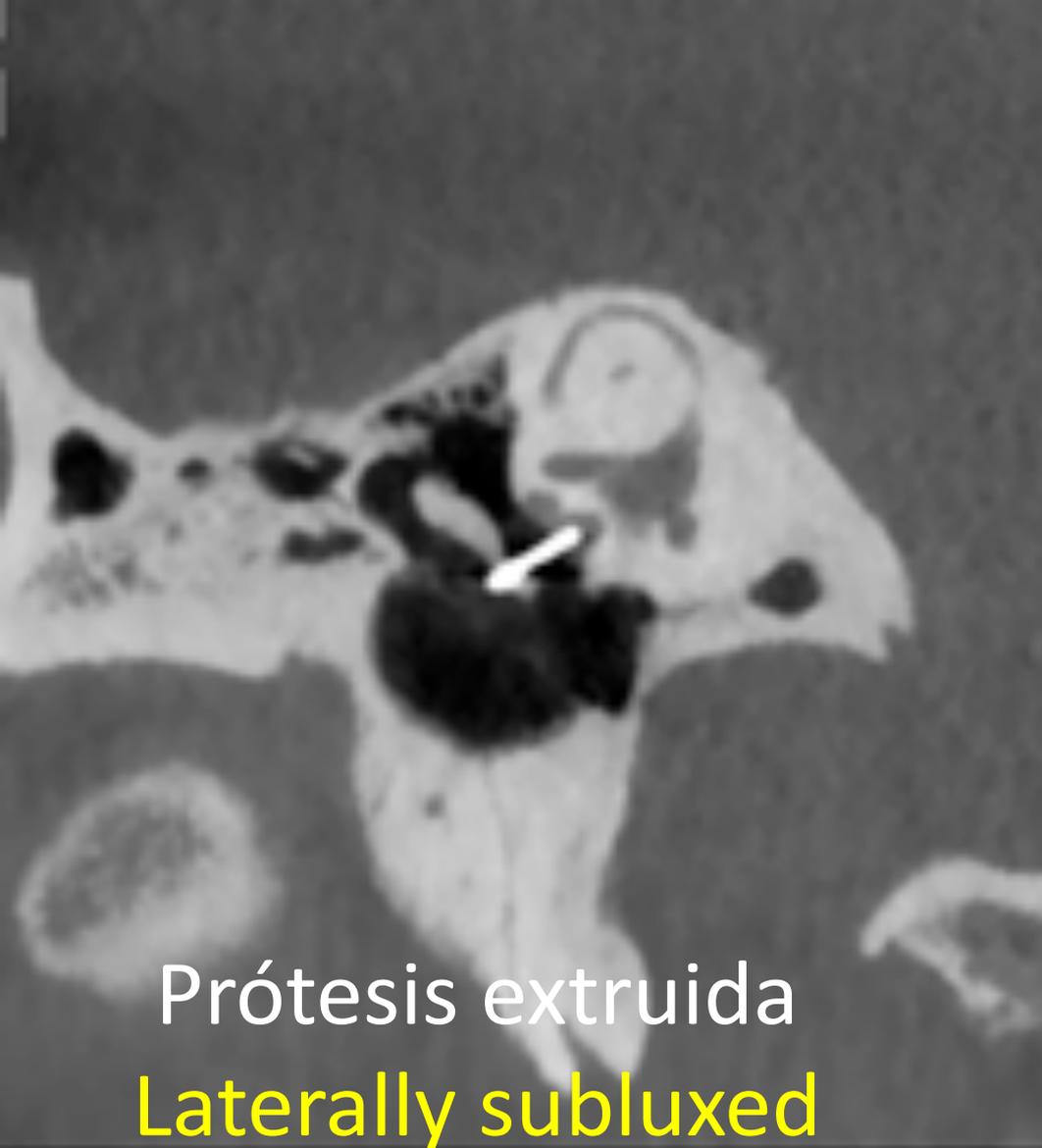




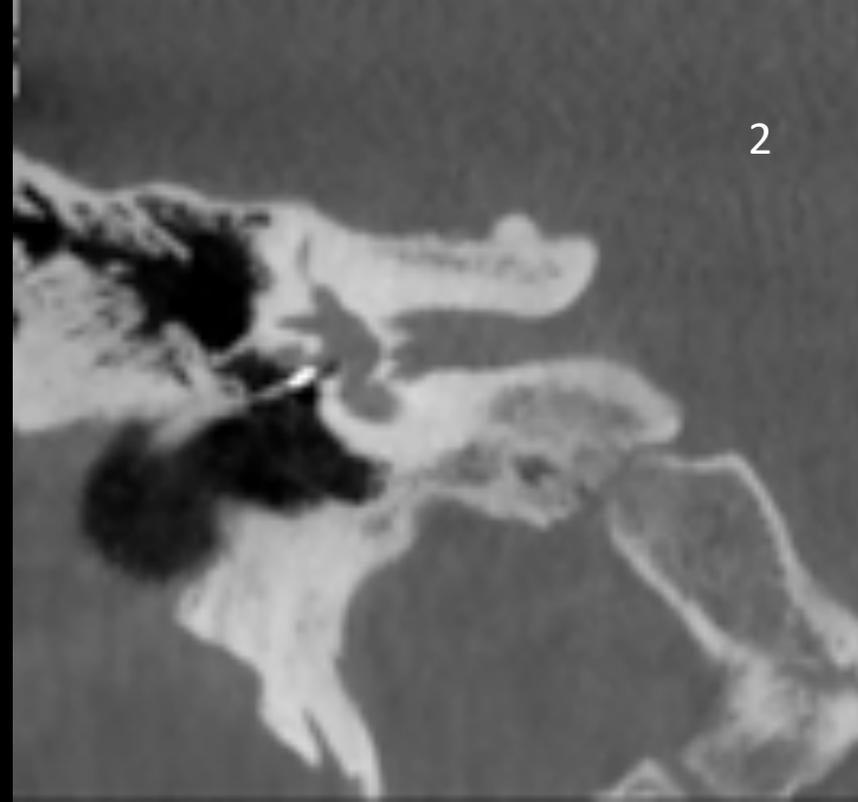




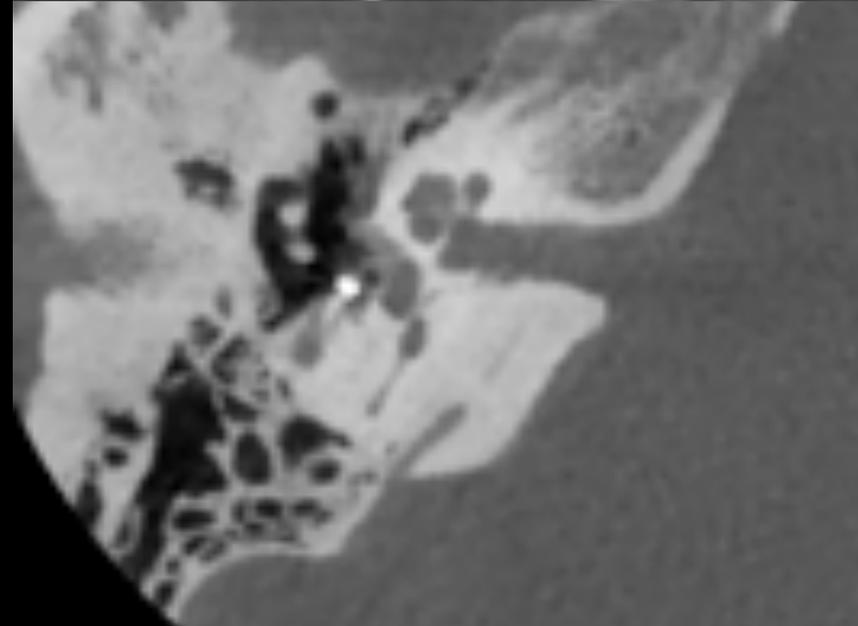




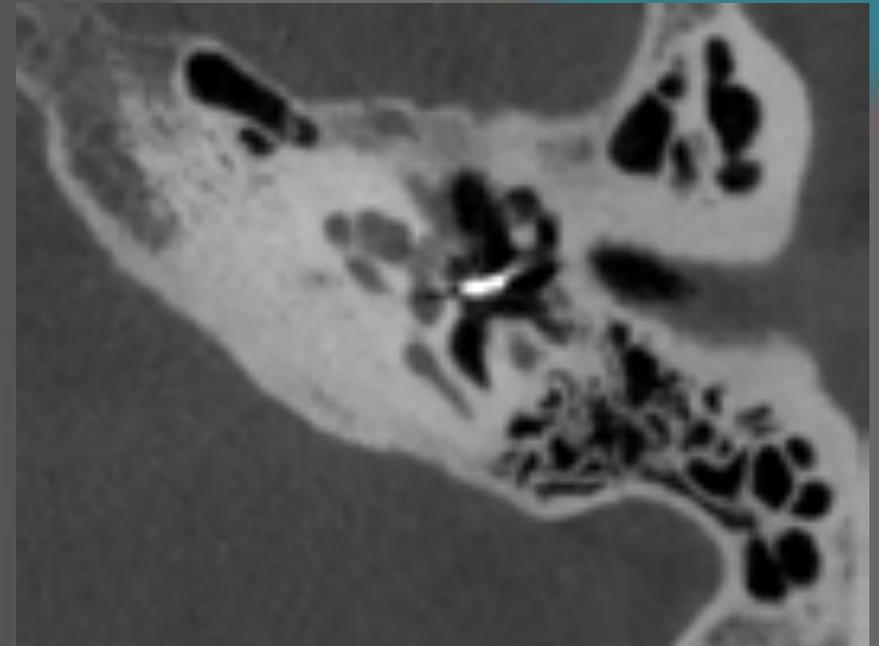
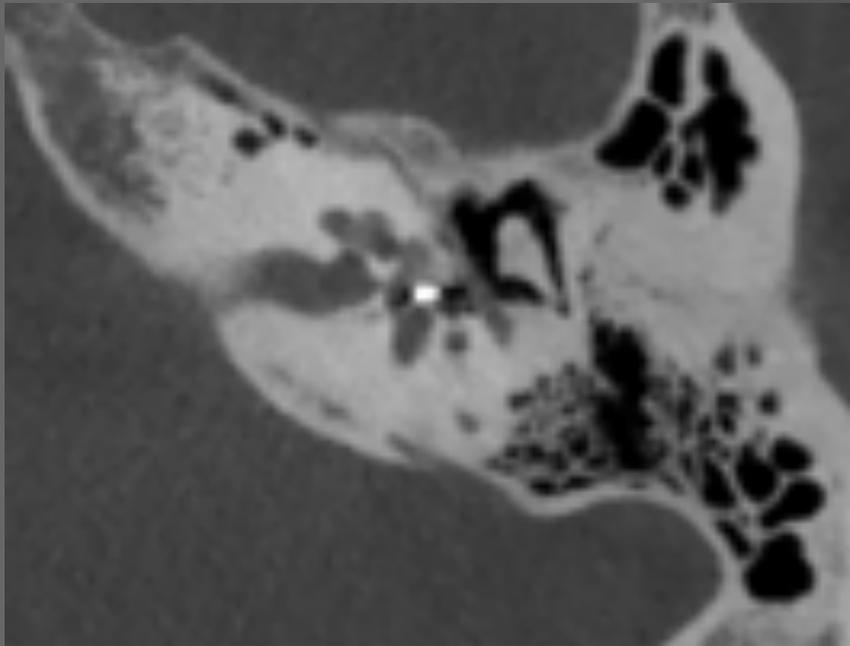
Prótesis extruida  
Laterally subluxed  
stapedectomy  
prosthesis



2

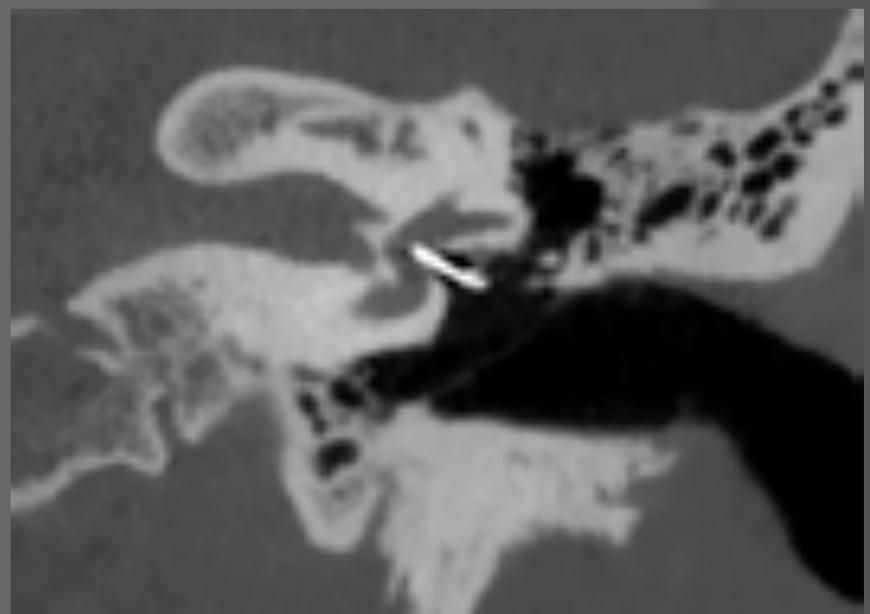


# Prótesis Protruida Medially subluxed prosthesis.

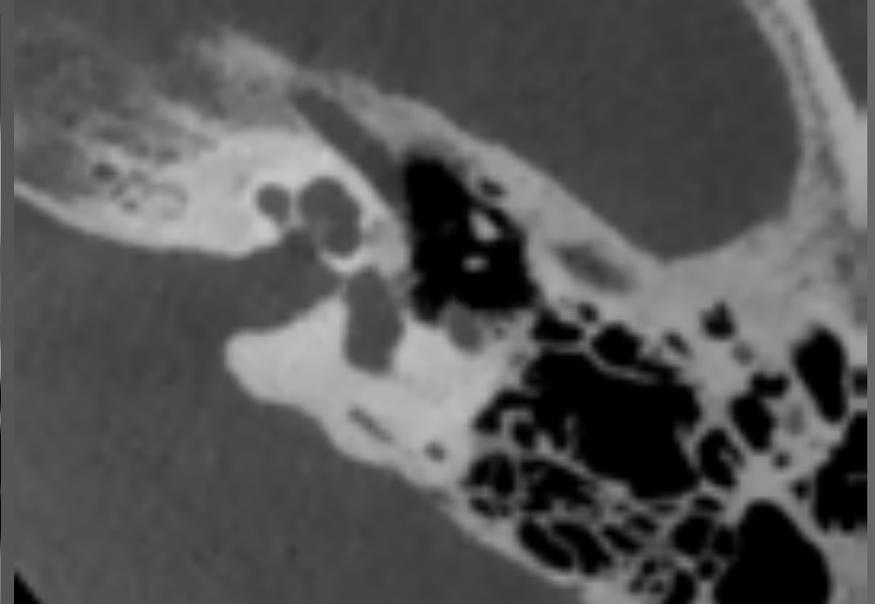
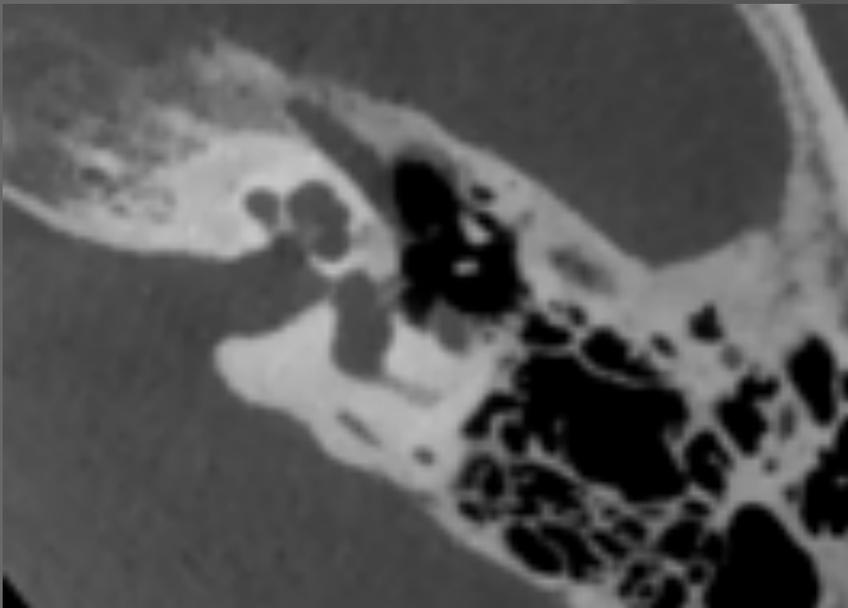




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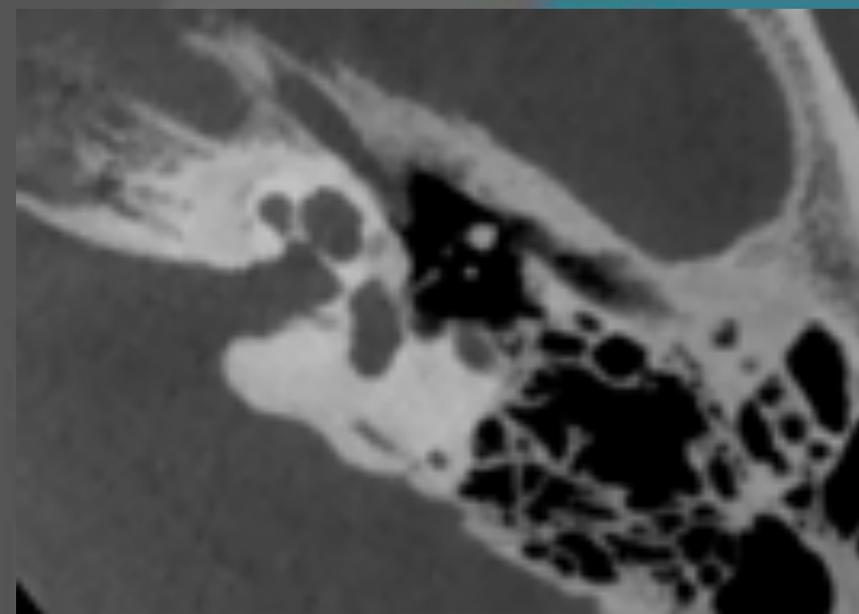
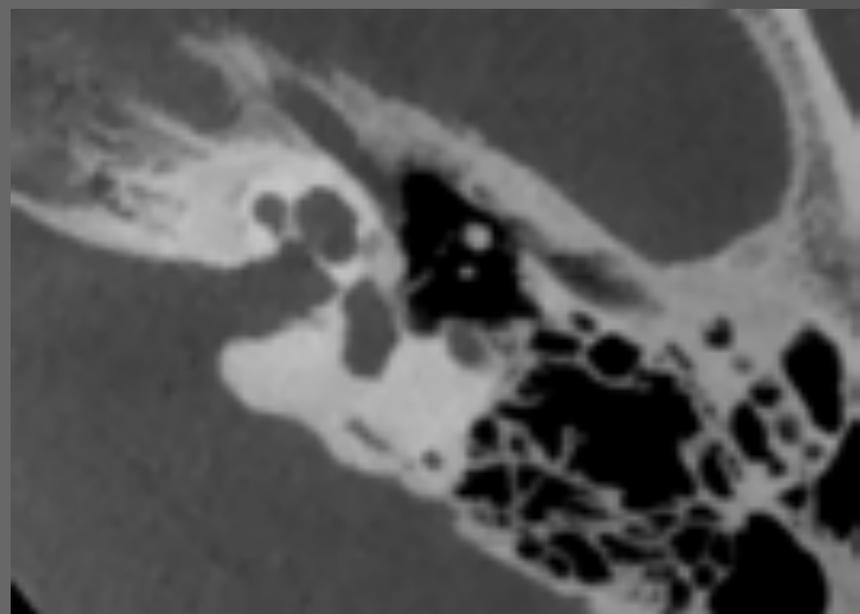


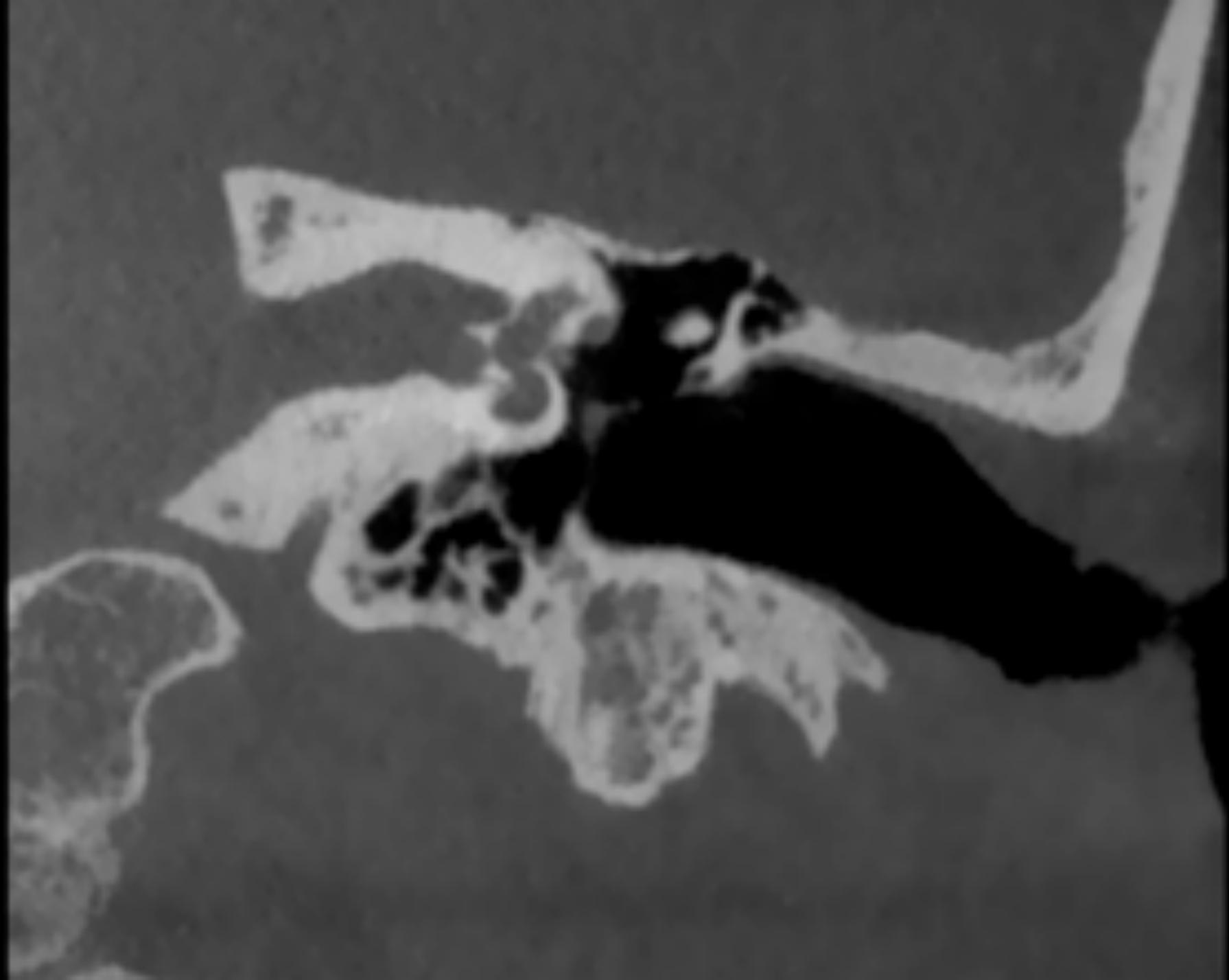
Crisis vertiginosas  
Hipoacusia trans  
Estapedectomía OI  
Dizziness/vertigo  
Conductive hearing loss  
LE Stapedectomy

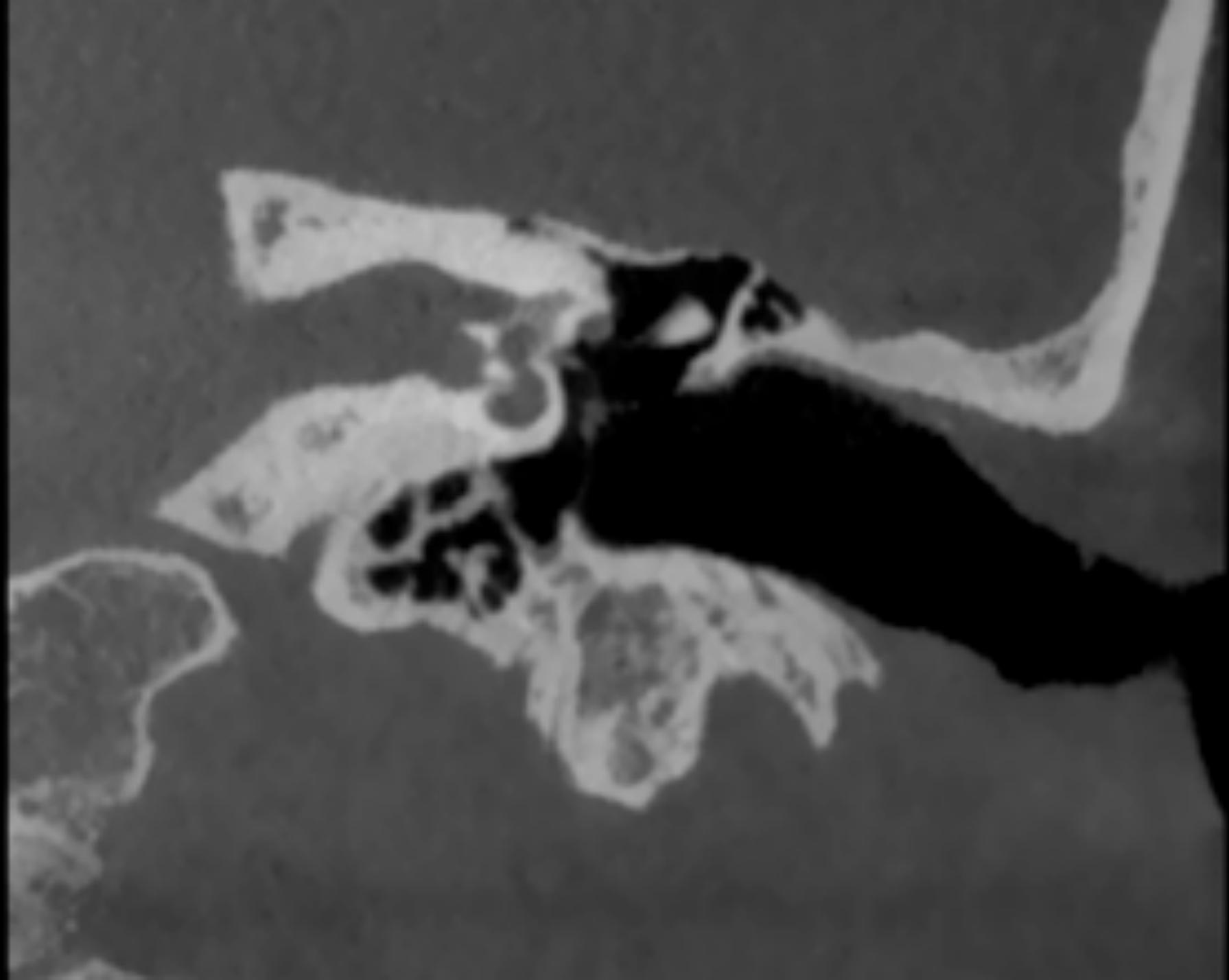


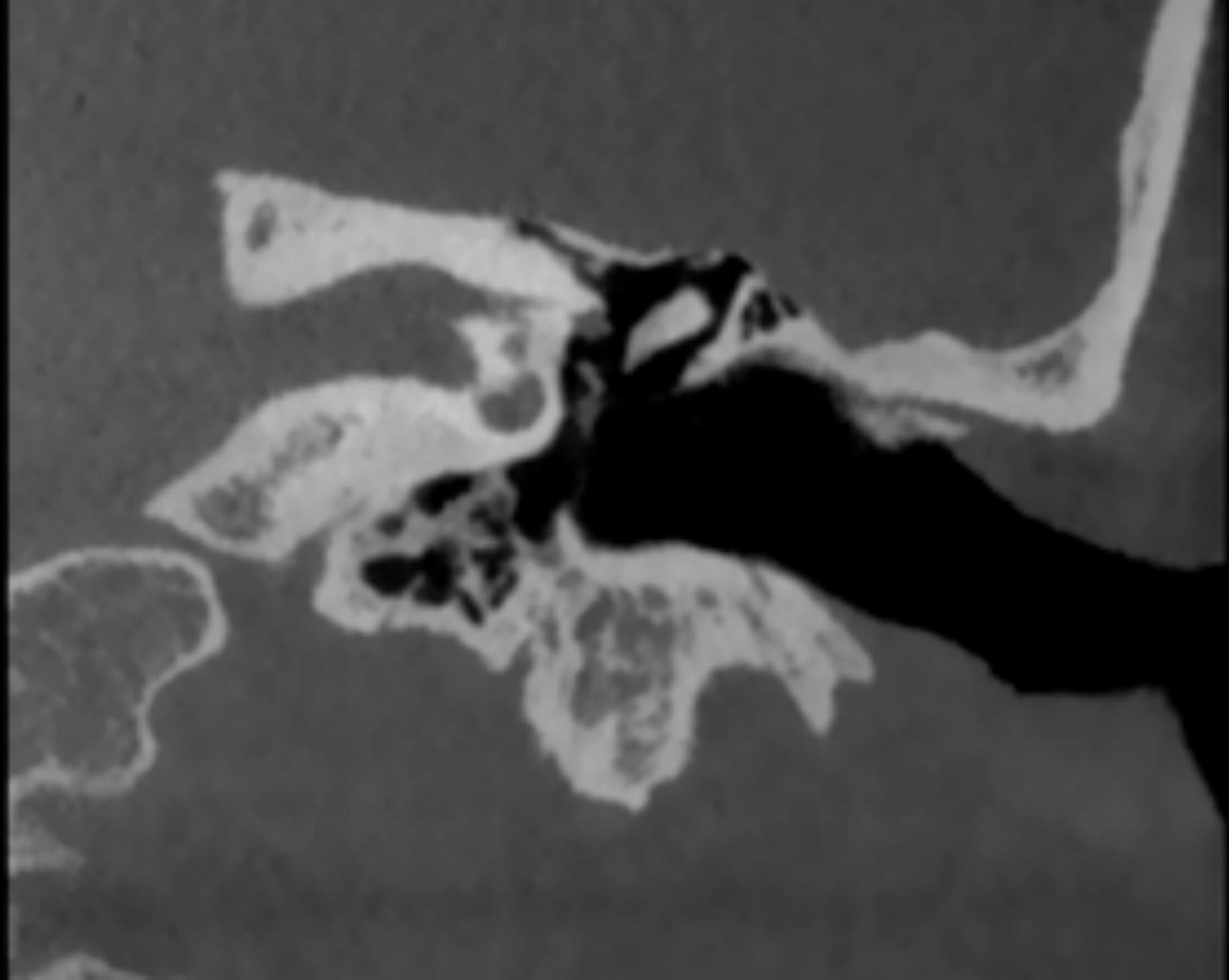


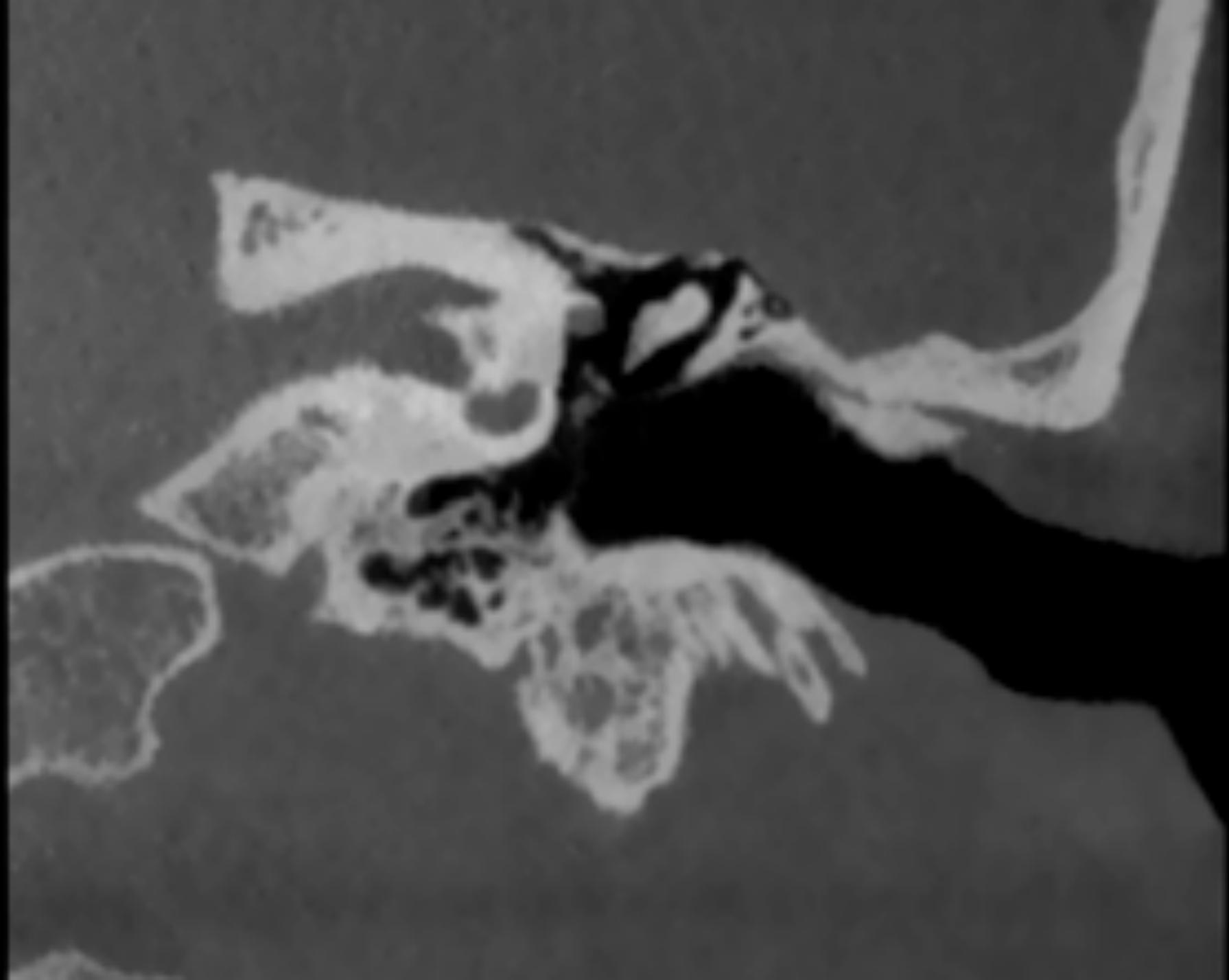
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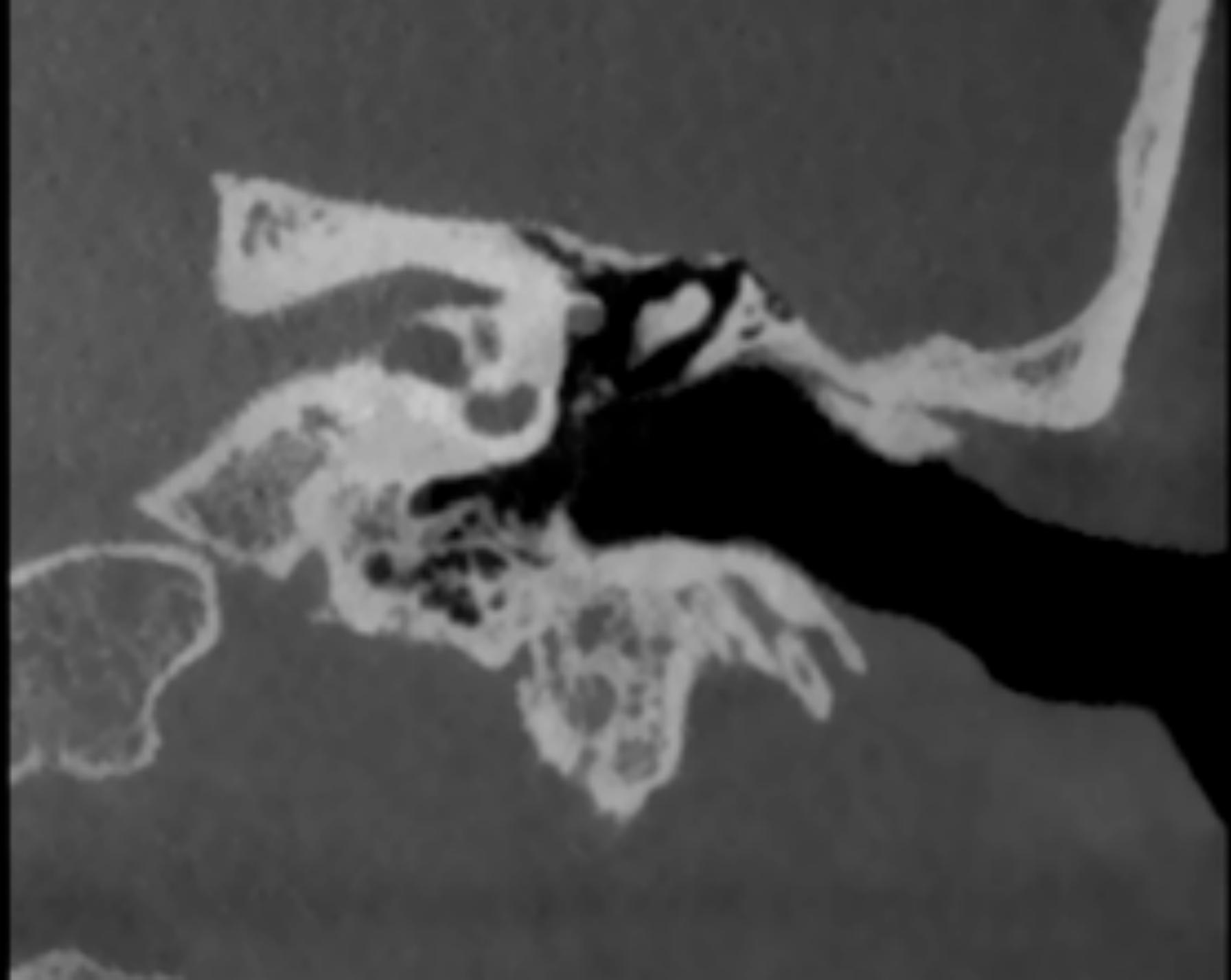




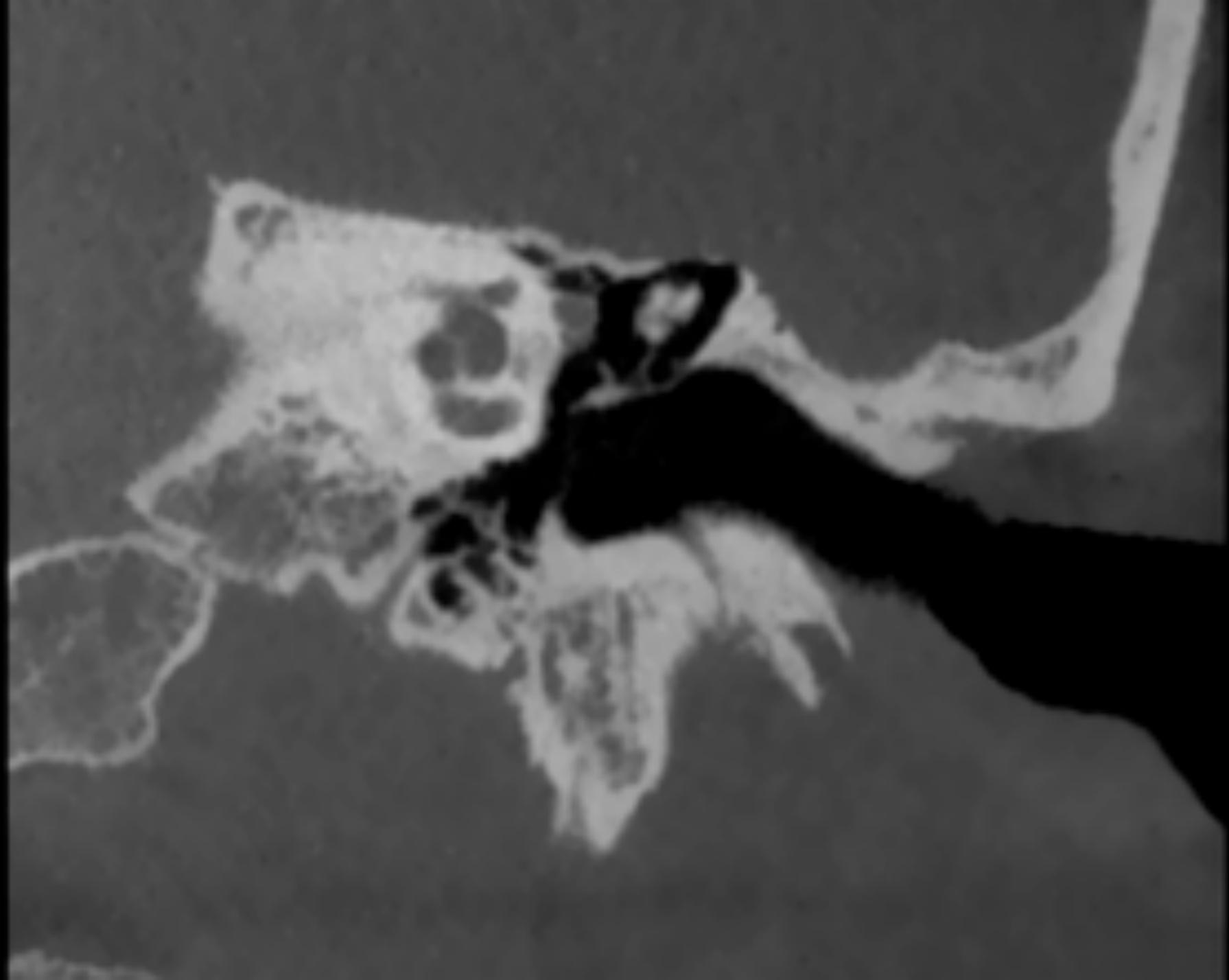






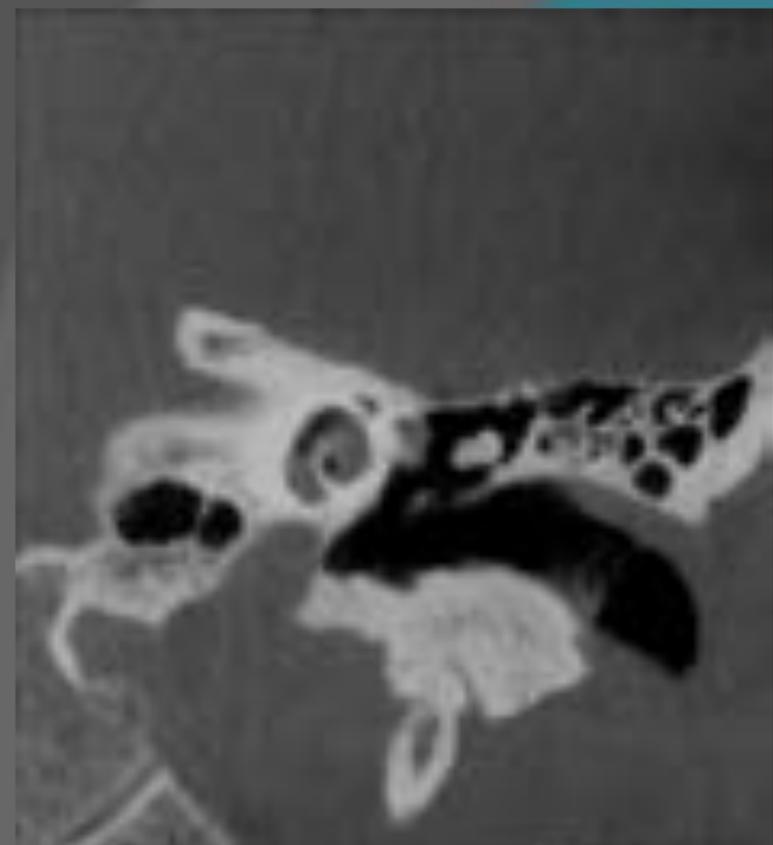
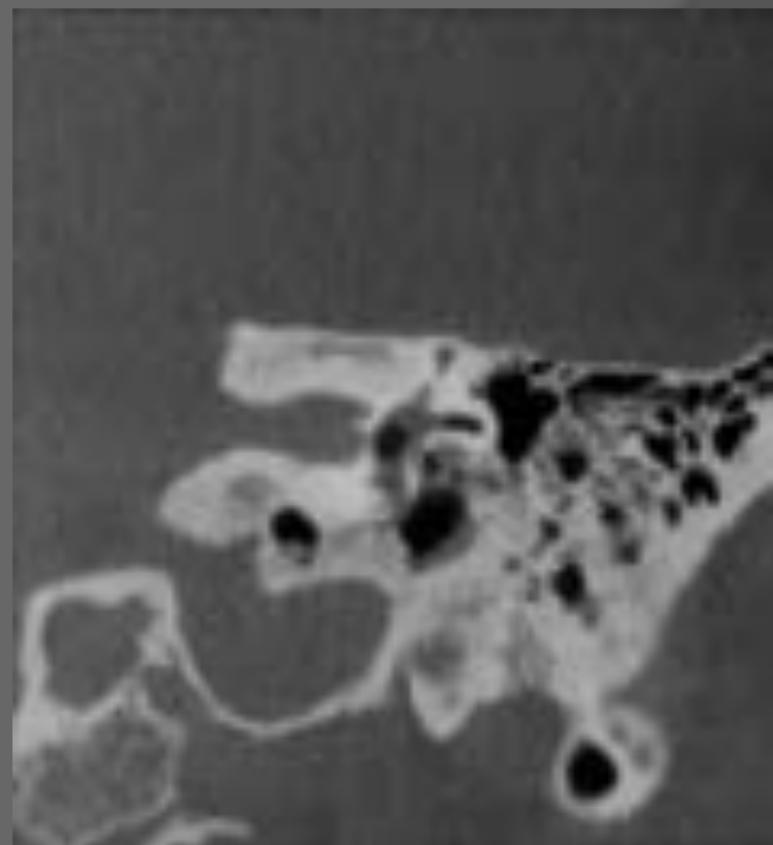






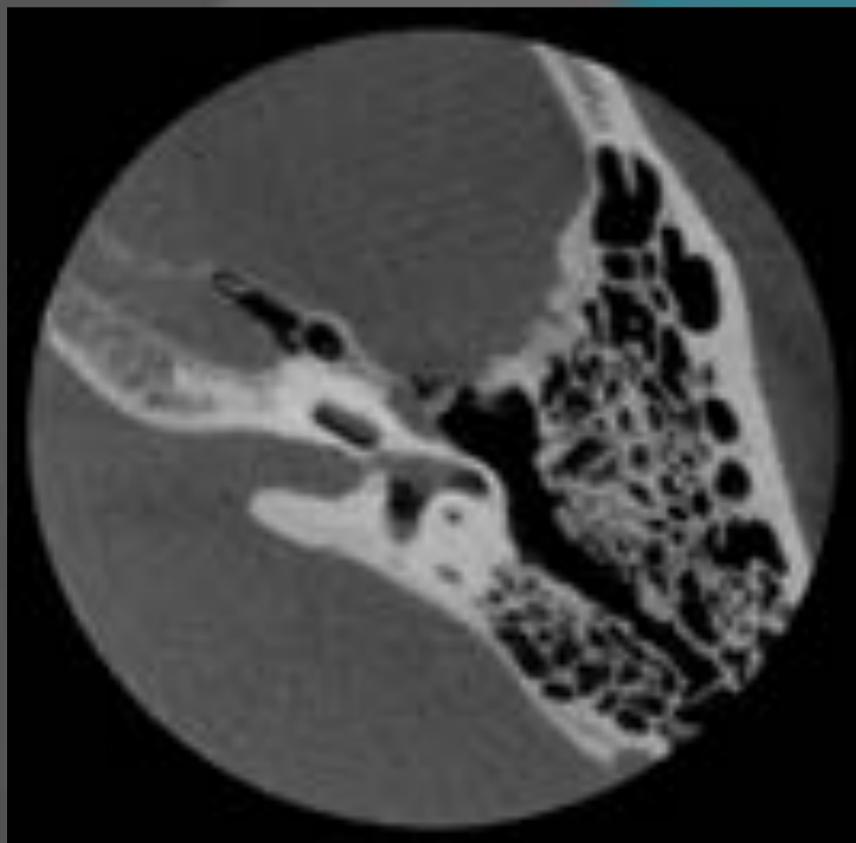
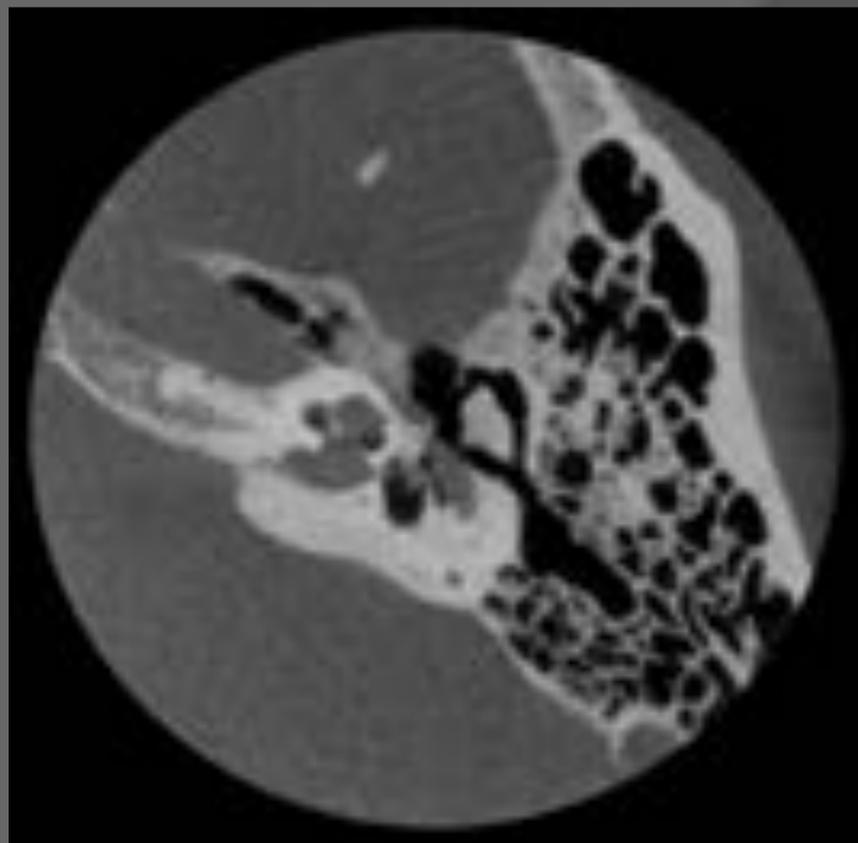


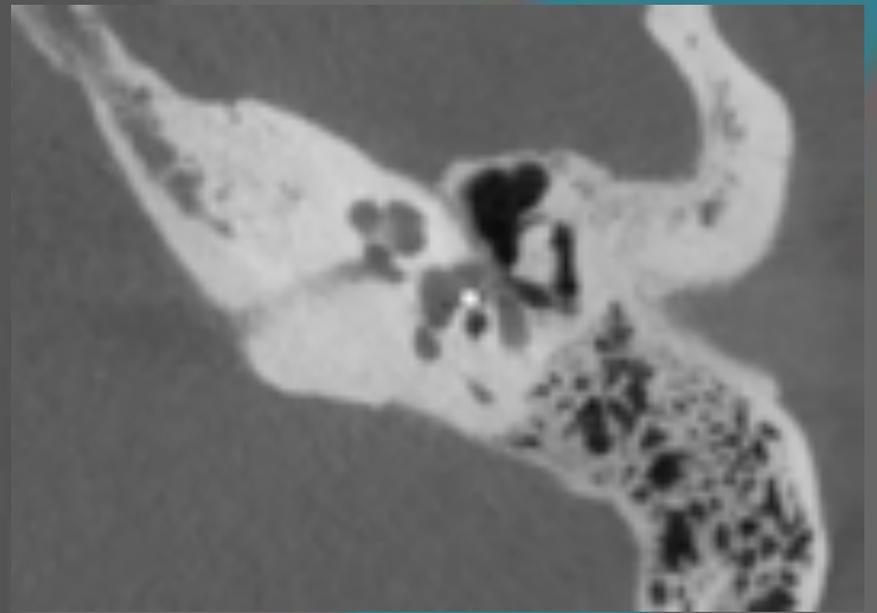
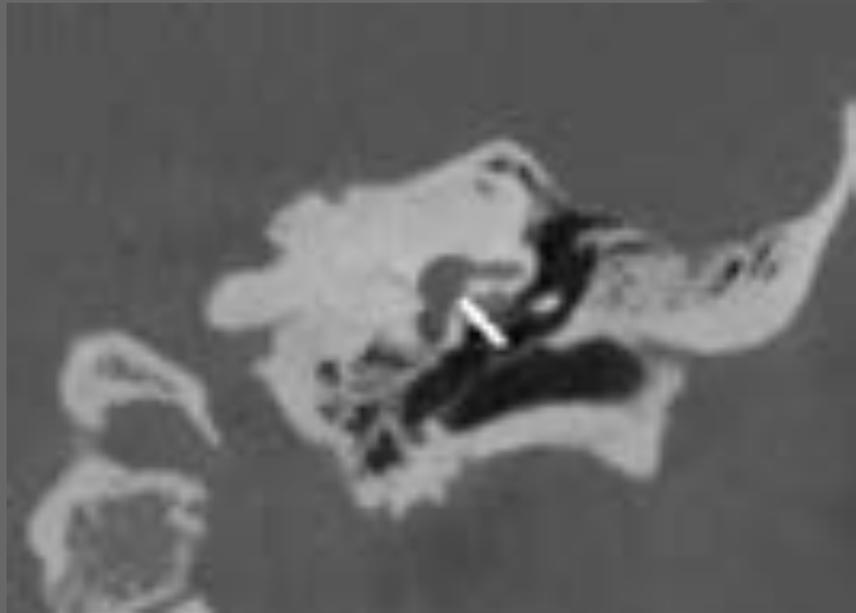
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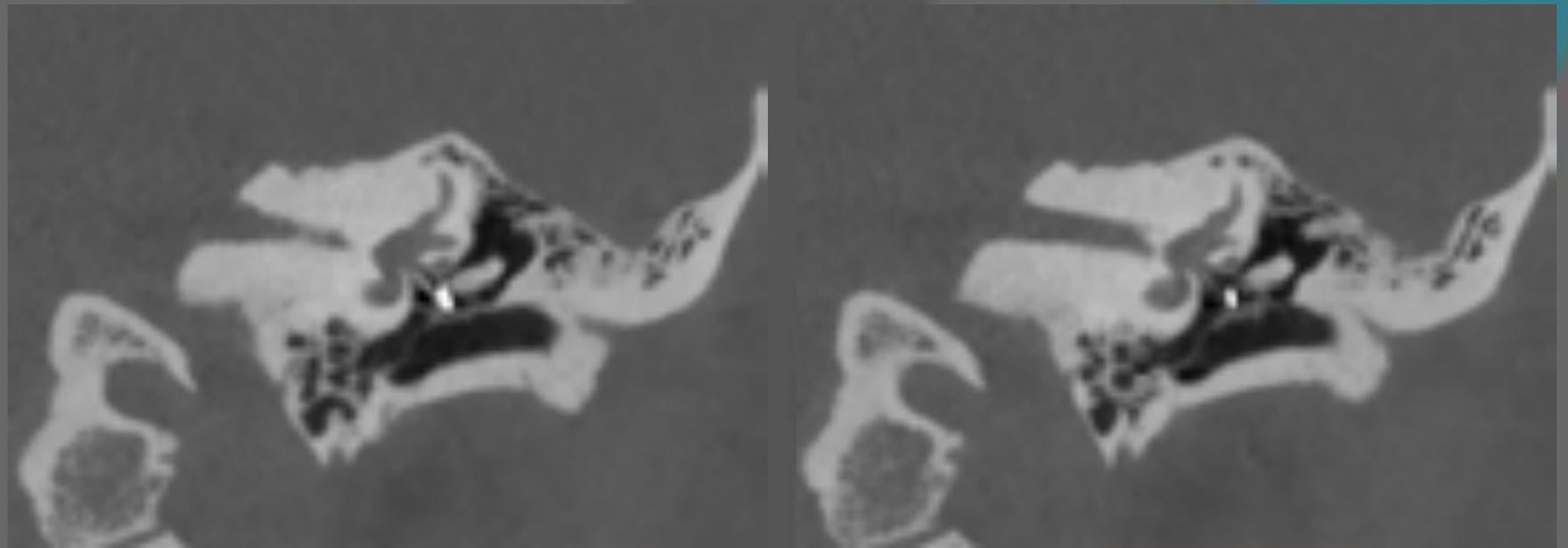


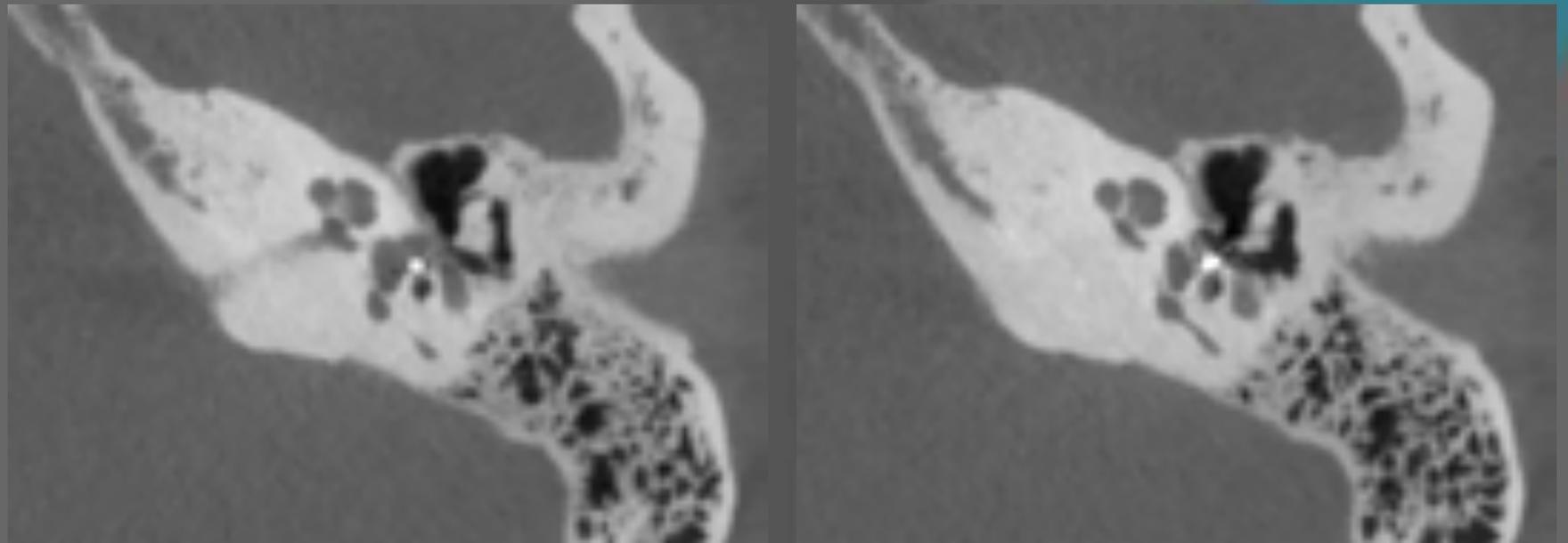


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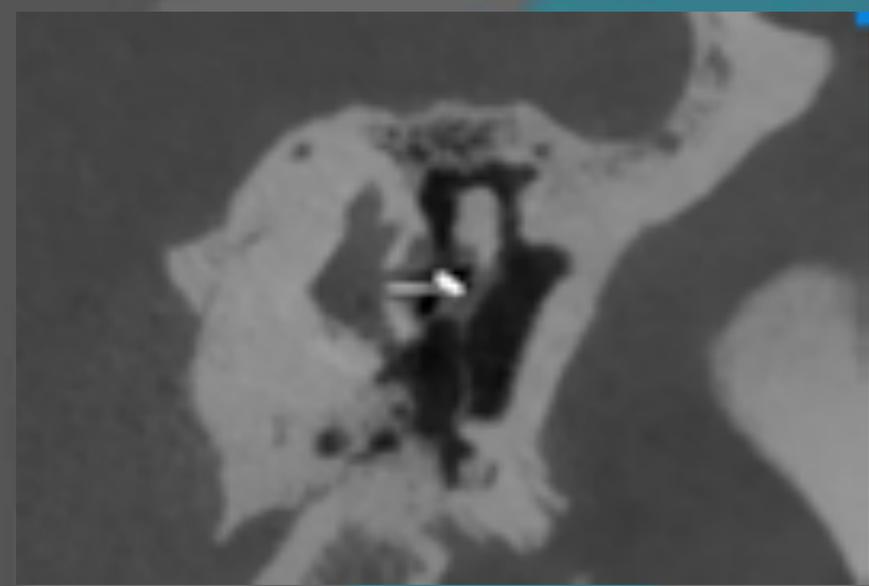
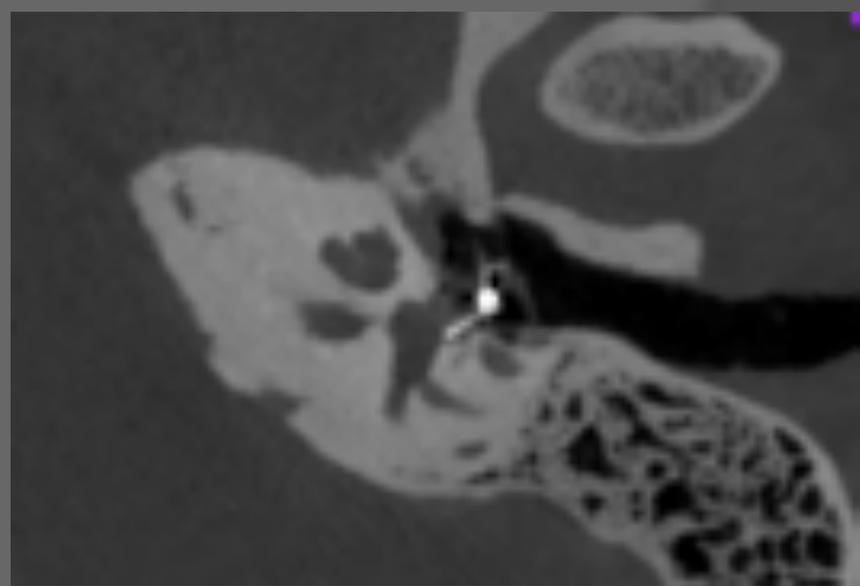


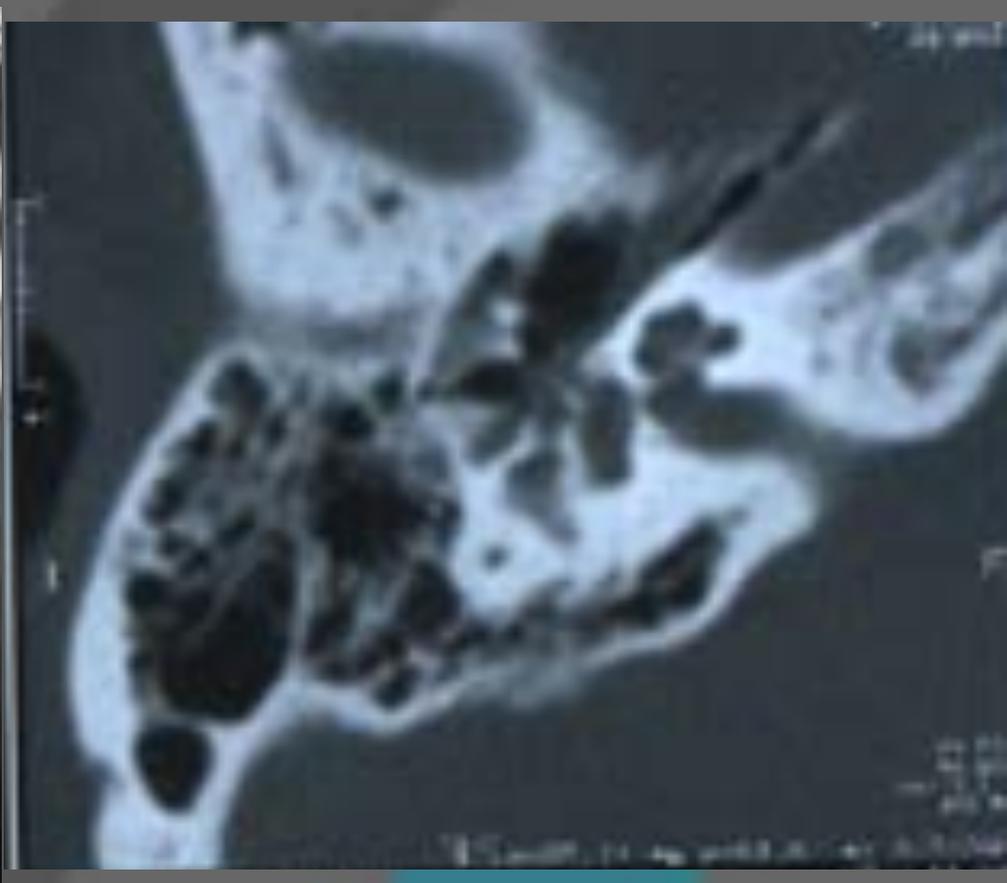
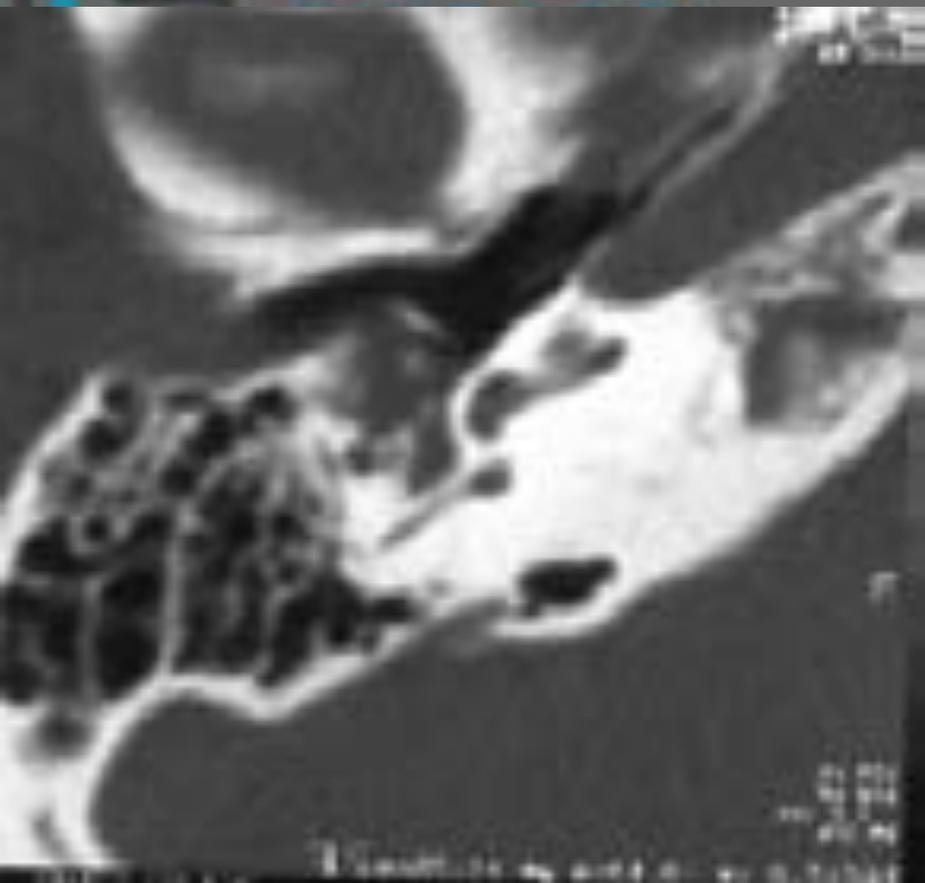






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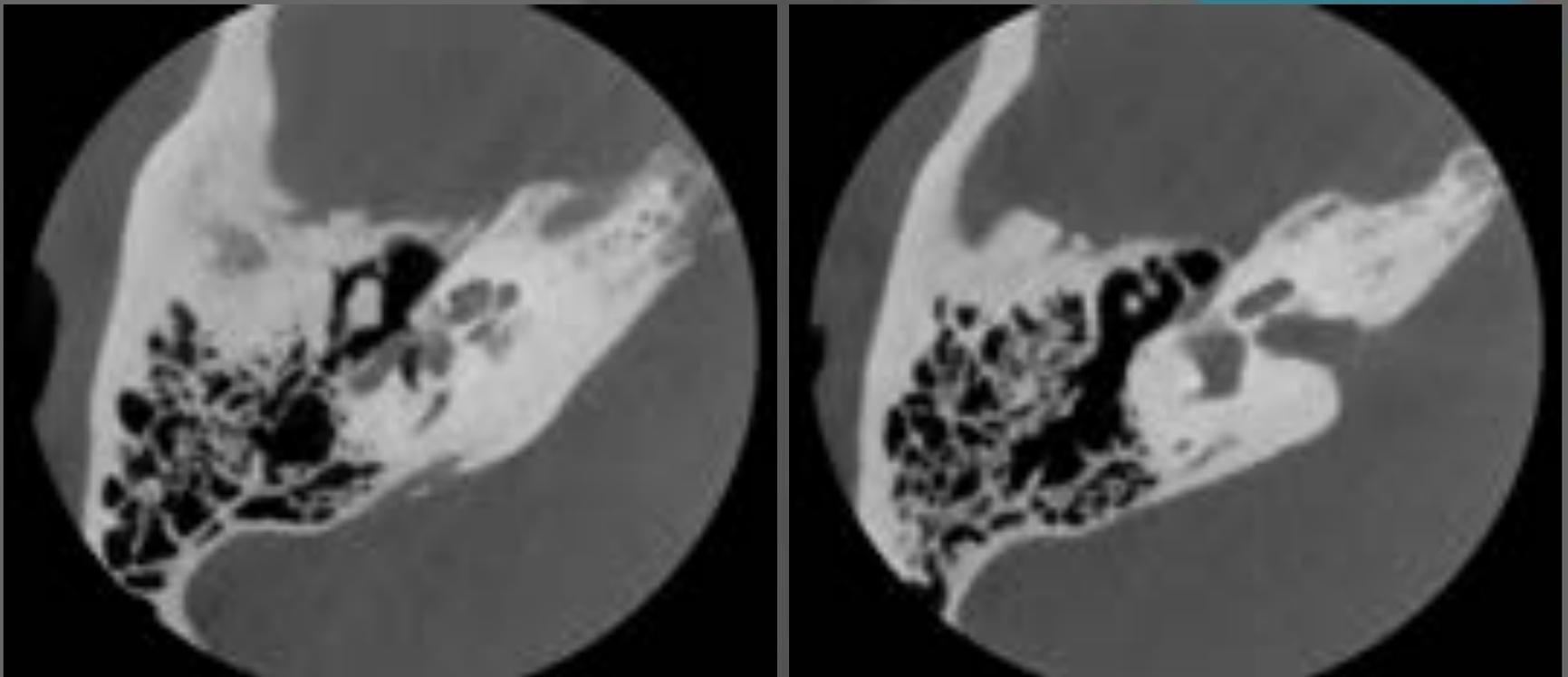


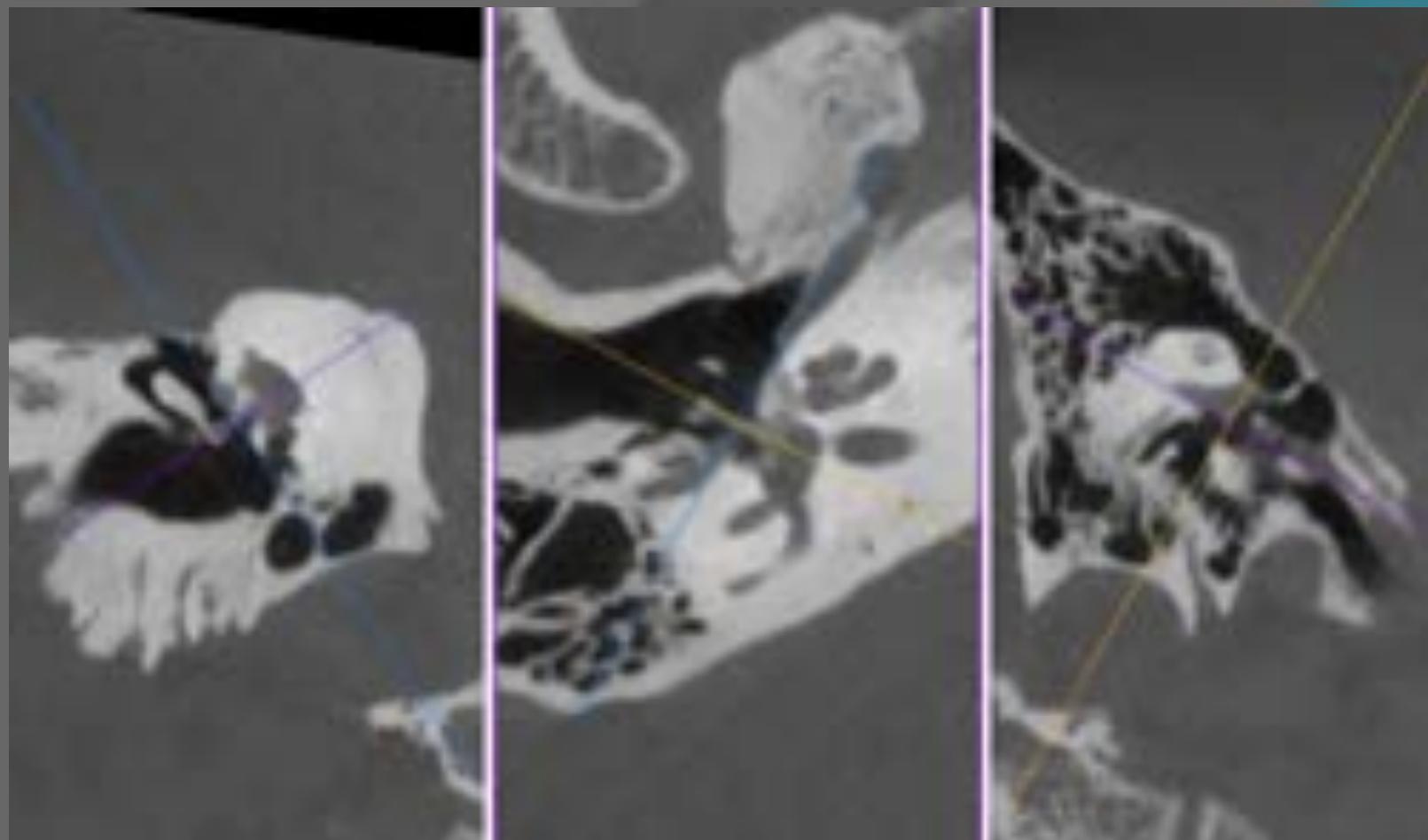
35 años .Estapedectomía  
con mal resultado funcional.

24

35 yo.

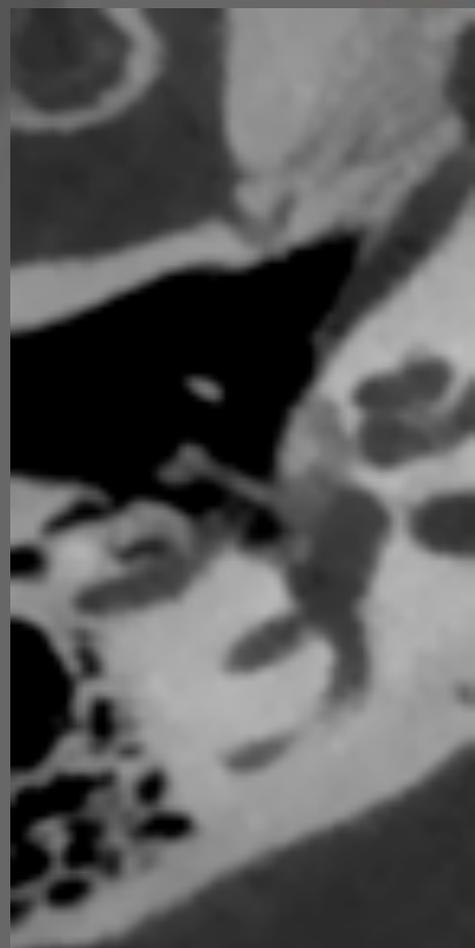
Stapedectomy with poor functional outcome







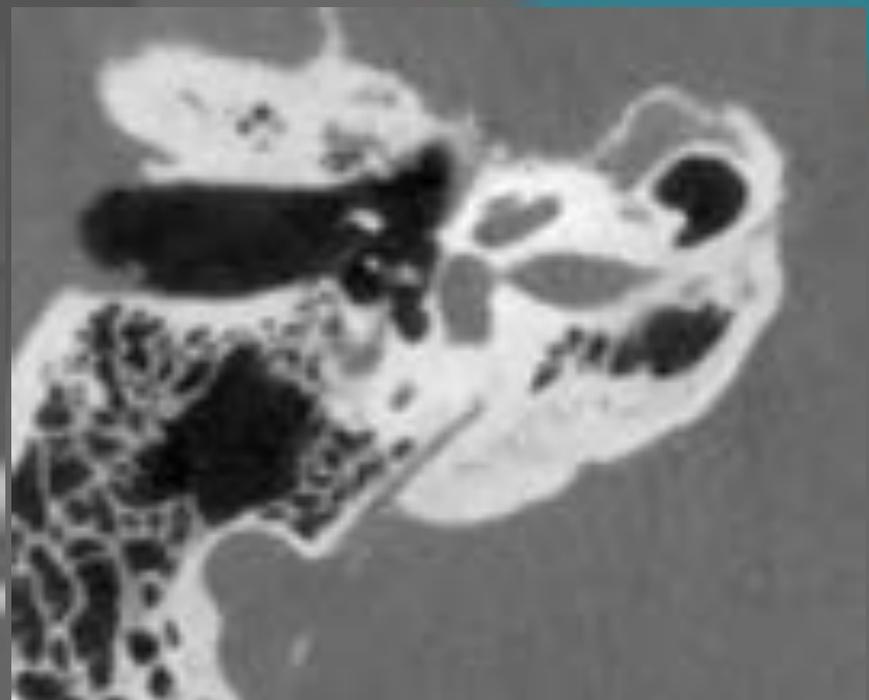
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- 22 años con hipoacusia de transmisión severa y otoscopia normal.
- No antecedentes quirúrgicos.
- 22 year old with severe conductive hearing loss and normal otoscopy exploration.
- No surgical history.

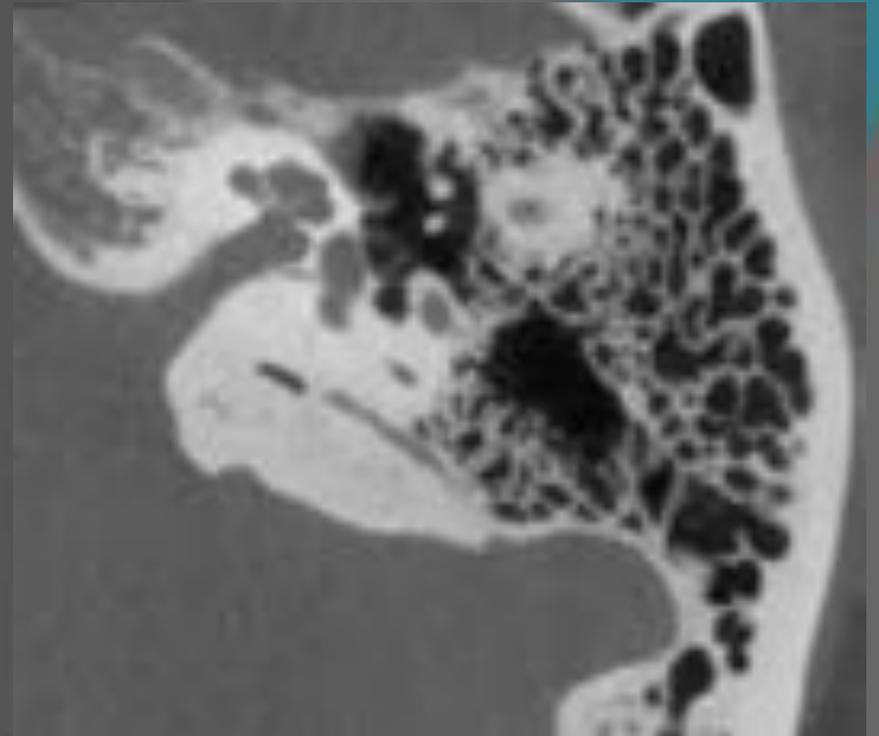
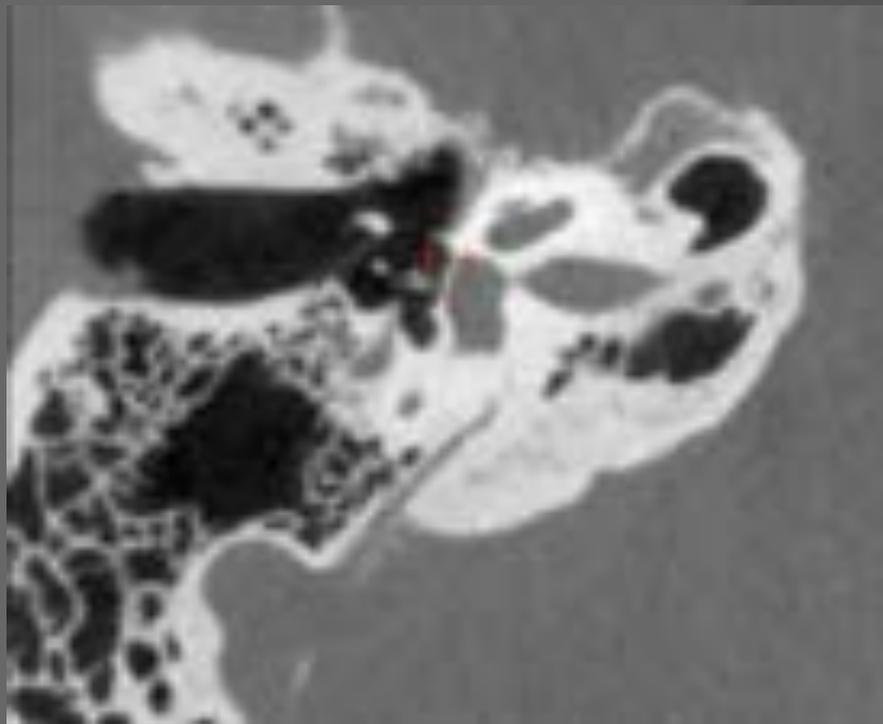


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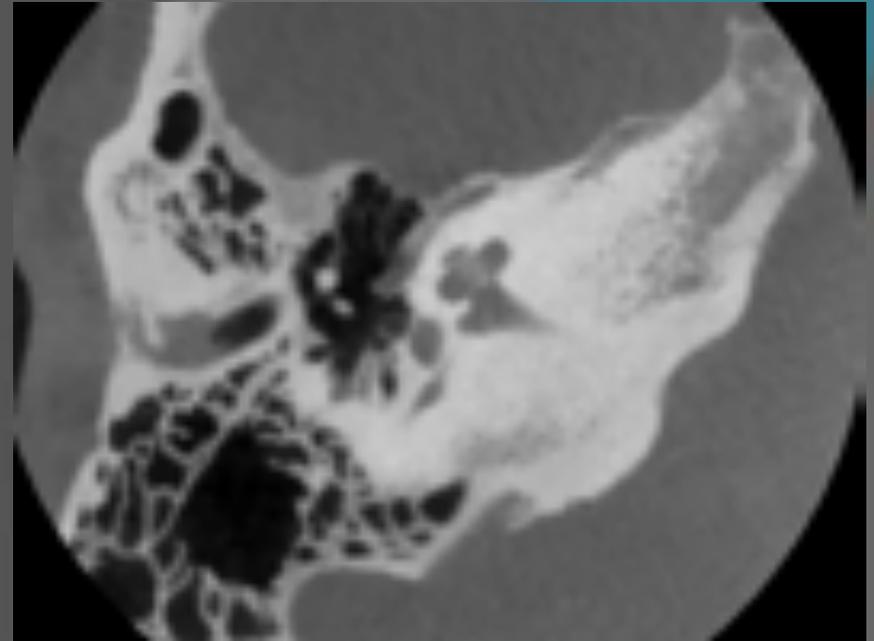
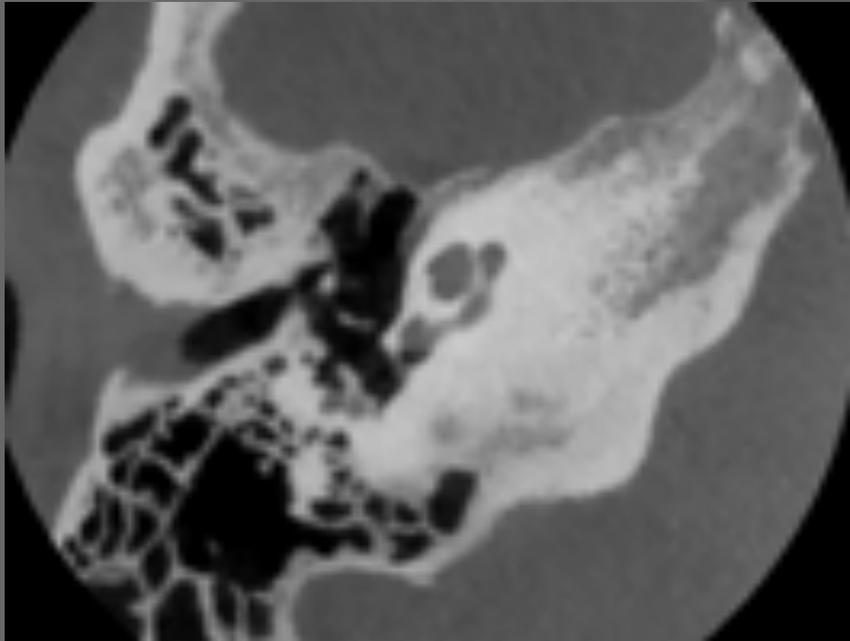
INSTITUTS  
GUIRADO





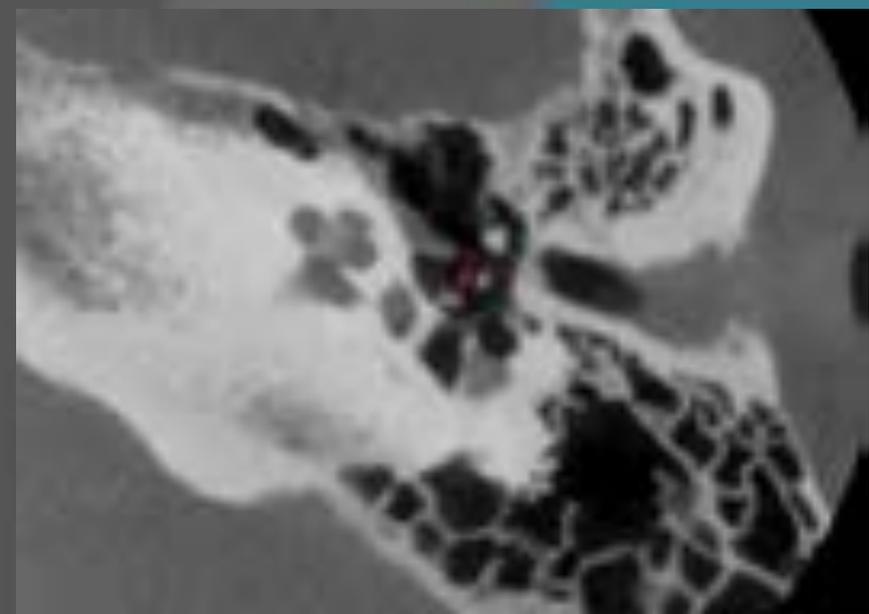
Hipoacusia de transmisión del oído izquierdo. 52 años.  
Left ear conductive hearing loss. 52 yo

17



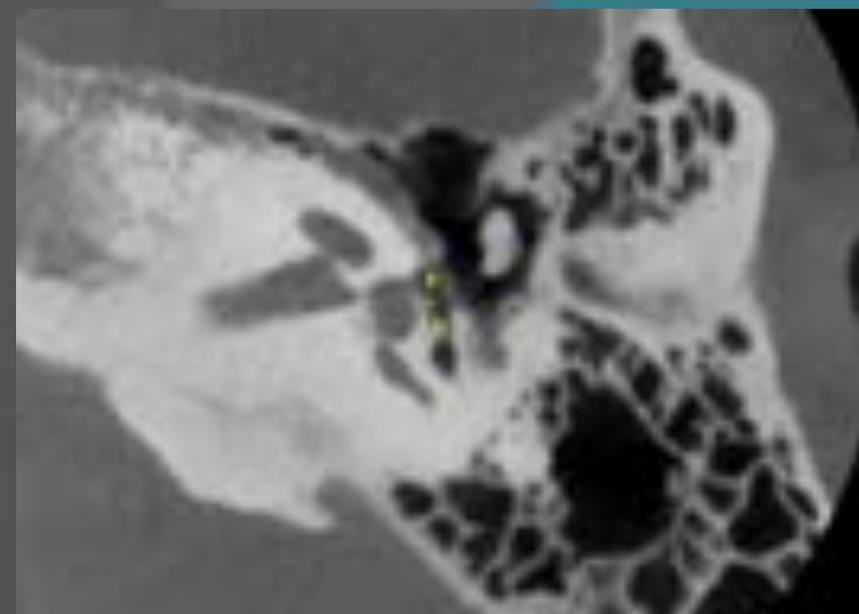
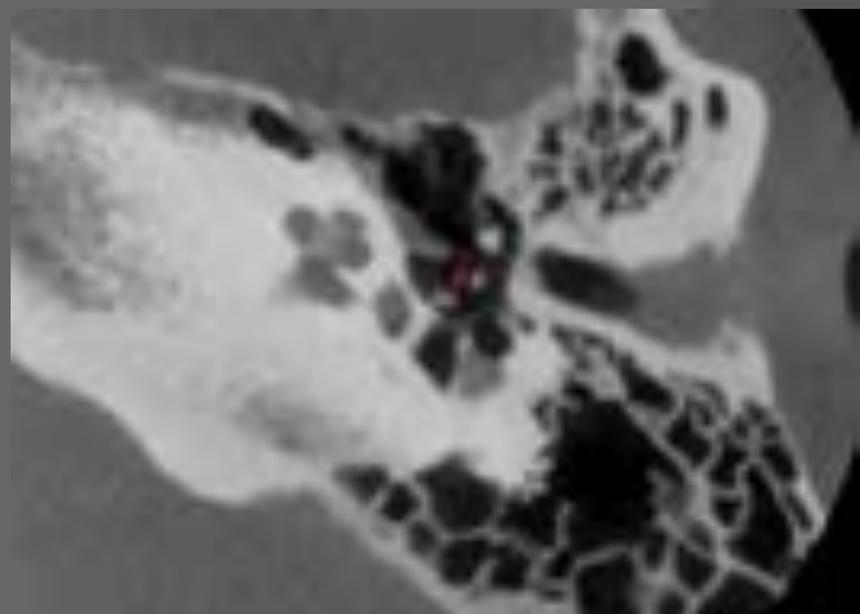


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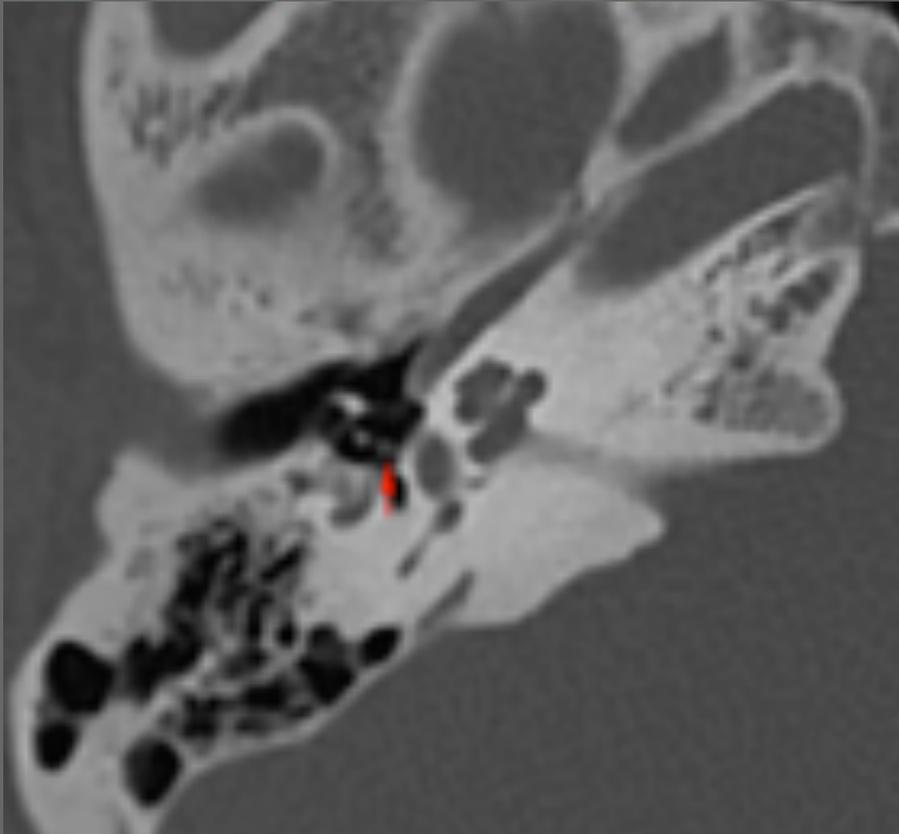


INSTITUTS  
GUIRADO

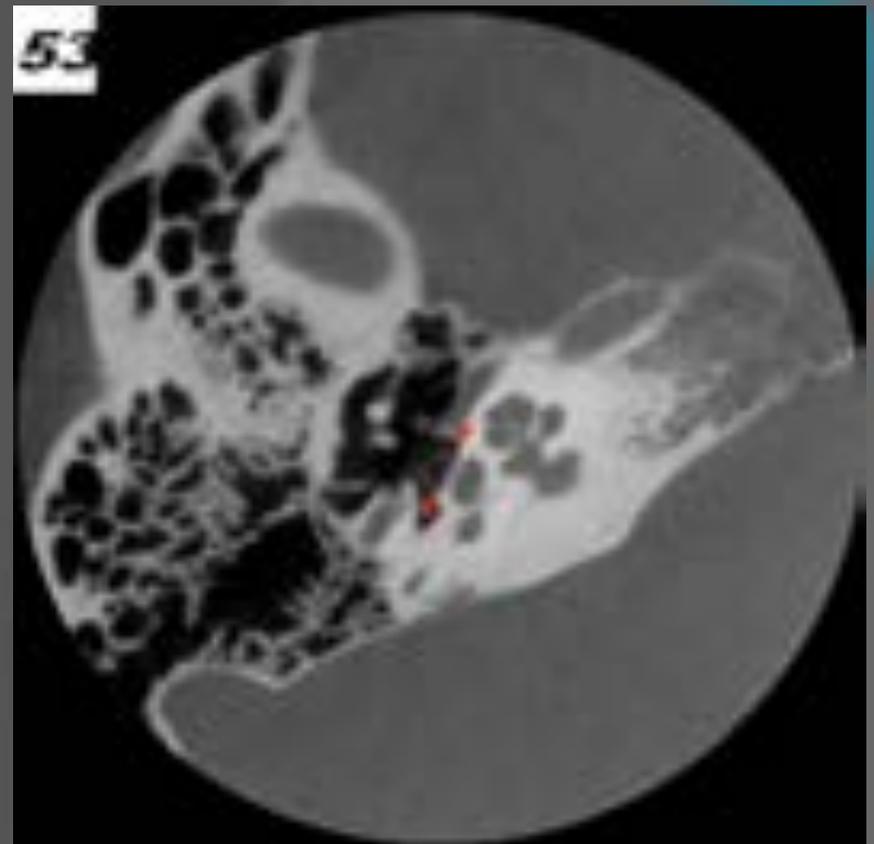


# Caso clínico

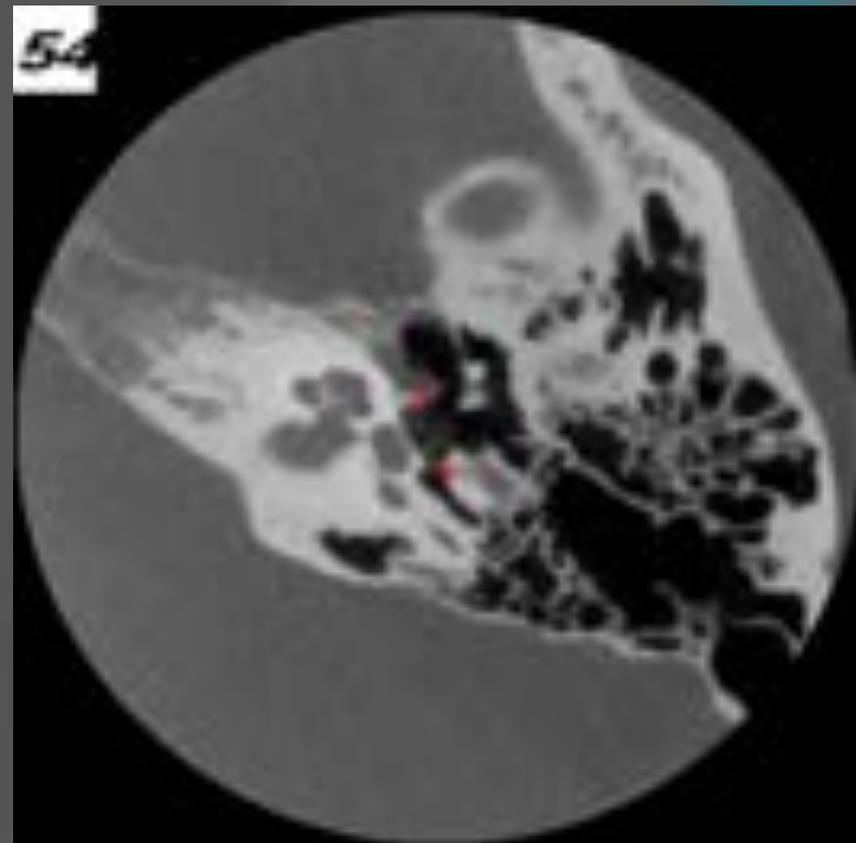
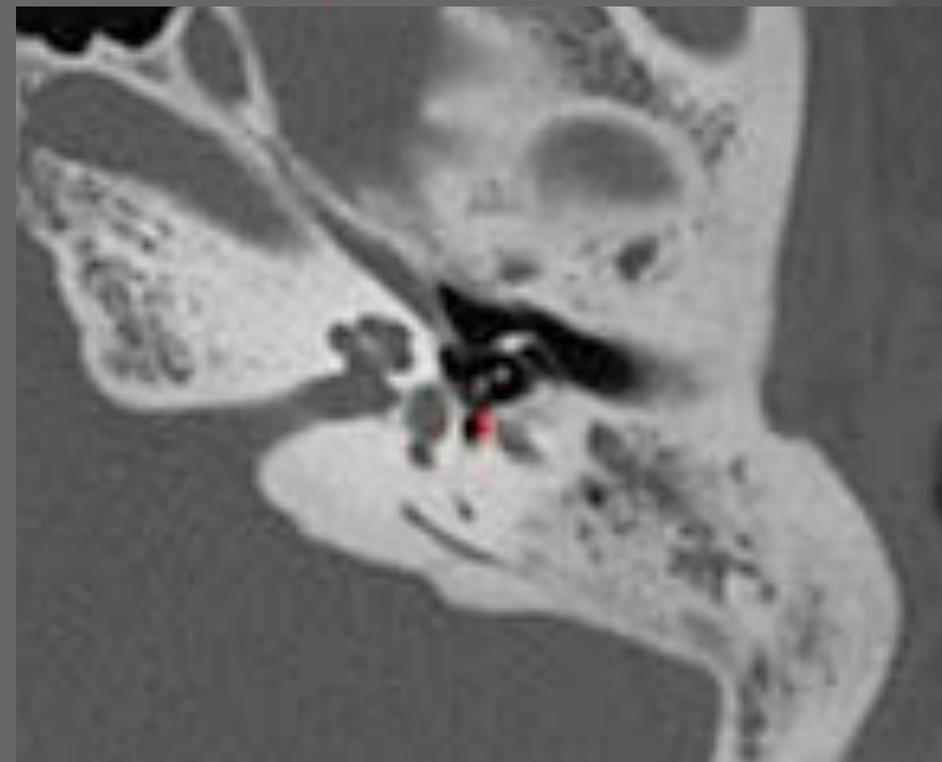
- Paciente de 17 años de edad, varón con antecedentes de otitis en la infancia.
- Hipoacusia severa de transmisión bilateral. 23
- Otoscopia sin hallazgos patológicos significativos.
- Motivo de la exploración: Valorar oído medio.
- 17 yo patient, male, with a history of childhood otitis media.
- Severe bilateral conductive hearing loss.
- Otoscopy with no remarkable pathological findings.



**Flecha roja señala crura monopodal.**  
**Red arrow points to the monopodal stapes.**



**Flechas rojas señalan la cruras de un paciente con estribo normal.**  
**Red arrows points to the normal stapes**



**Flecha roja señala la crura monopodal.  
Anteriormente vestigio de la crura  
Más anterior.**

**Flechas rojas señalan la cruras de un  
paciente con estribo normal.**

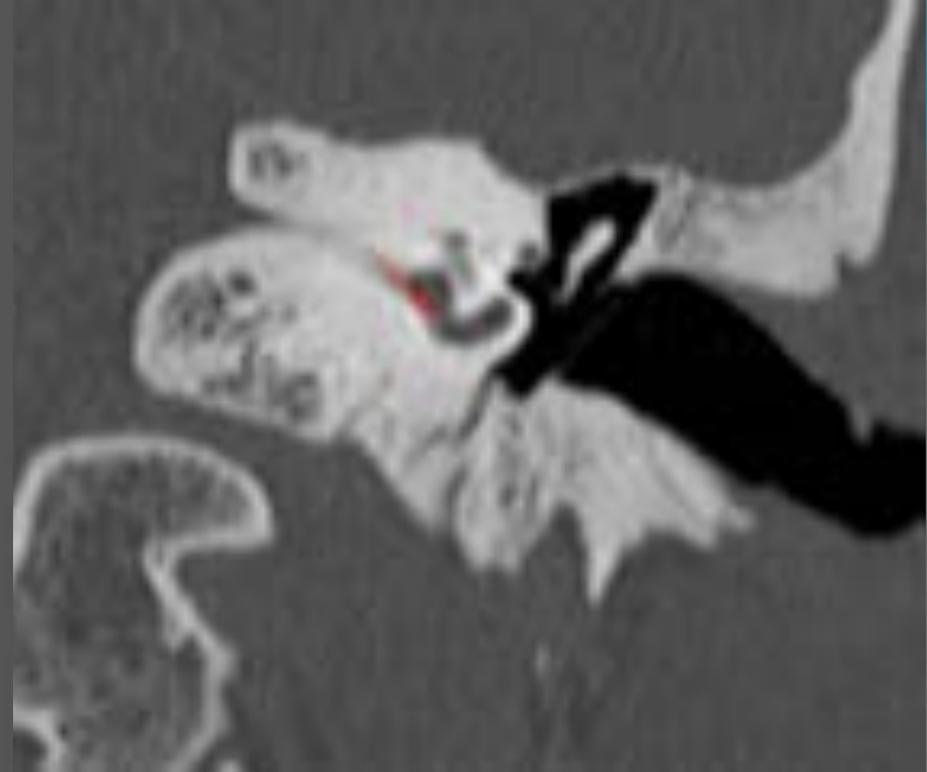
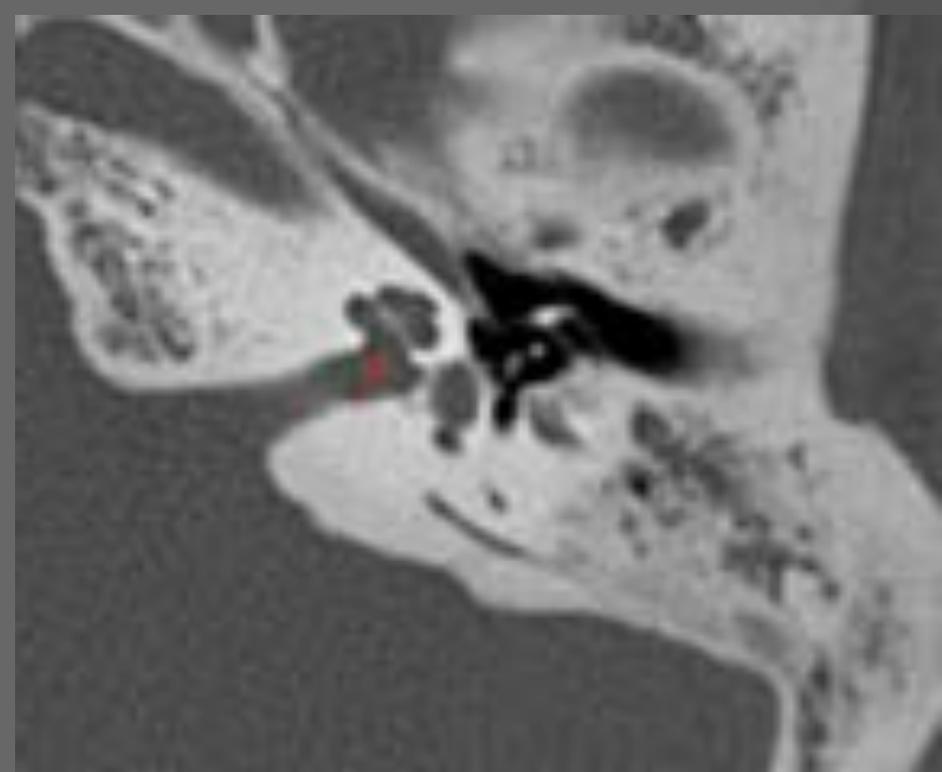
# Otros hallazgos

## Other findings



**Flecha señala canal coclear anormalmente amplio con ausencia de la lámina cribosa de la cóclea**  
**Arrow points to abnormally wide cochlear canal with absence of the cribriform plate of the cochlea**

# Otros hallazgos



**Flecha señala canal coclear anormalmente amplio con ausencia de la lámina cribosa de la cóclea**  
**Arrow points to abnormally wide cochlear canal with absence of the cribriform plate of the cochlea**

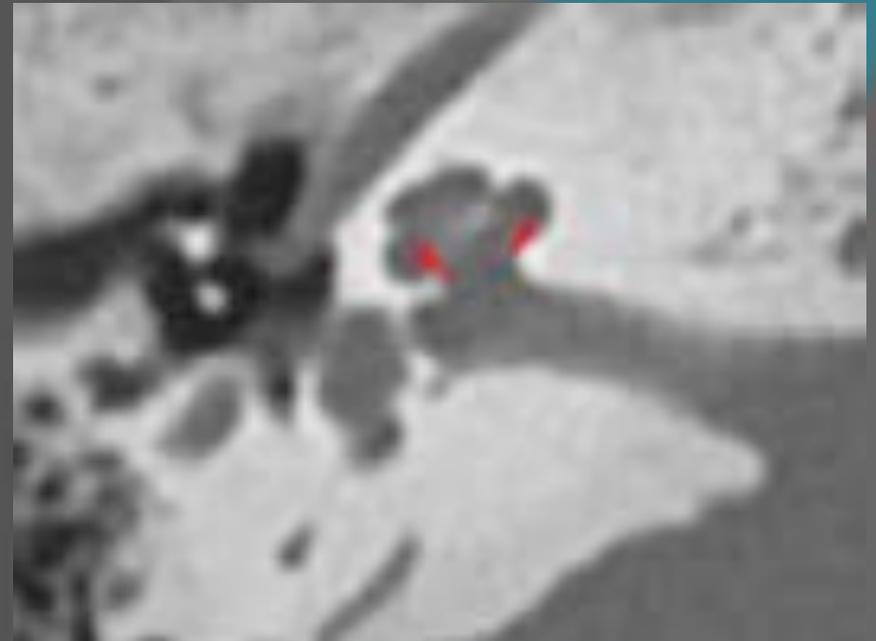
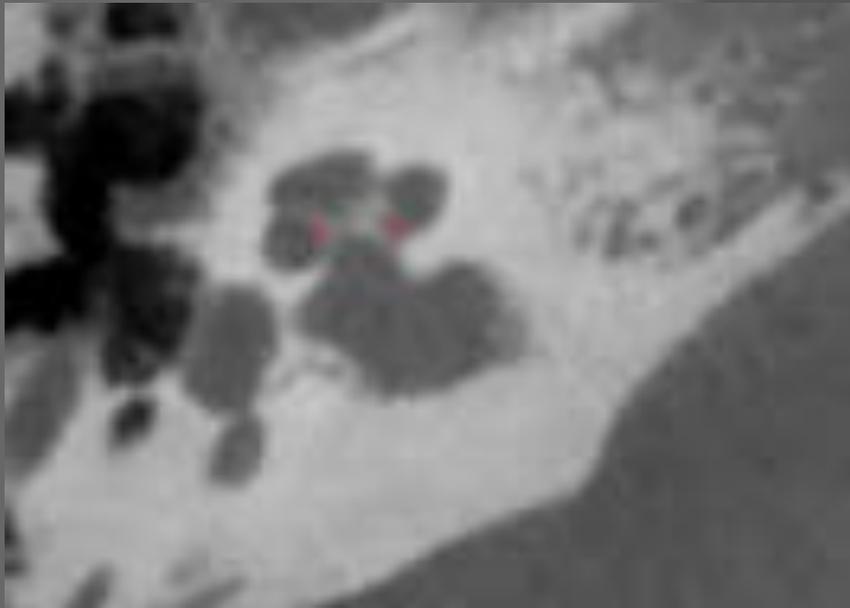


Lámina cribosa de la cóclea normal.  
**Normal cribriform plate of the cochlea.**

Ausencia de lámina cribosa de la cóclea.  
**Absence of the cribriform plate of the cochlea**

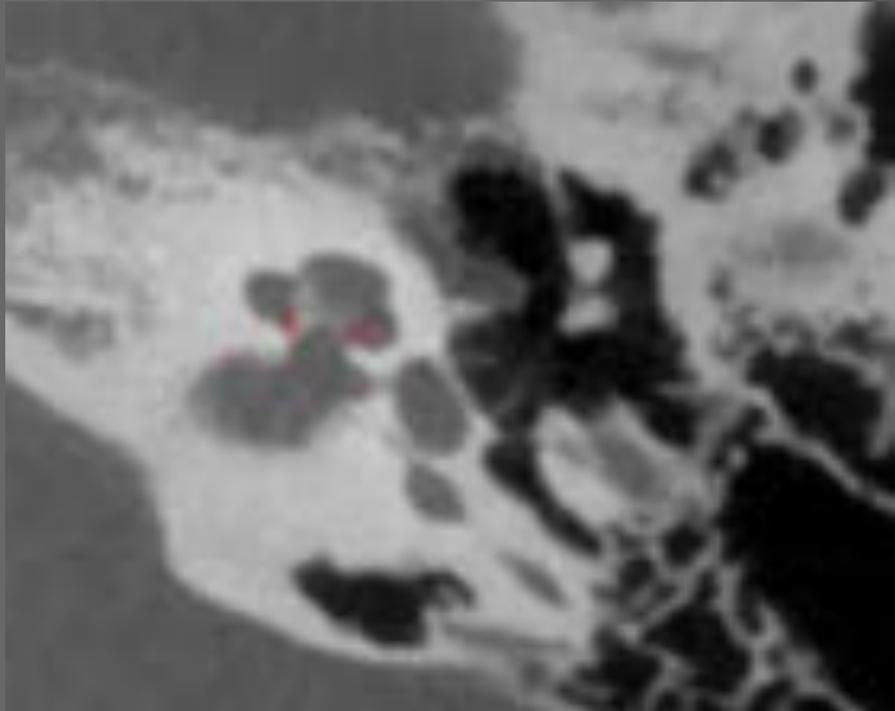
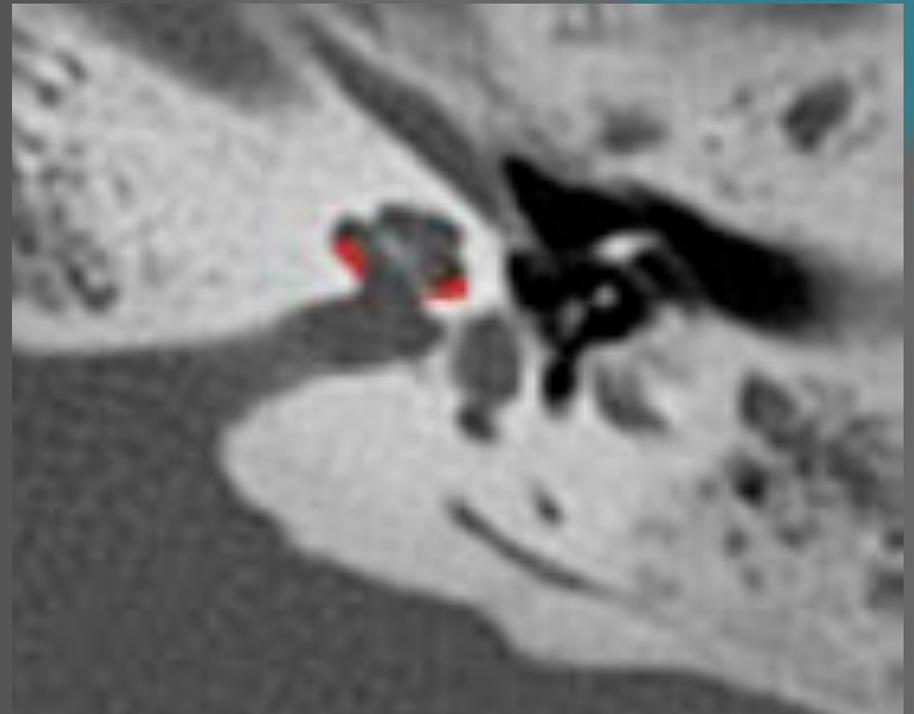


Lámina cribosa de la cóclea normal.  
Normal cribriform plate of the cochlea.



Ausencia de lámina cribosa de la cóclea.  
Absence of the cribriform plate of the cochlea

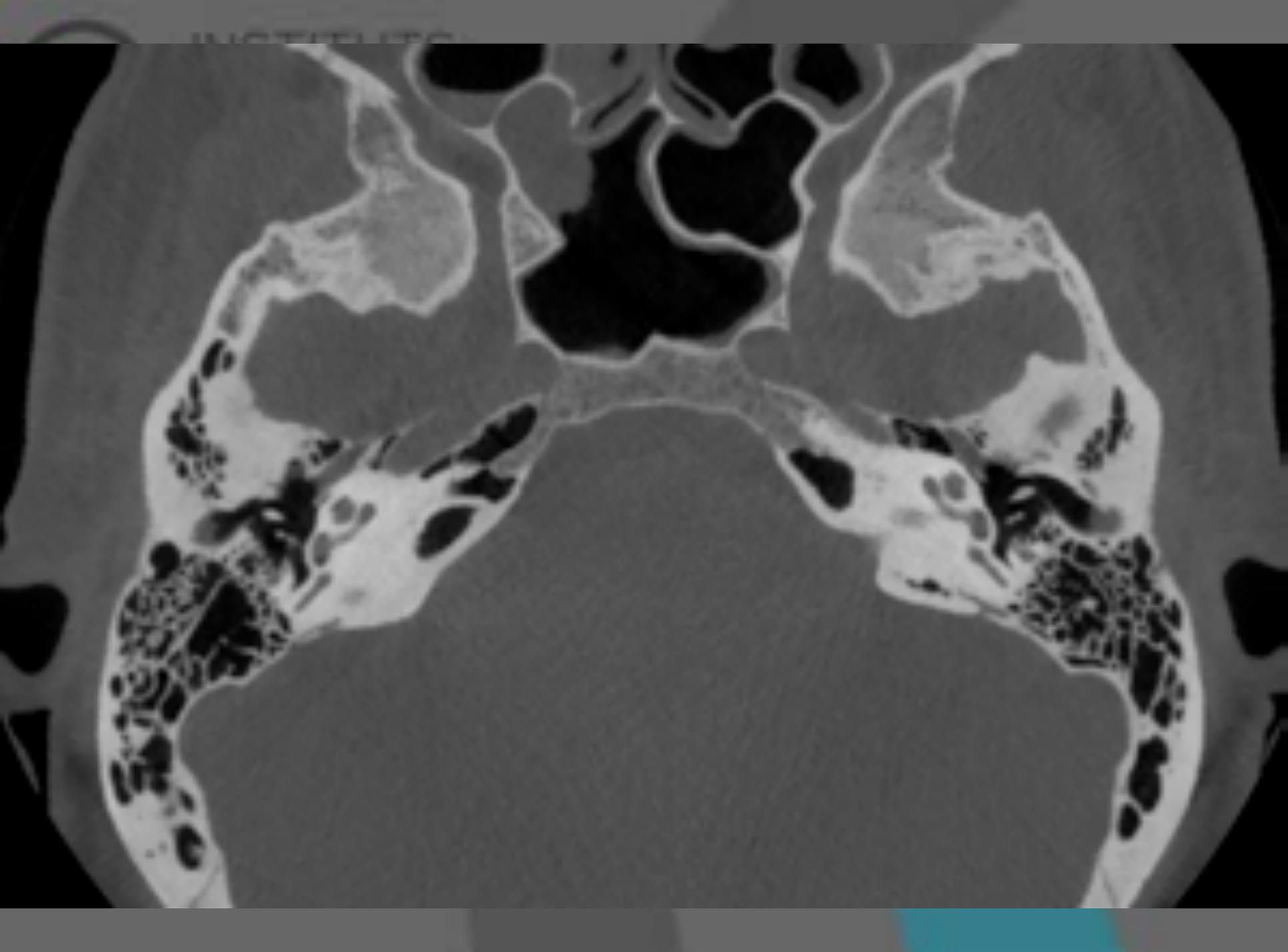
17 años de edad.

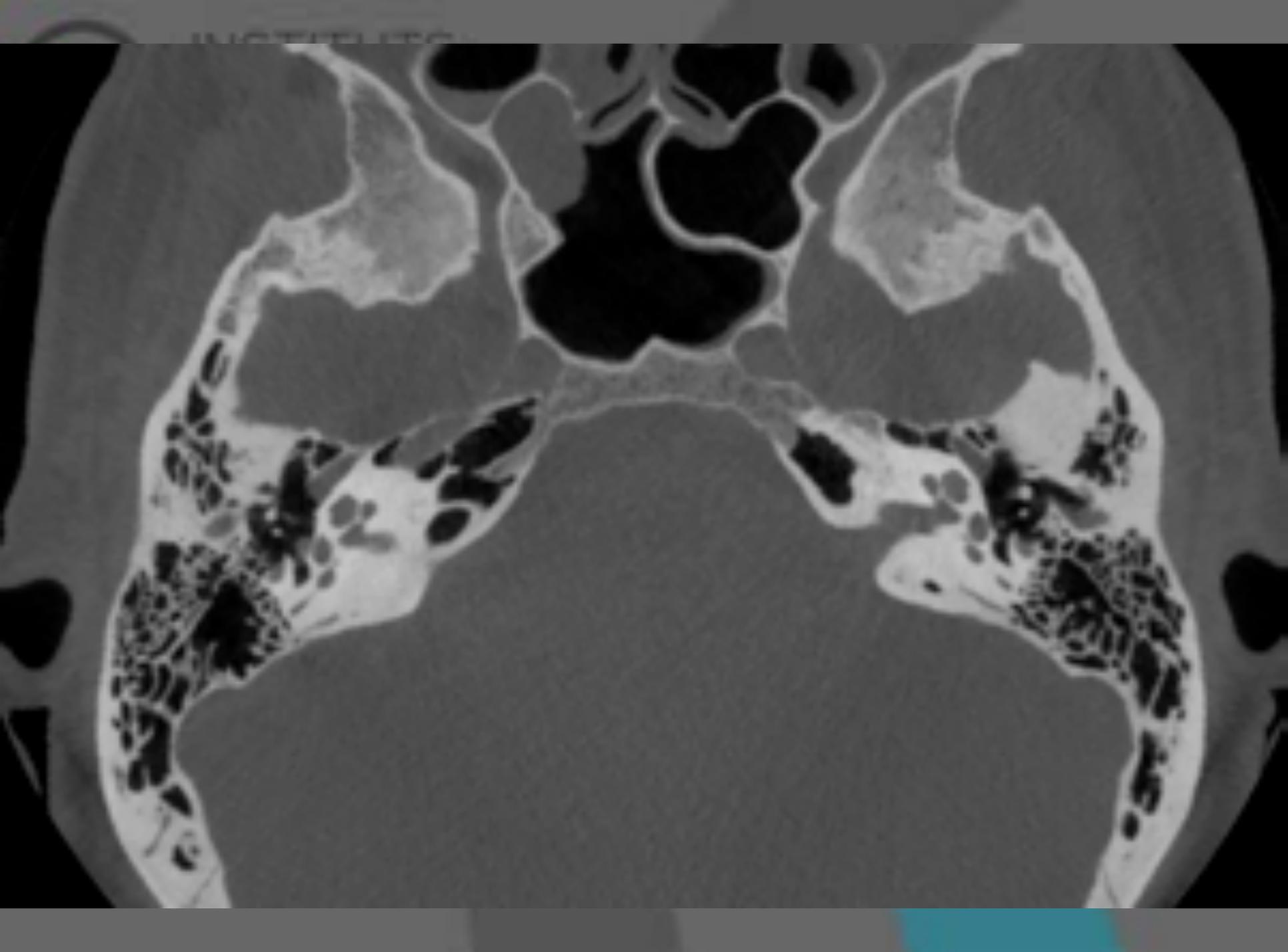
Hipoacusia de transmisión severa.

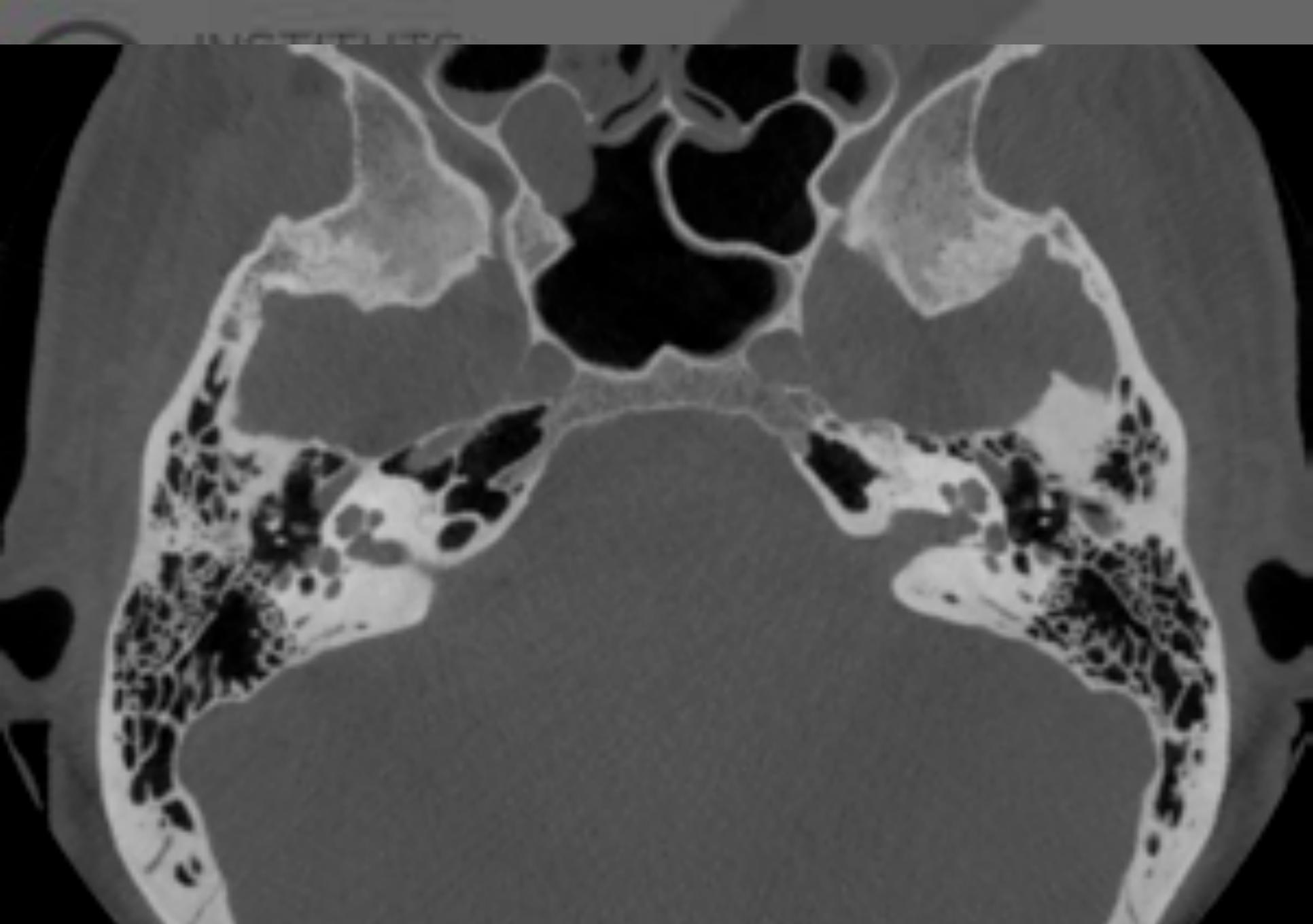
No antecedentes óticos.

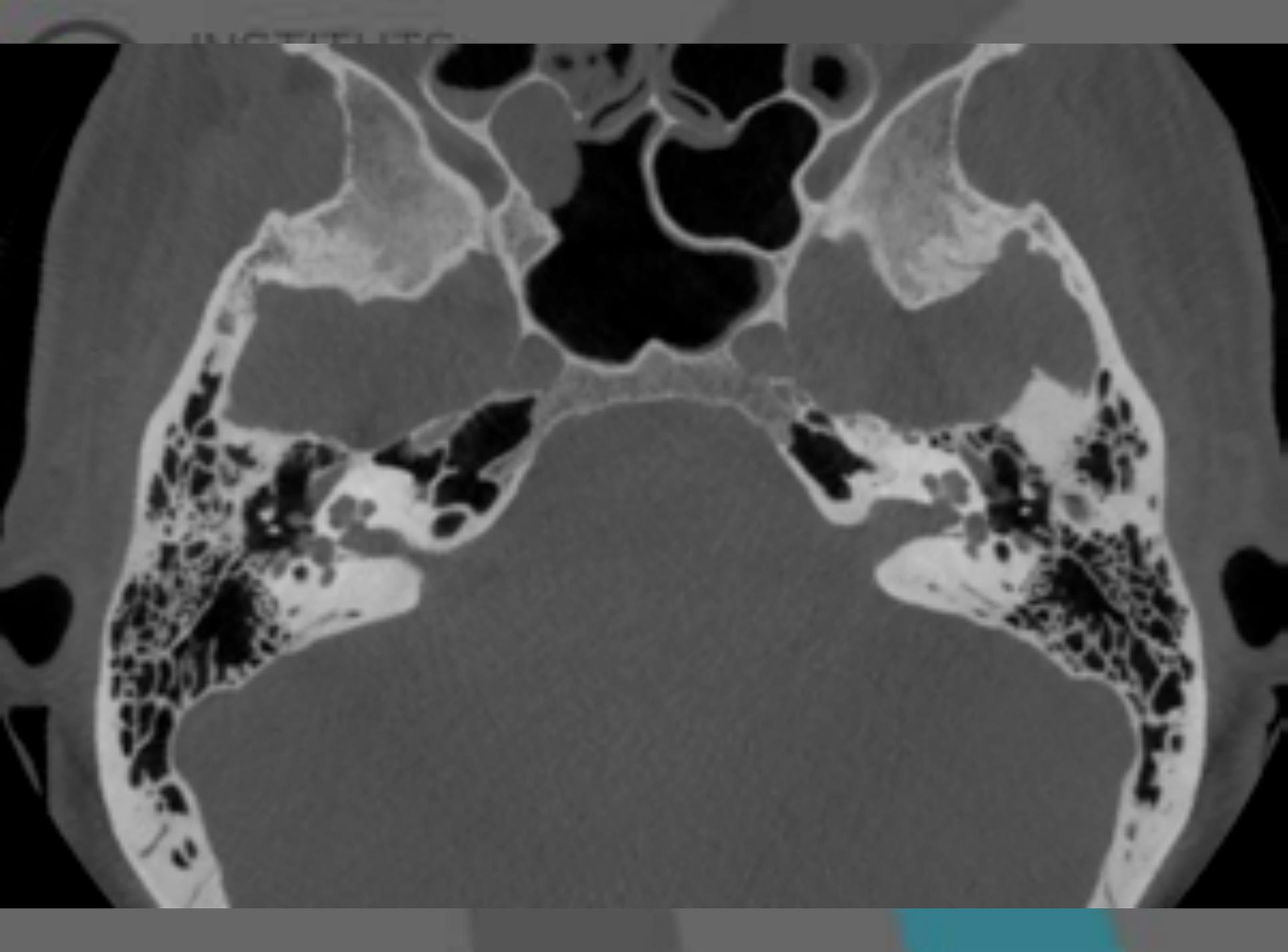
Otoscopia normal.

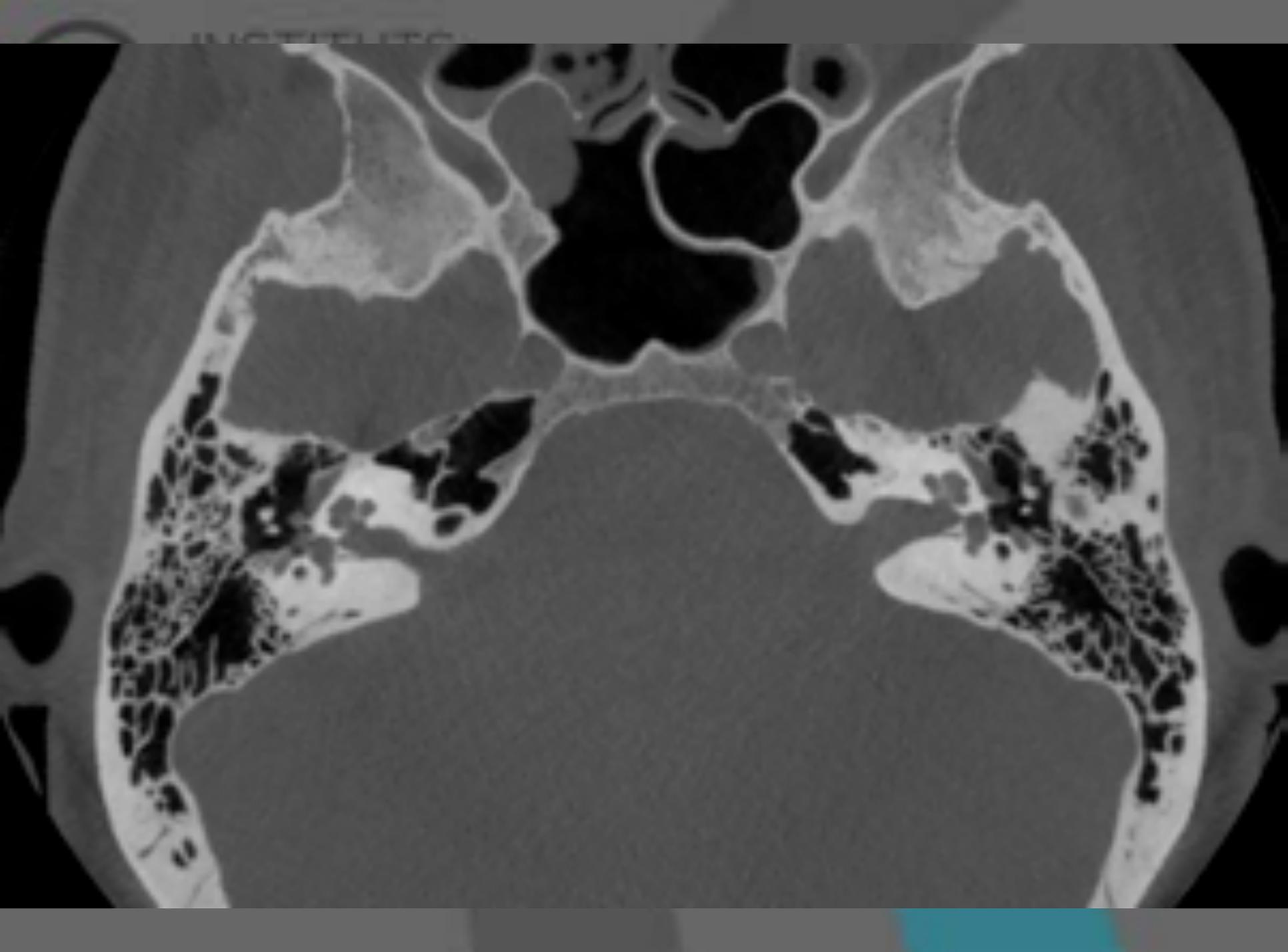
Reflejos acústicos alterados

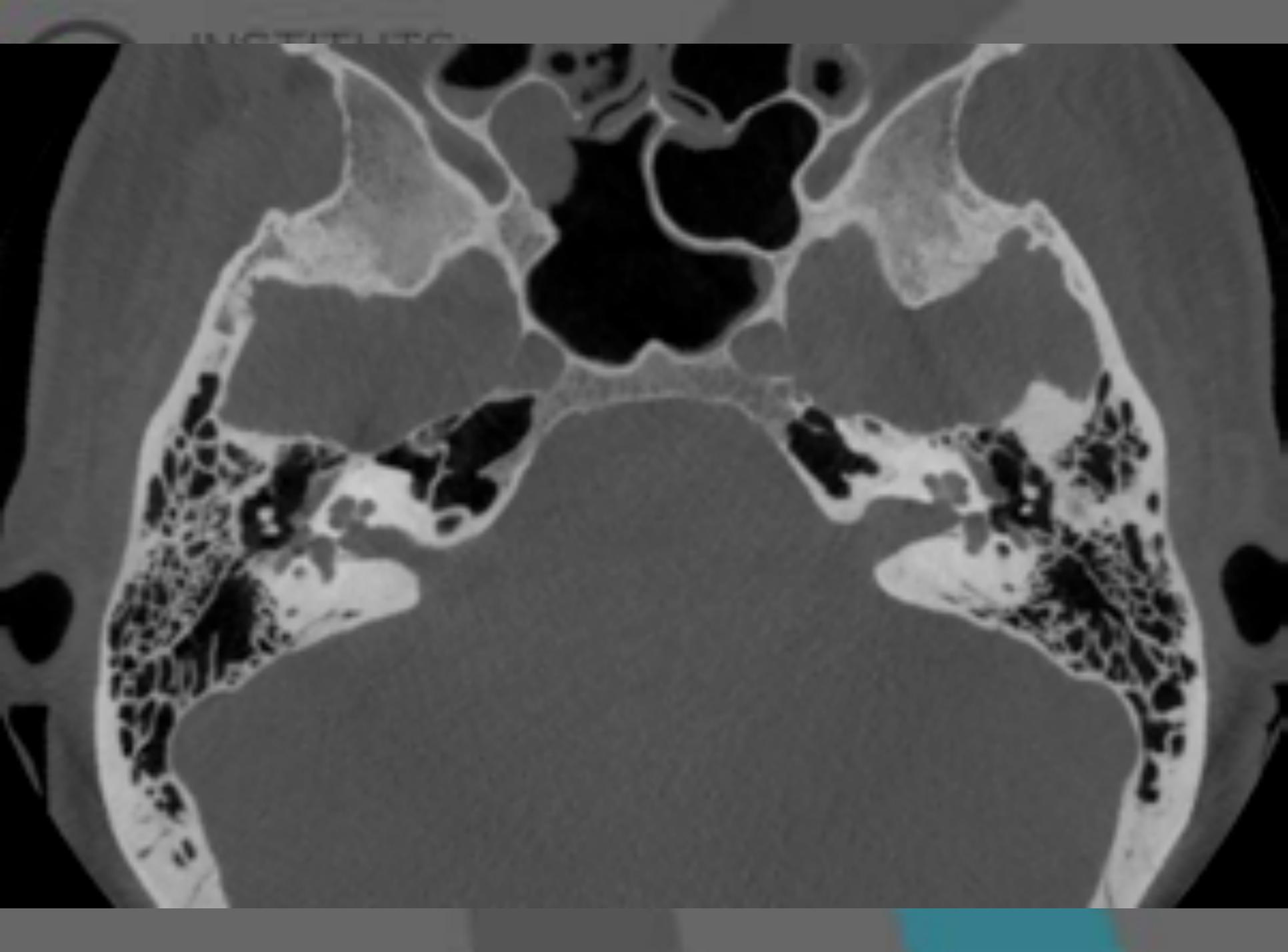


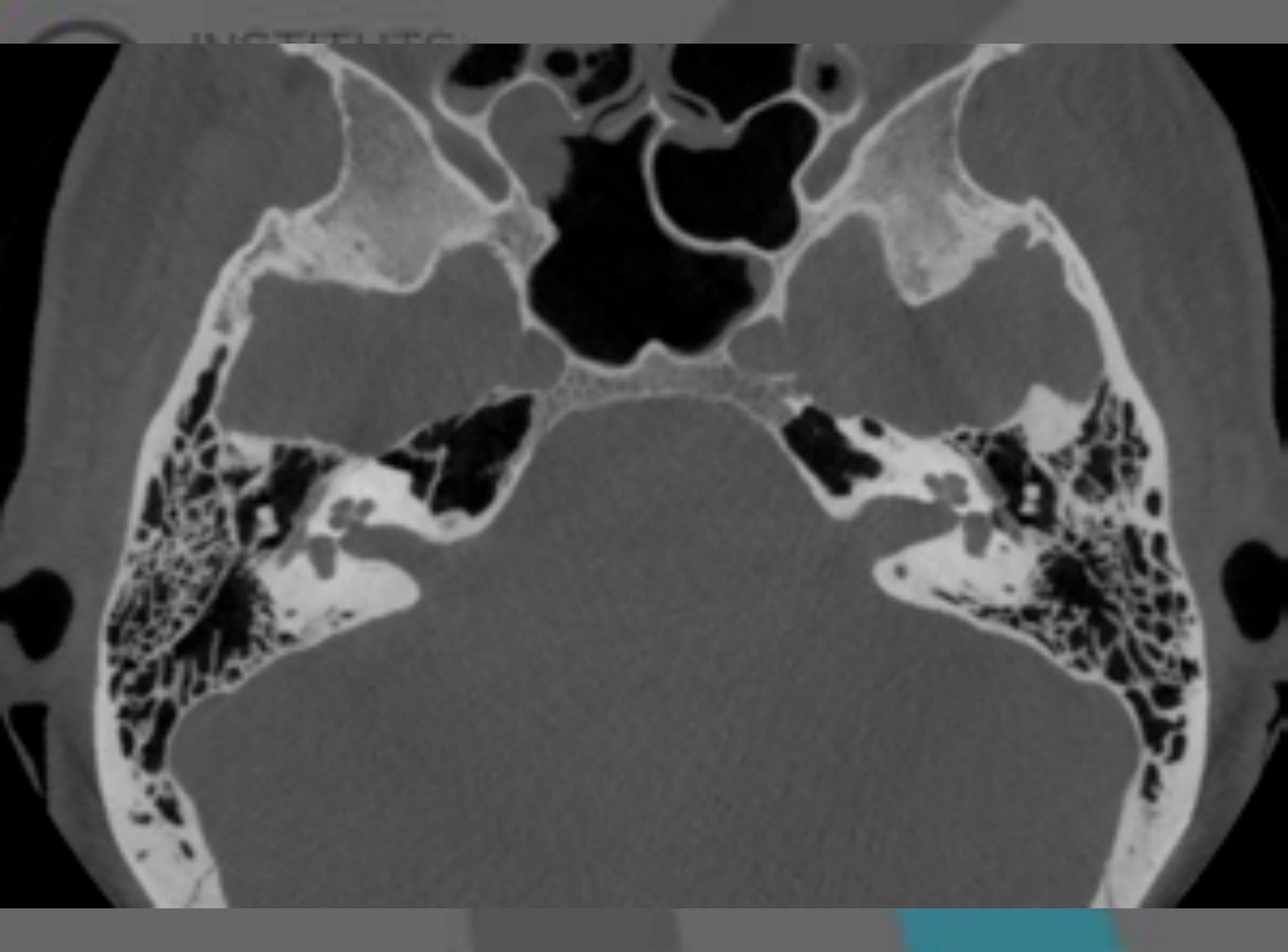






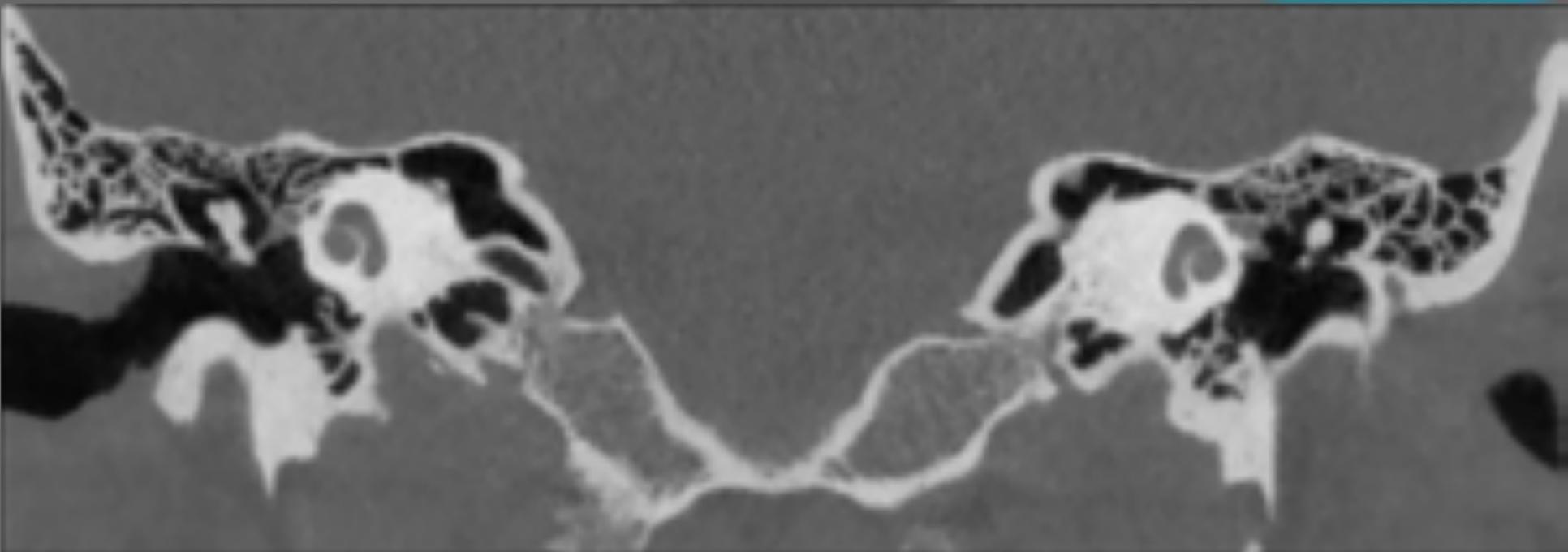






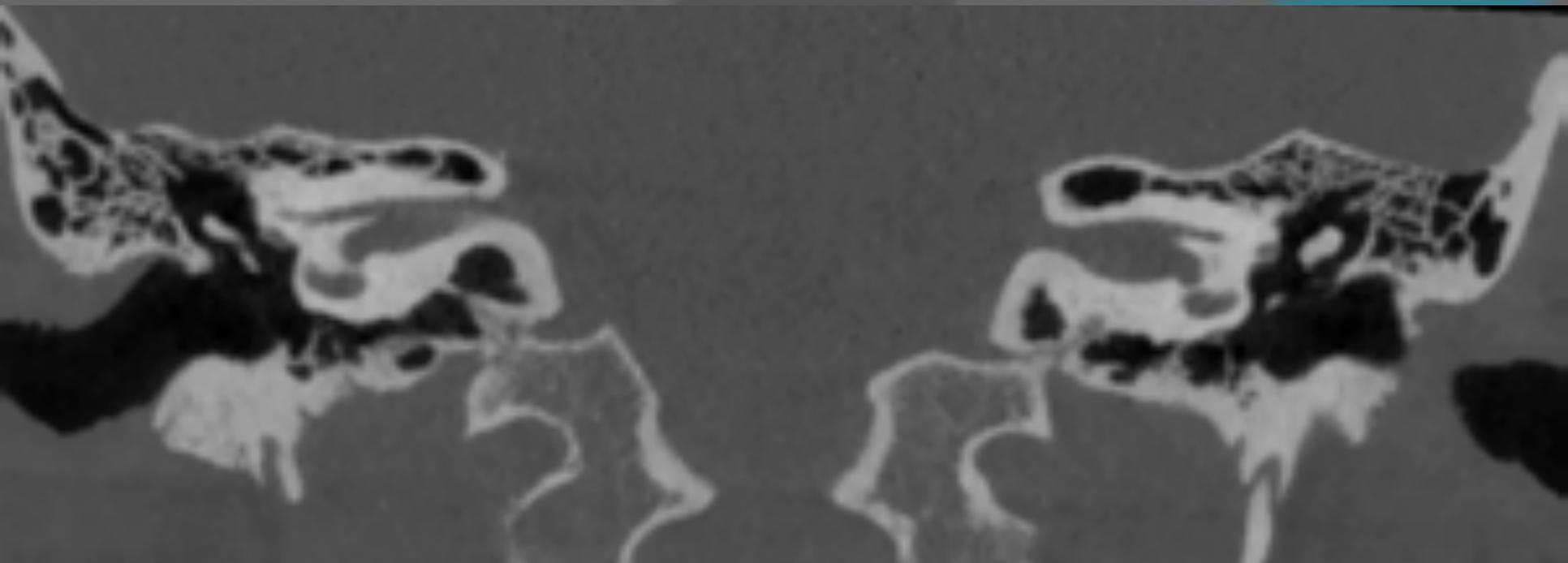


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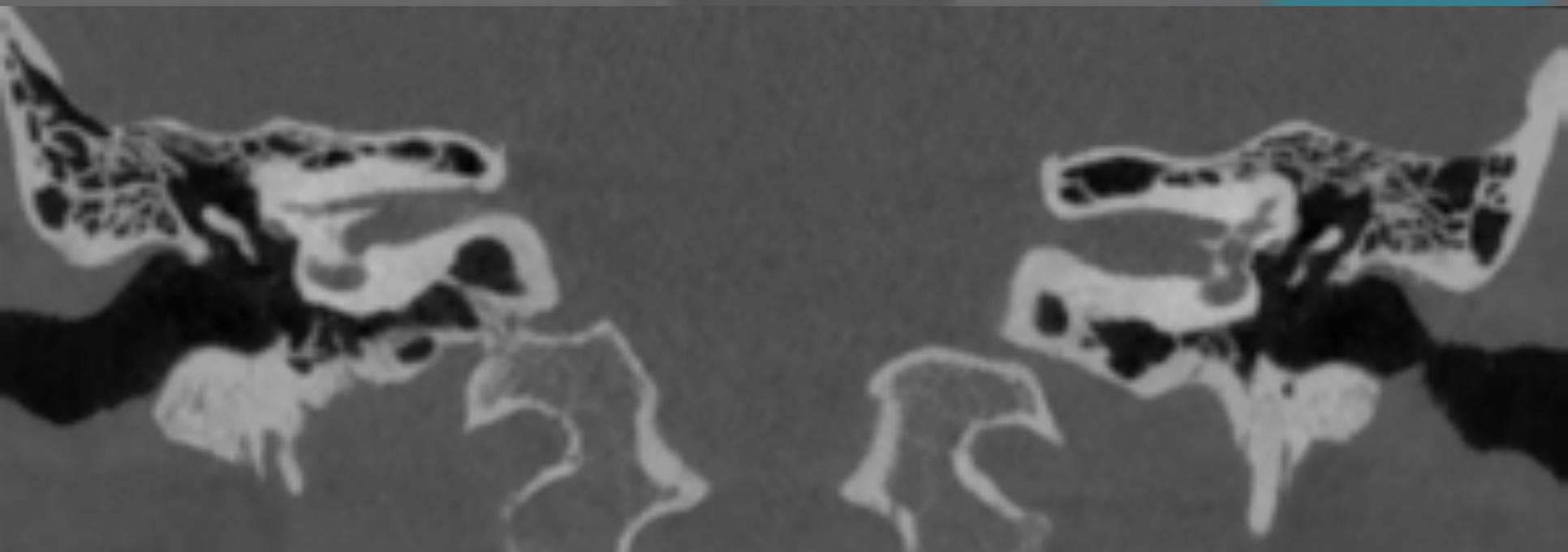


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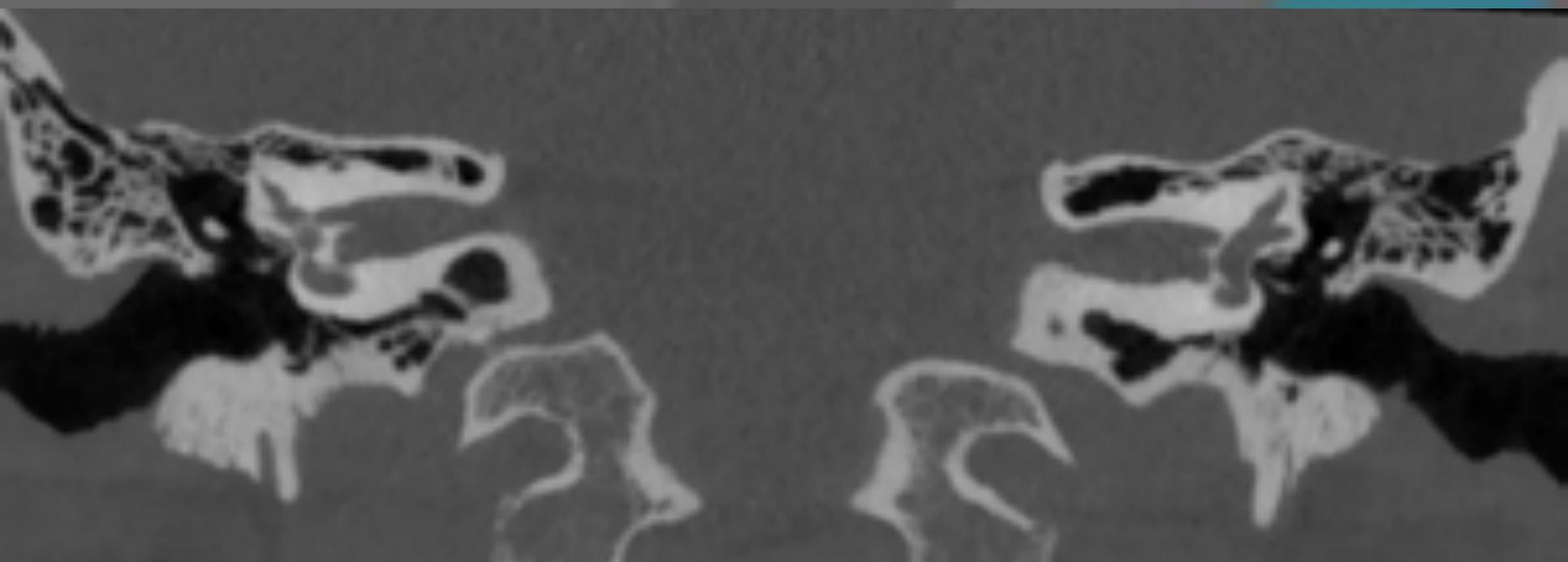


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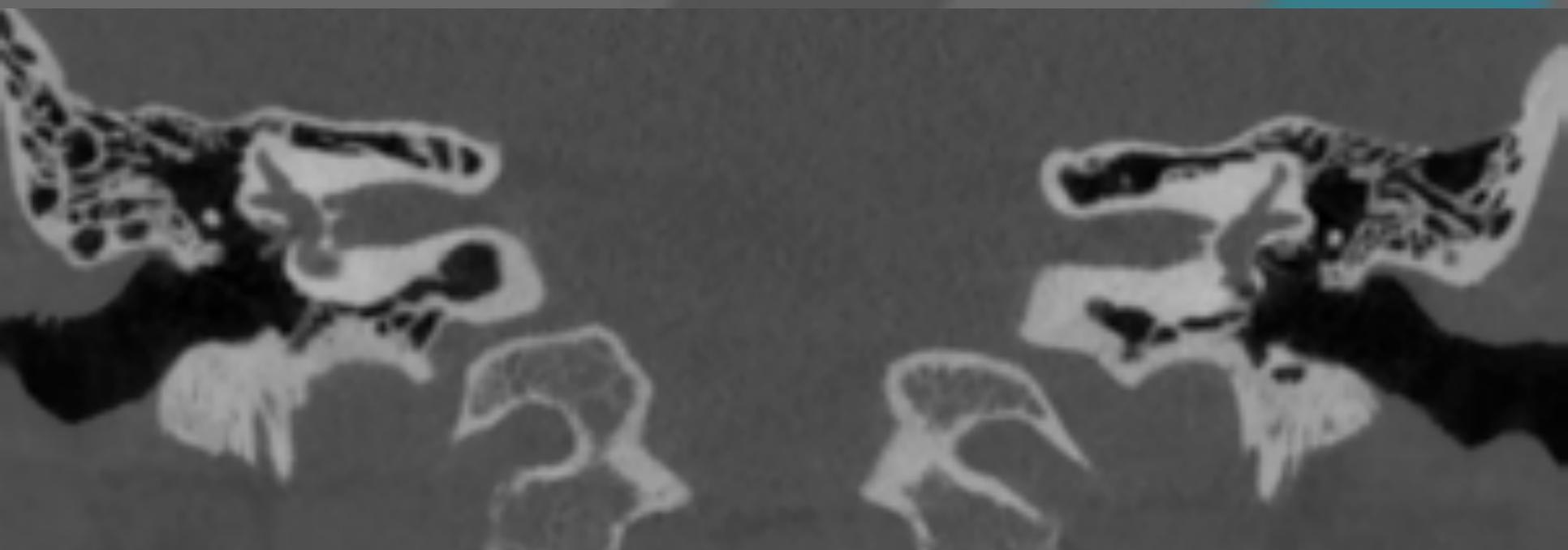


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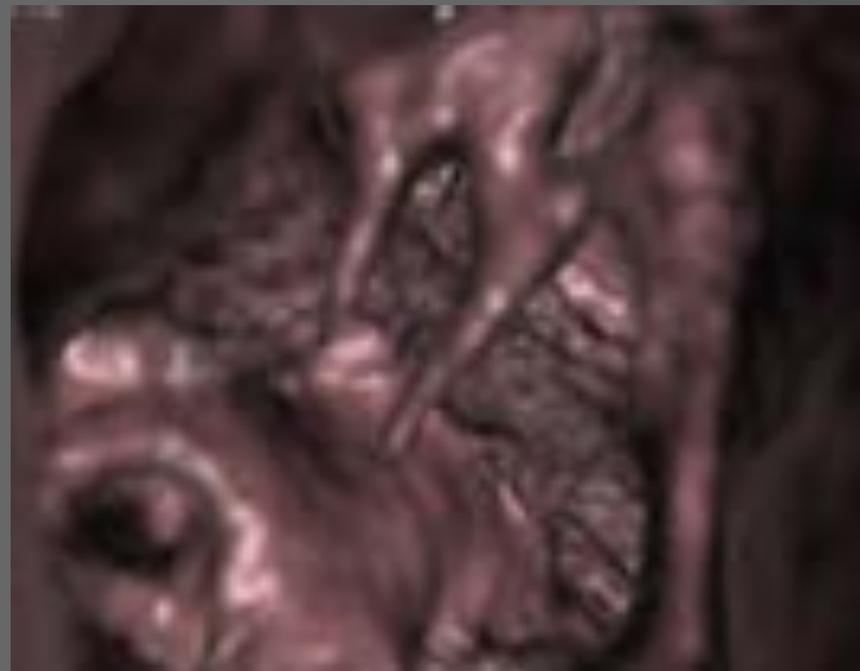


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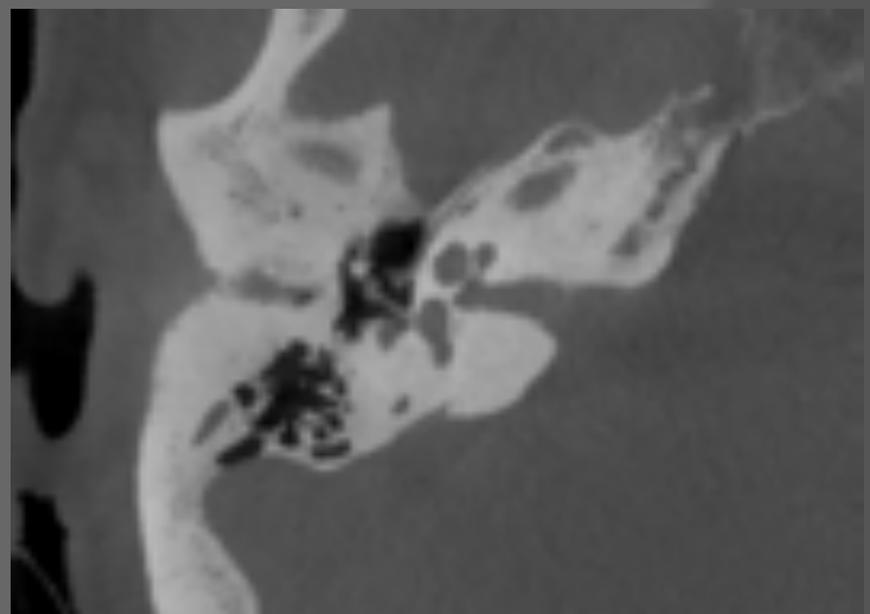
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- 36 yo with a history of severe congenital hearing loss.
- Surgical background with vibrant sound bridge (left ear).
- Bilateral hearing loss, right predominance

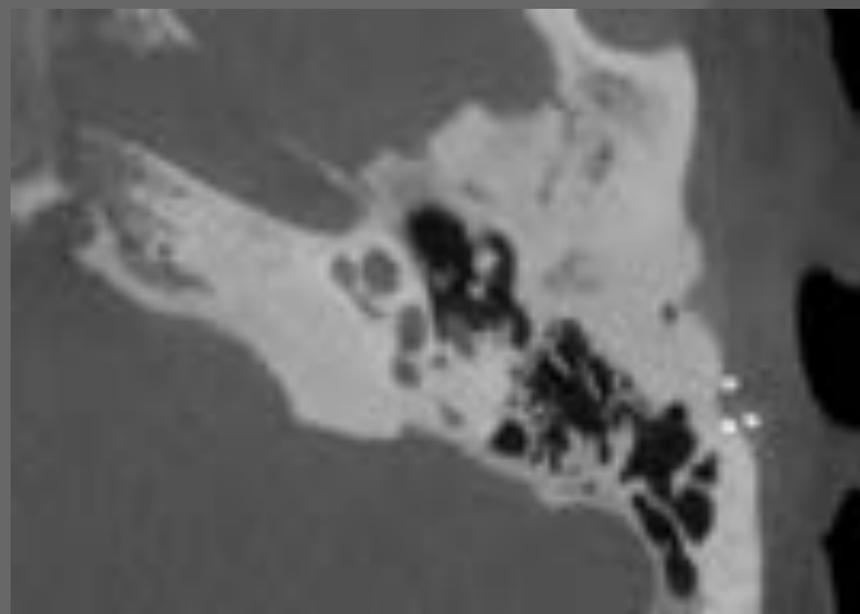


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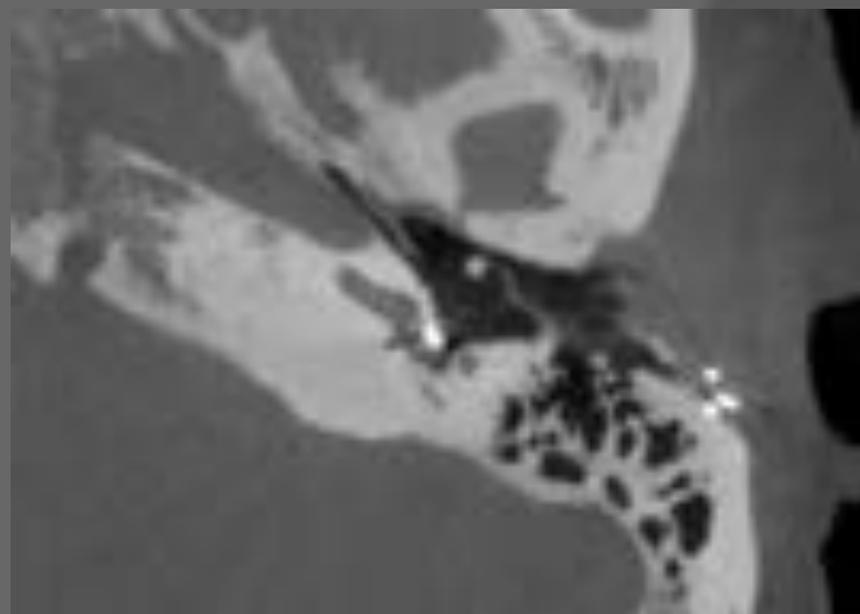


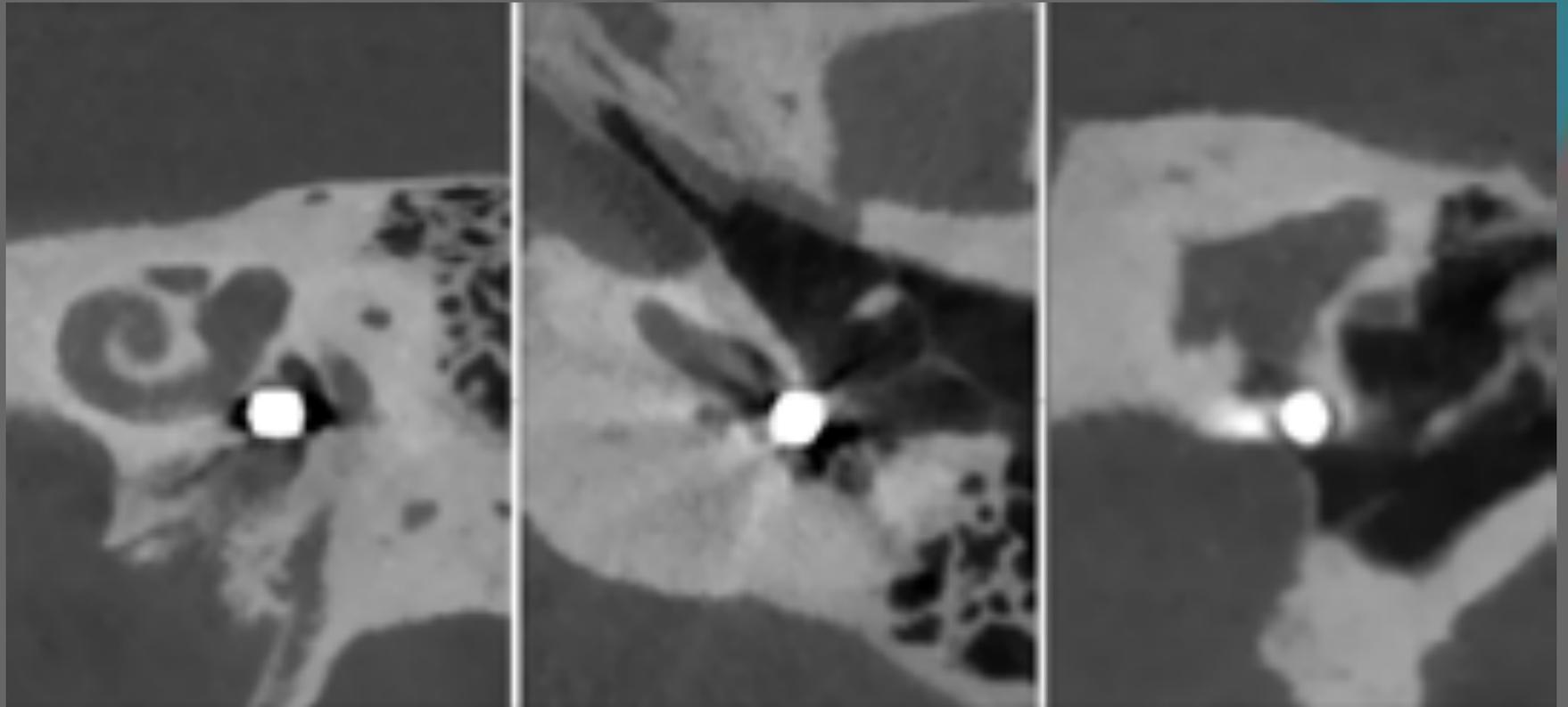
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# Clínica

12

- Paciente de 54 años de edad
- Hipoacusia de transmisión en el oído izquierdo de años de evolución.
- Oído derecho audiometría normal.
- Reflejo estapedial conservado.
- Algiacusia.
- Otoscopia normal.
- 54 year old patient .
- Long-term (years) left ear conductive hearing loss.
- Right ear: normal audiometry.
- Stapedial reflection preserved.
- Algiacusia.
- Normal otoscopy.



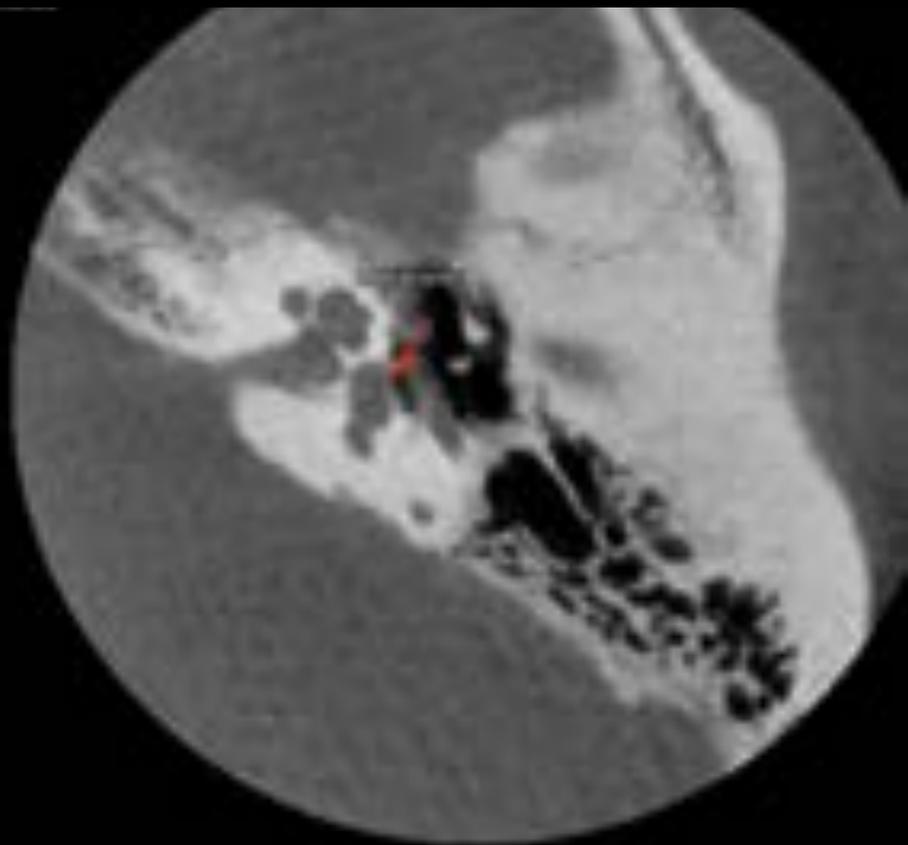
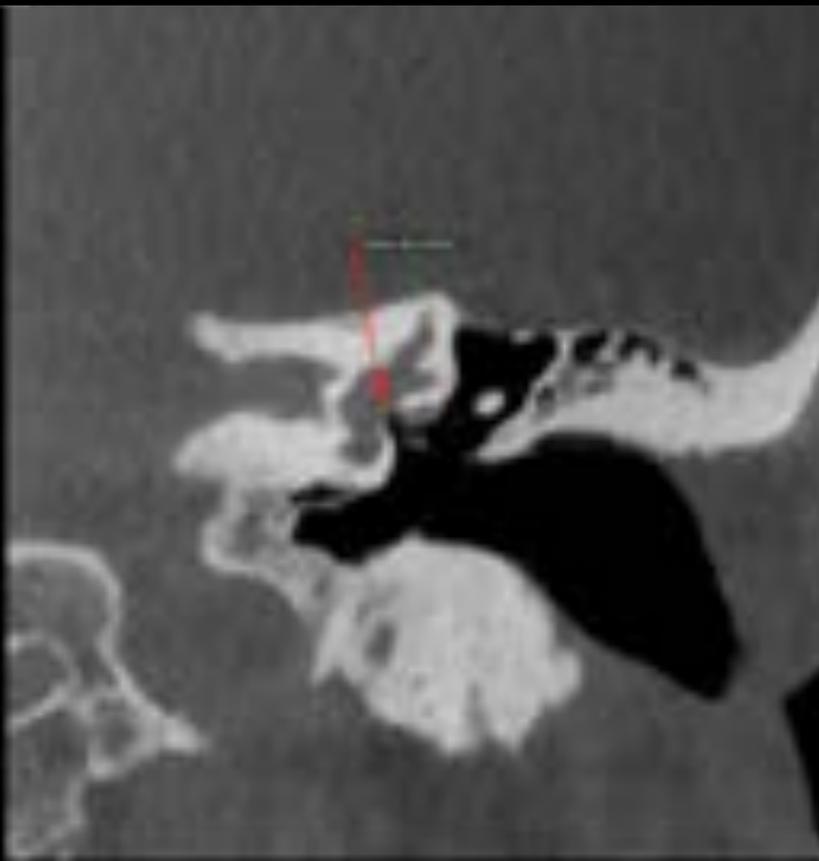
Sospecha clínica.  
Presumed diagnosis

Otosclerosis de la platina del estribo.  
Fenestral Otosclerosis



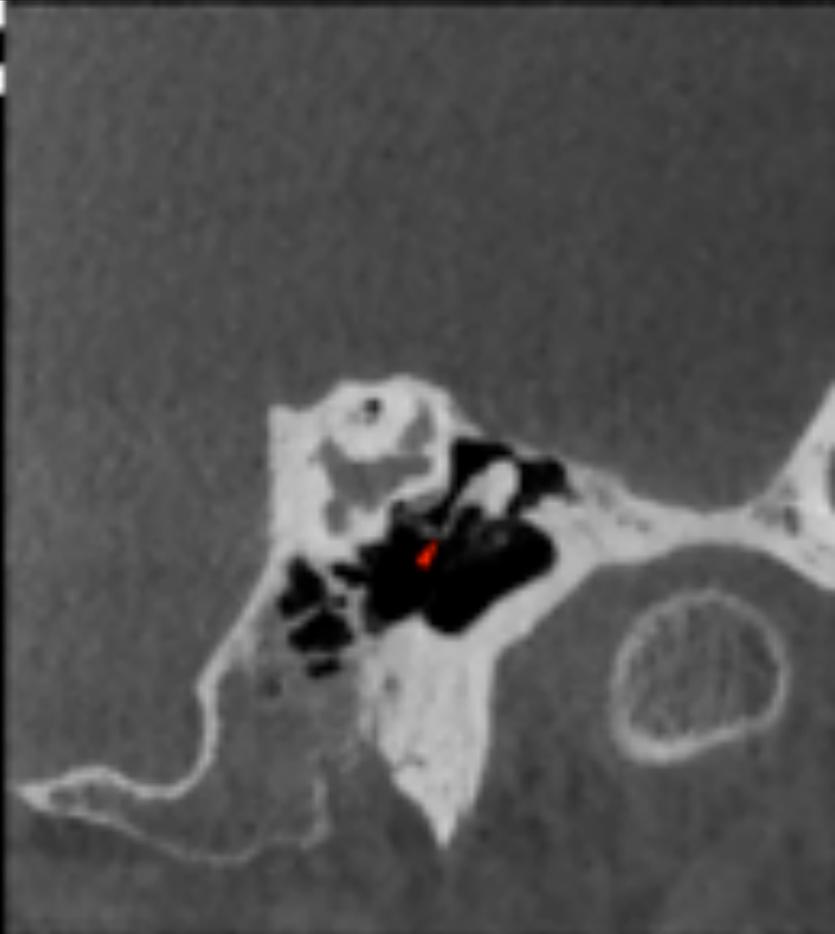
Flecha larga y flecha corta señalan la platina del estribo sin evidencia de focos de otosclerosis.

Long and short arrows point to the footplate with no evidence of fenestral otosclerosis foci.



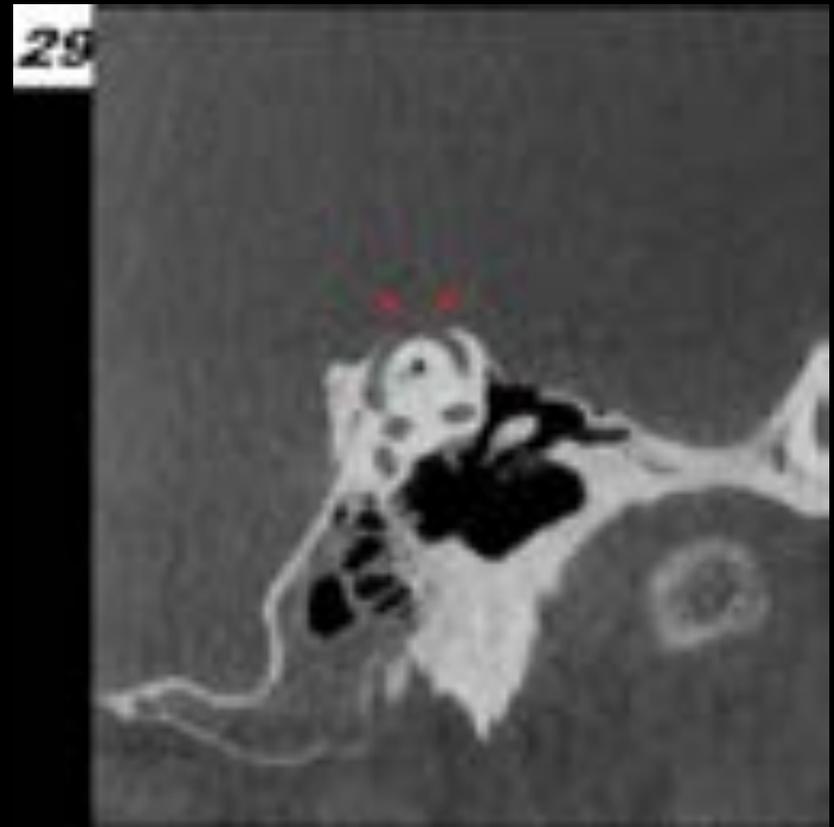
Cabeza de flecha integridad de la articulación incudoestapediana. Flecha señala la articulación incudomaleolar que aparece así mismo normal.

Integrity of the incudoestapedial joint ( head arrow). Incudomalleolar joint also looks normal ( arrow).



Flechas señalan la dehiscencia del canal semicircular superior. Amplia dehiscencia.

Superior semicircular canal dehiscence, wide dehiscence (Arrows)

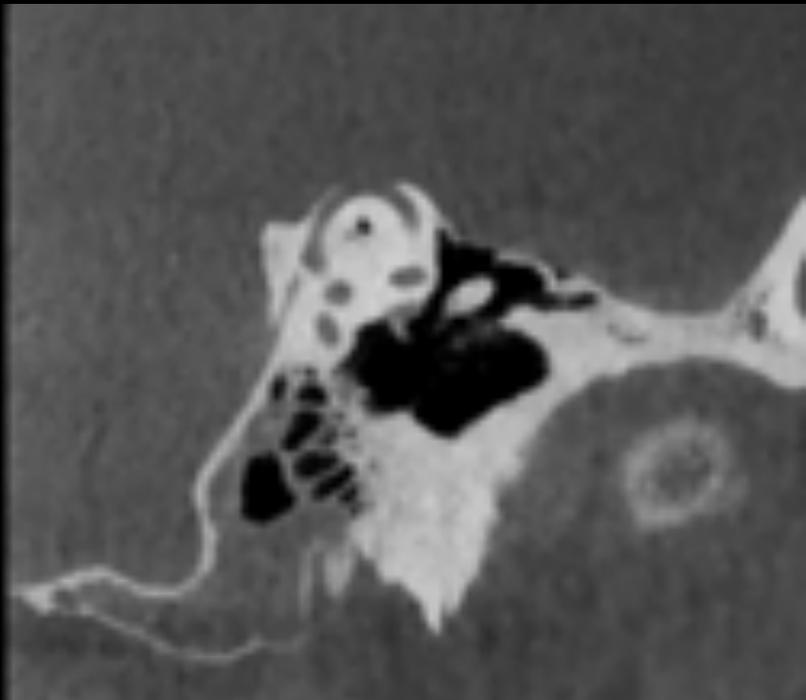


Cortes comparativos de ambos oídos.

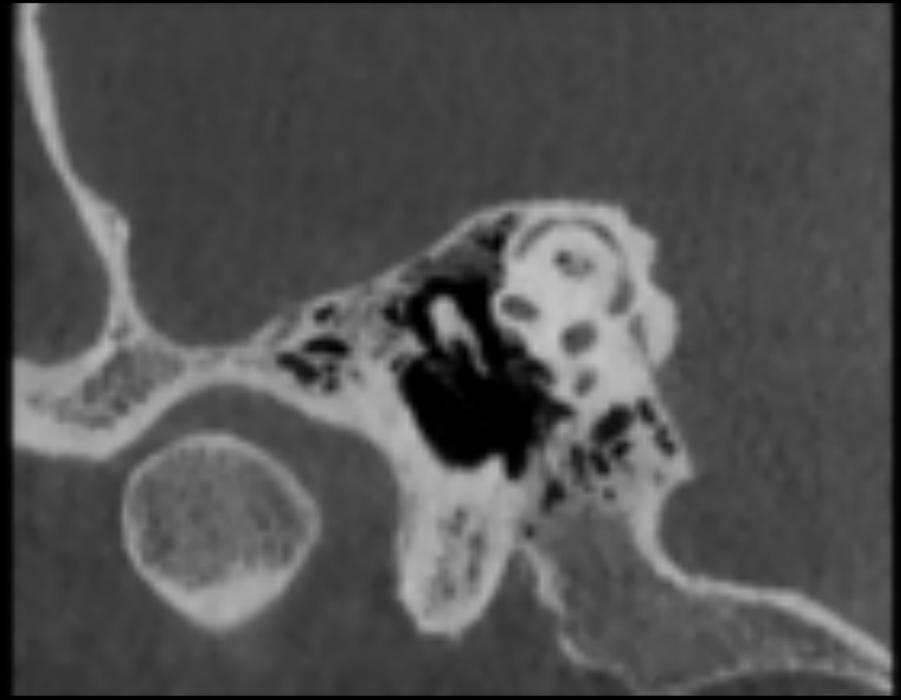
No se aprecia una dehiscencia congénita del CSS del oído derecho.

Comparative slices of both ears. CSS of the right ear shows no signs of dehiscence.

Oído izquierdo. **Left ear**

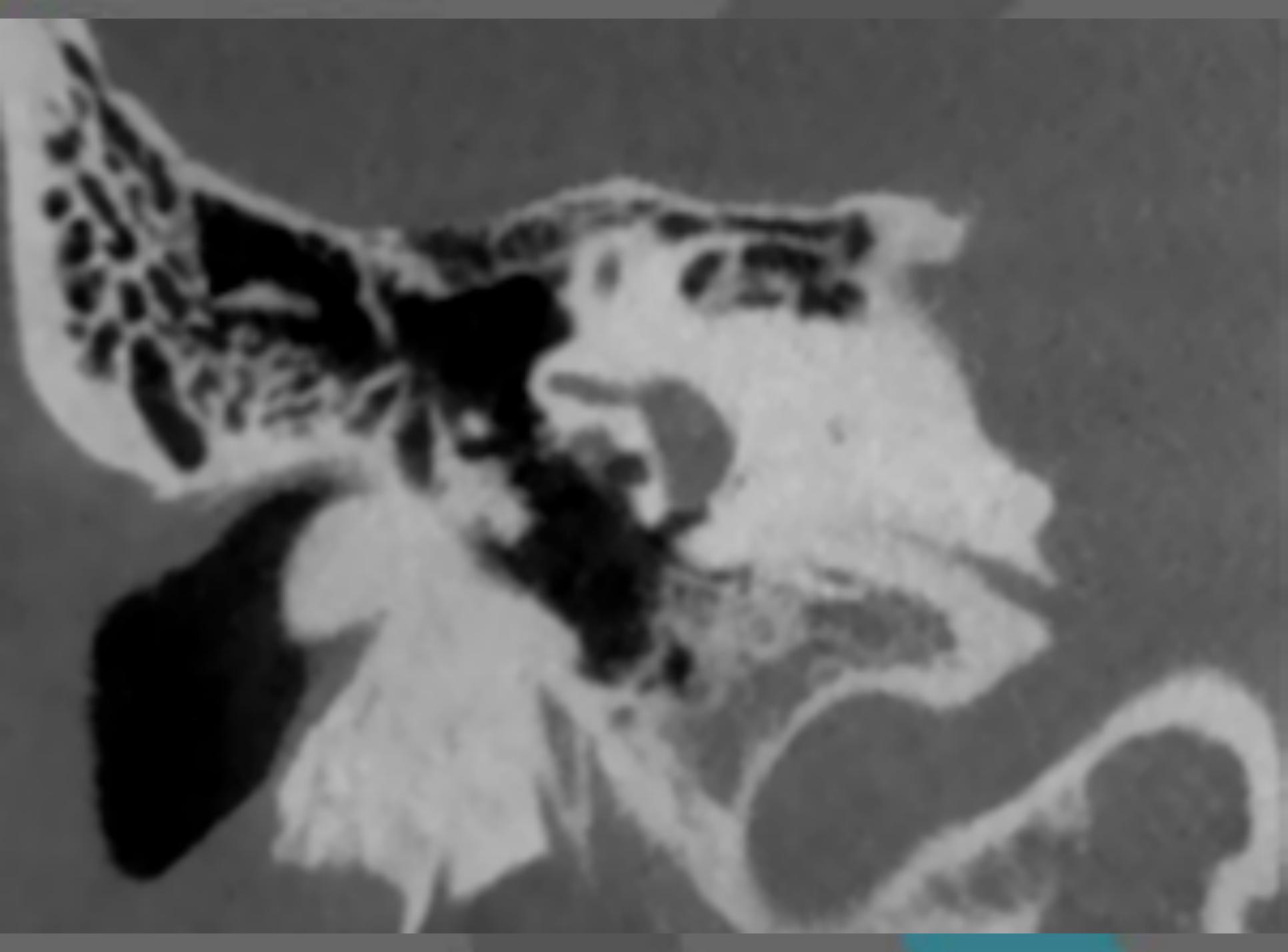


Oído derecho. **Right ear**

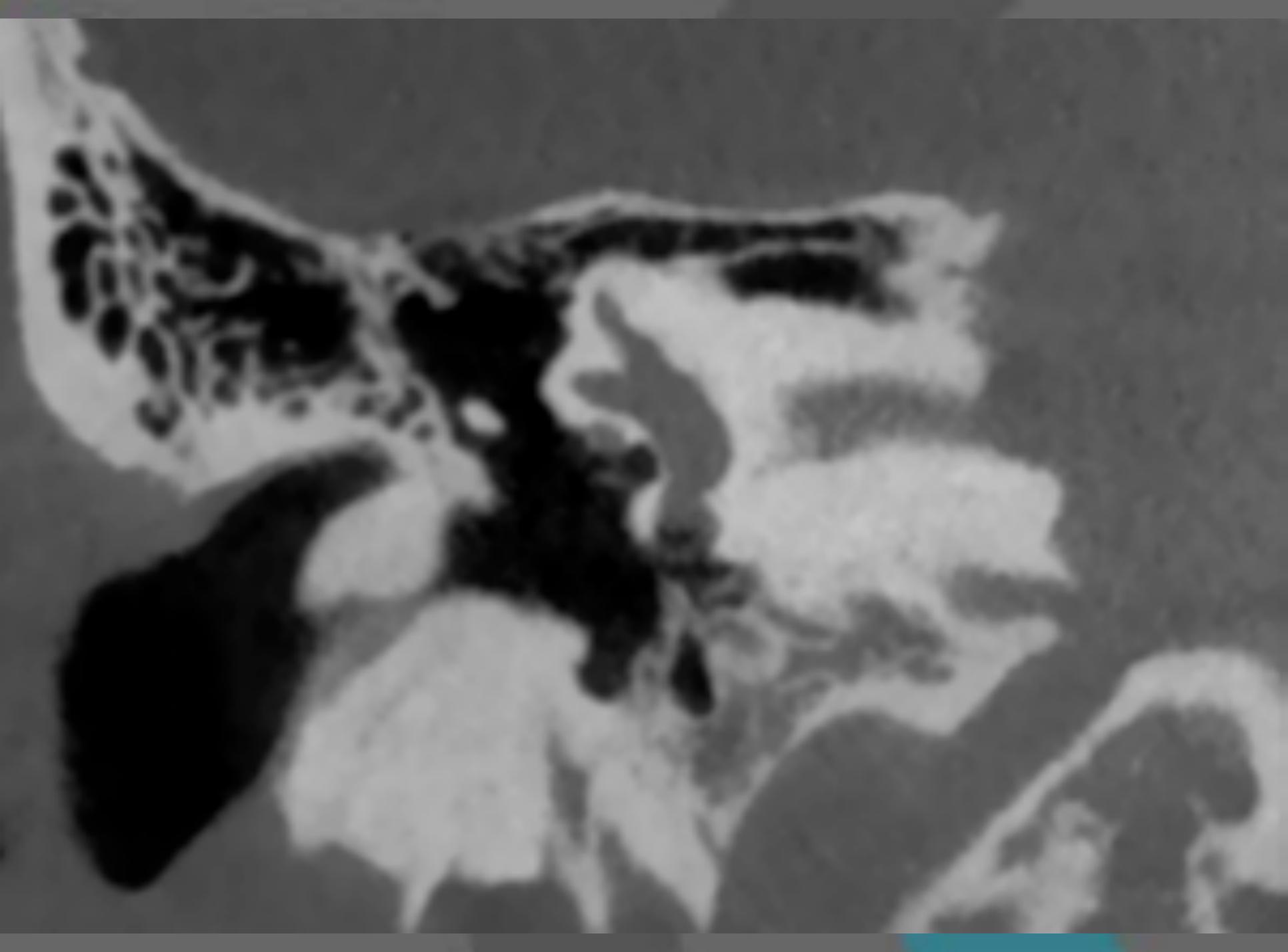


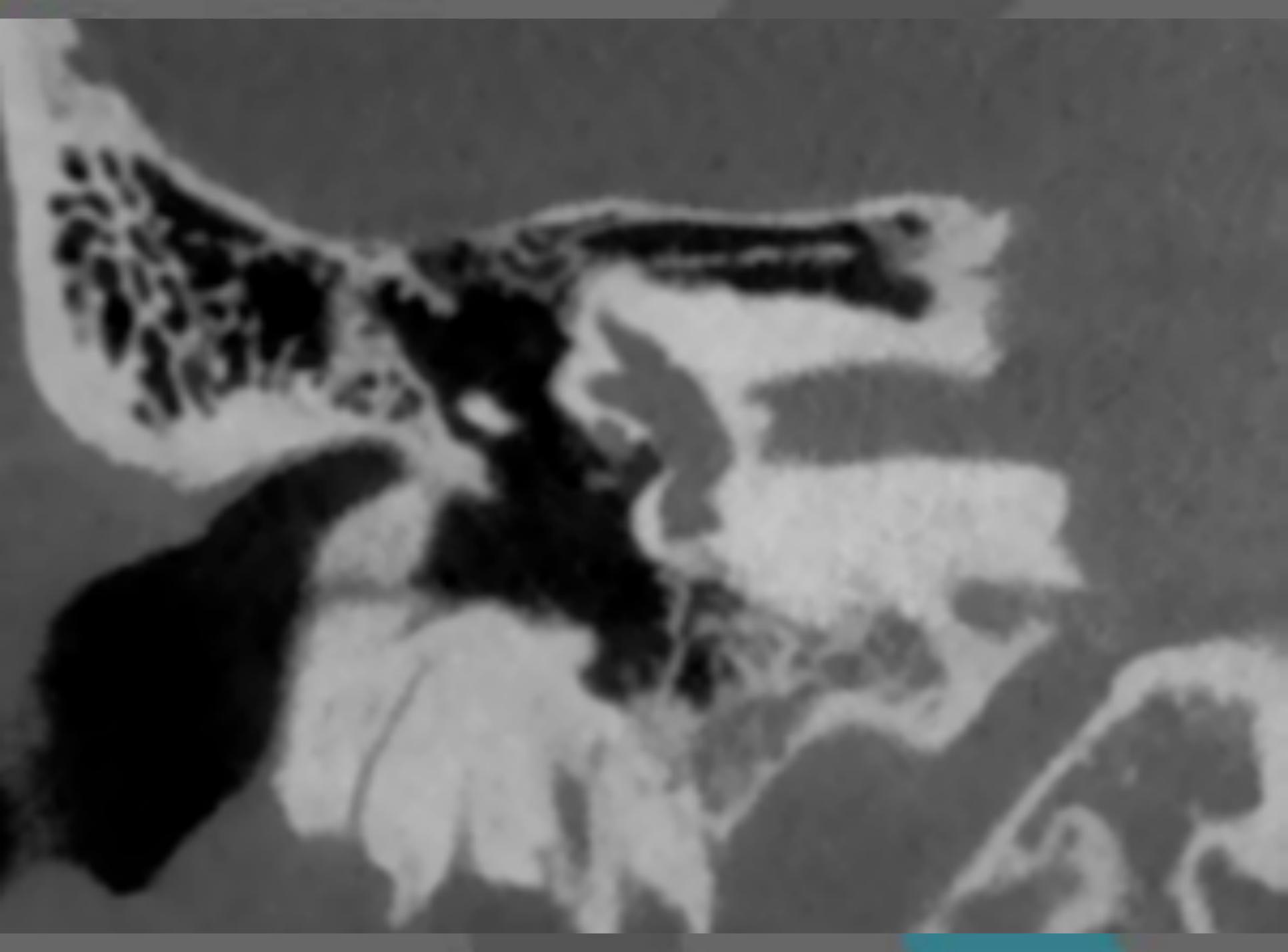
**DEHISCENCIA DEL SEGMENTO  
TIMPÁNICO DEL NERVIIO FACIAL.  
EXÓSTOSIS CAE.**

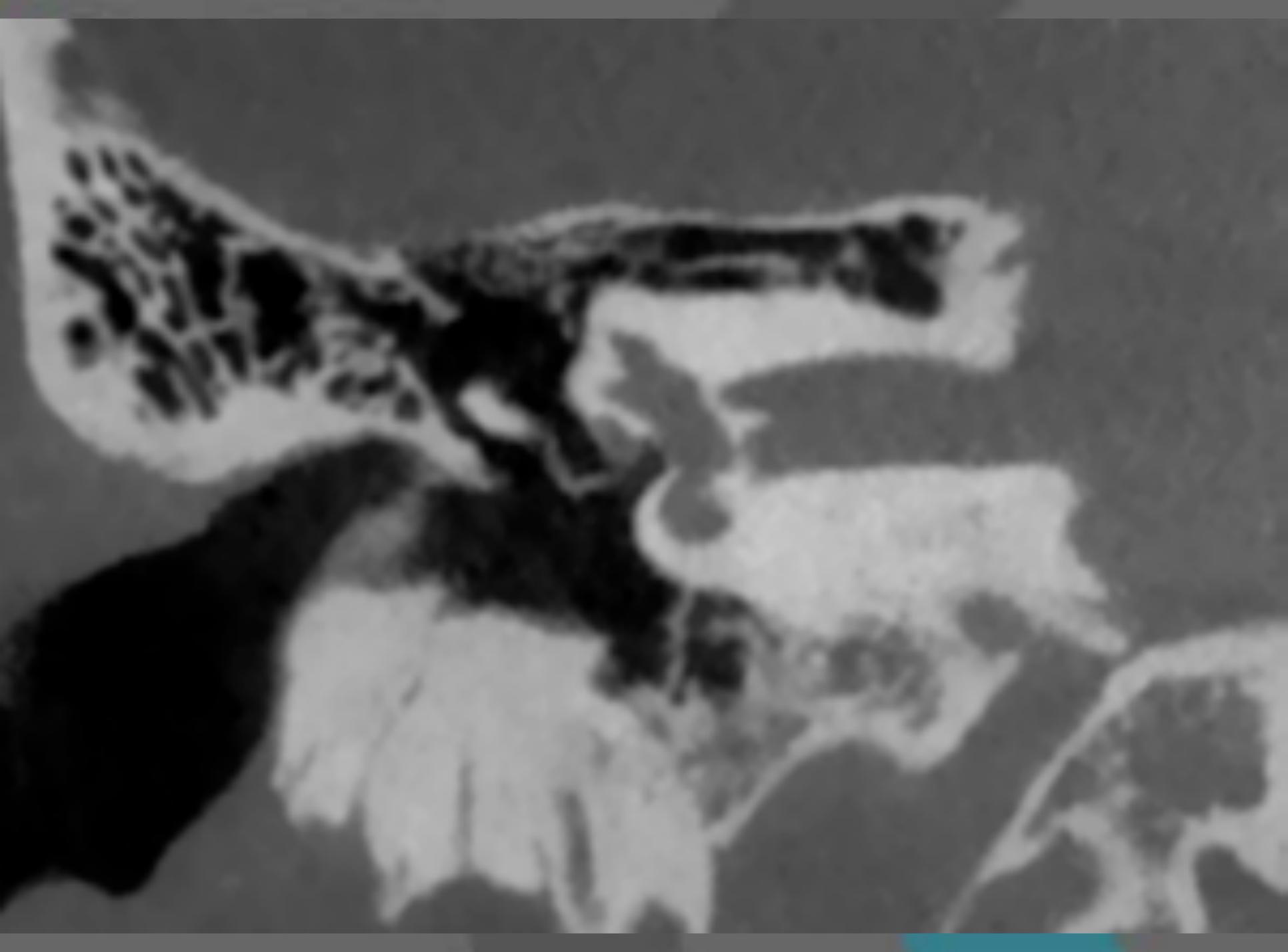
**TYMPANIC SEGMENT OF FACIAL  
NERVE DEHISCENCE.  
EAR CANAL EXOSTOSIS**

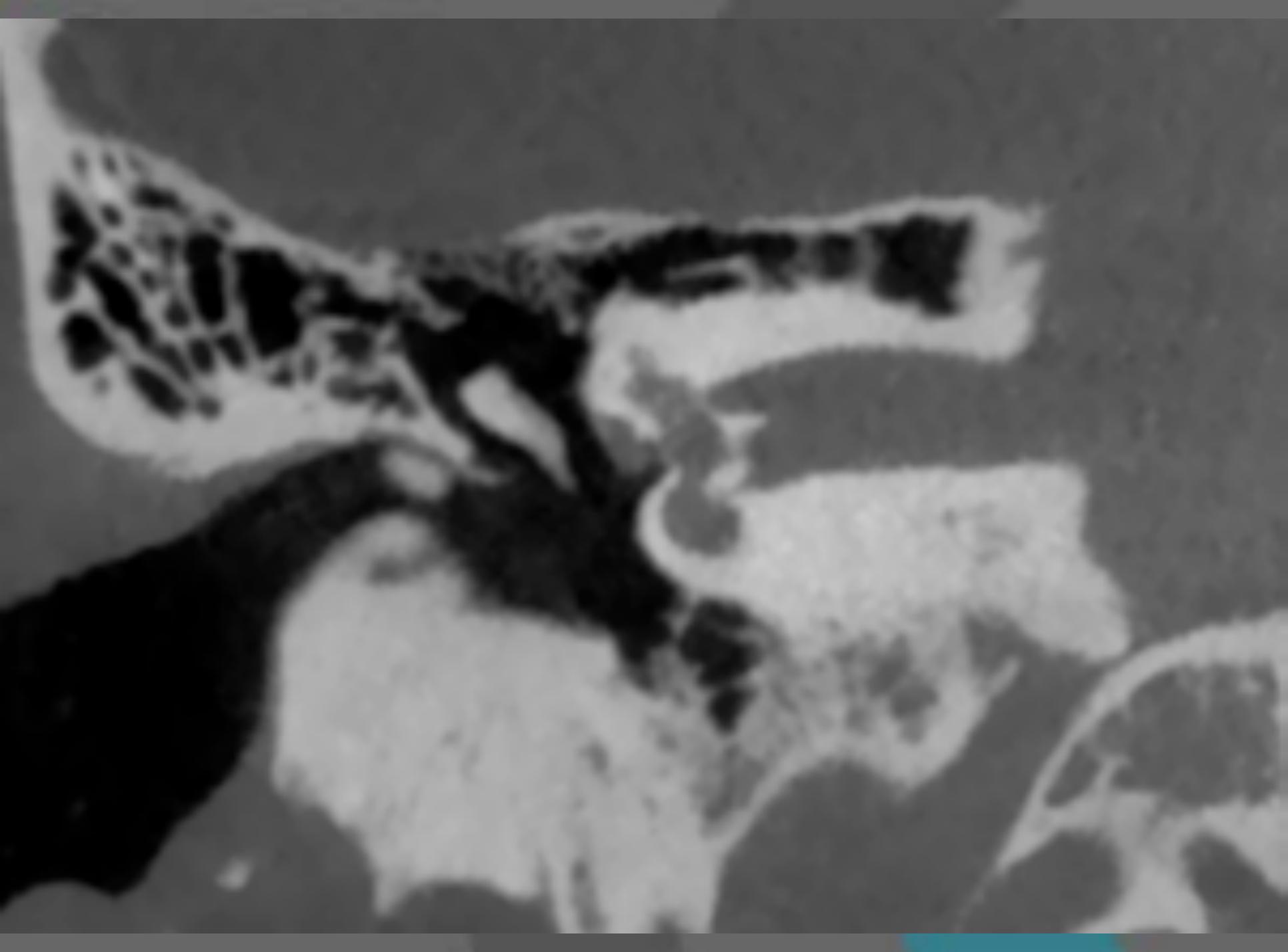


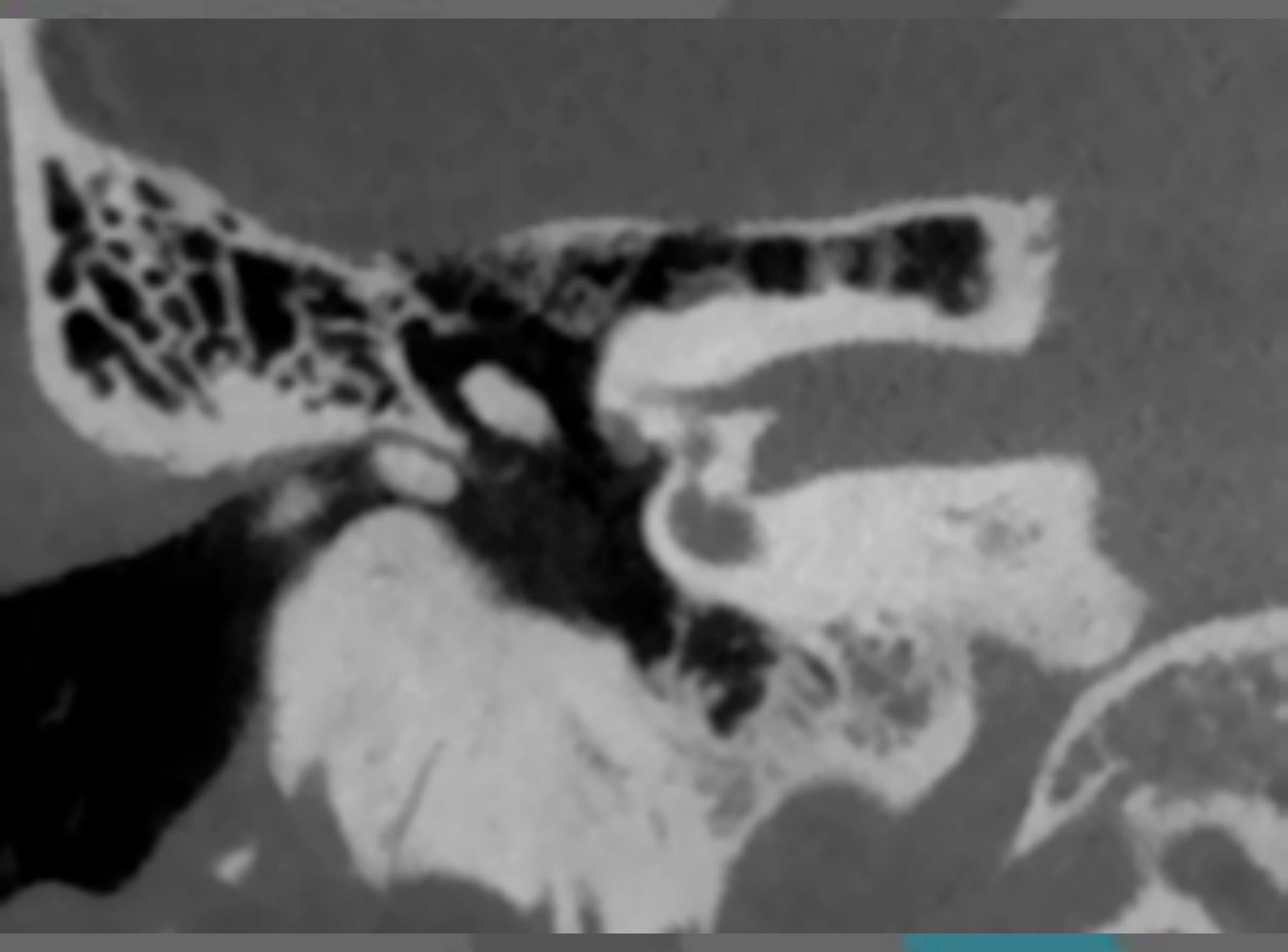


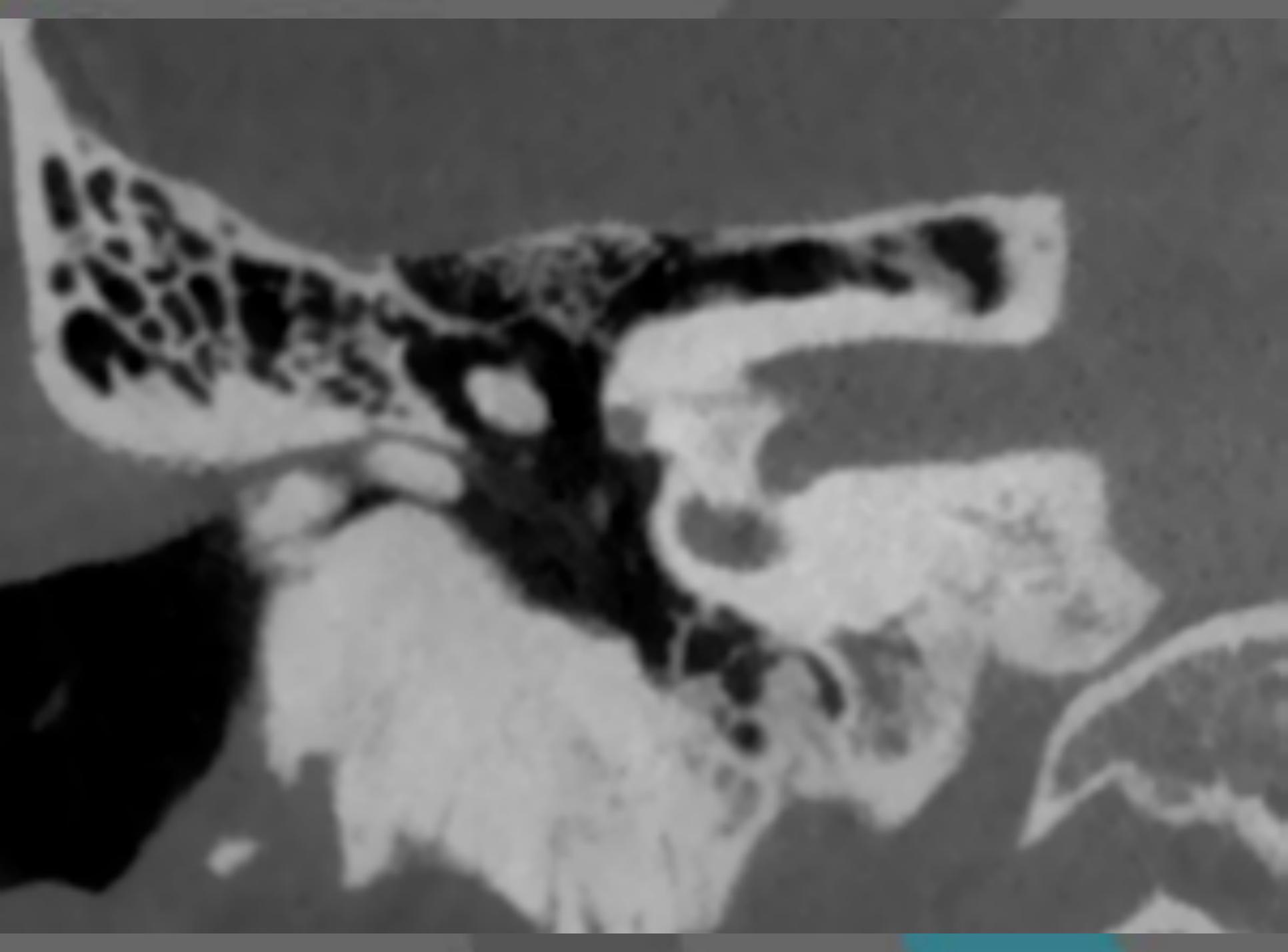


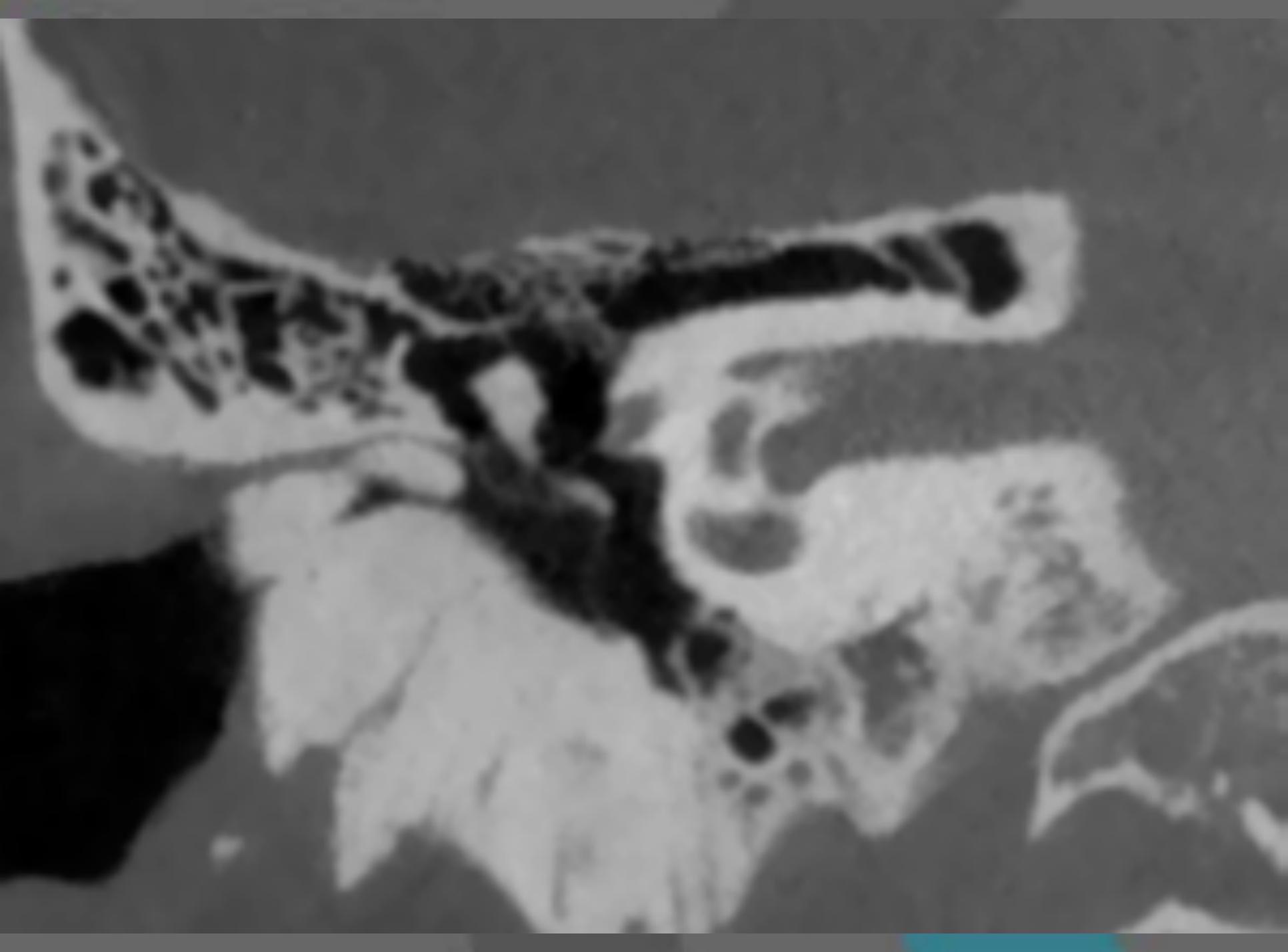






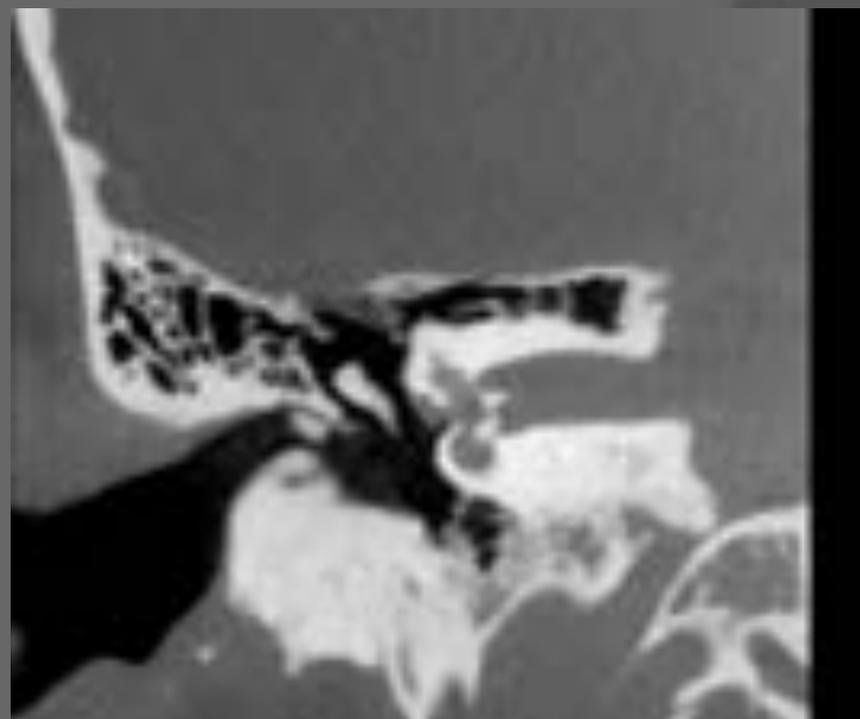








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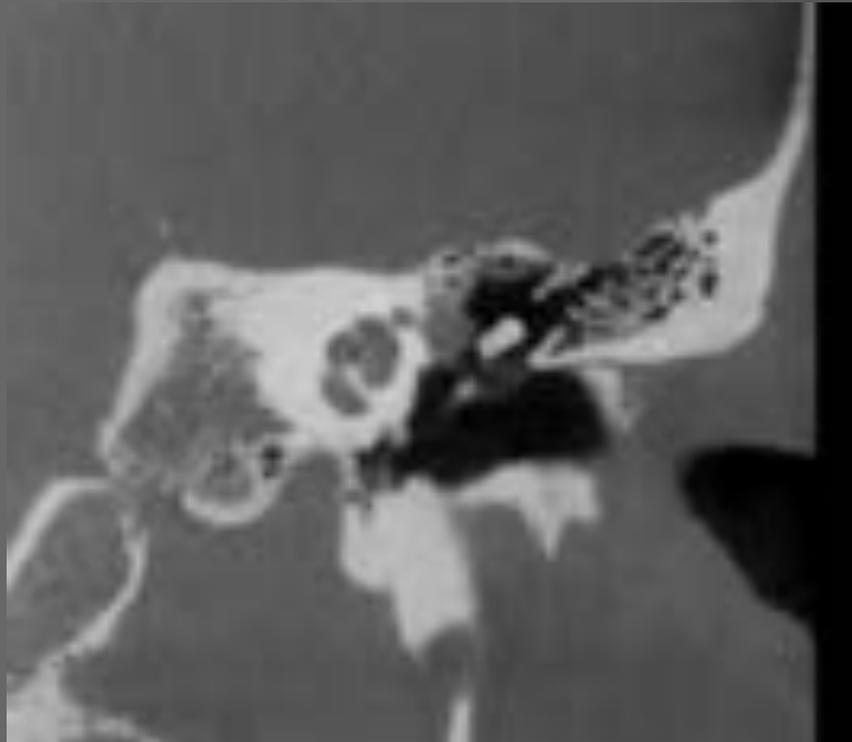


- 40 años de edad con hipoacusia de transmisión OI.
- Antecedentes de parálisis facial hace 6 meses.
- Hemiespasmos faciales.



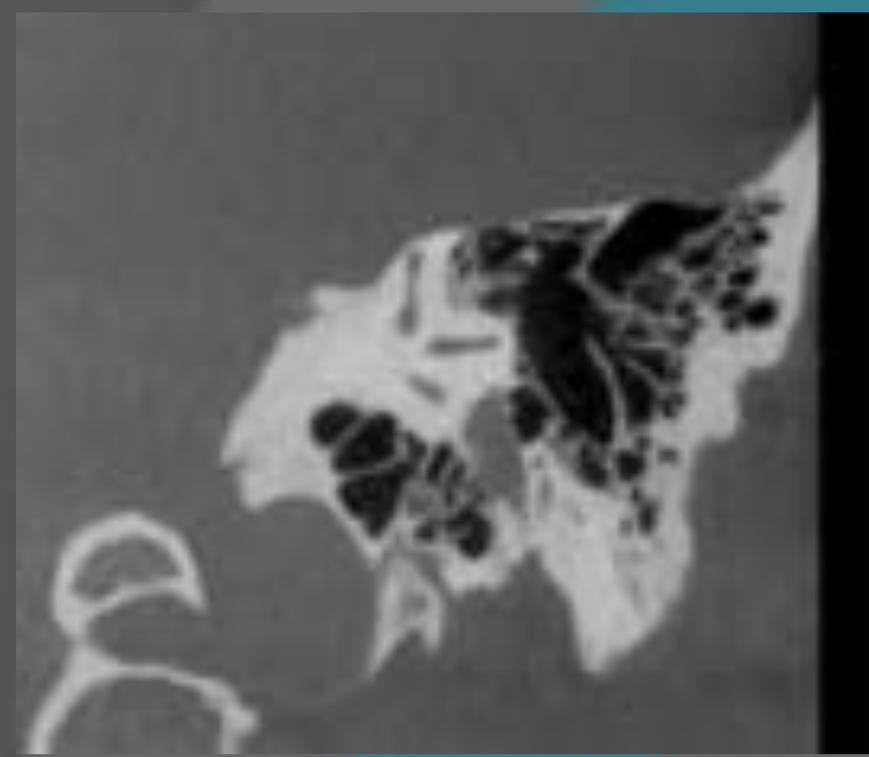
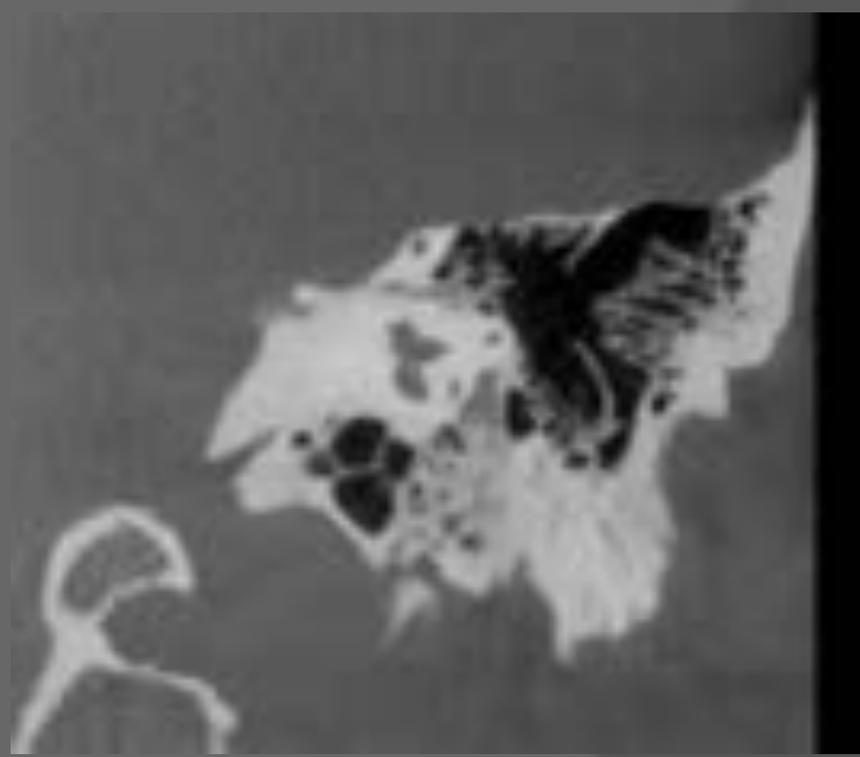
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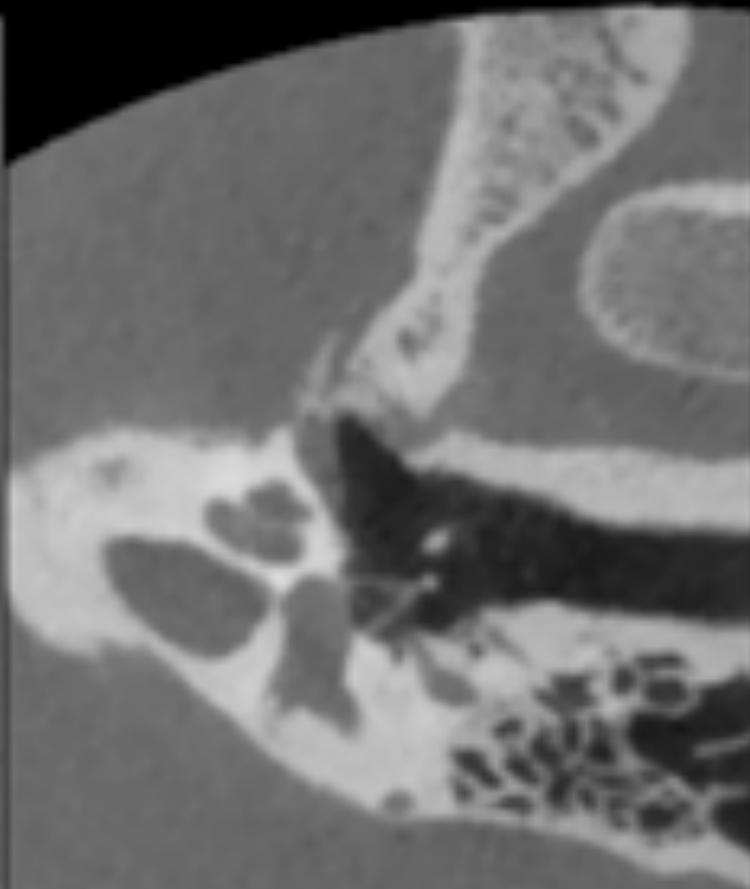


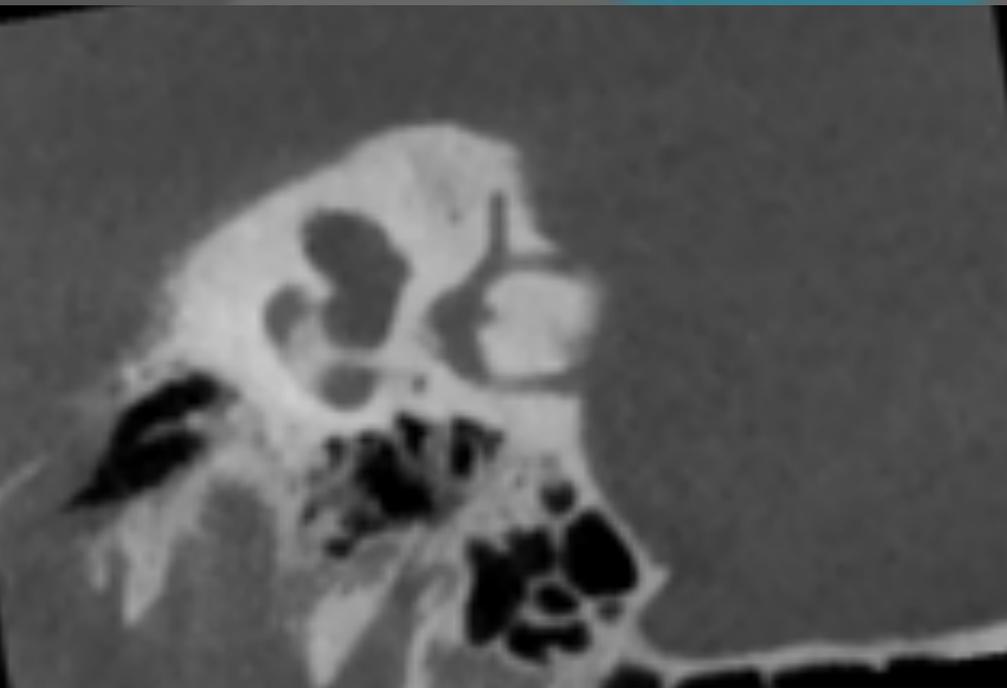
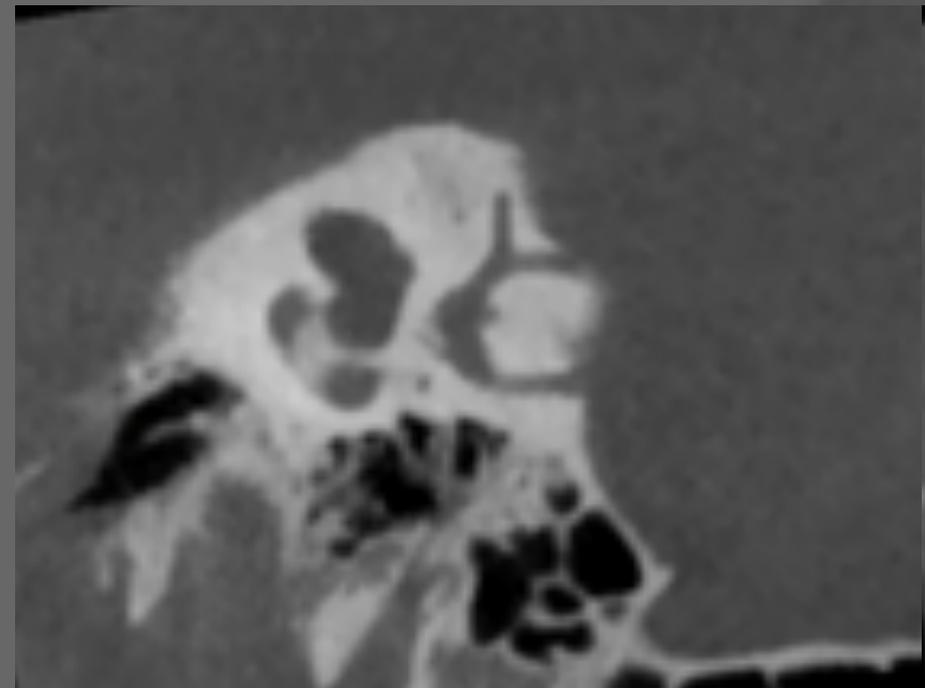
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56 años. Hipoacusia  
transmisión con reflejos  
acústicos conservados

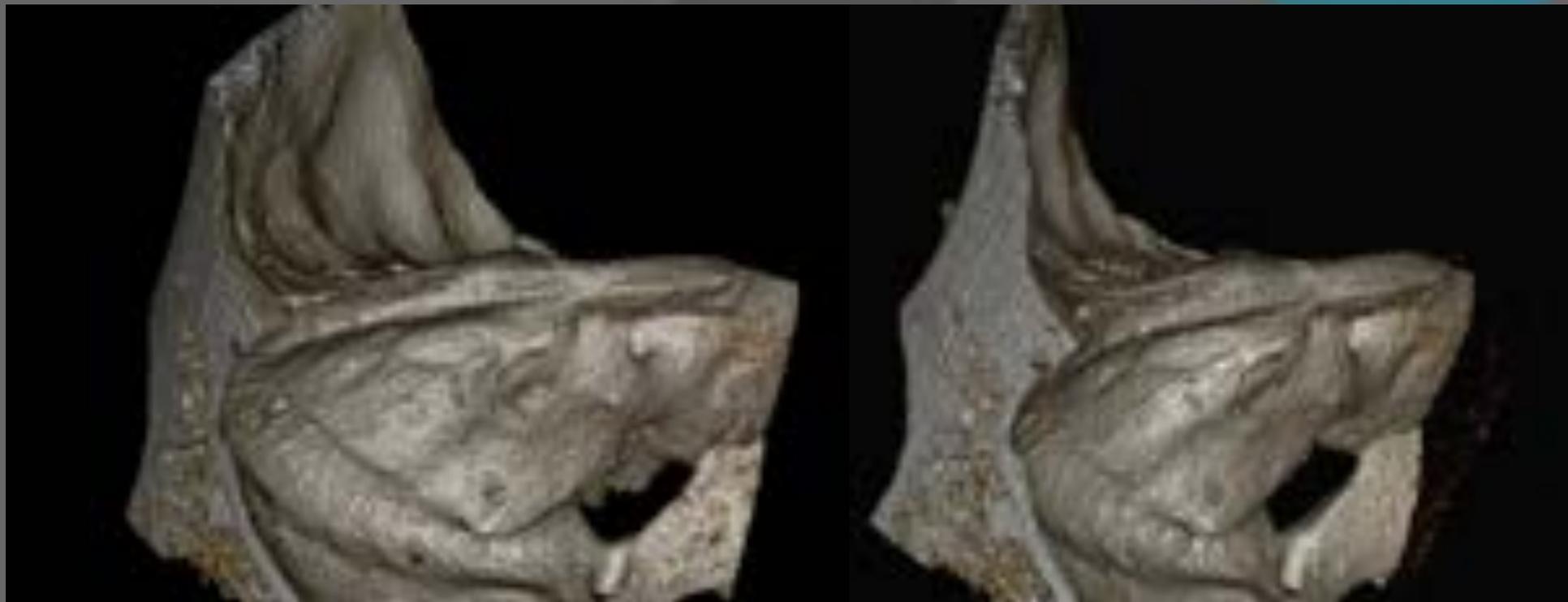
56 yo. Conductive hearing  
loss with preserved  
acoustic reflexes







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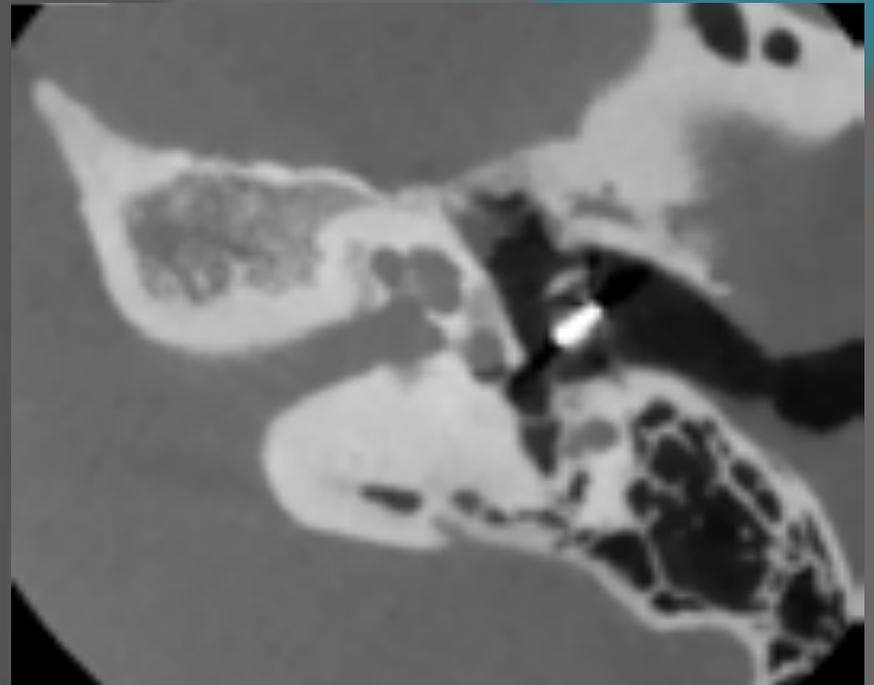
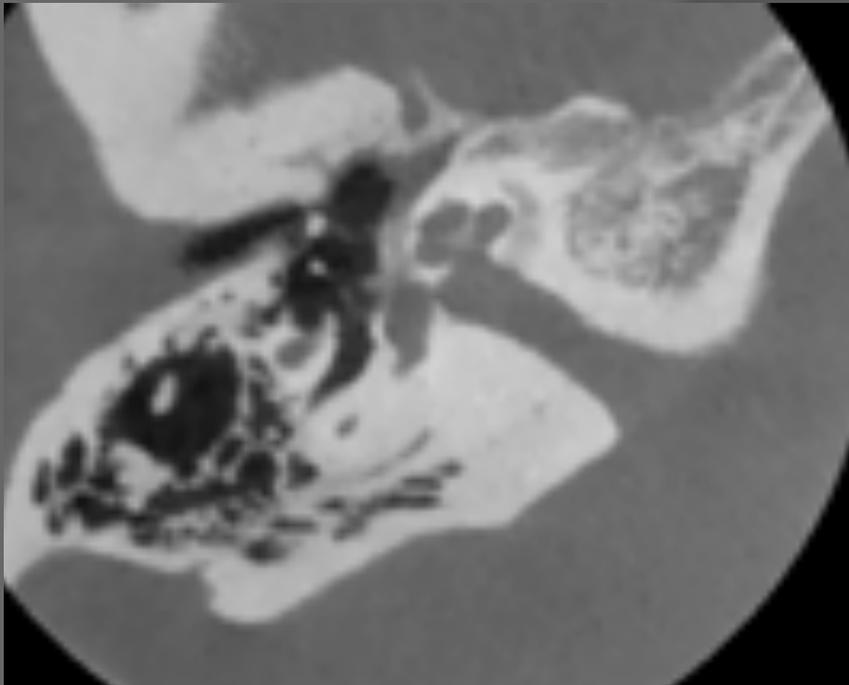


- Paciente de 40 años de edad con hipoacusia mixta severa bilateral.
- Antecedentes de estapedectomía OI sin resultado funcional.
- Estudio realizado con CBCT New Tom 110kw y 30 mA. DLP 110 mGy cm.
- A 40-year-old patient with bilateral severe mixed hearing loss.
- History of stapedectomy in Left Ear without functional outcome.
- Study carried out with CBCT New Tom 110 kv and 30 mA. DLP 110 mGy cm.

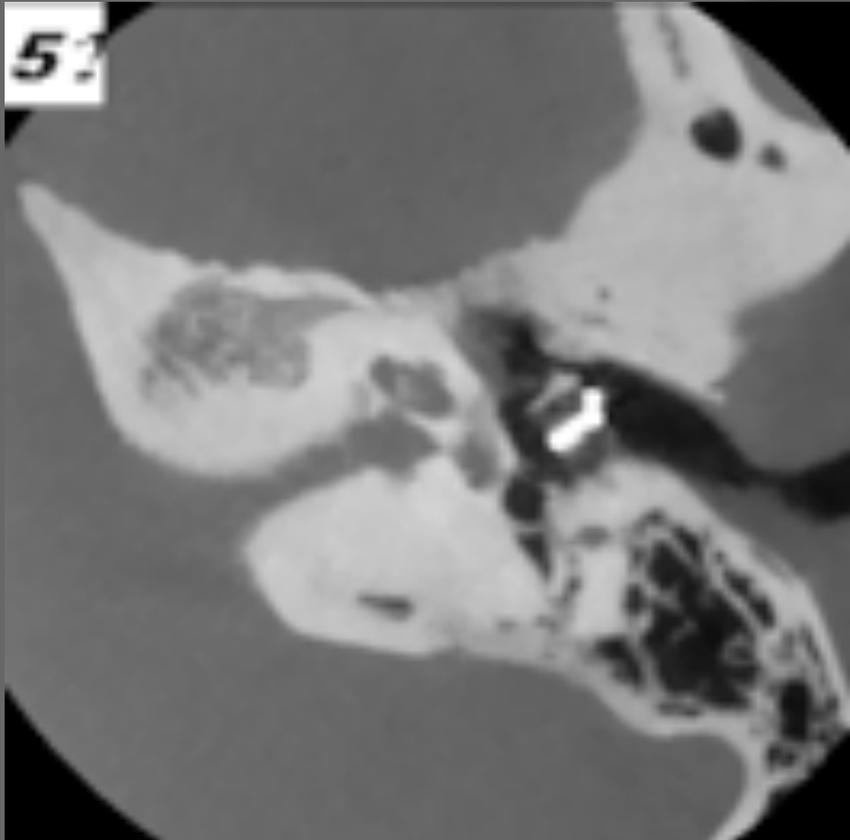


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# Axiales ambos oídos

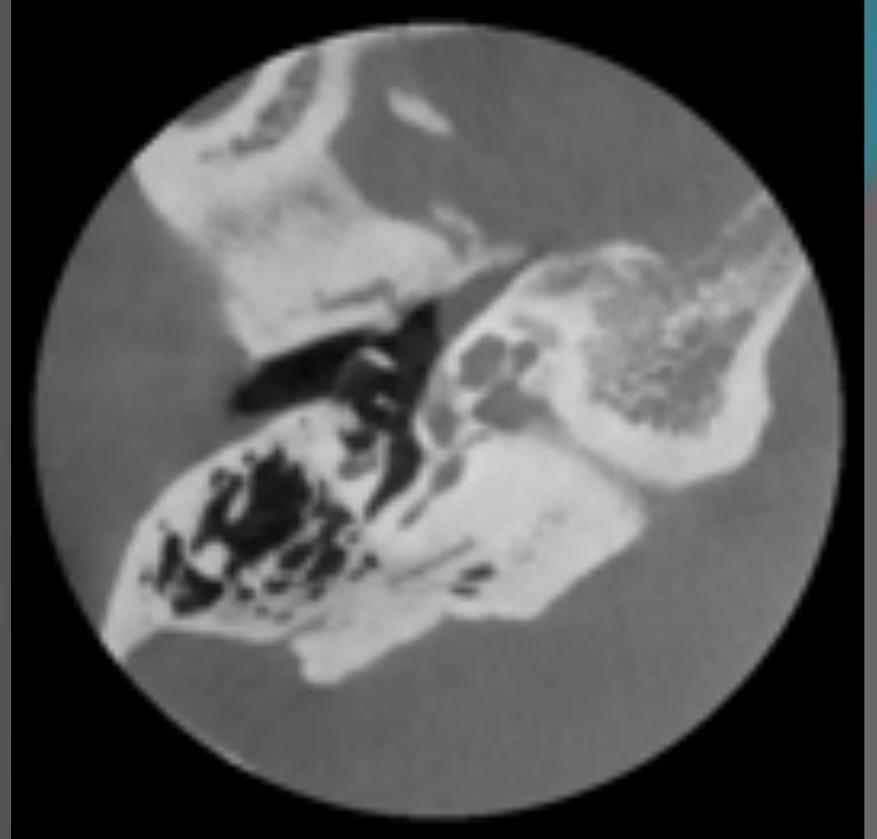
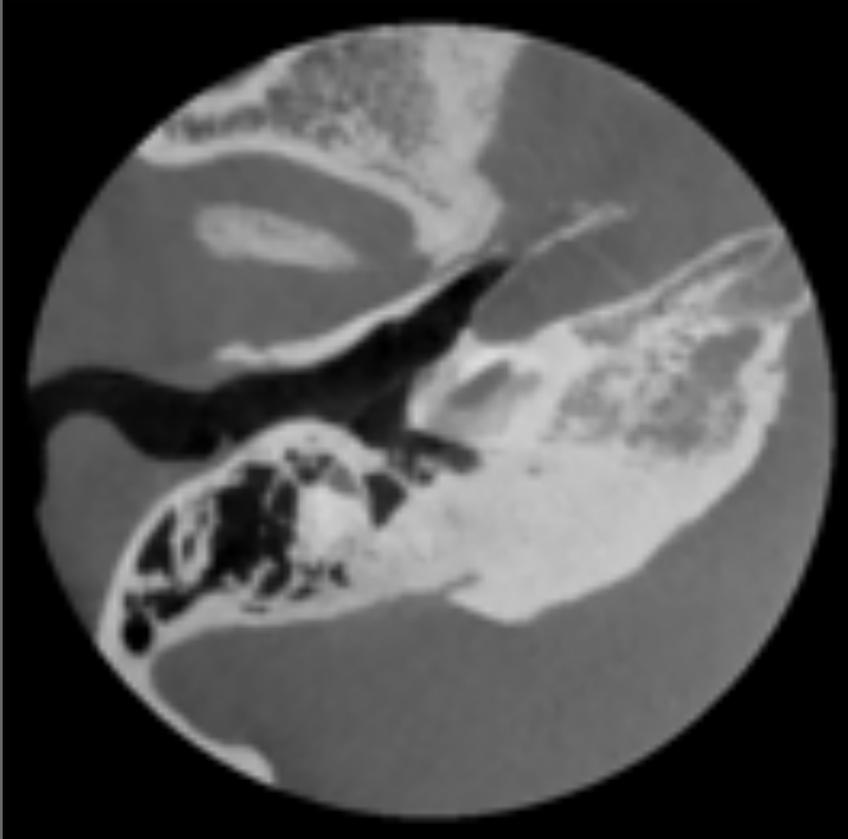


# Oído Izquierdo. Left Ear.

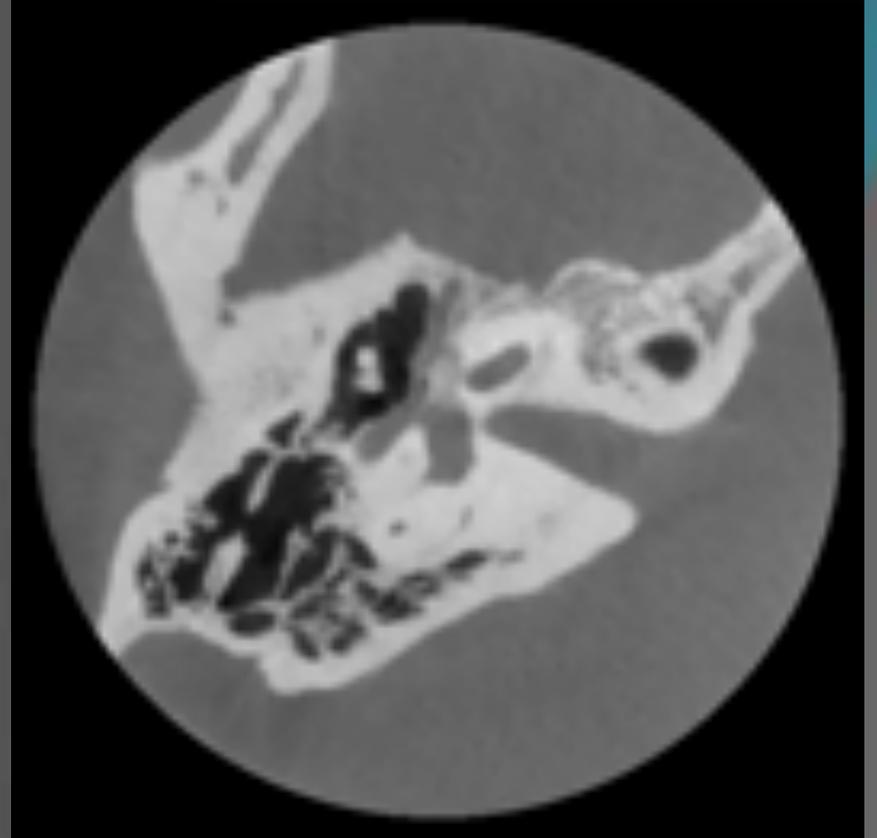
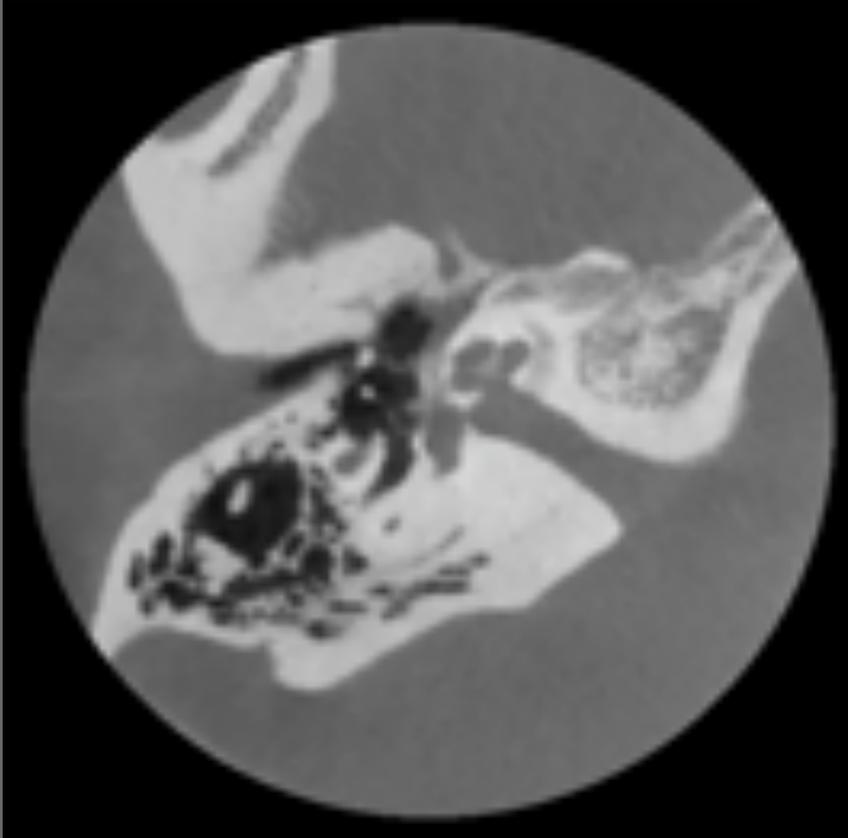


# Axiales oído derecho.

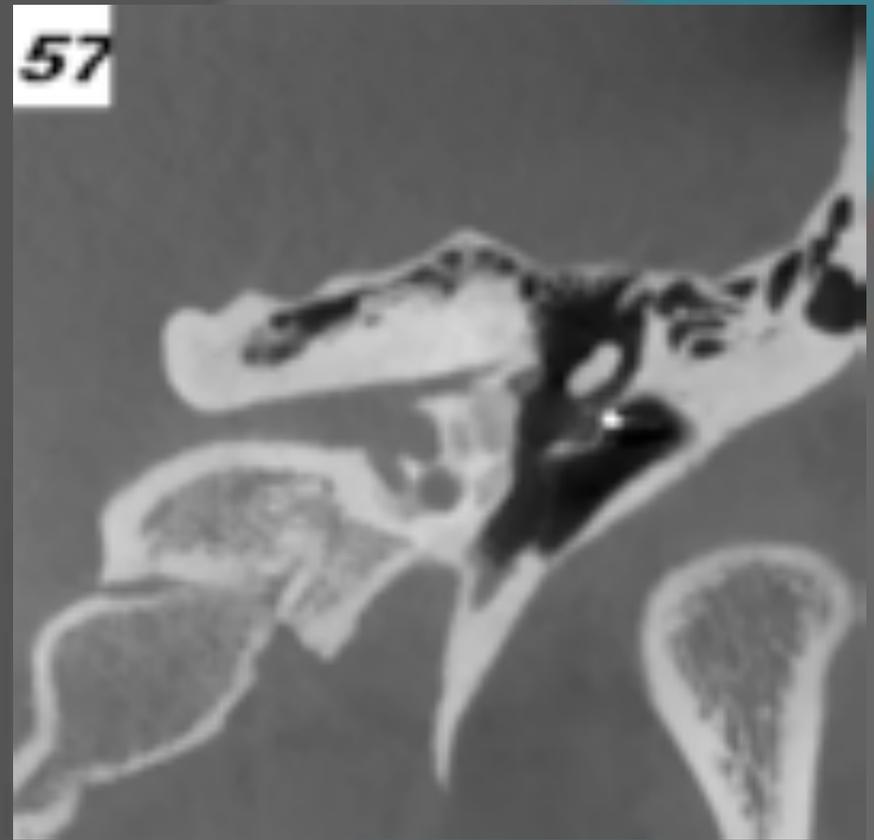
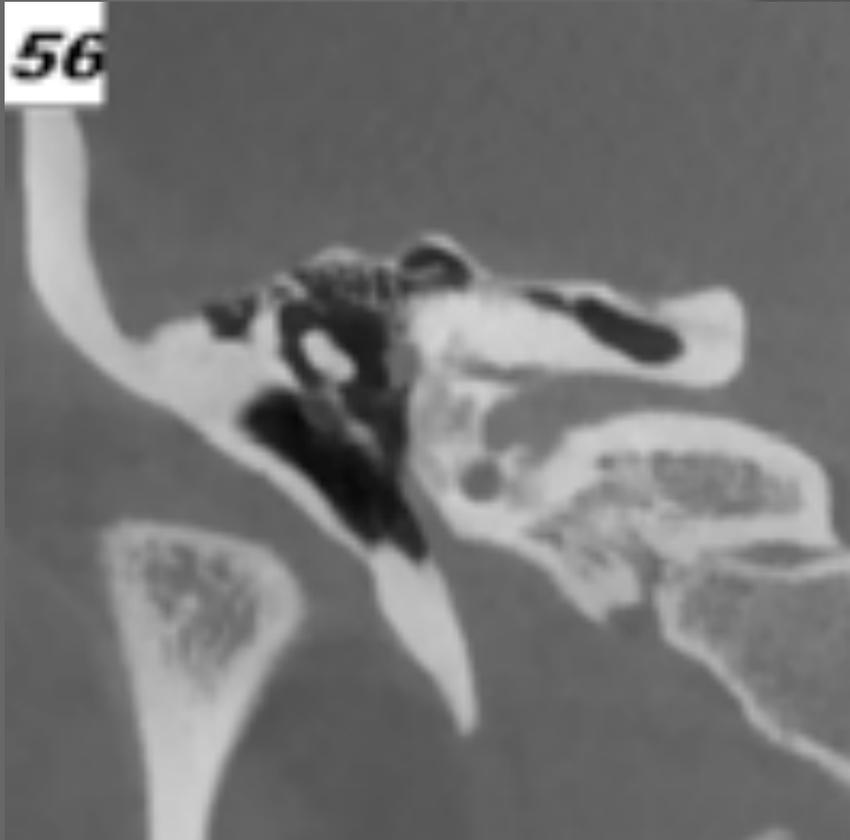
## Axial right ear

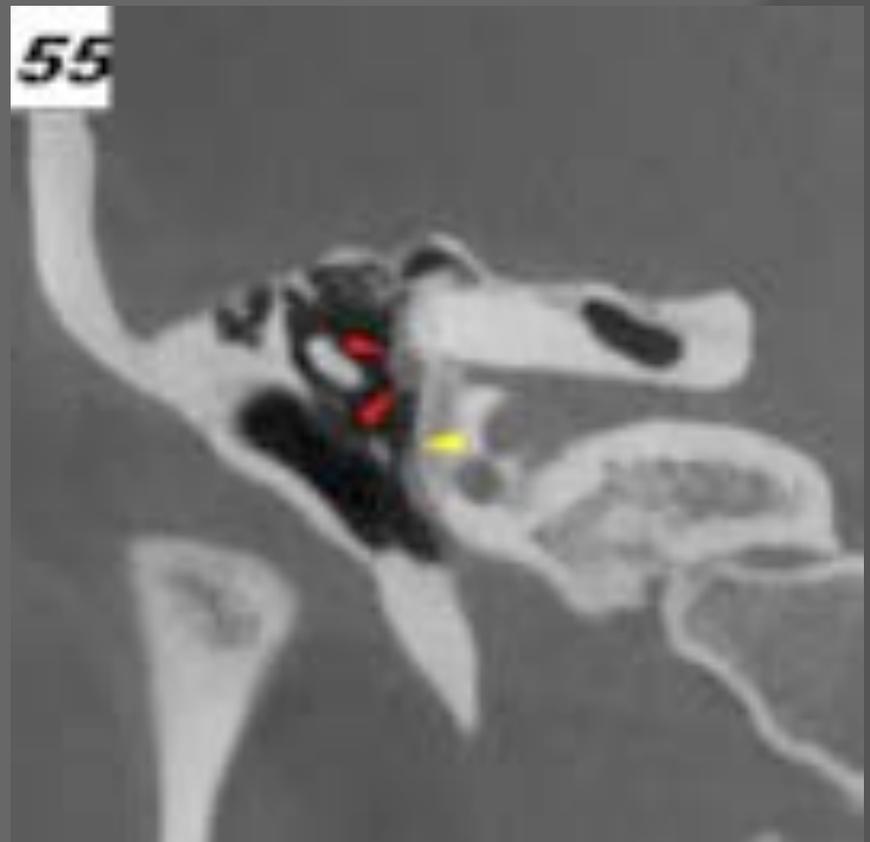


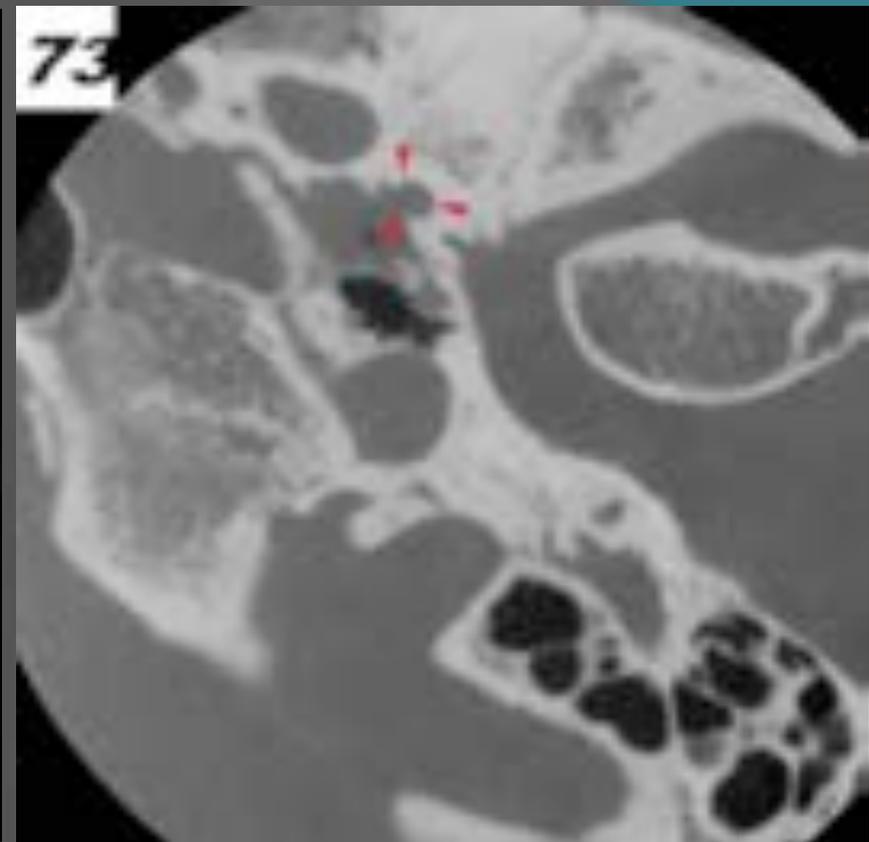
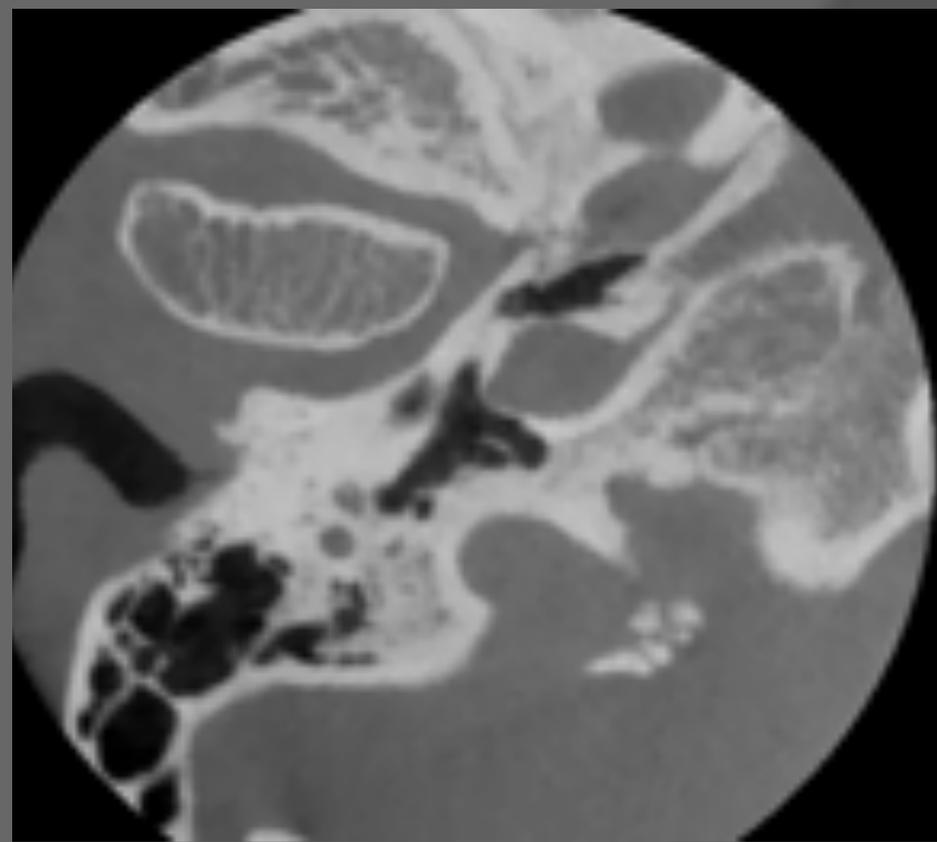
# Axiales oído derecho. Axial right ear



Coronales ambos oídos.  
Coronal both ears.

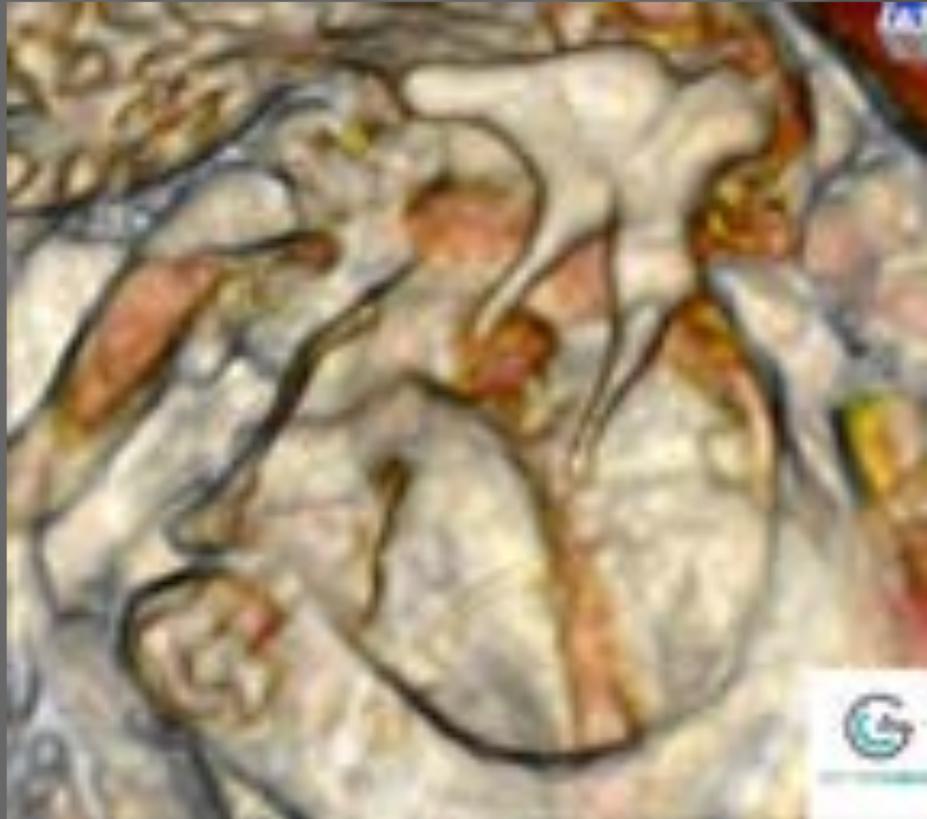






# Navegación

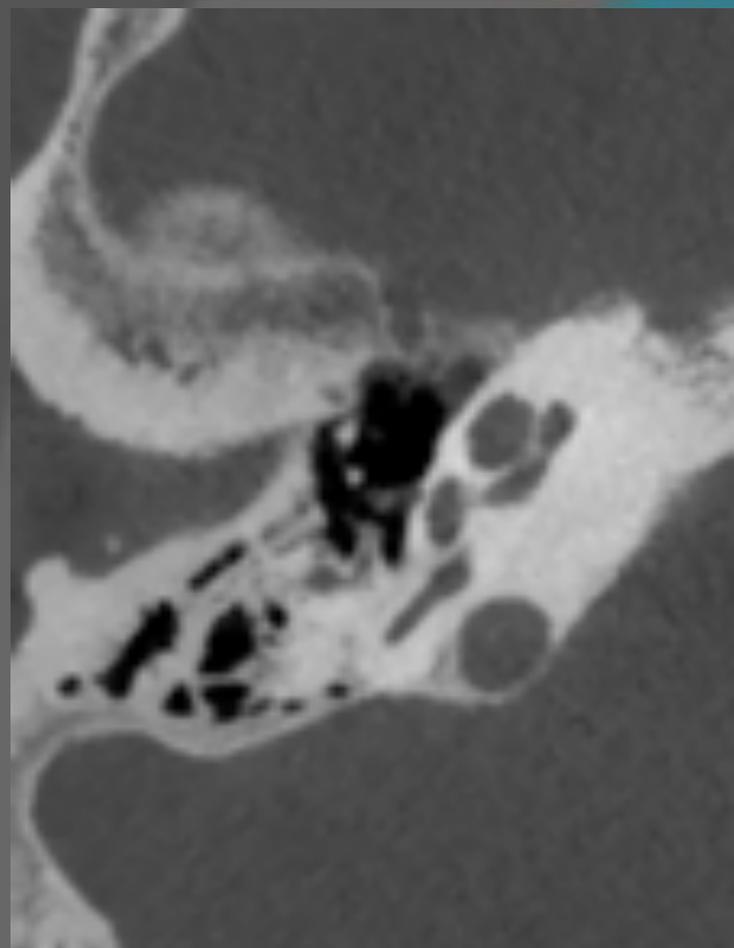
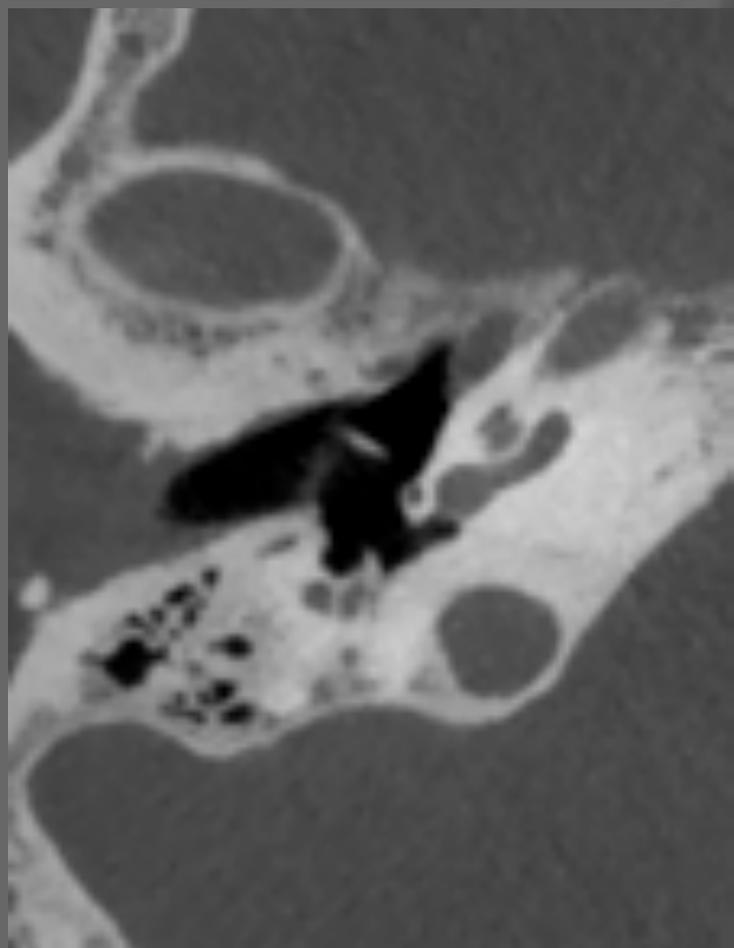
- Navegación del oído medio desde CAE con supresión del estribo.
- Al fondo la fosa oval.
- Estructura tubular ascendente en el promontorio. Arteria Estapedial.
- Middle ear navigation through Ear Canal with stapes suppression.
- In the background, the oval fossa.
- Ascending tubular structure on the promontory. Stapedial artery.



- 60 años de edad
- Hipoacusia de conducción bilateral de años de evolución.
- Antecedentes de otitis media.
- Tímpano con placas cálcicas
- Descartar otosclerosis.

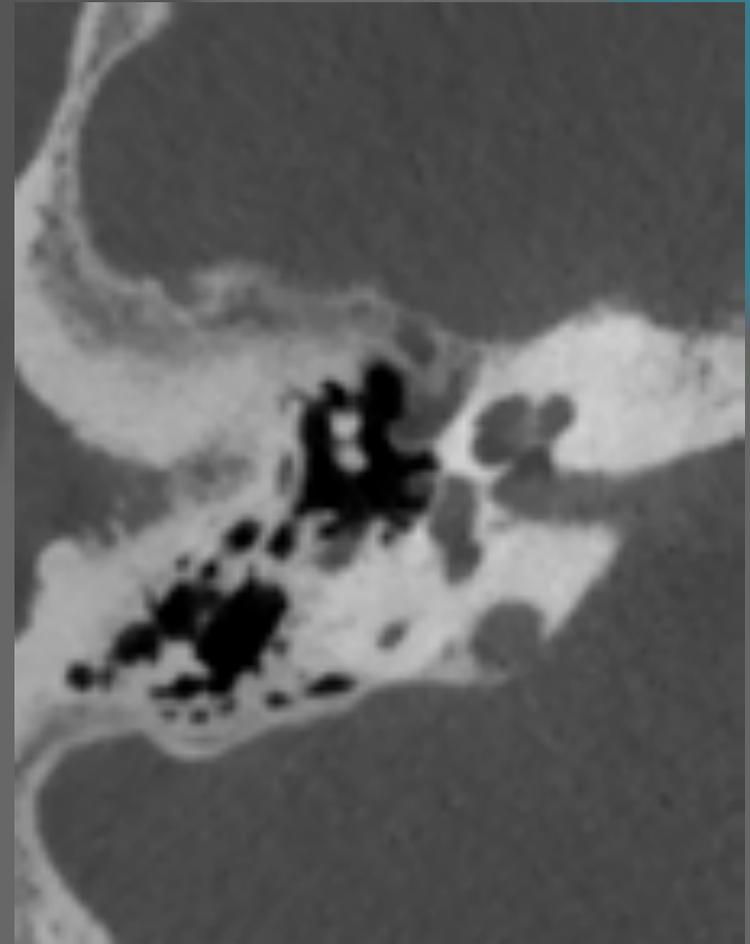
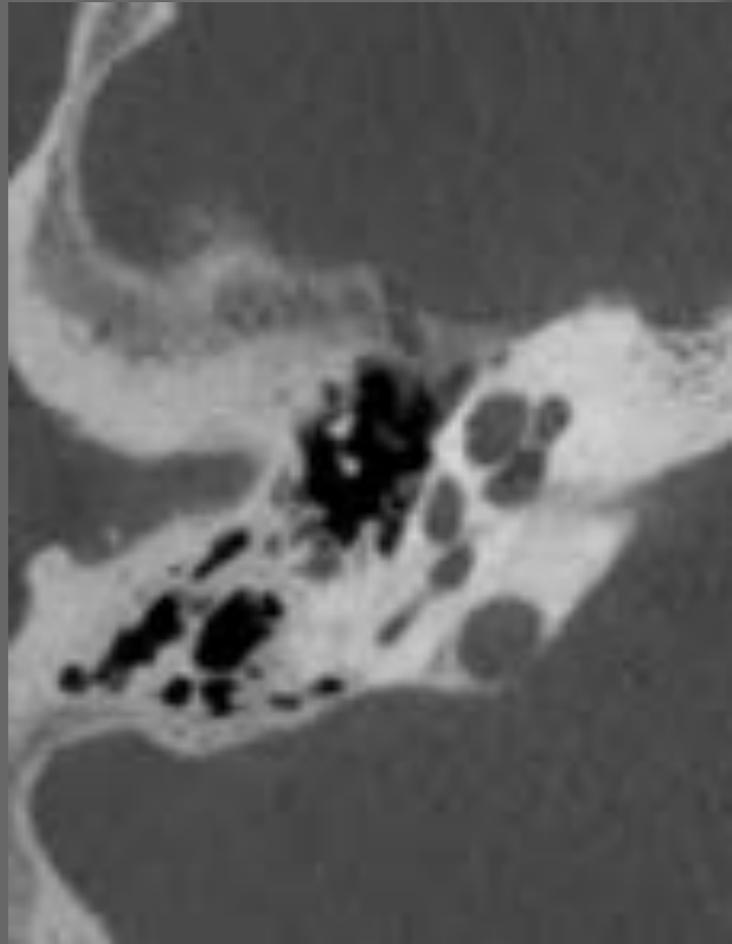


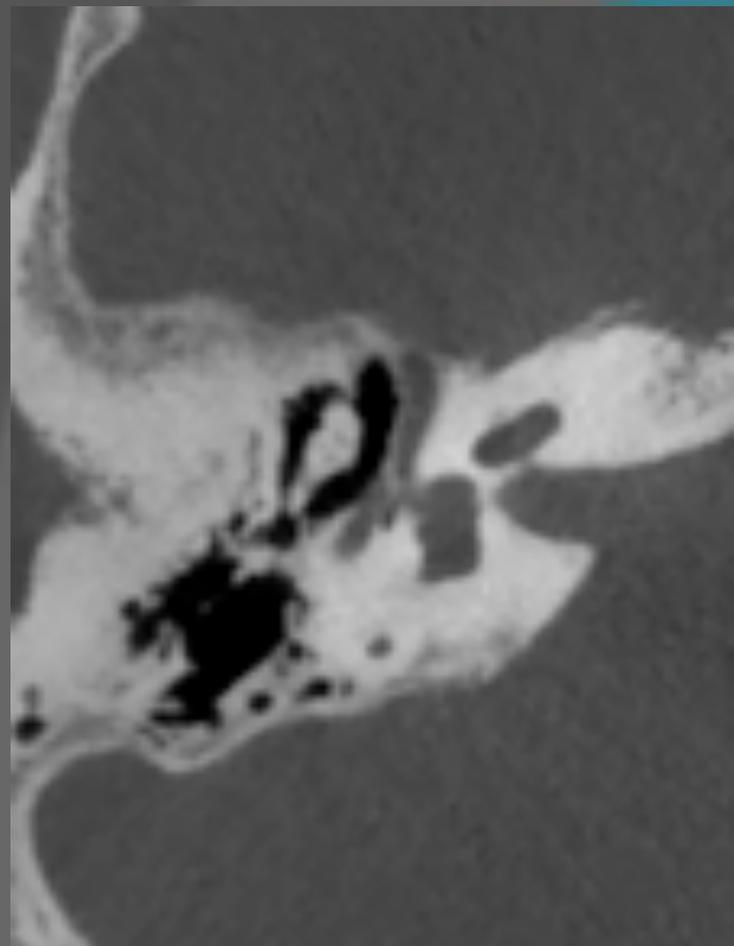
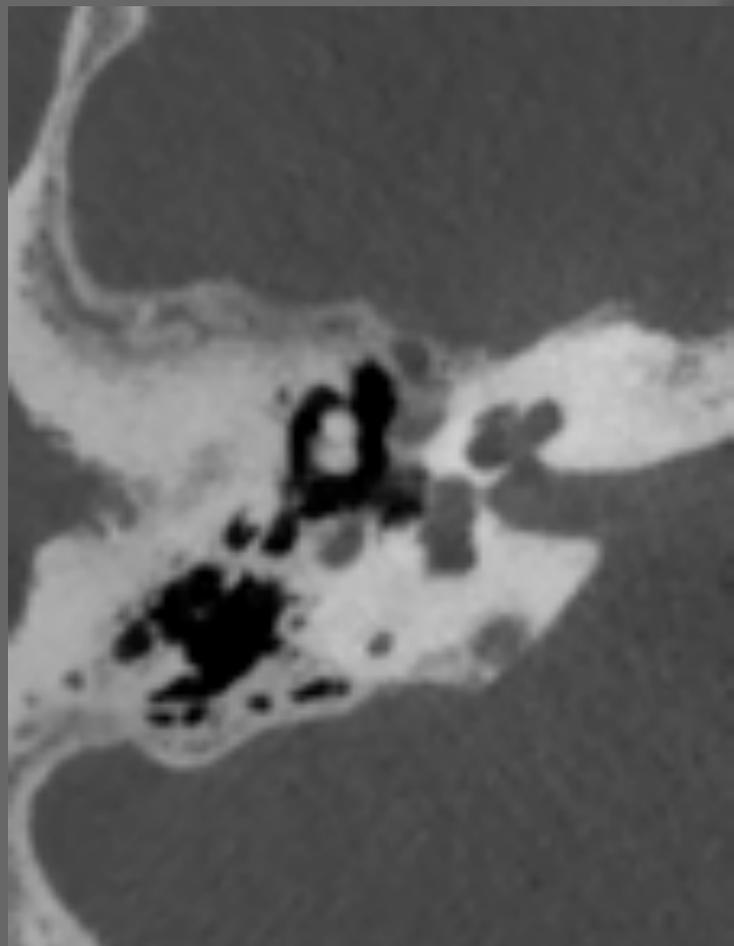
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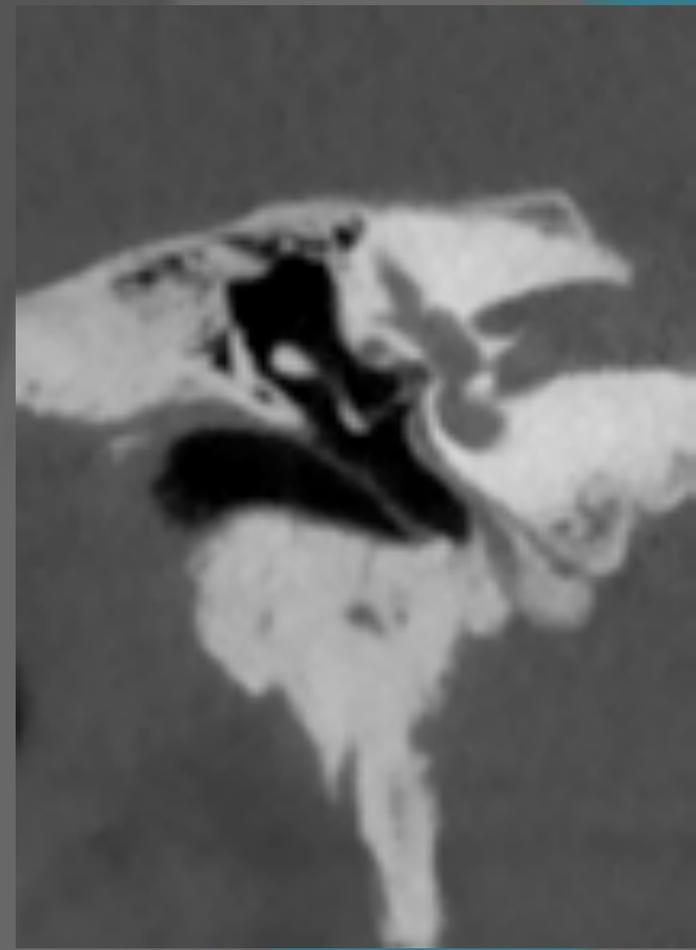
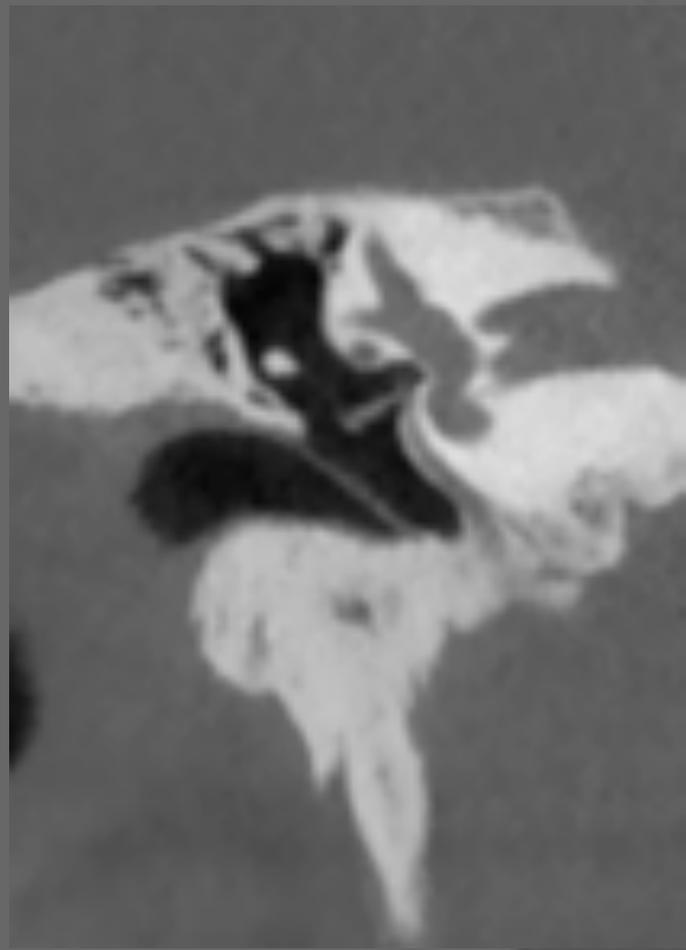
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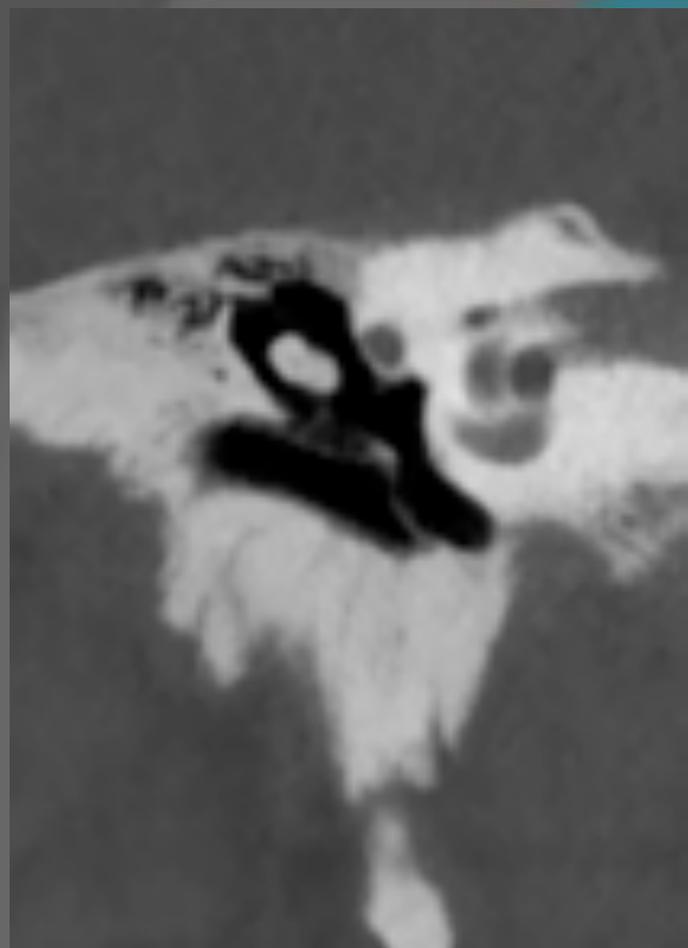
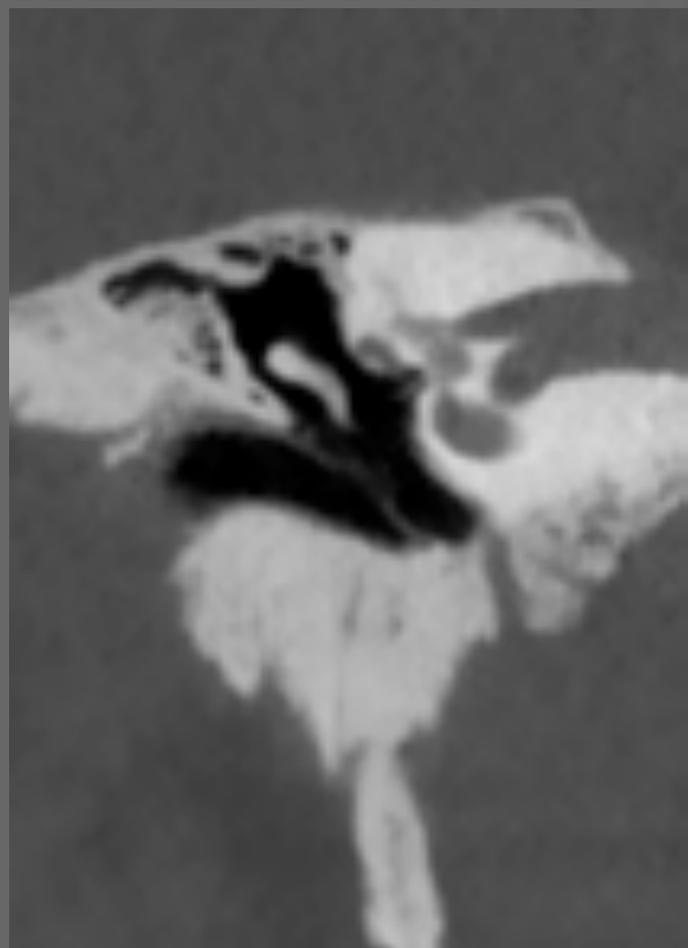


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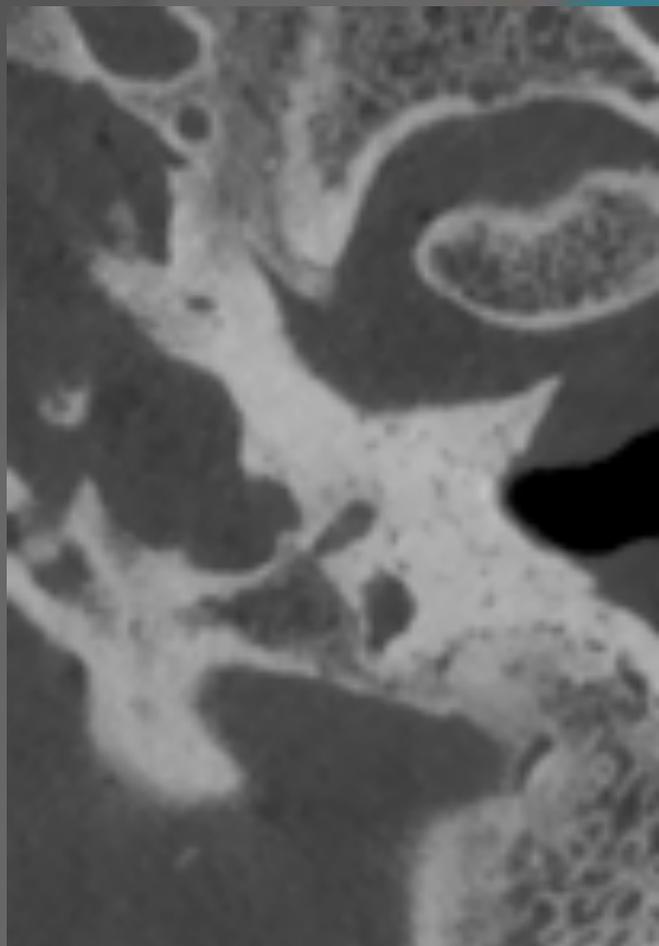
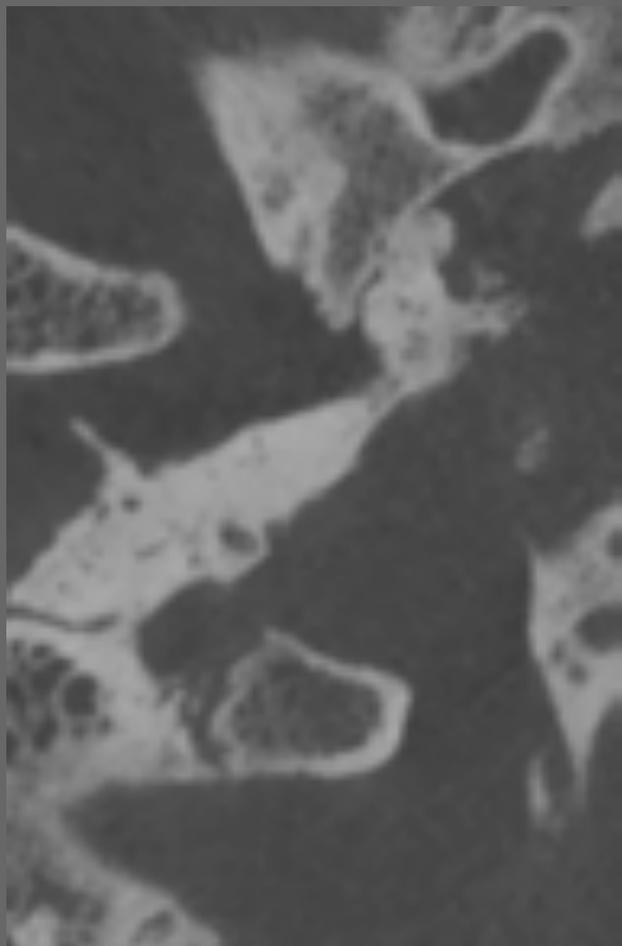


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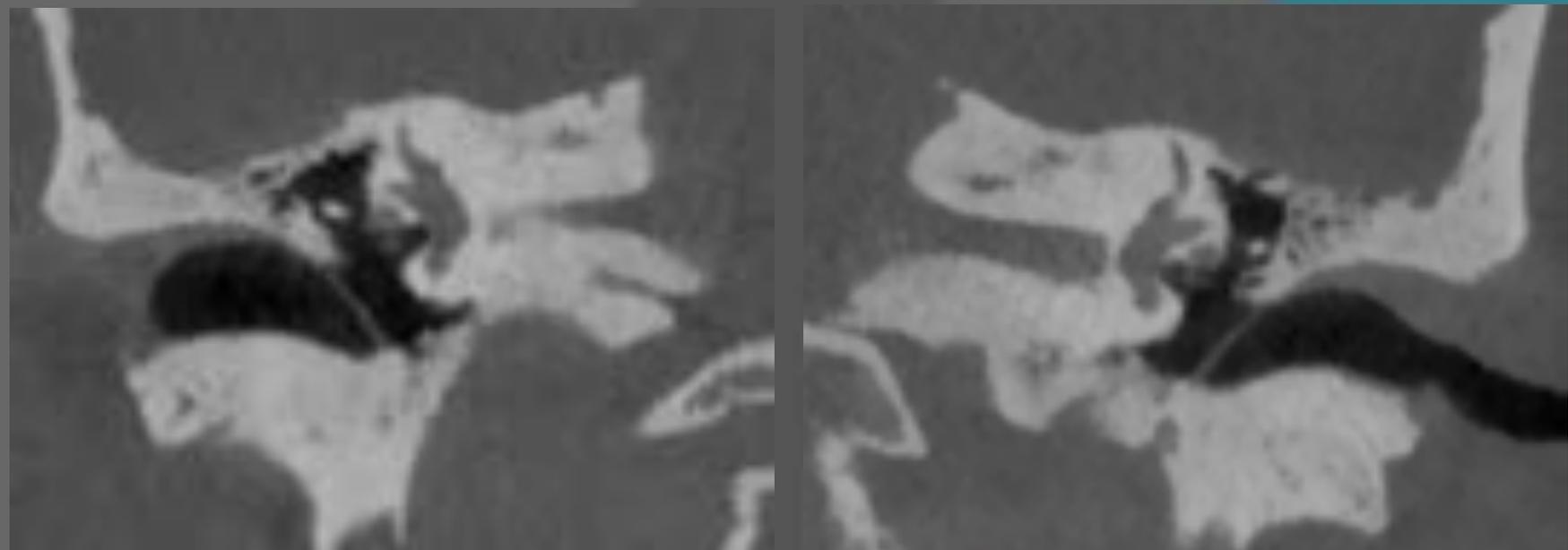
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- 34 años. Hipoacusia de transmisión bilateral
- Antecedentes de otitis en la infancia bilaterales.
- Otoscopia tímpano con alguna área cicatricial y placa cálcica en ambos oídos.
- Caja normal.

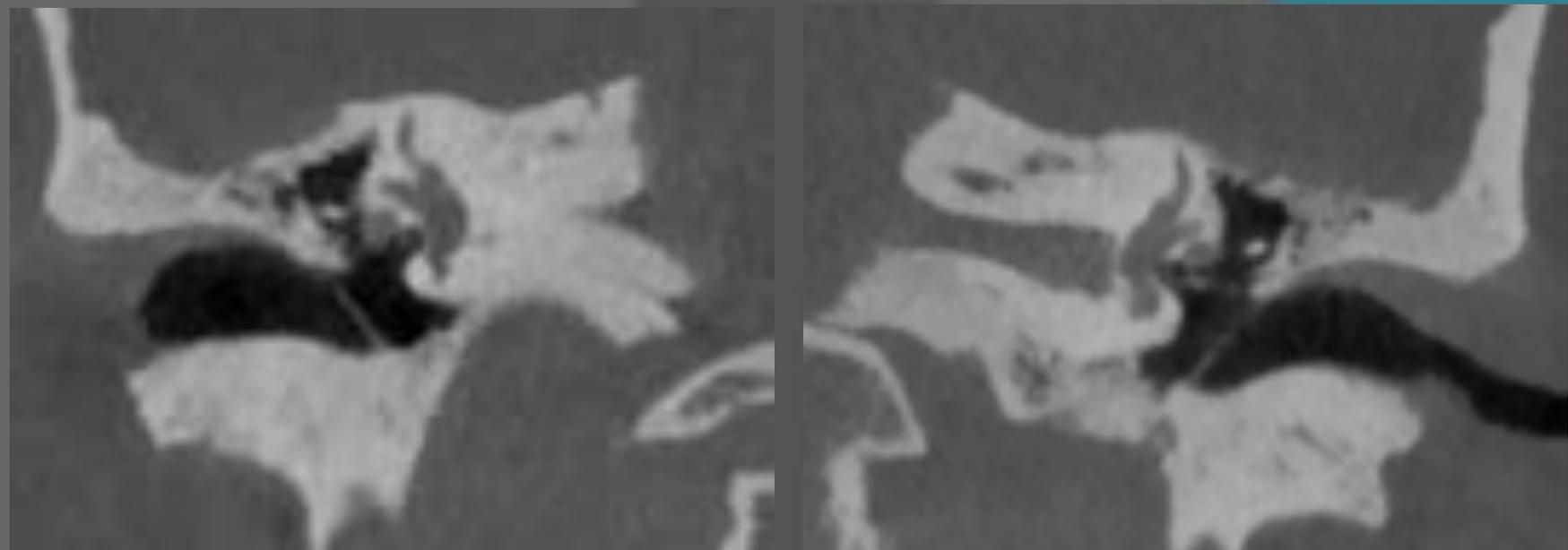


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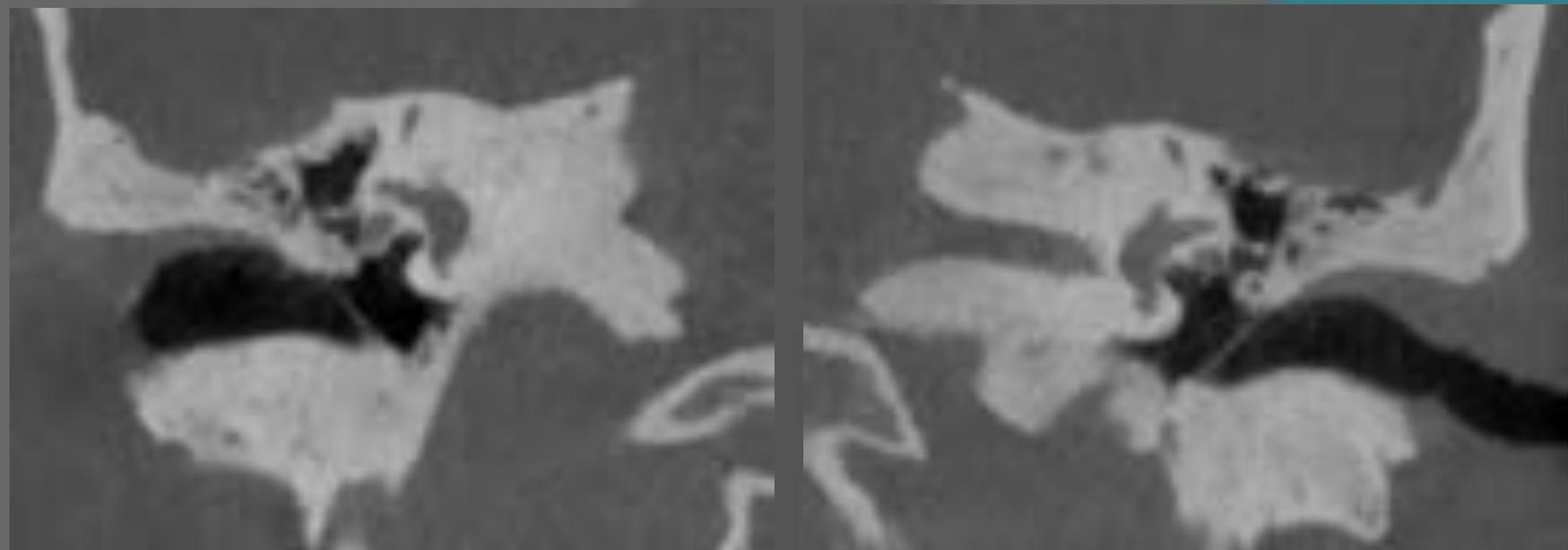


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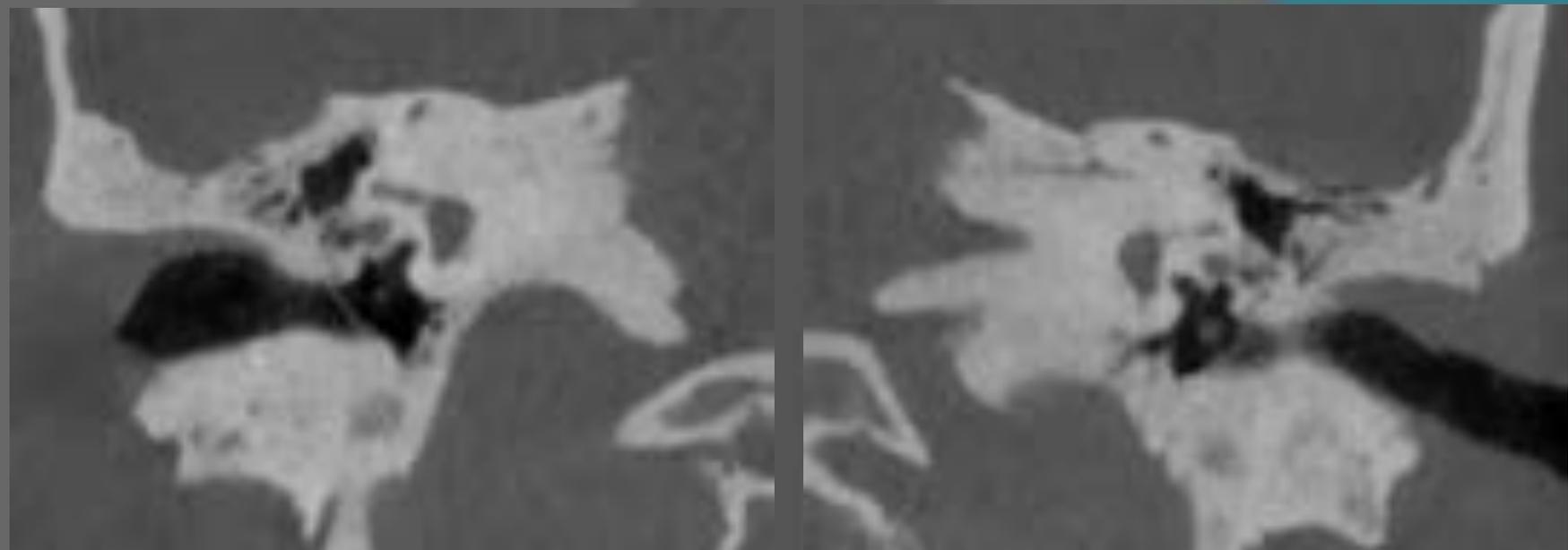


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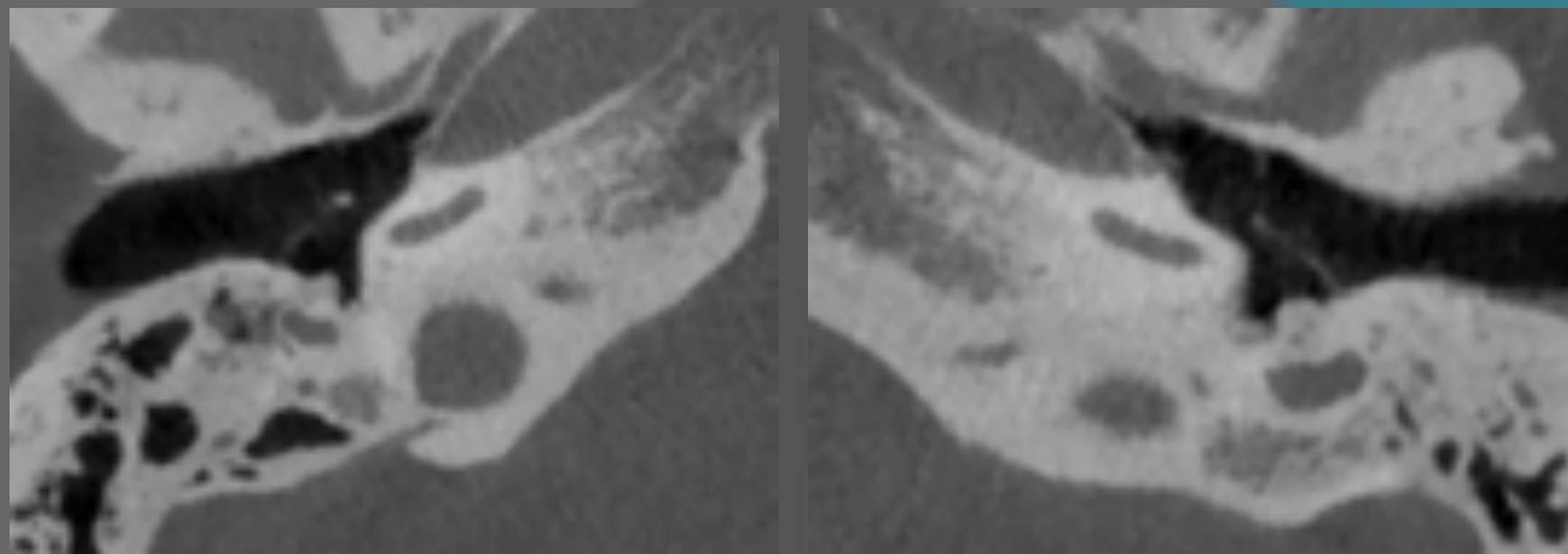


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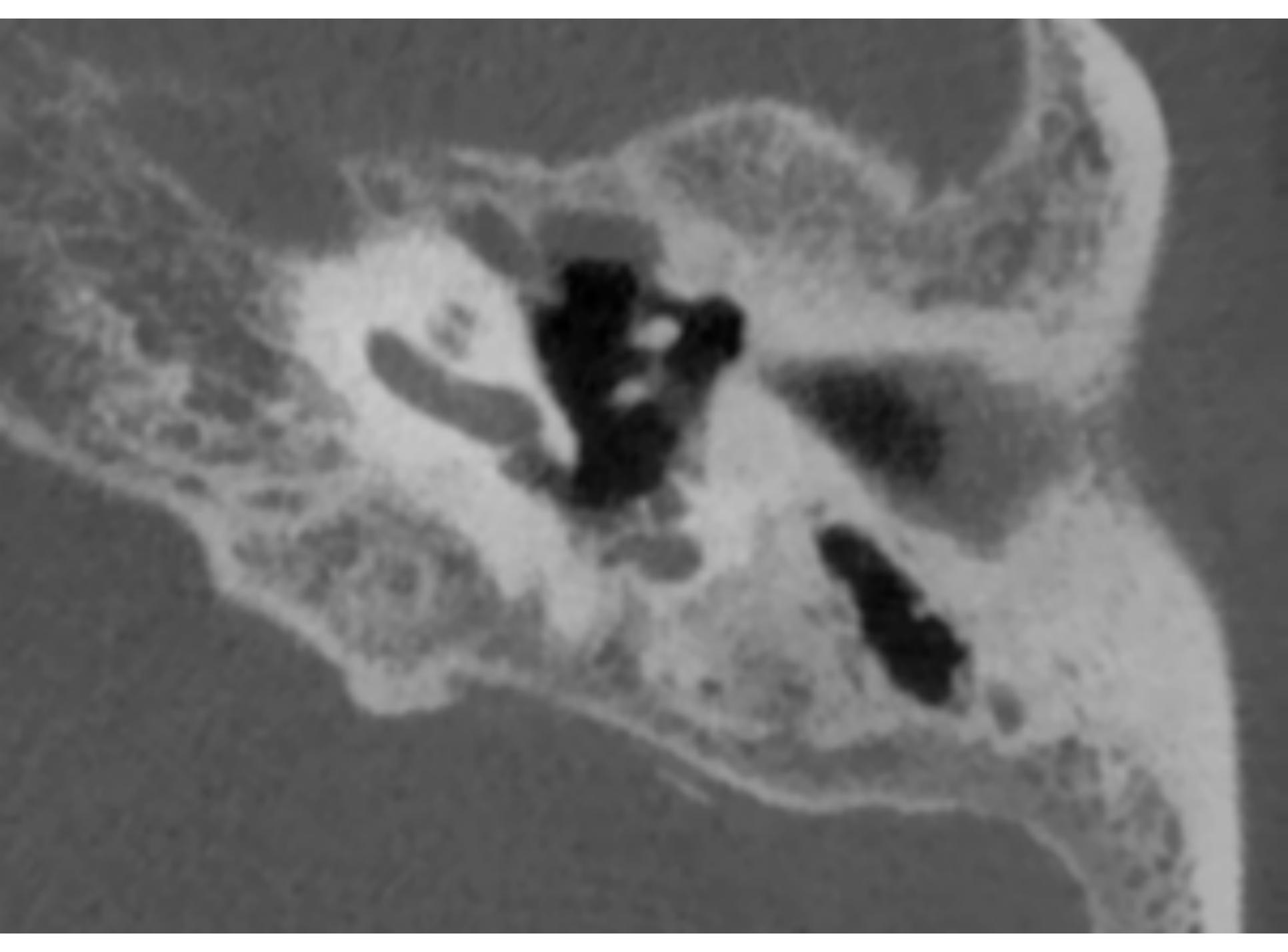


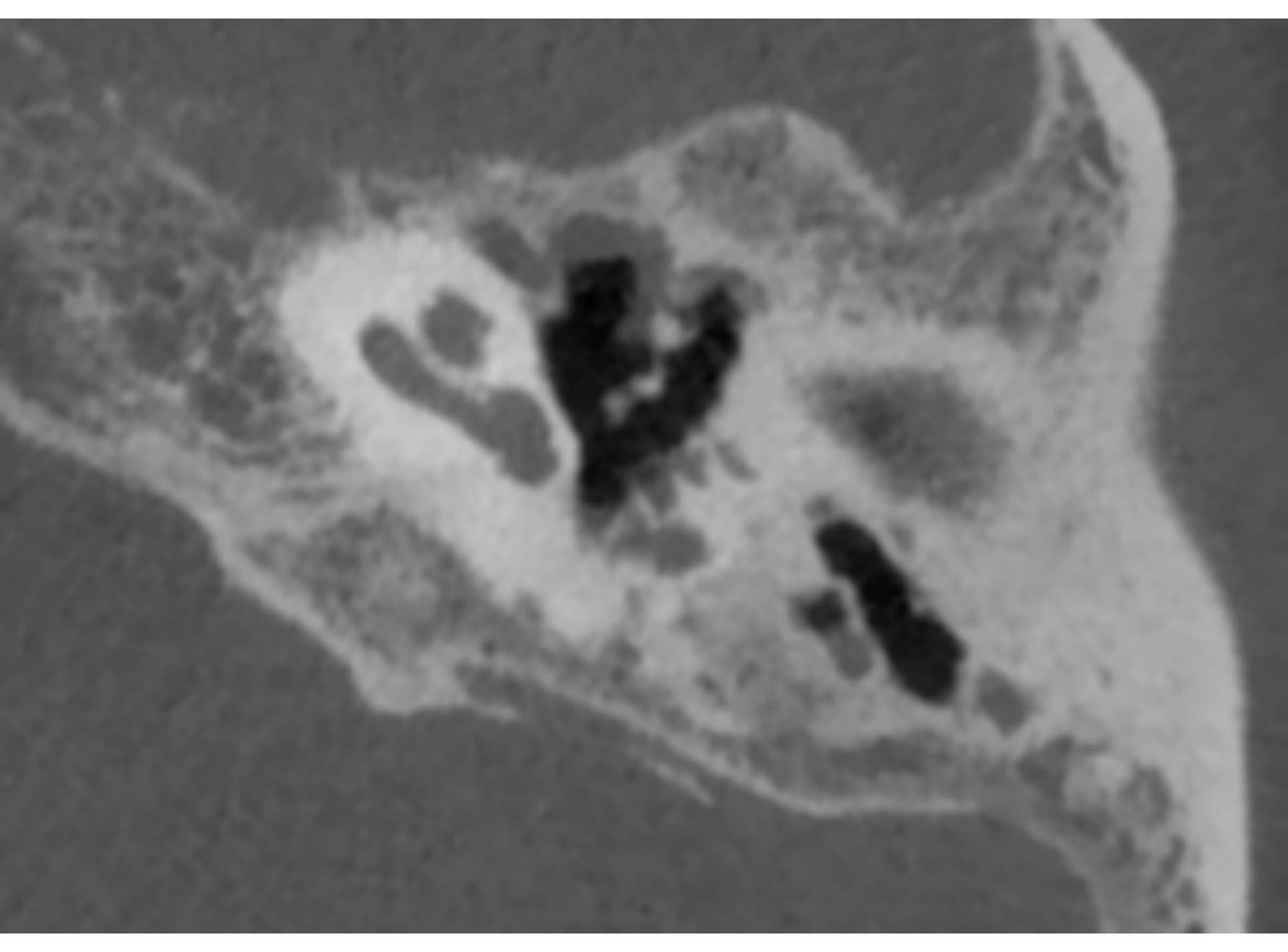
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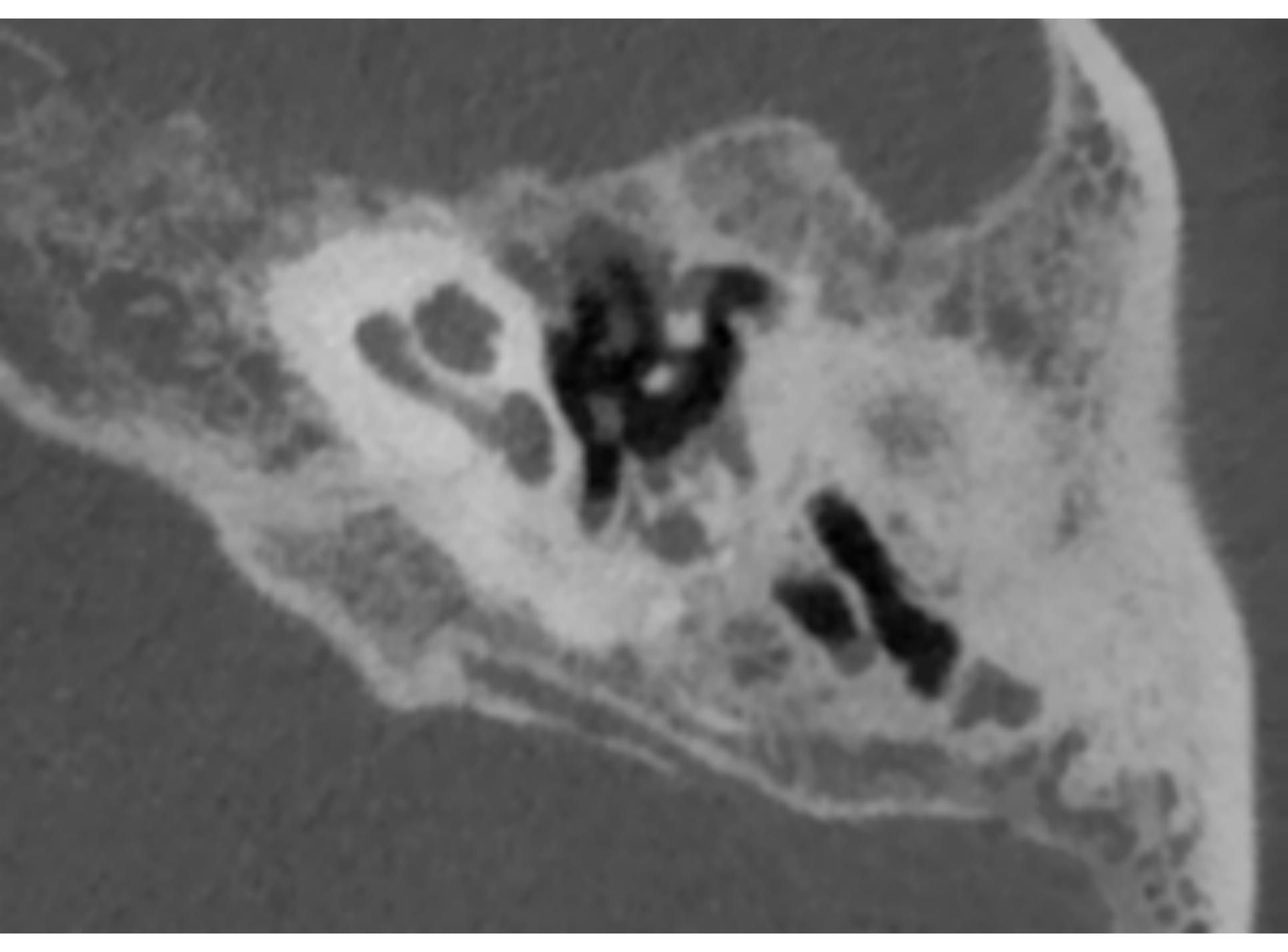


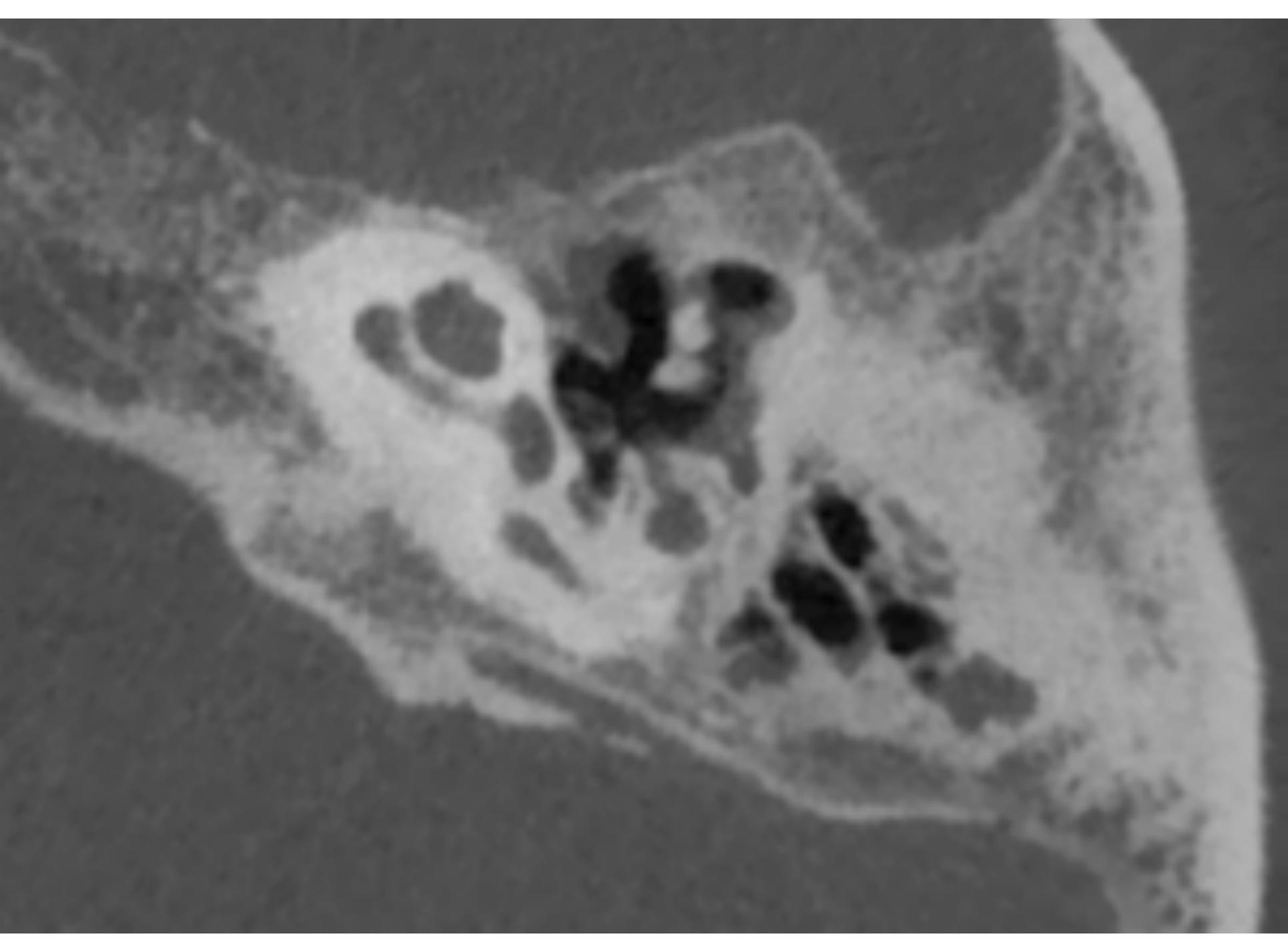


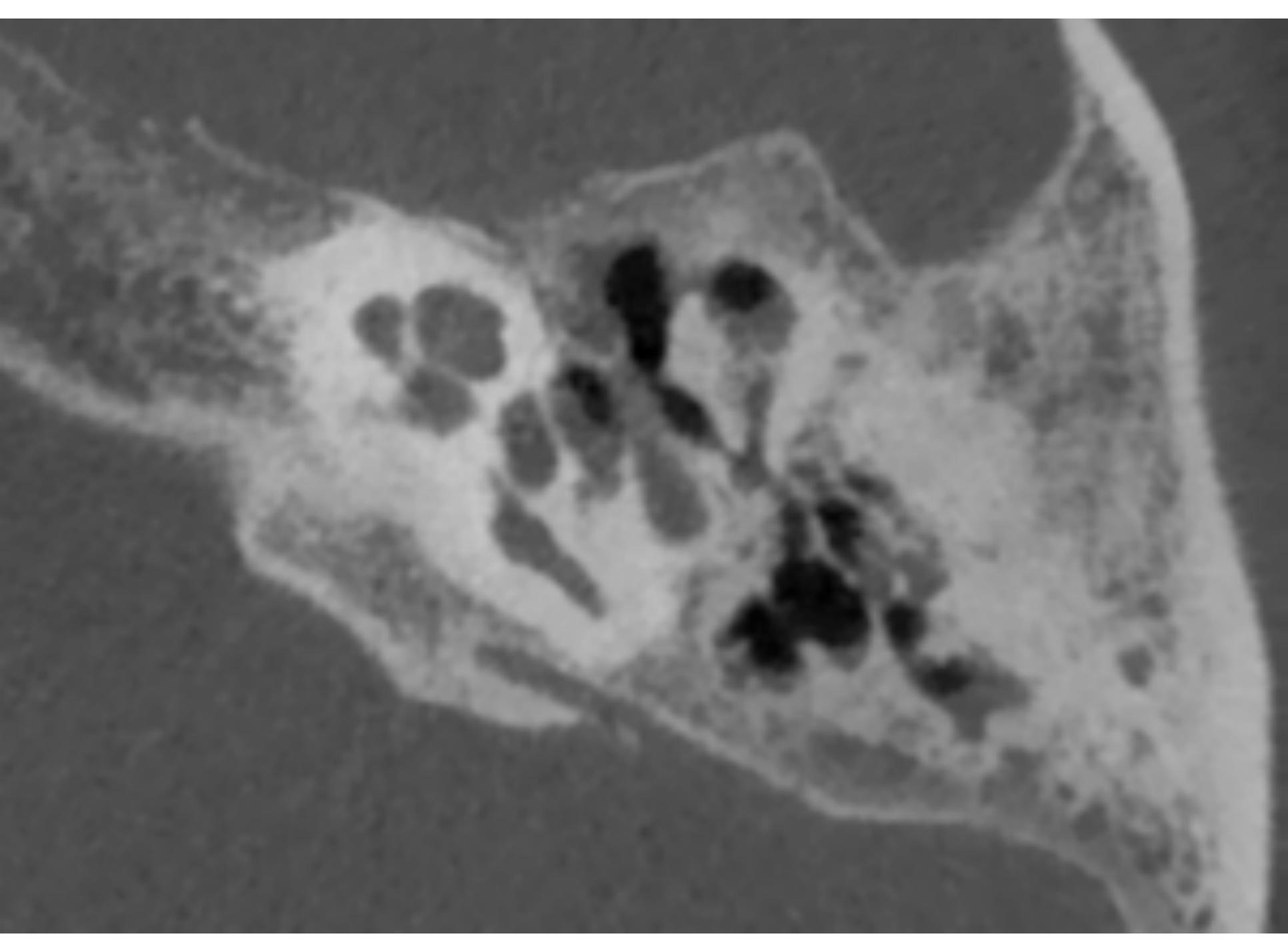
- Paciente de 65 años de edad con antecedentes de OMC
- Hipoacusia de transmisión OI.

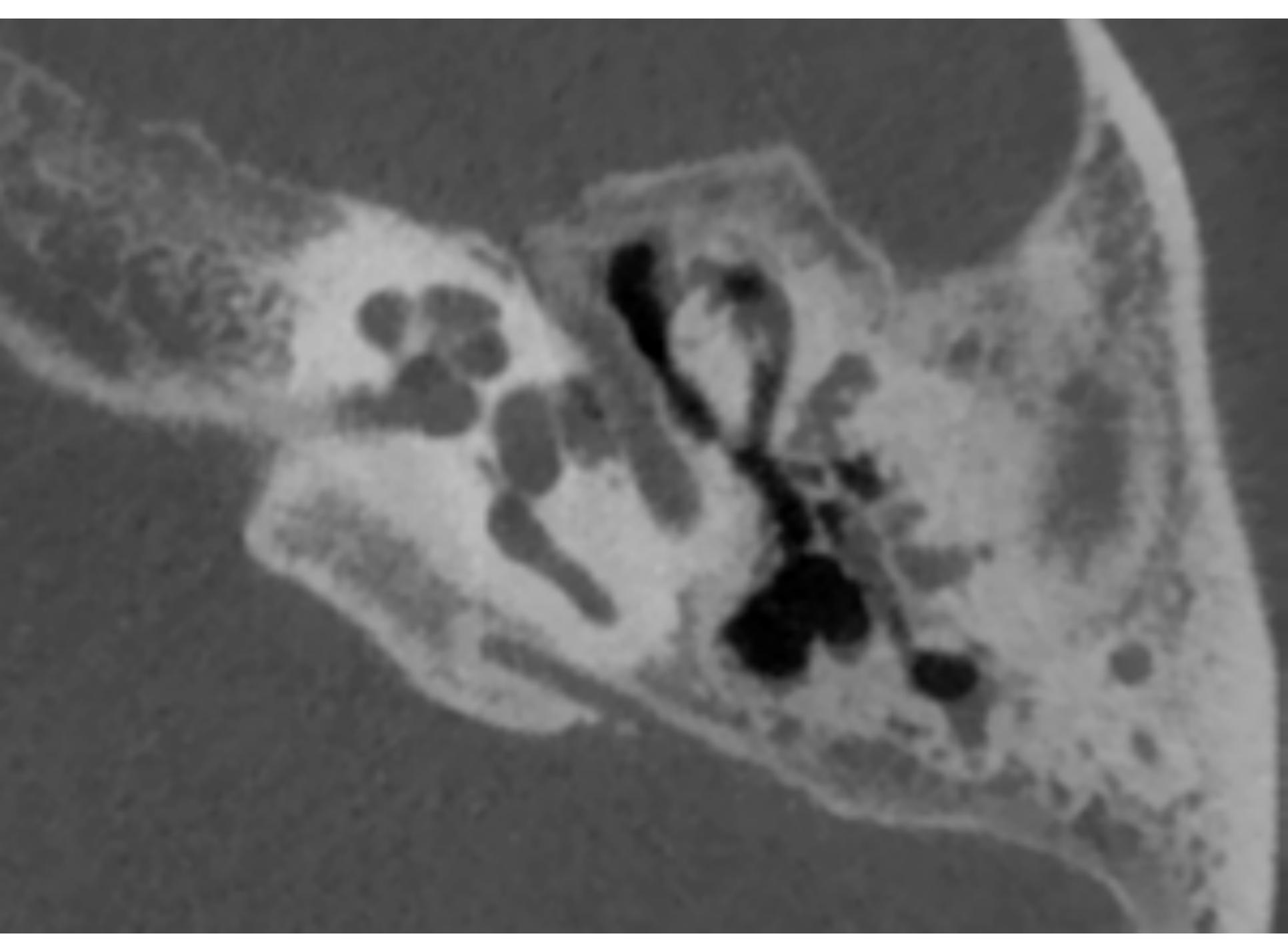


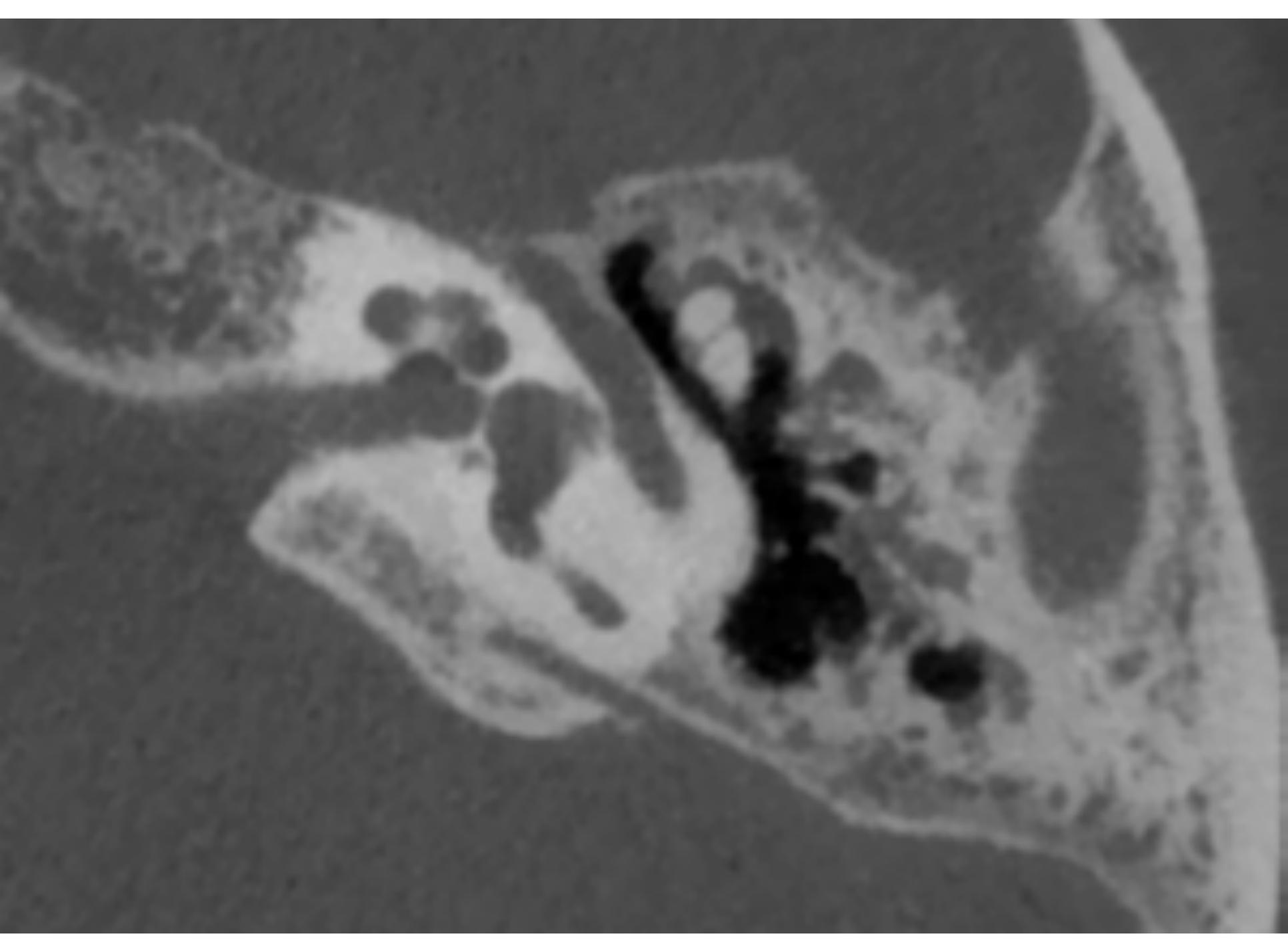


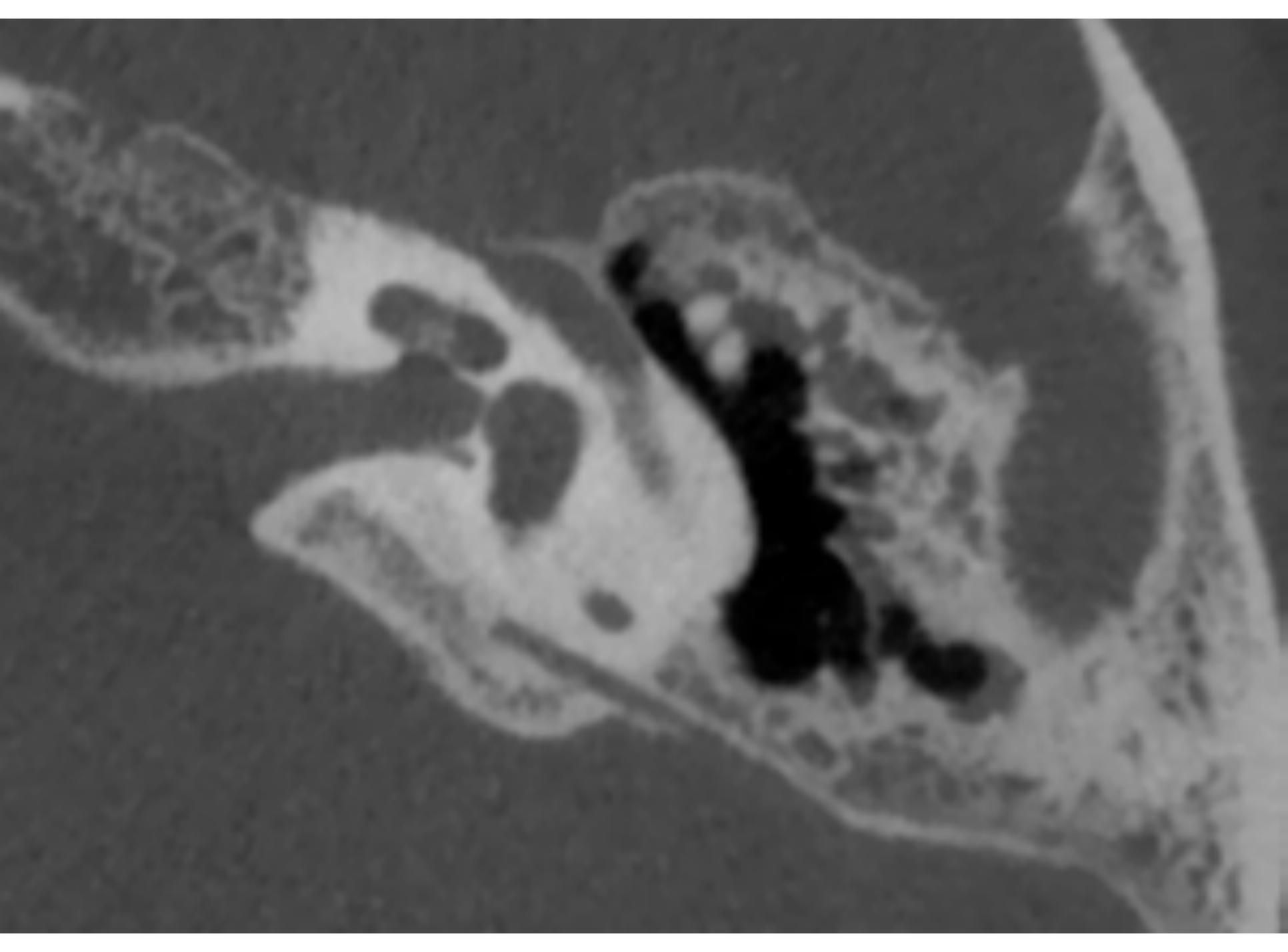


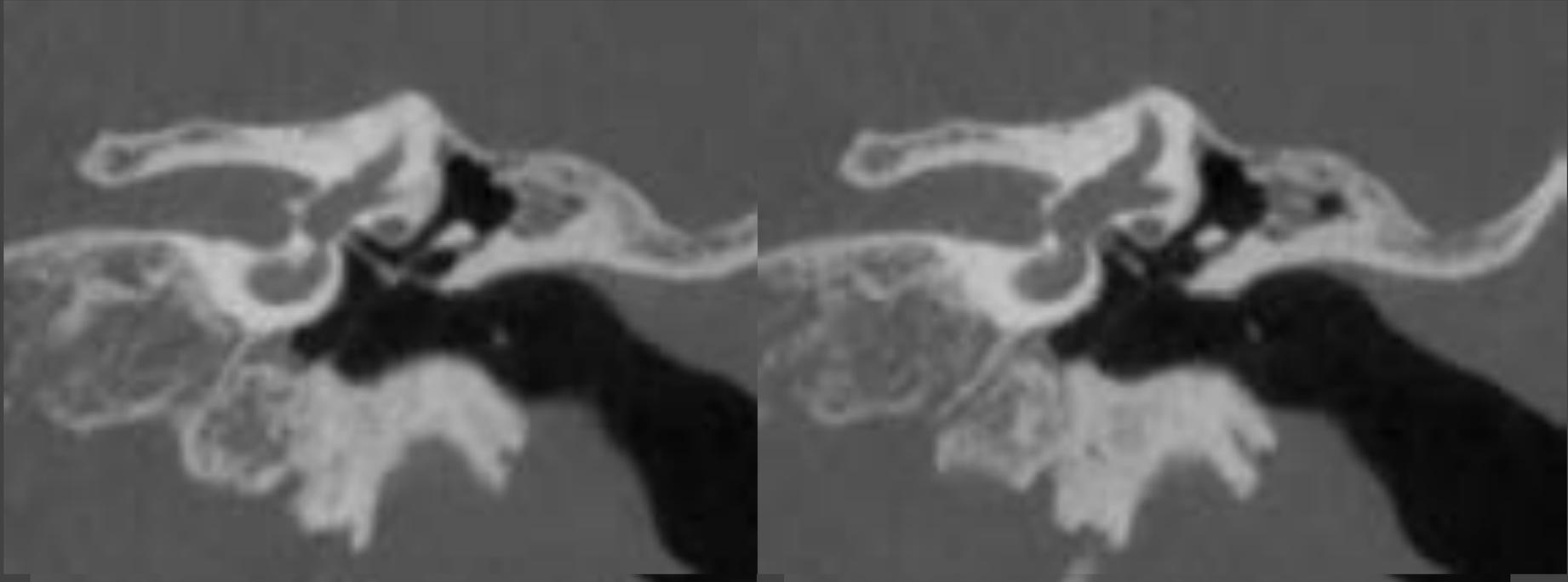


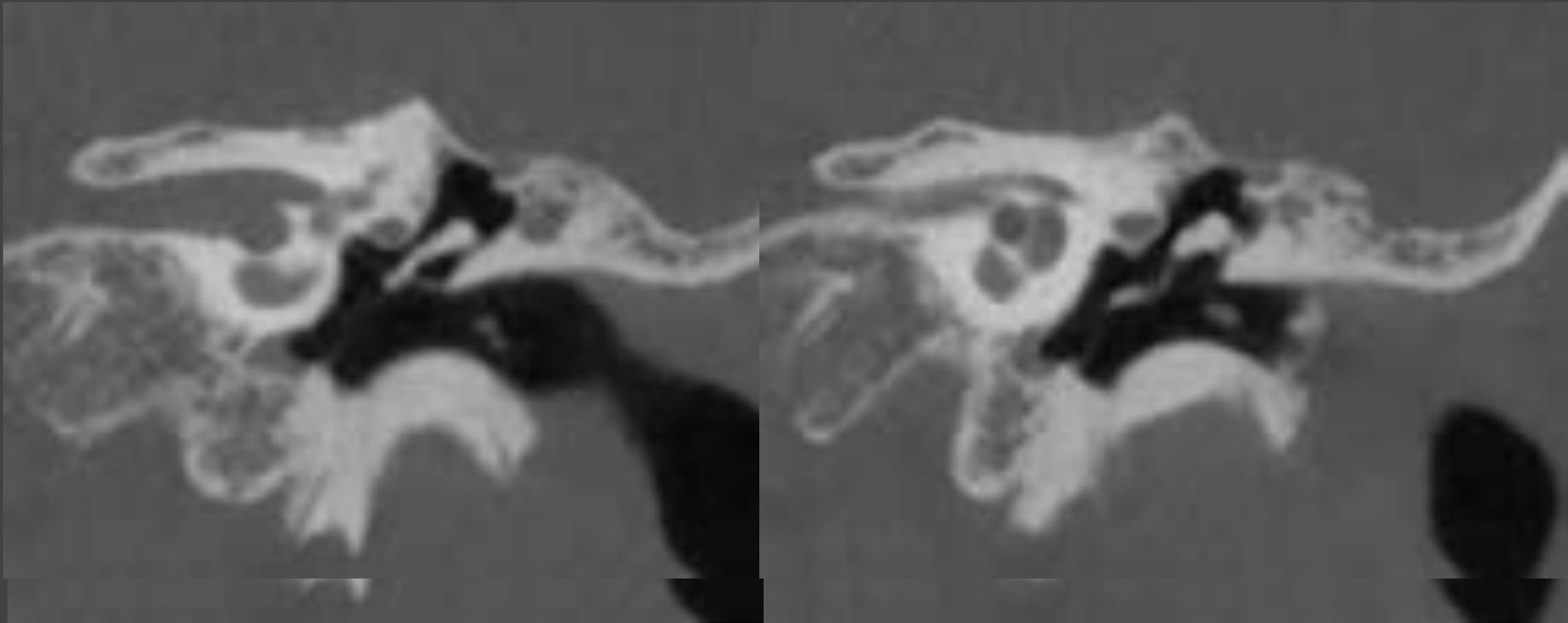








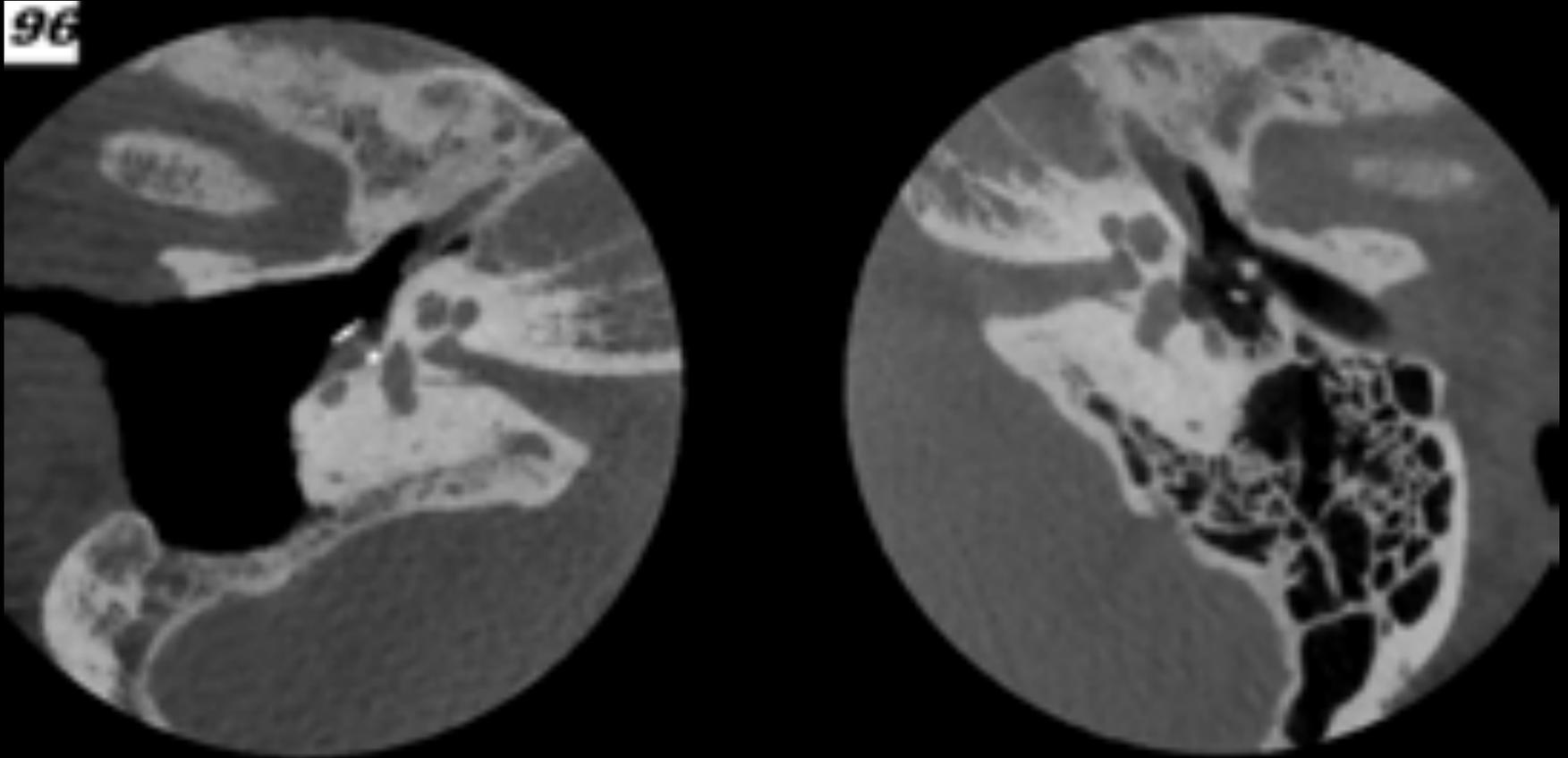




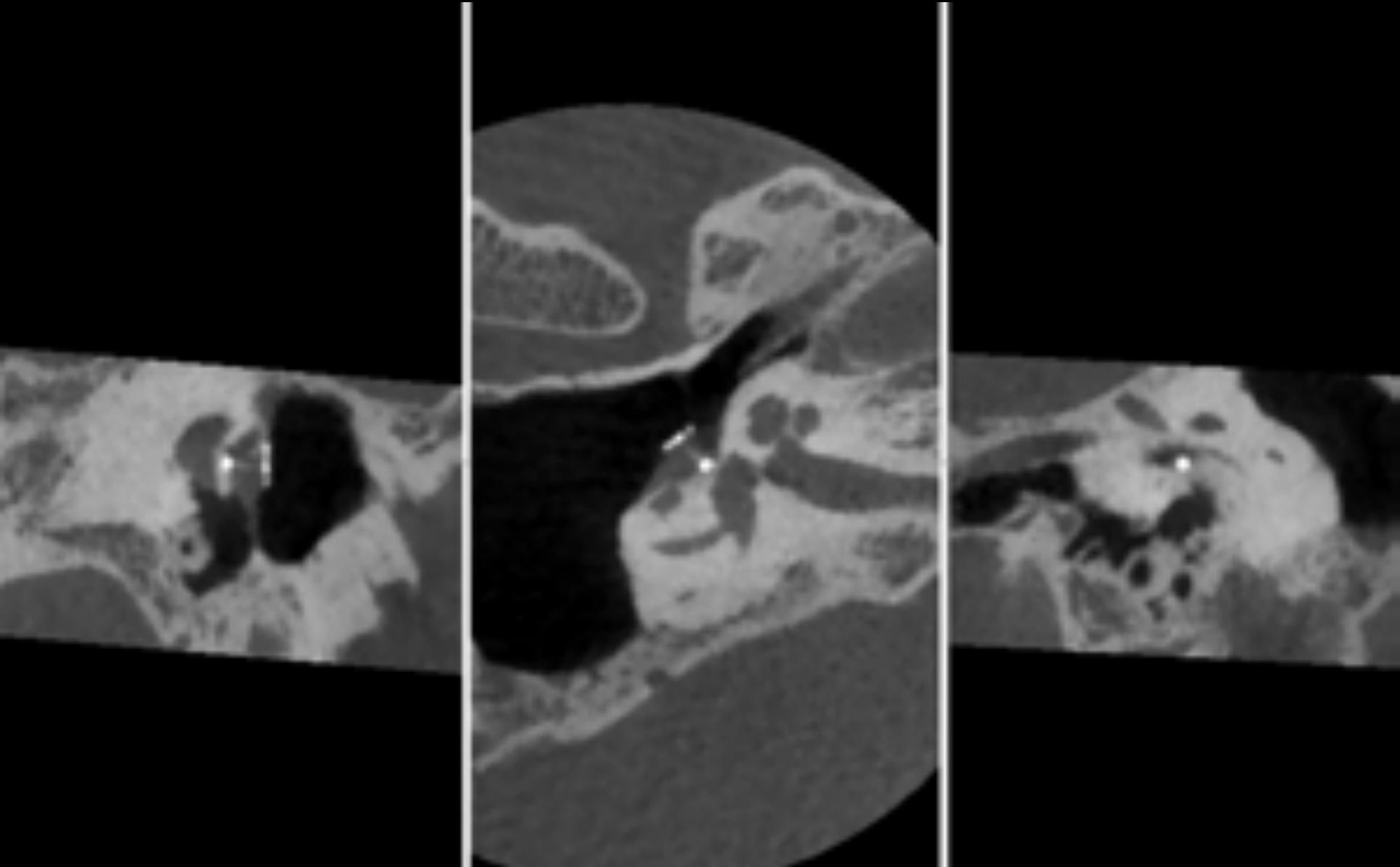
Prótesis. Platina cálcica

16

Prosthesis. Footplate calcifications



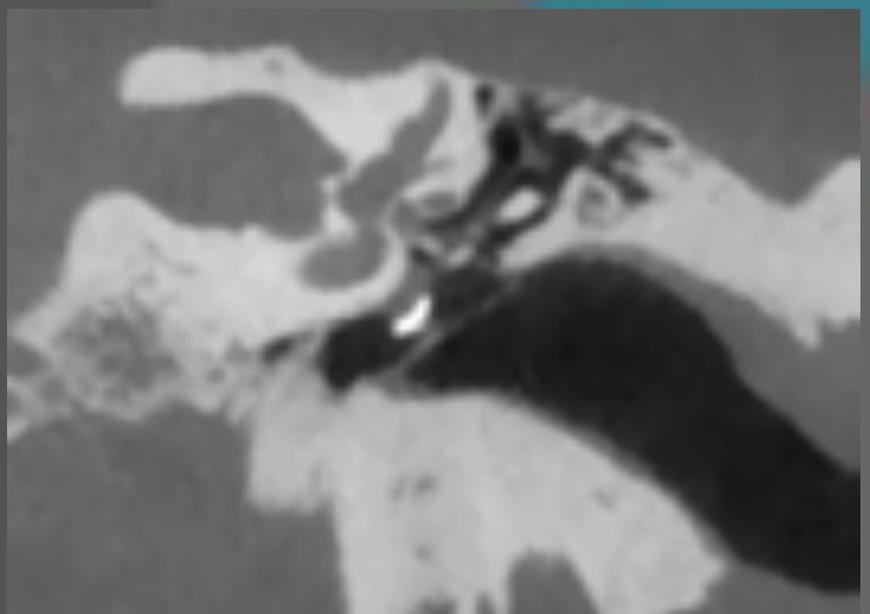
Prótesis platina cálcica  
Prosthesis. Footplate calcifications.



- Paciente de 57 años de edad con otitis serosa izquierda de repetición.
- Hipoacusia de transmisión OI

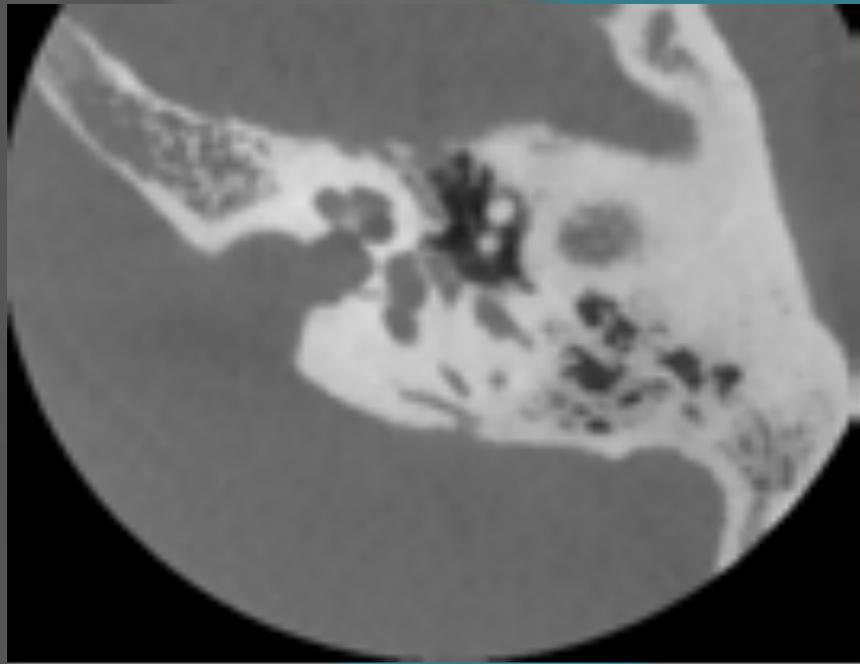
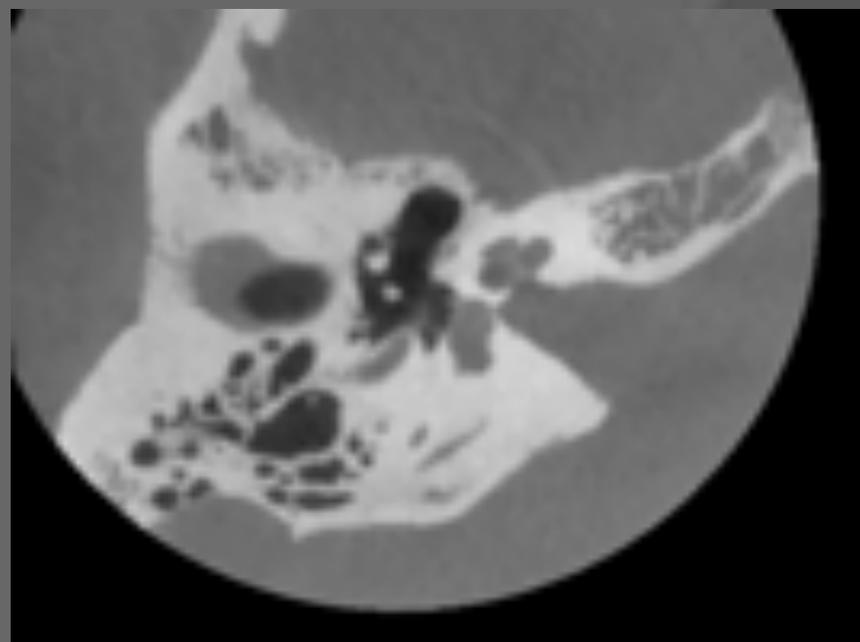


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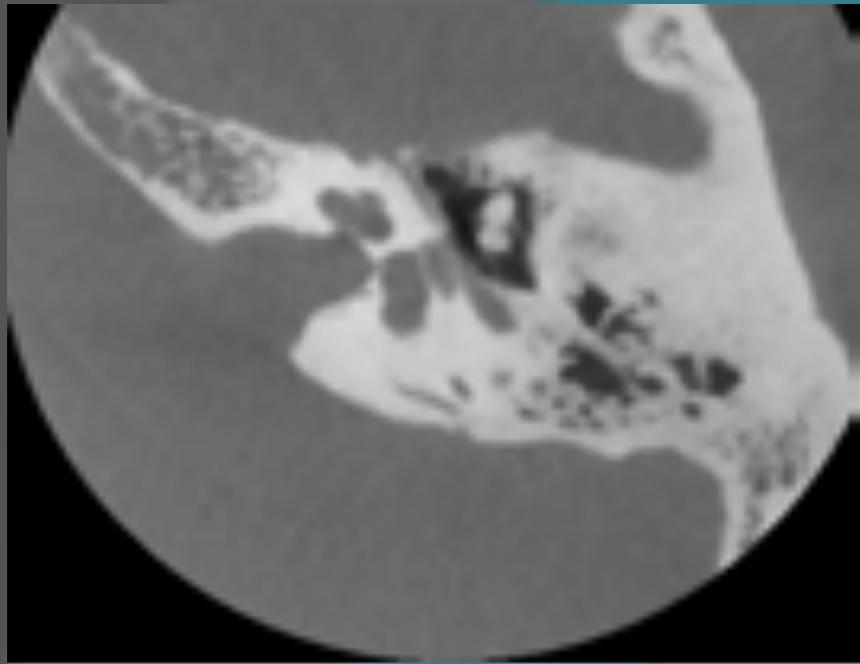
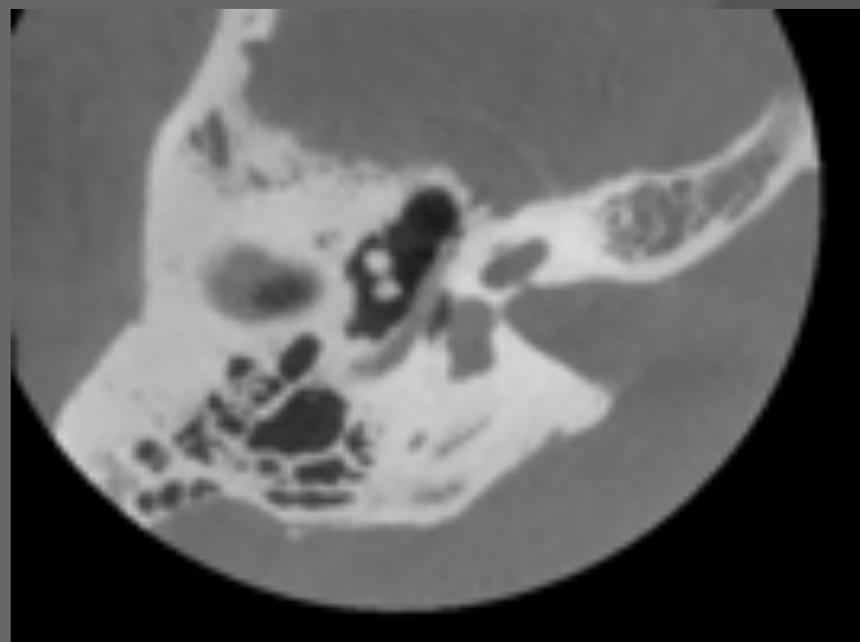


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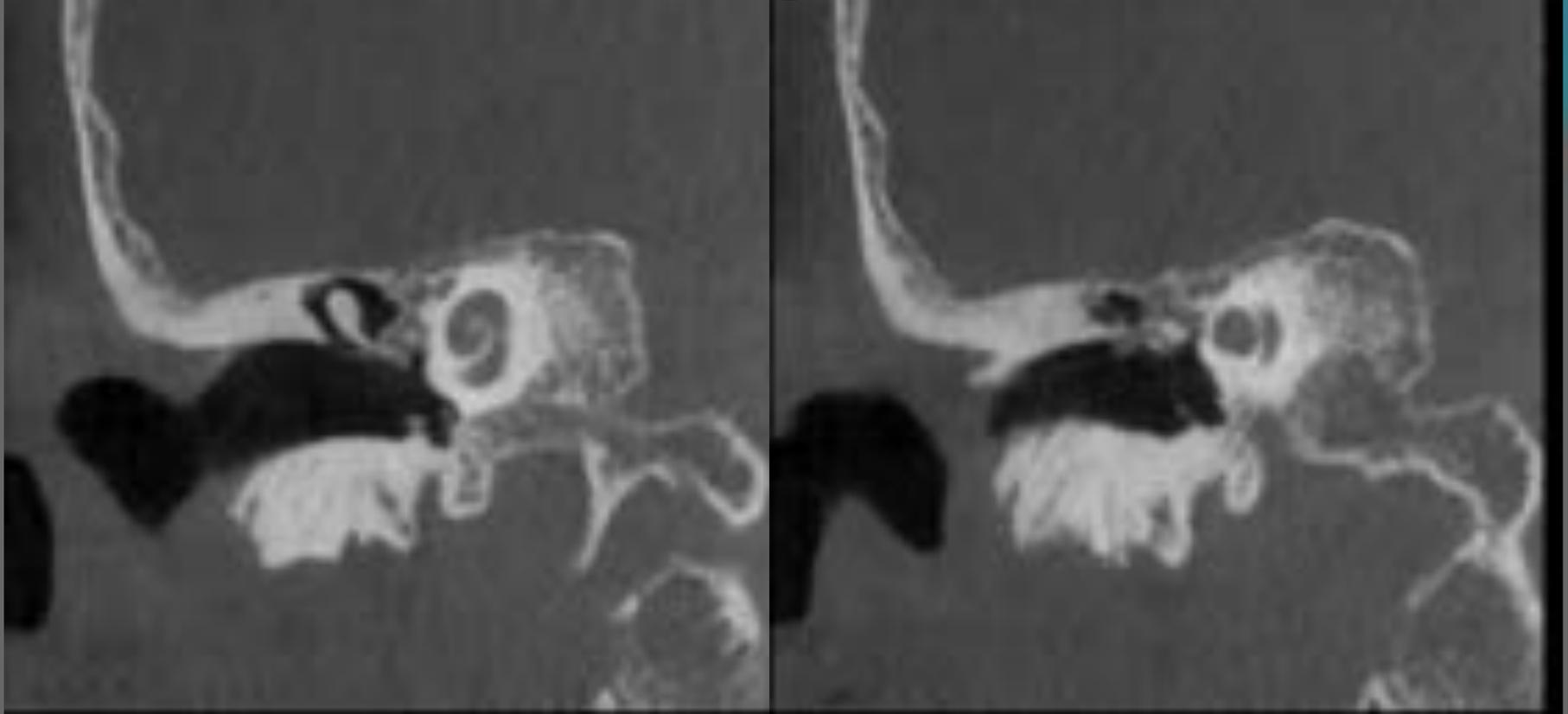
- Paciente de 45 años de edad con otitis seromucosa crónica del oído derecho con múltiples drenajes transtimpánicos que presenta hipoacusia severa. Descartar alteración cadena osicular.
- A 45-year-old patient with chronic right ear serous otitis media with multiple transtympanic drainage tubes and severe hearing loss. Rule out ossicular chain



**Calcificaciones de platina del estribo. Timpanoesclerosis.**

Footplate calcifications.

Tympanosclerosis.





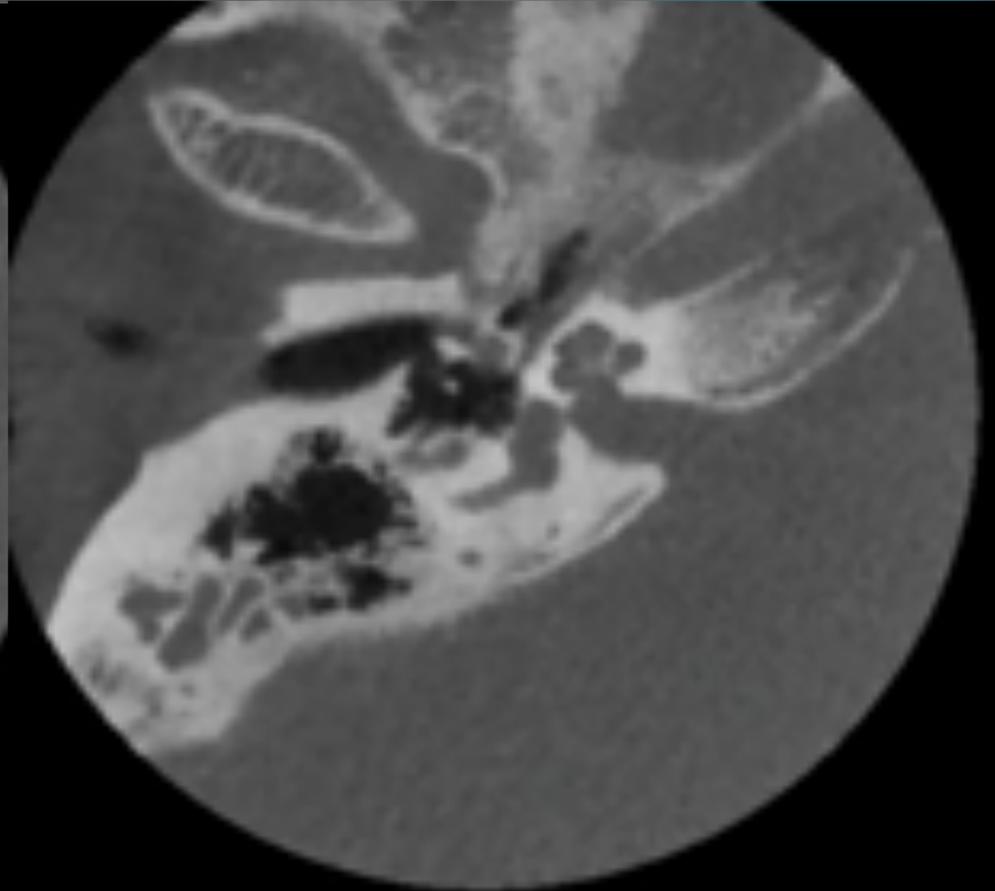
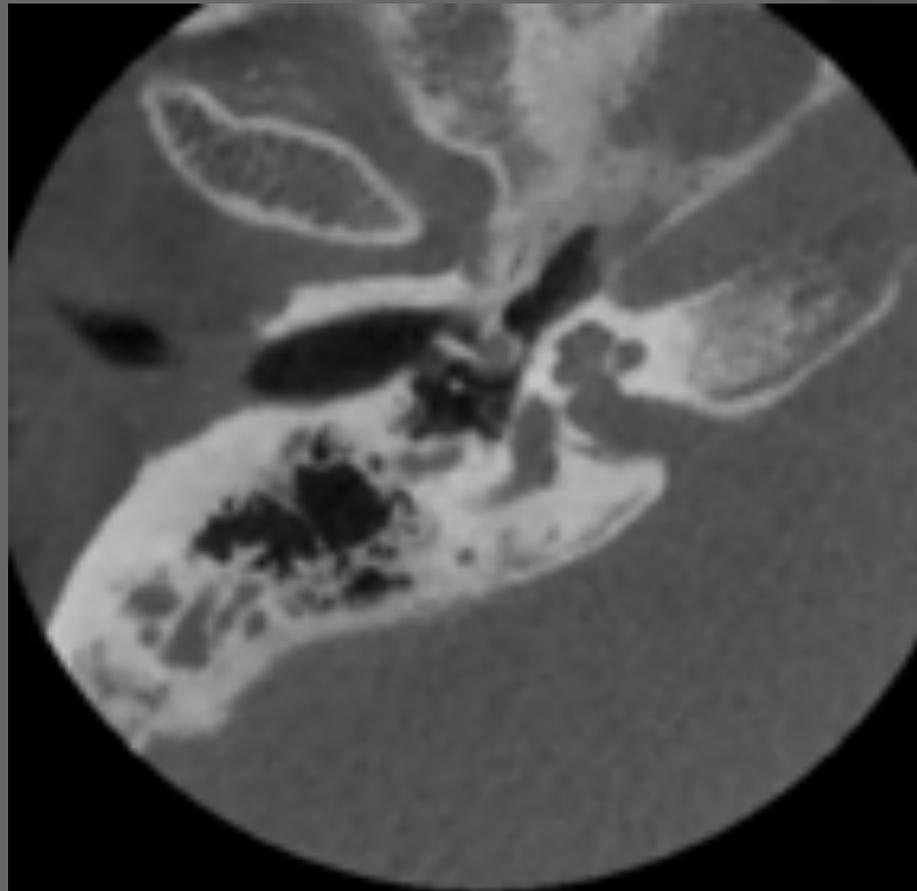
INSTITUTO  
GUIRADO

**Calcificaciones de platina del estribo.**

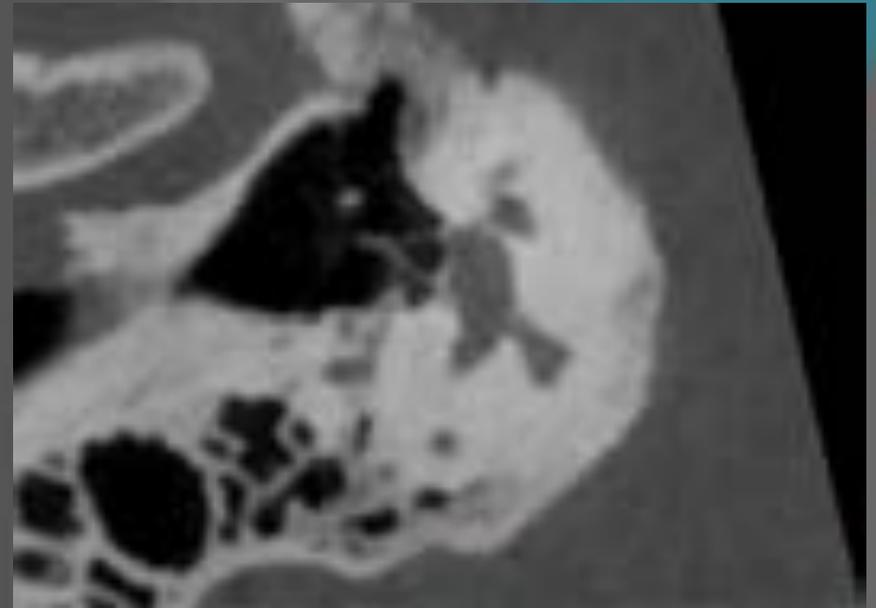
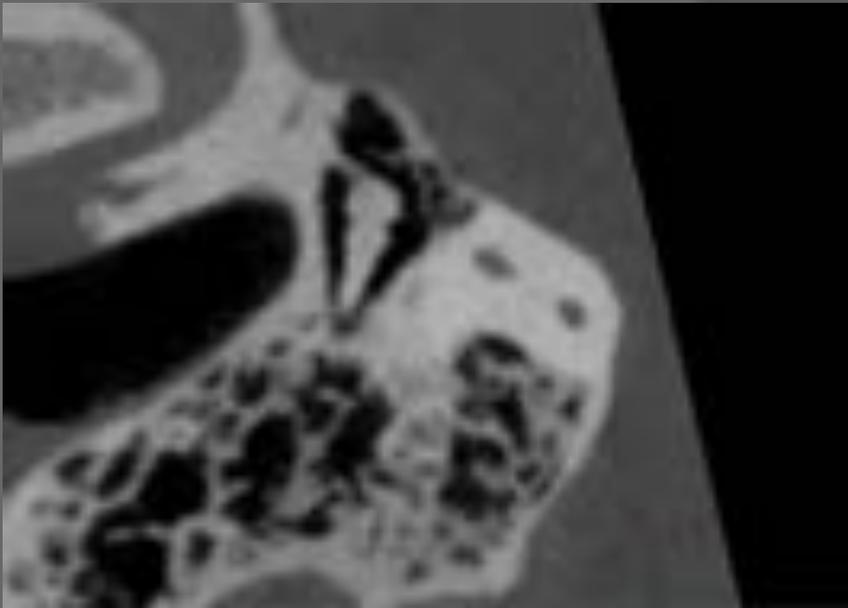
**Timpanoesclerosis.**

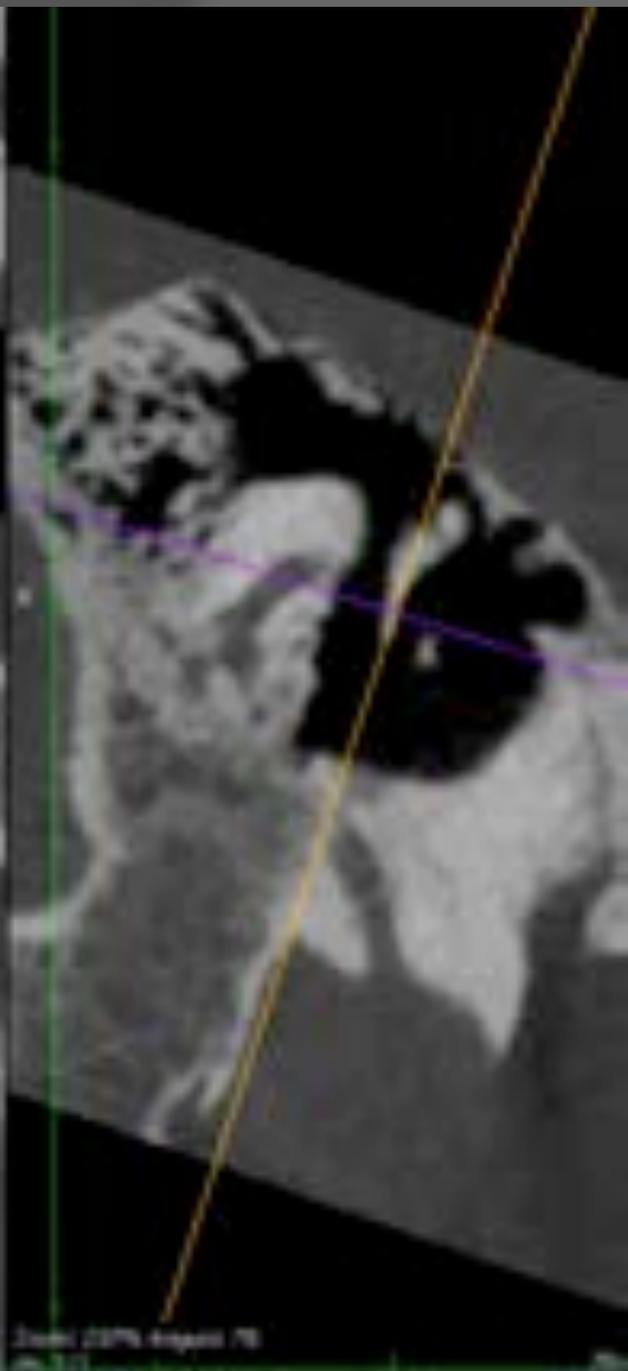
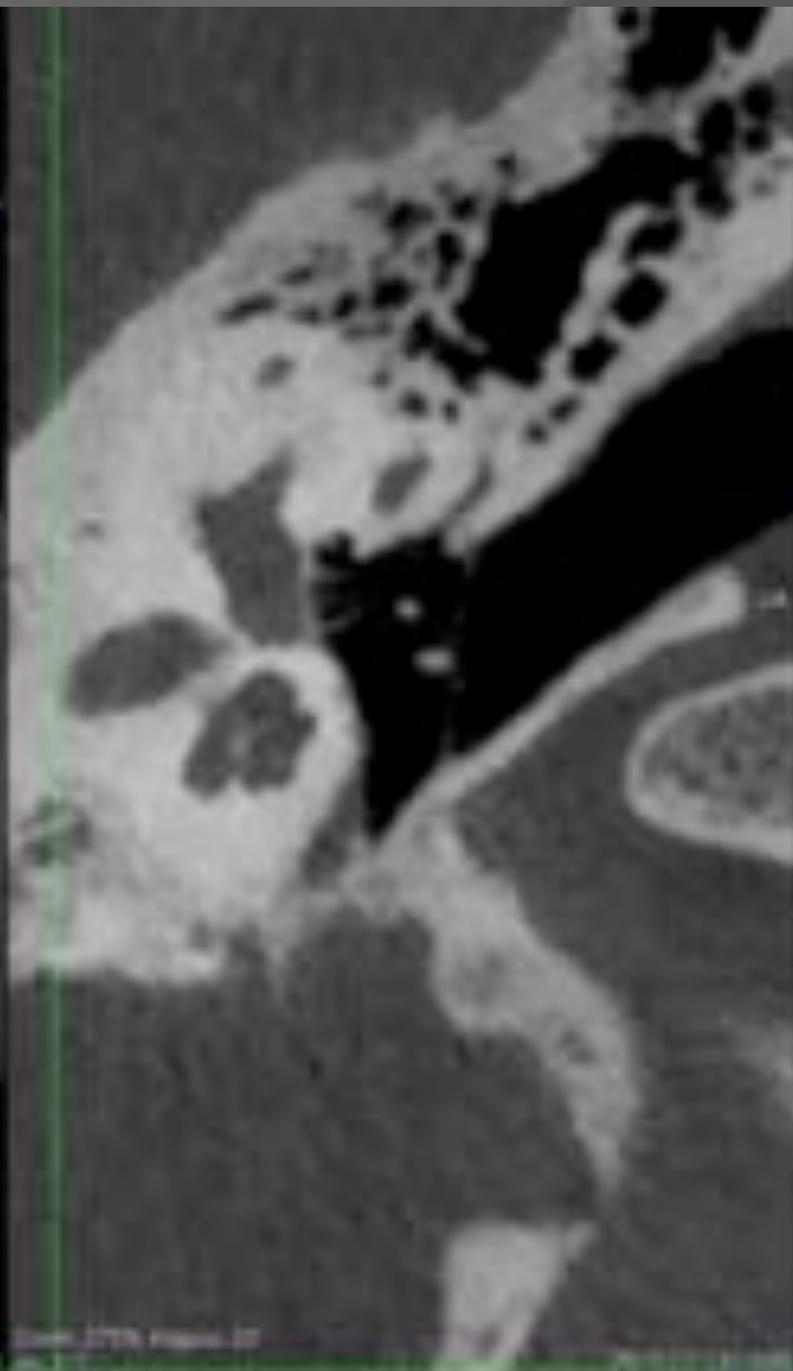
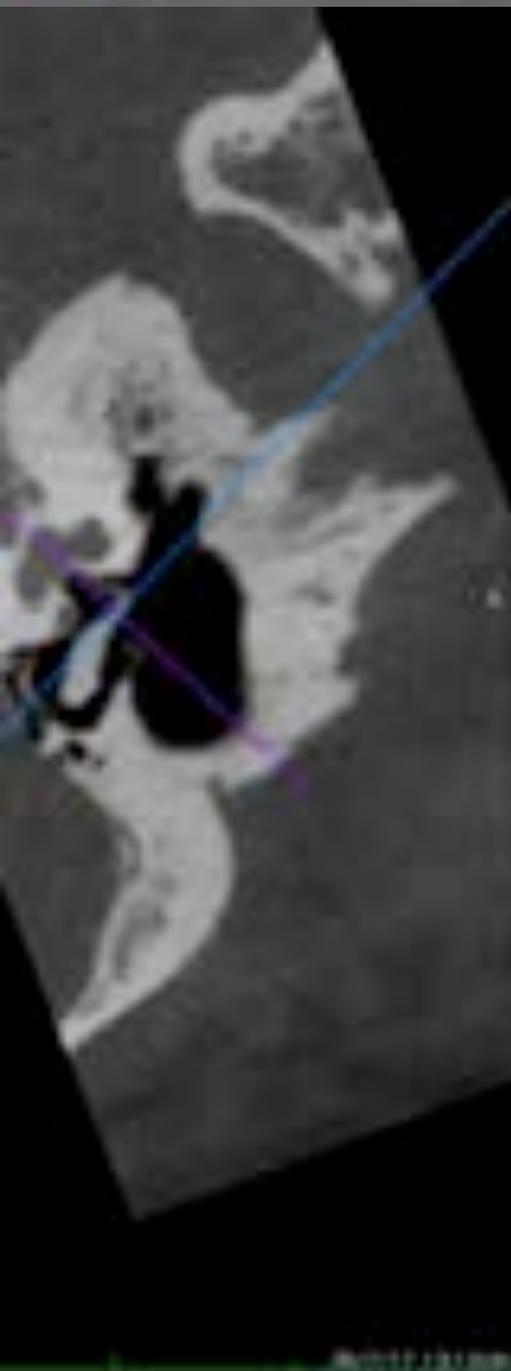
**Calcifications of the stapes footplate.**

**Tympanosclerosis**



Hipoacusia de transmisión  
anteriores de otitis serosa.  
**Conductive hearing loss. History  
of serous otitis media**

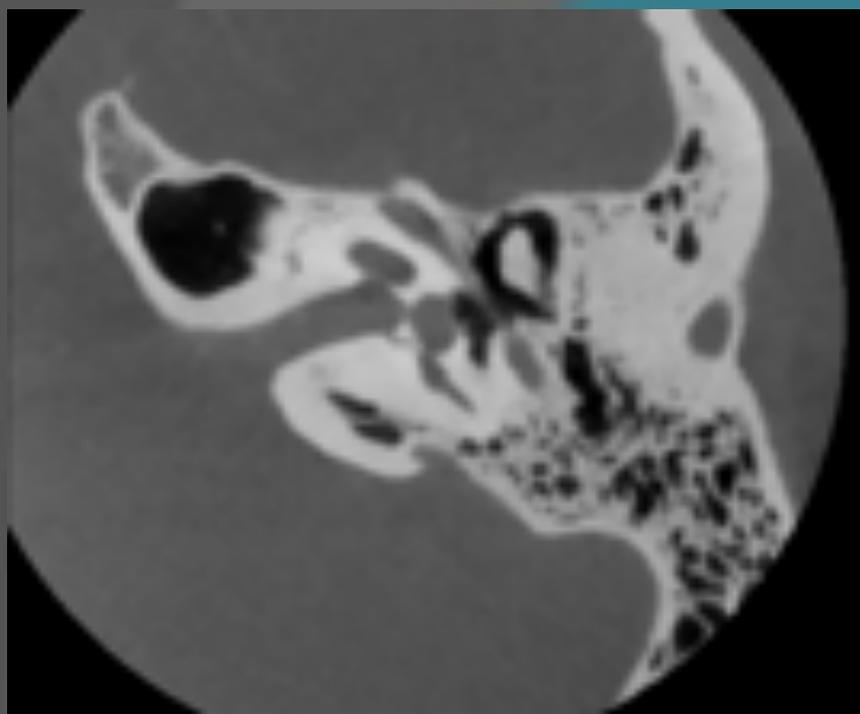
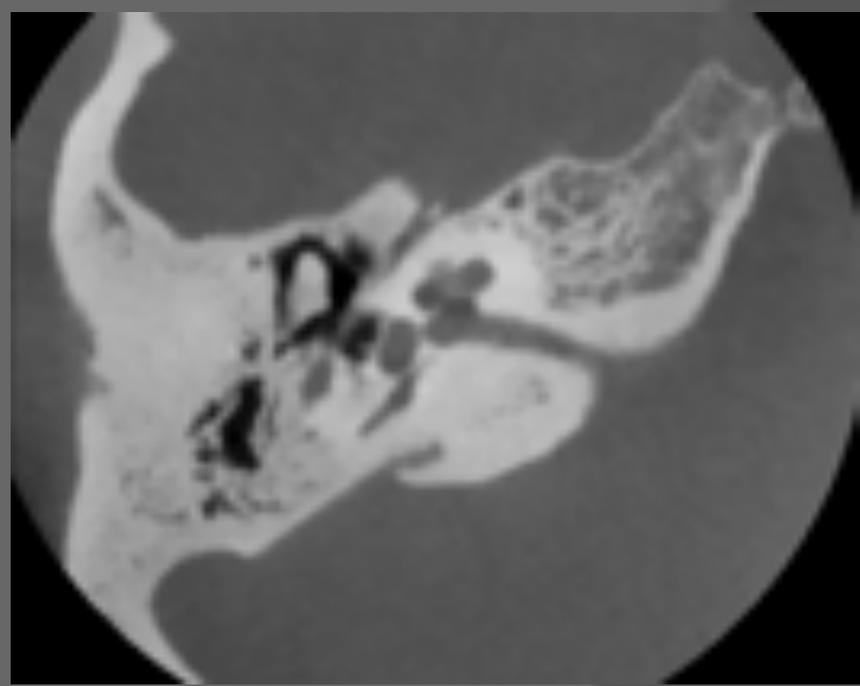




- Paciente de 31 años de edad con perforación timpánica oído derecho y GAP importante. Descartar alteración cadena osicular.
- 31 yo with right tympanic perforation. Important GAP. Rule out ossicular chain anomaly.

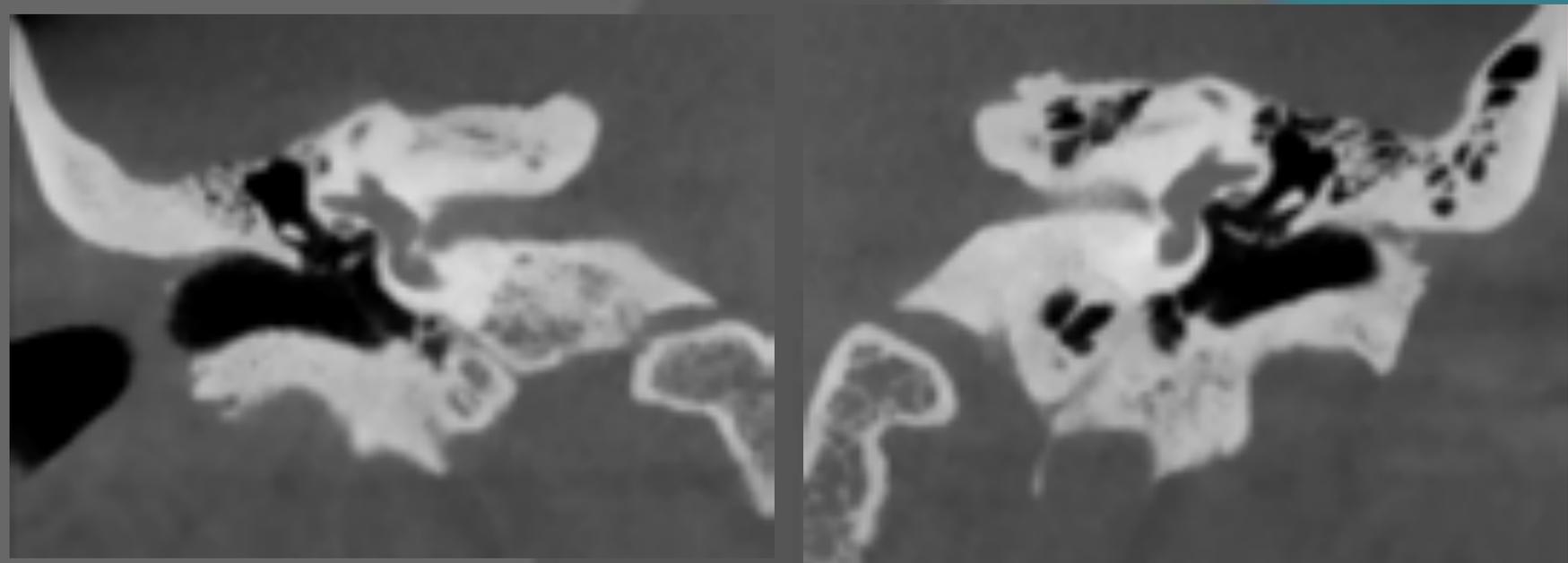


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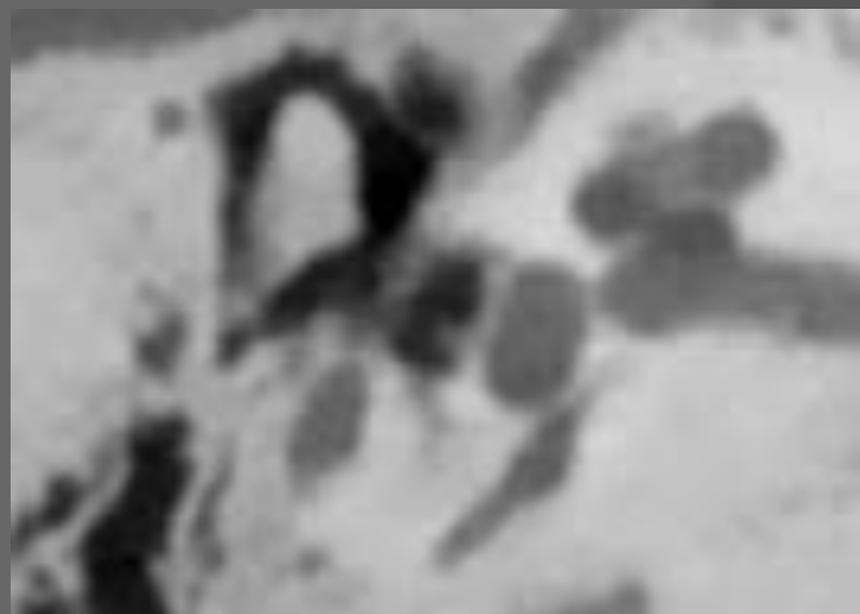


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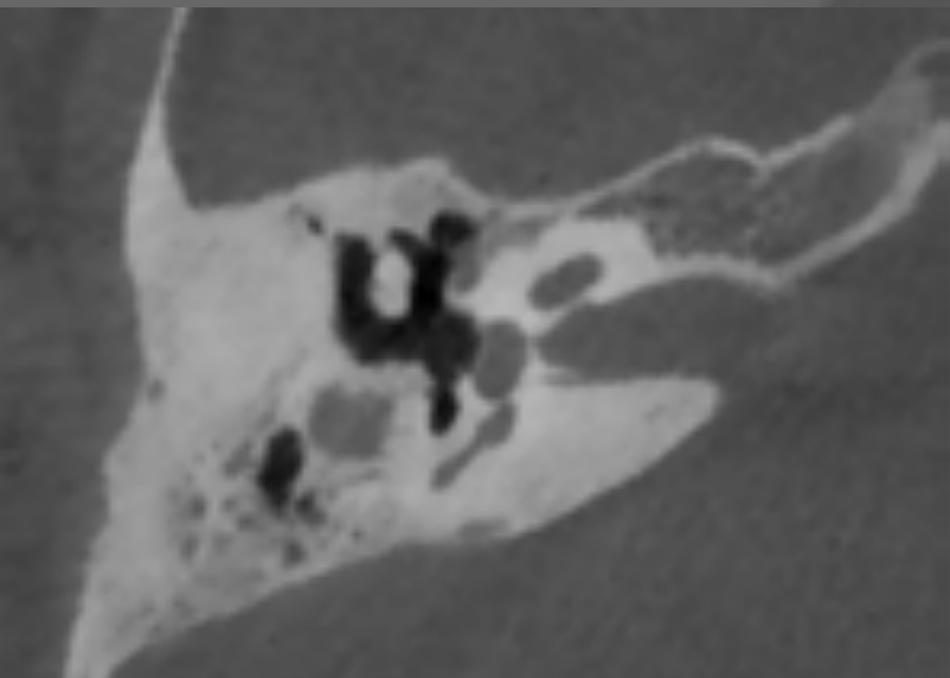


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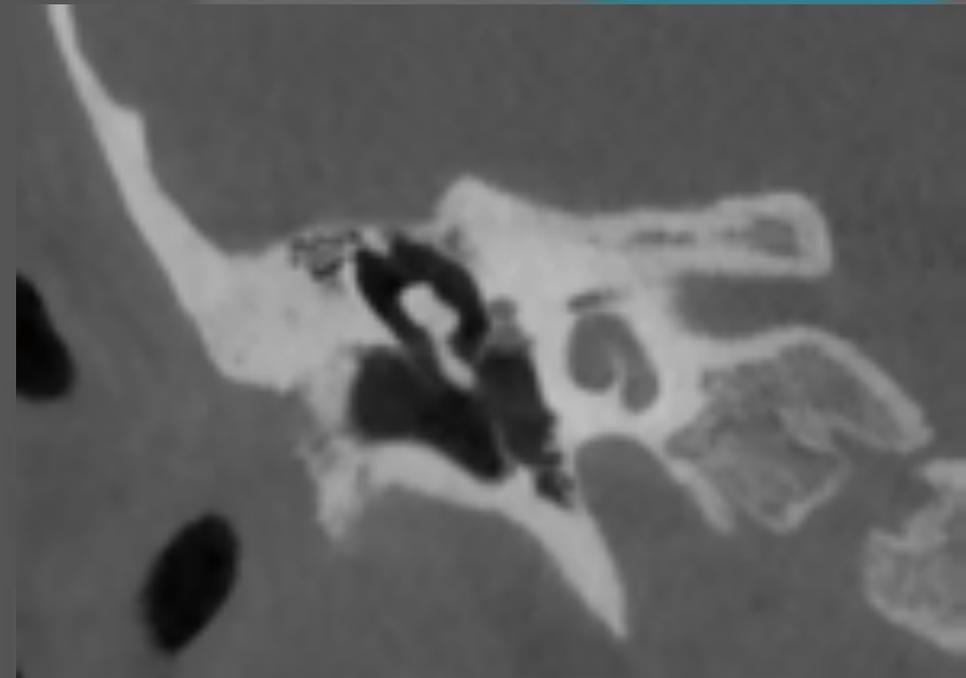
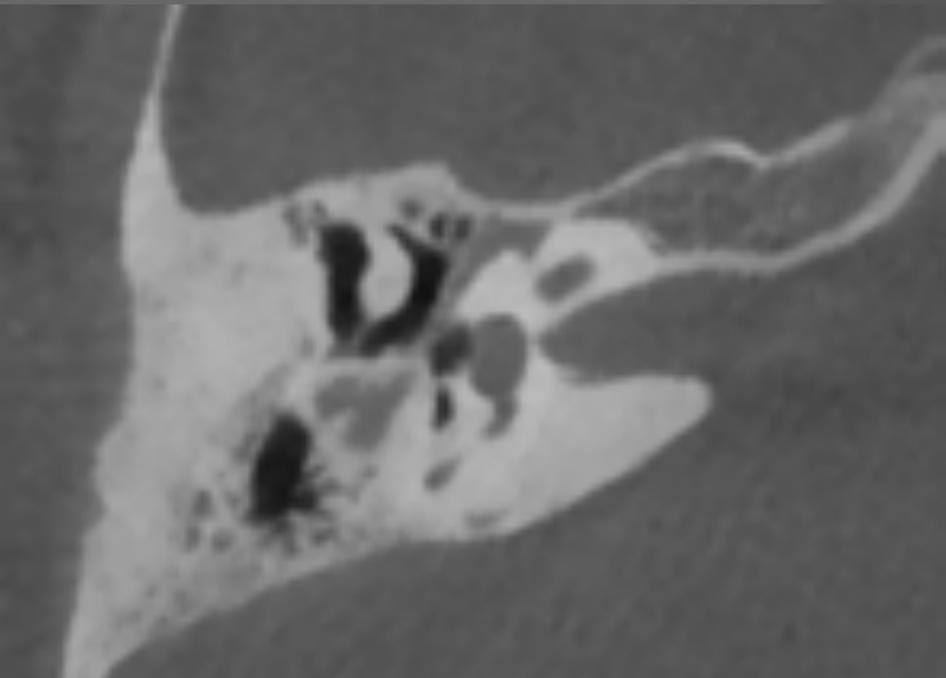
- Paciente de 8 años de edad con hipoacusia de transmisión oído derecho y antecedentes de otitis de repetición.

- 8yo Patient with right ear conductive hearing loss and a history of recurrent otitis.





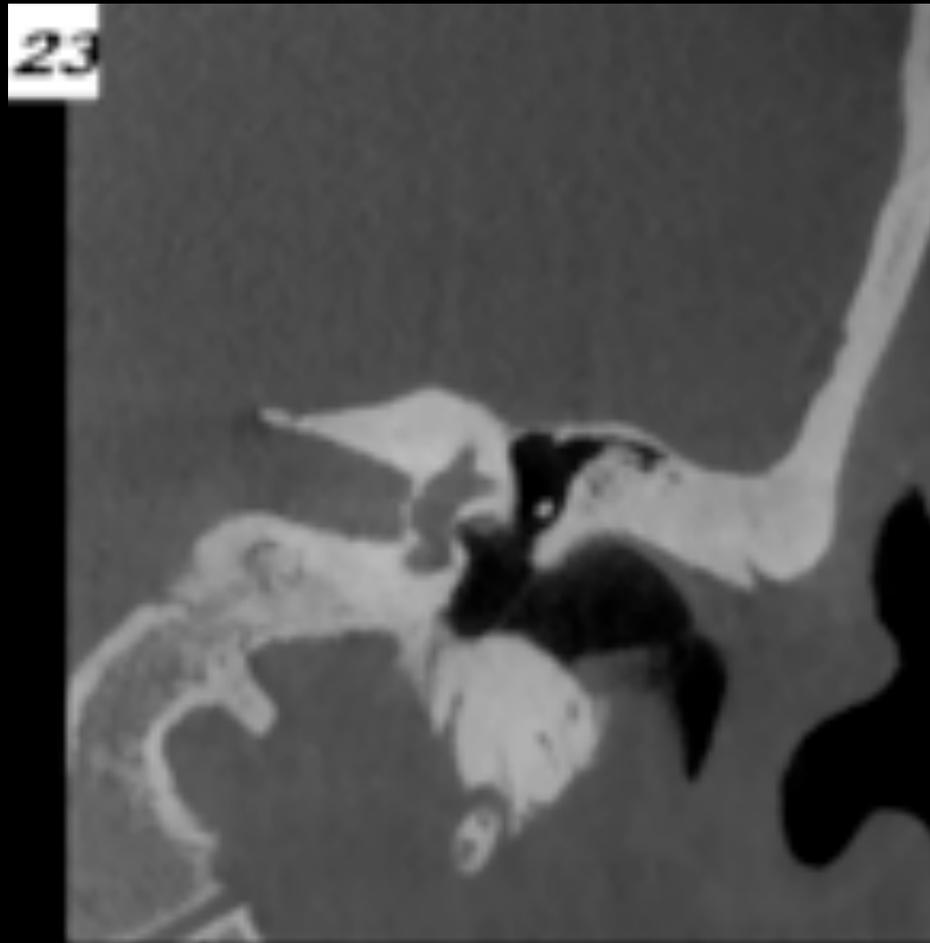
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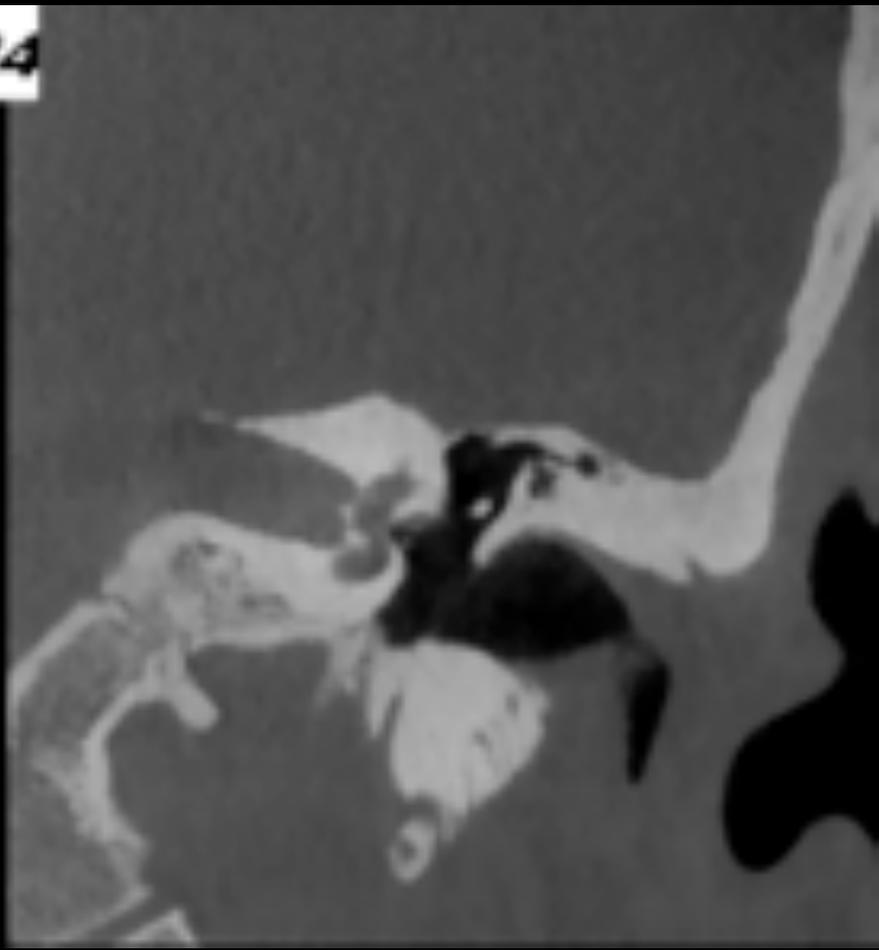


Osteítis de la rama larga del yunque. 14

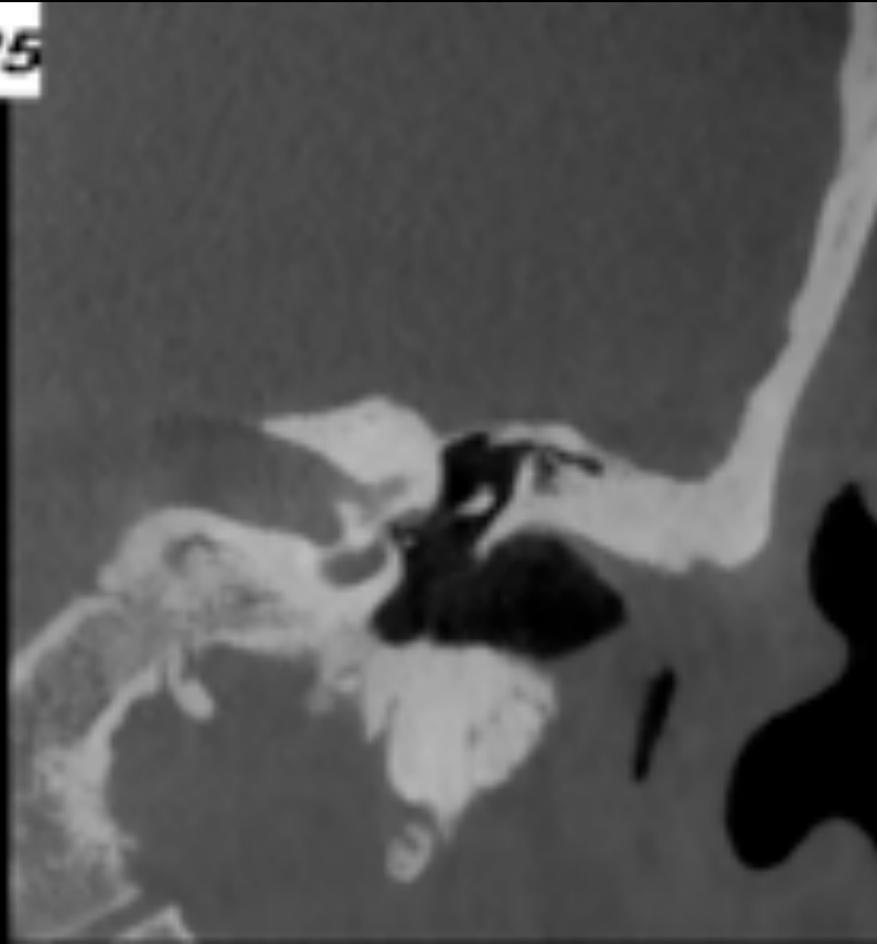
Osteitis of the incudiate lenticular process



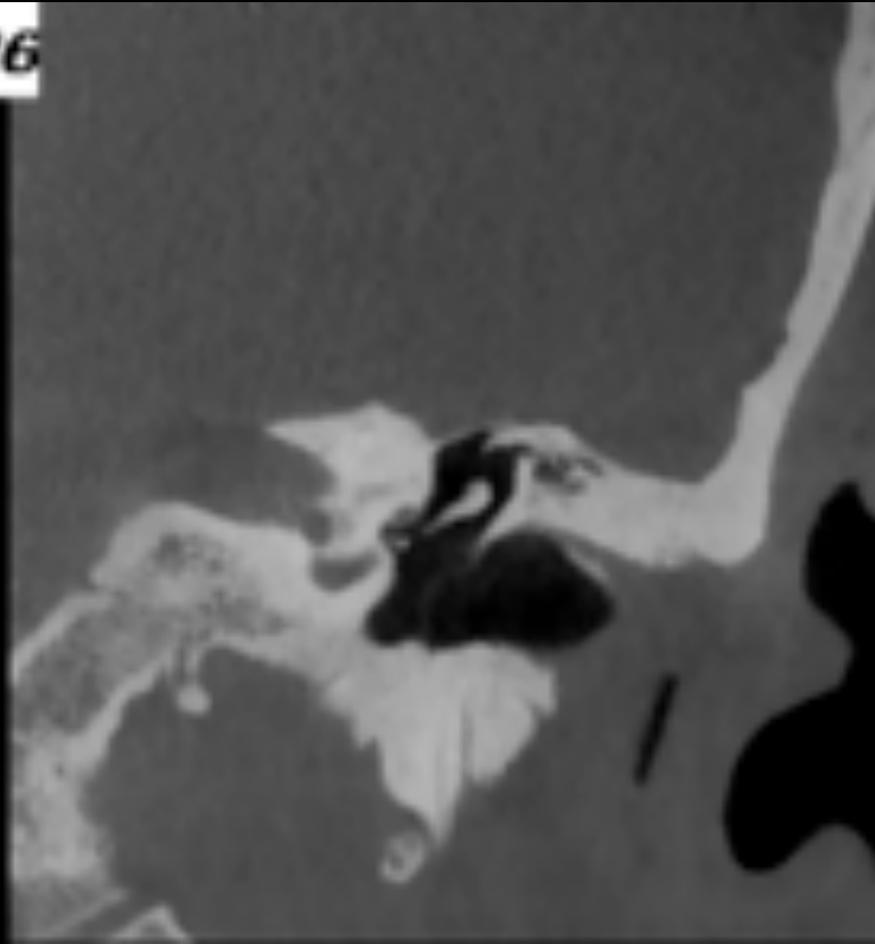
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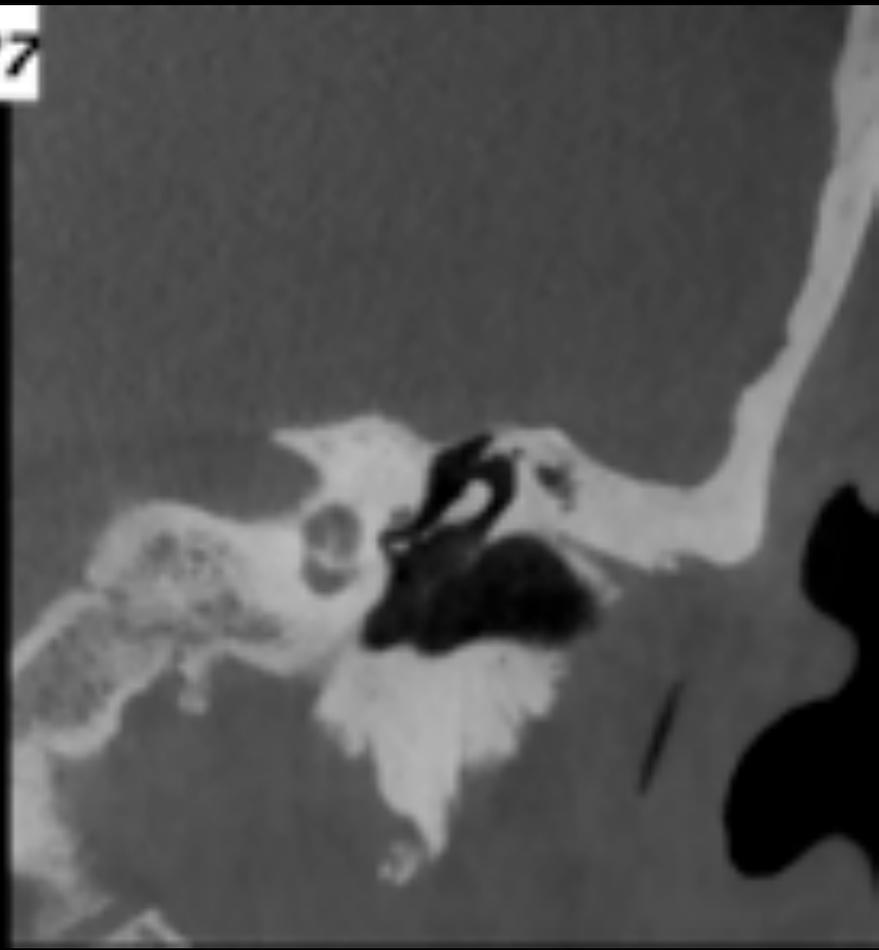
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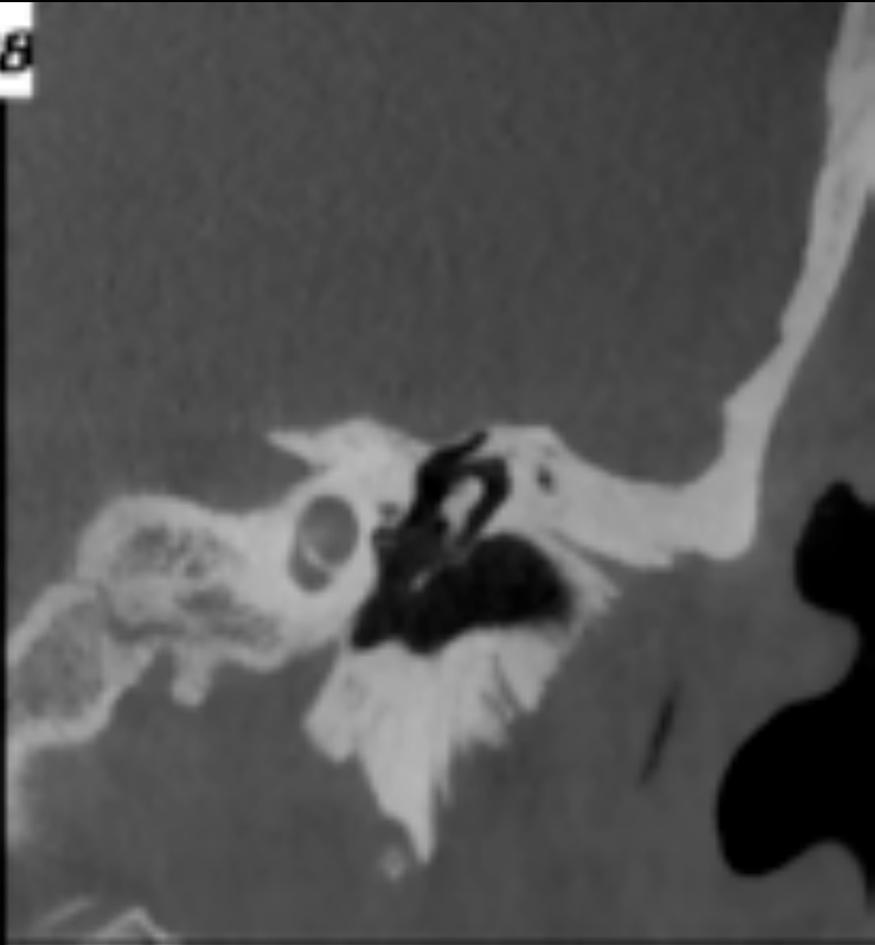
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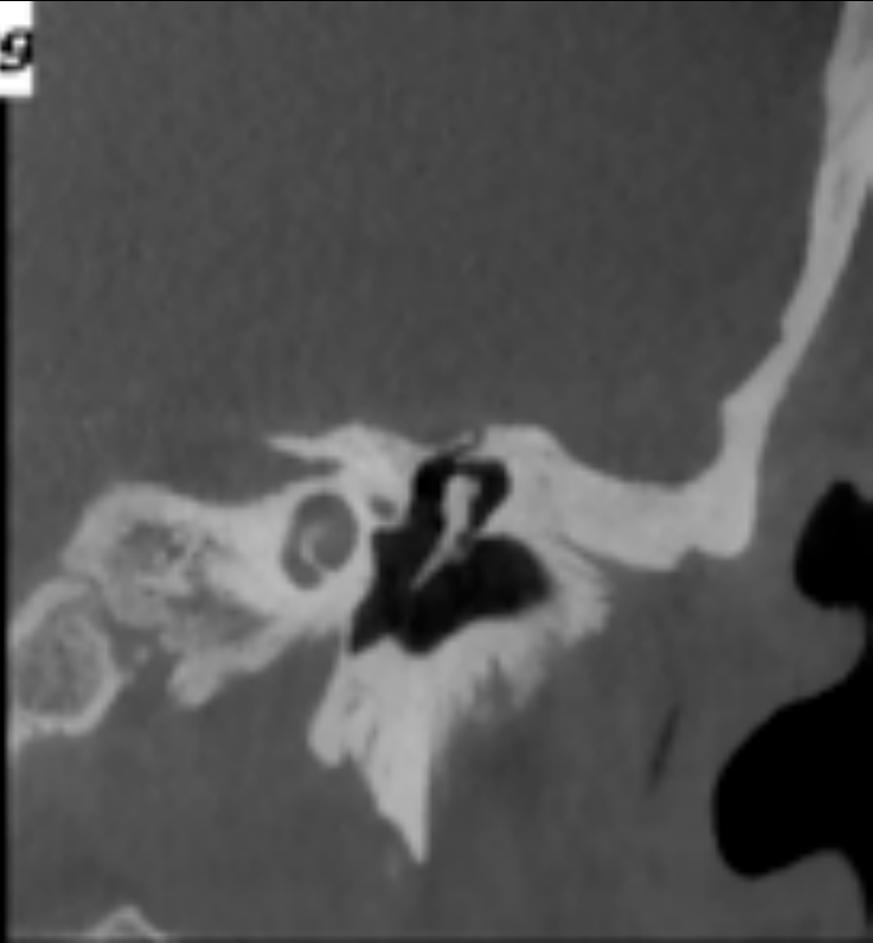
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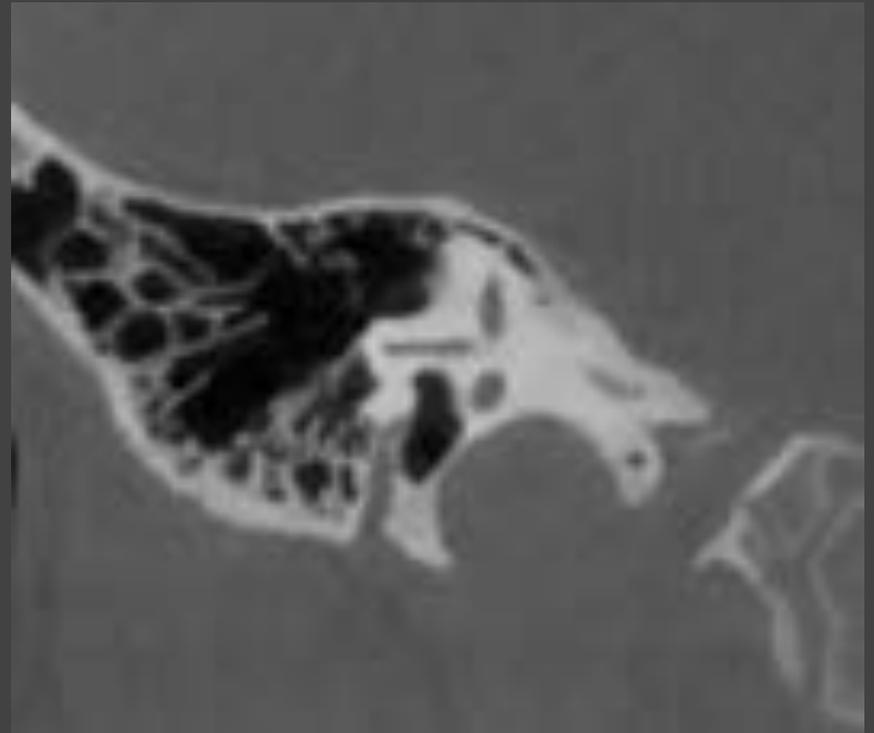
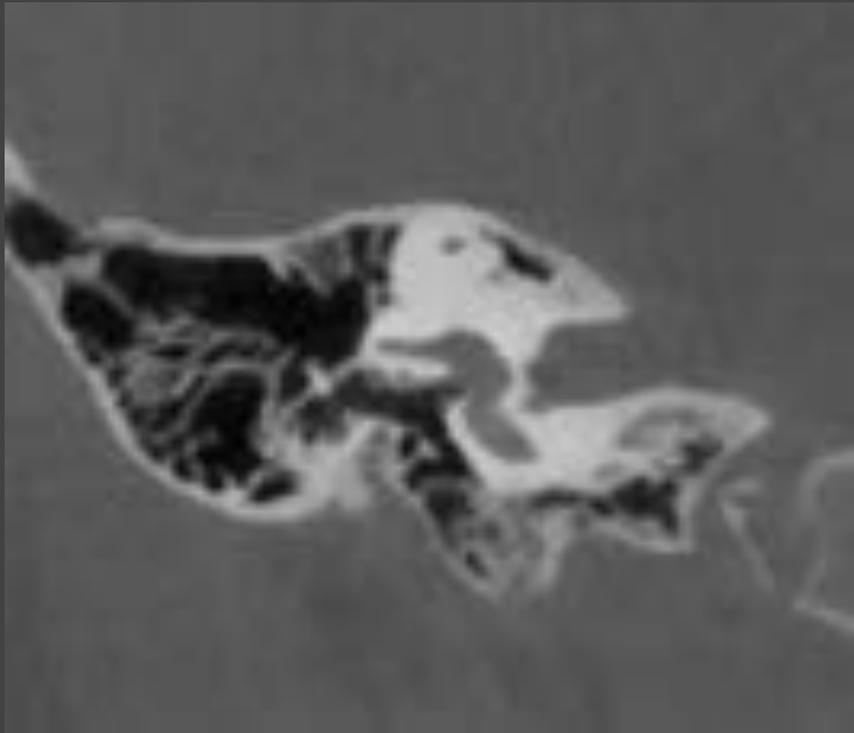
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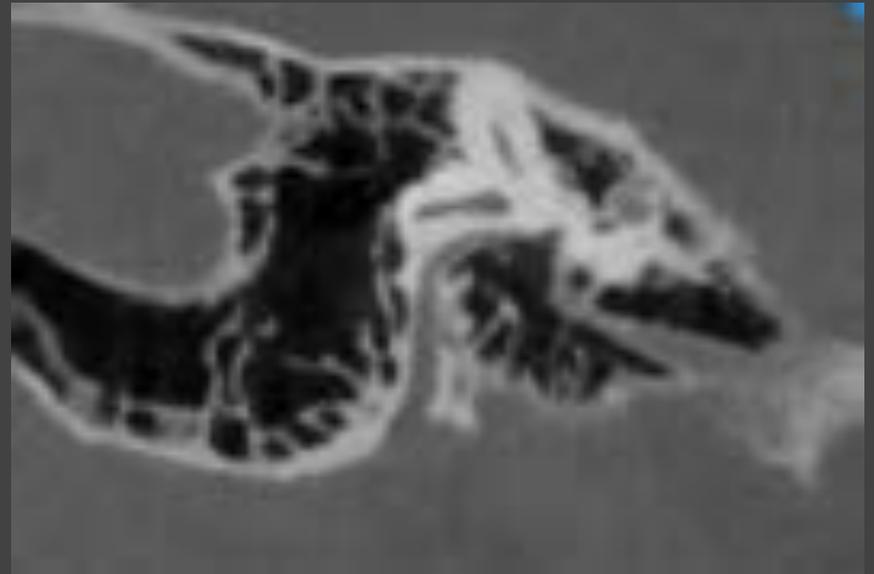
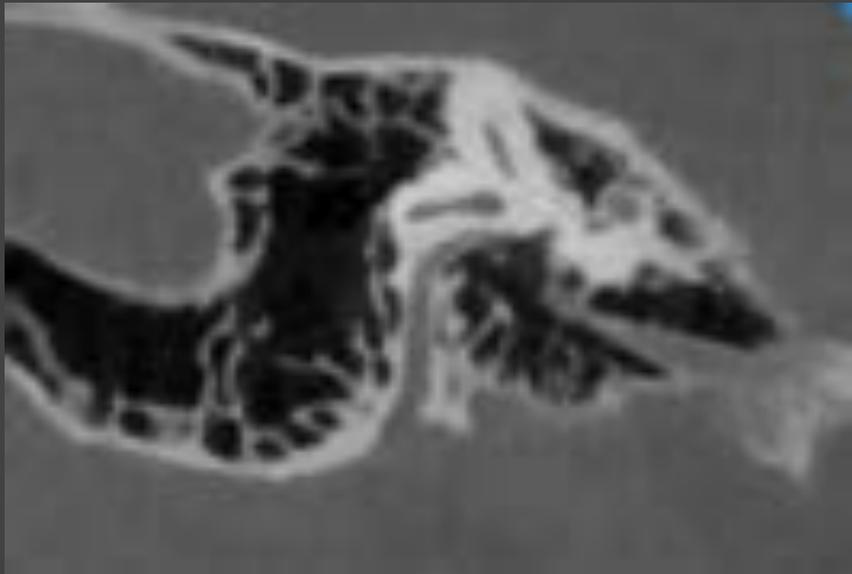


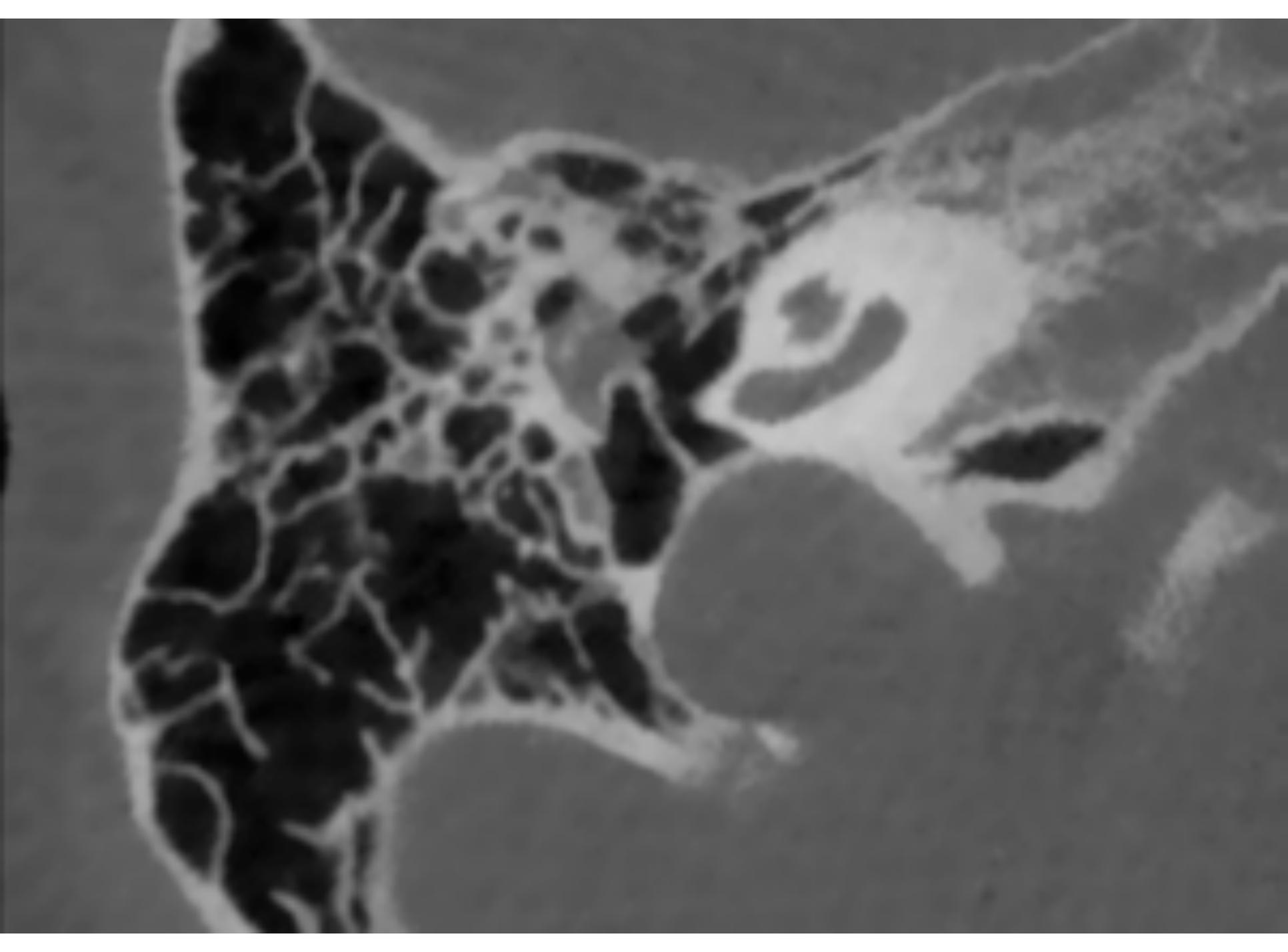
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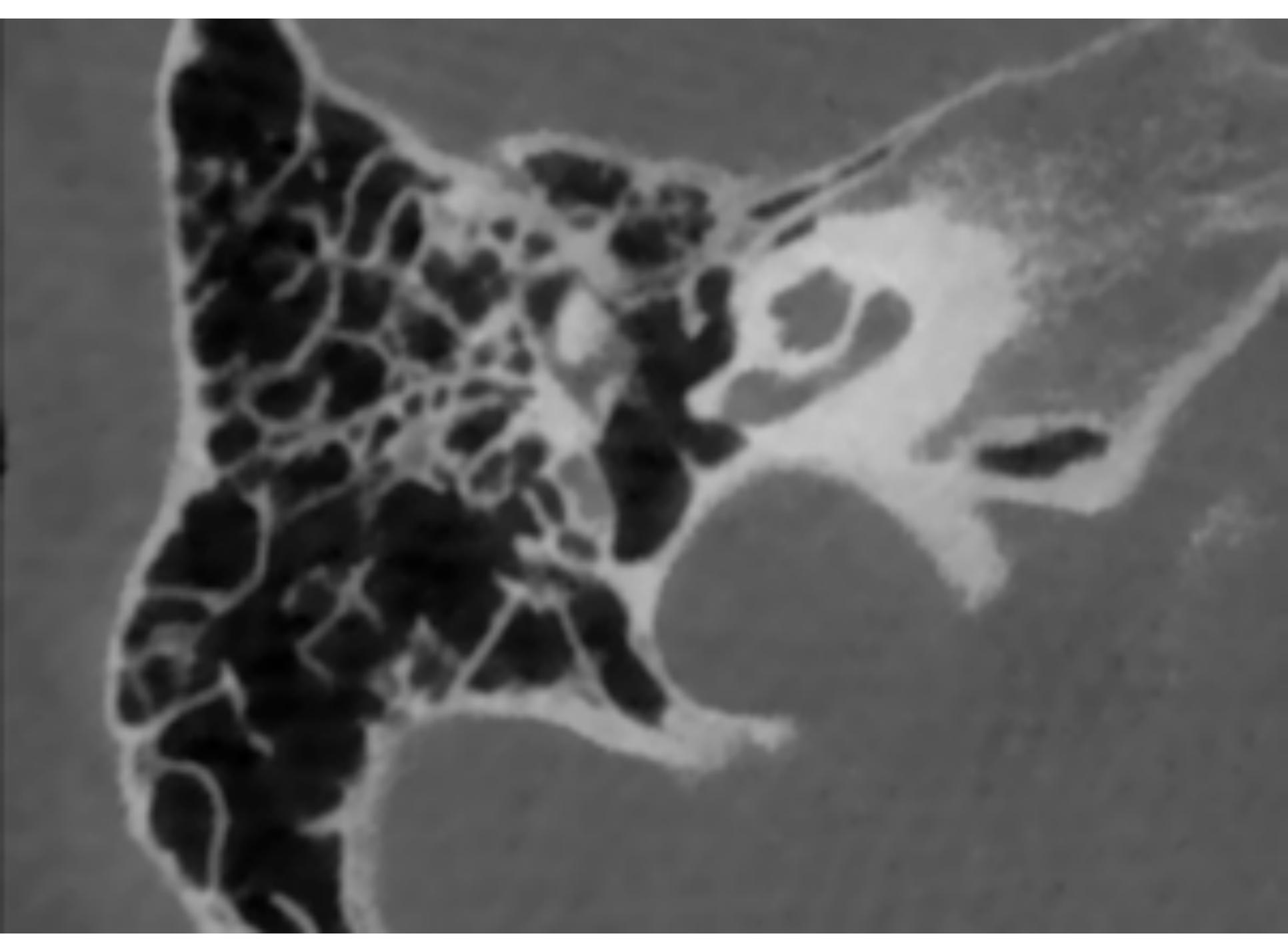


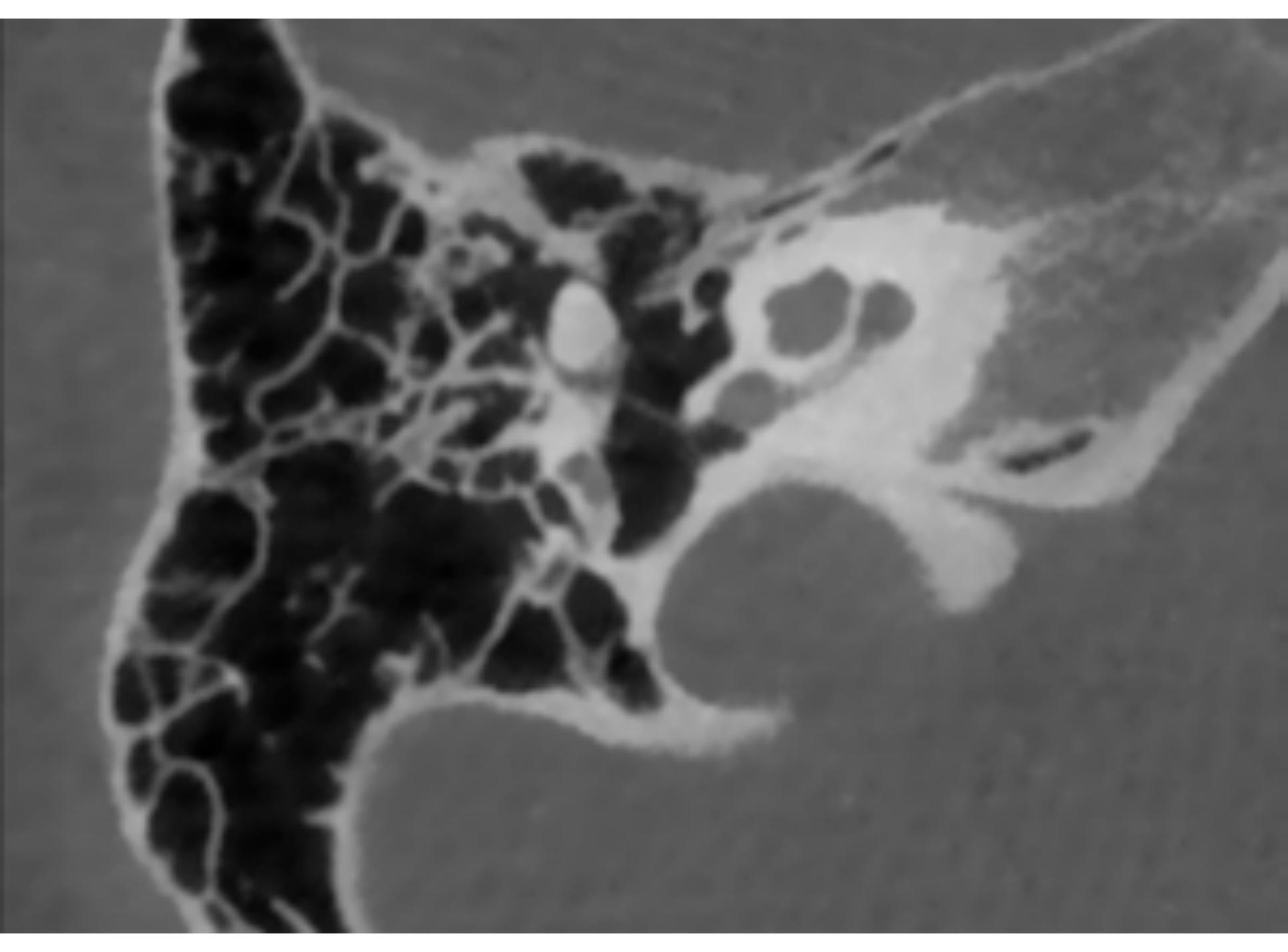


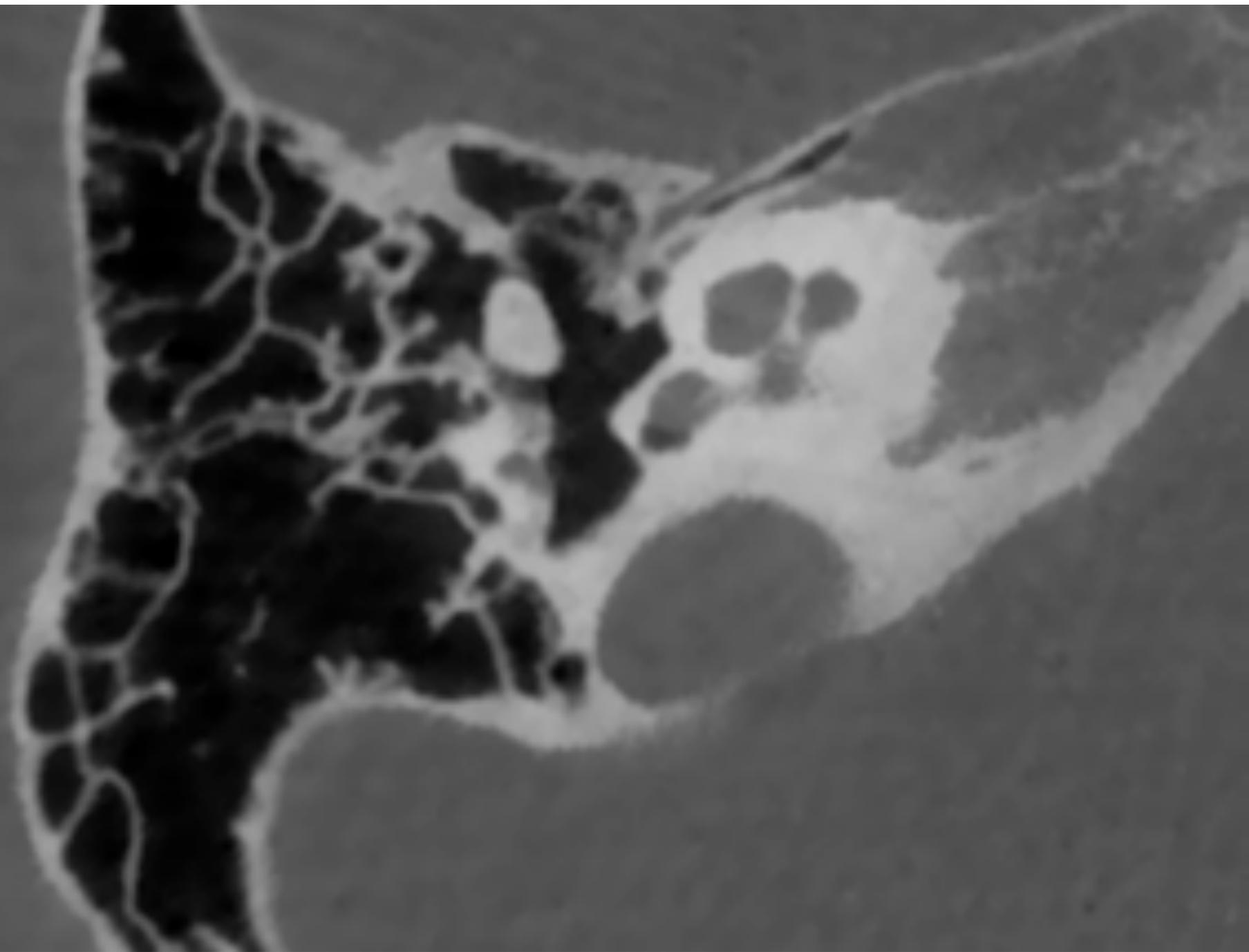


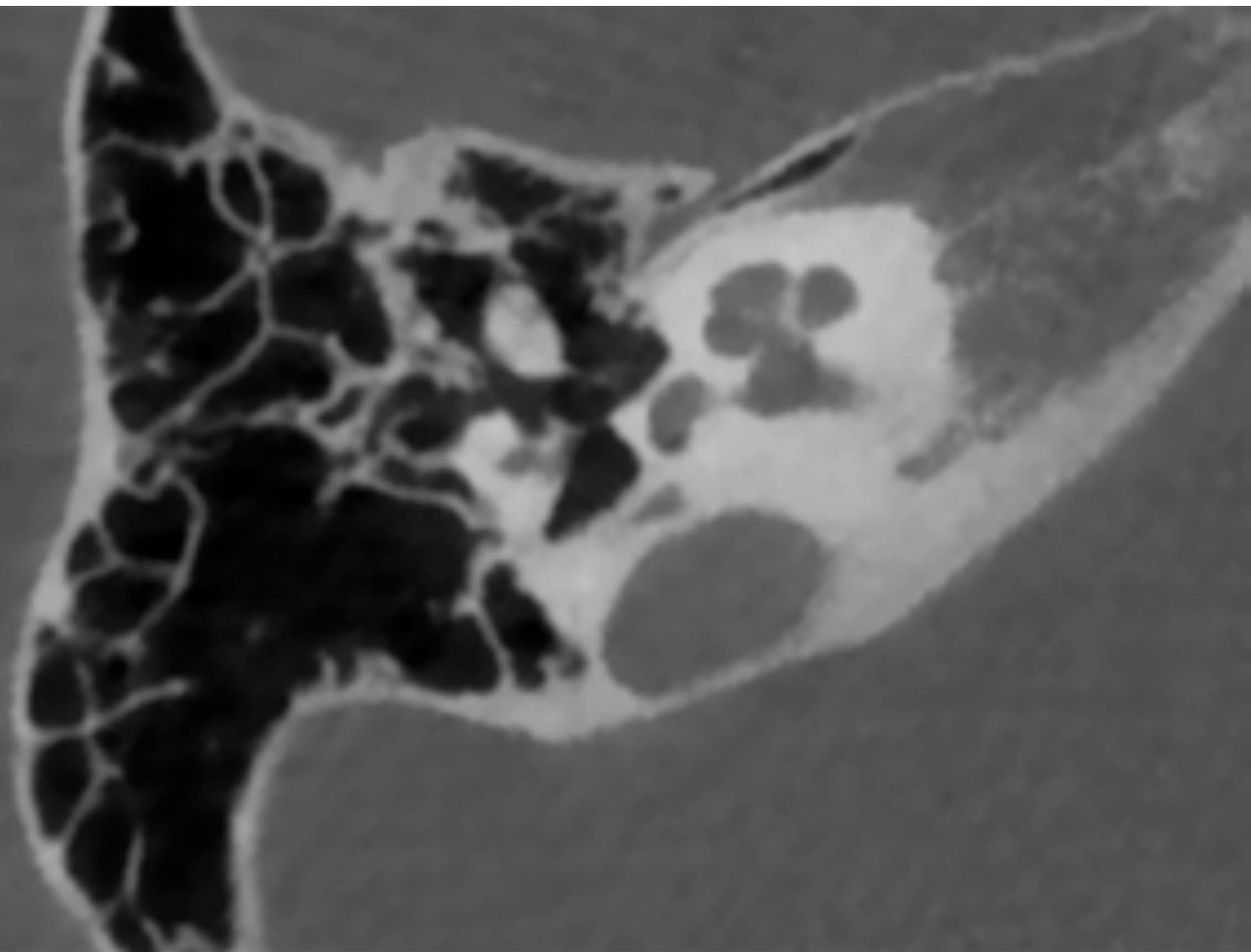


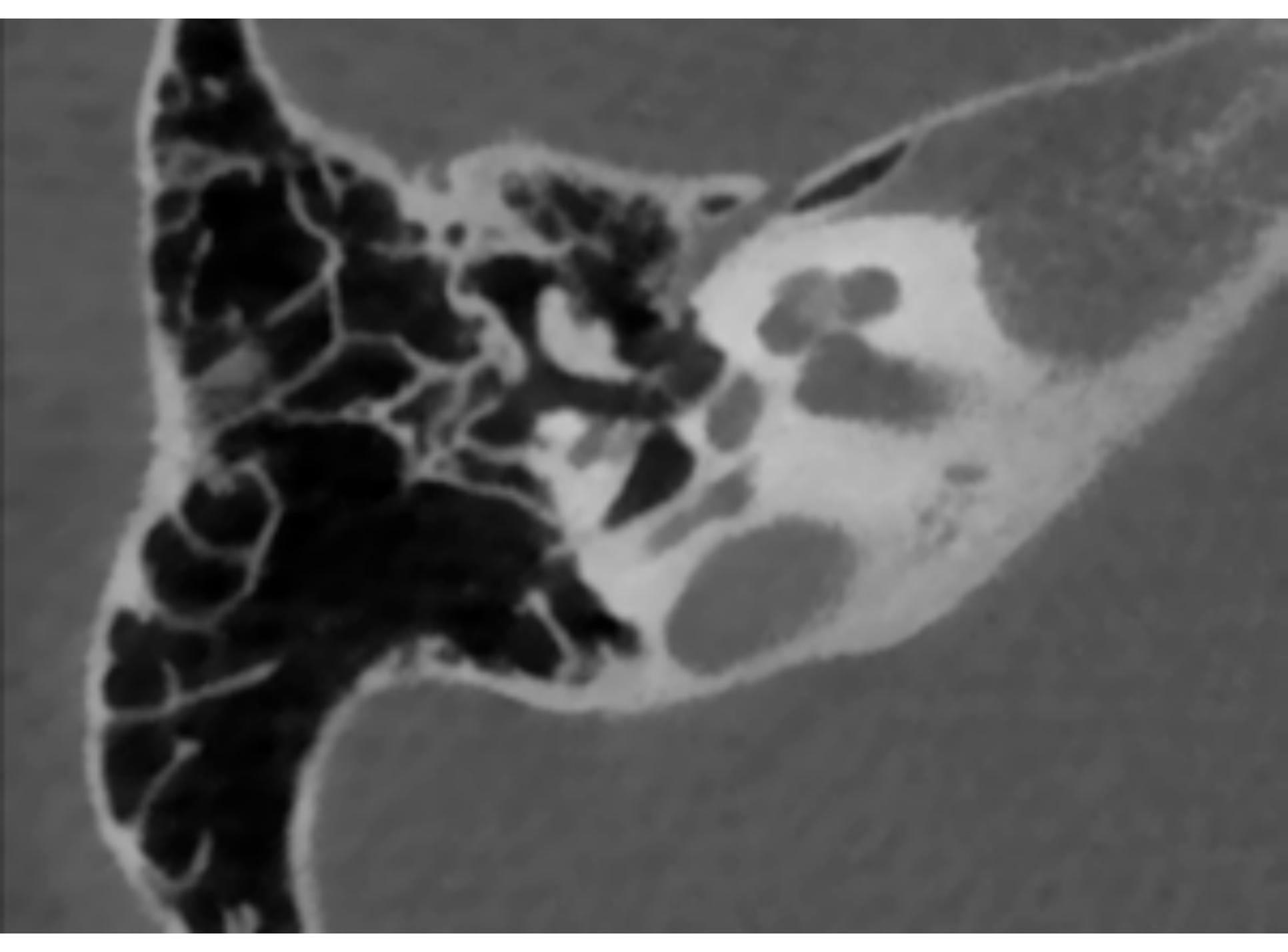


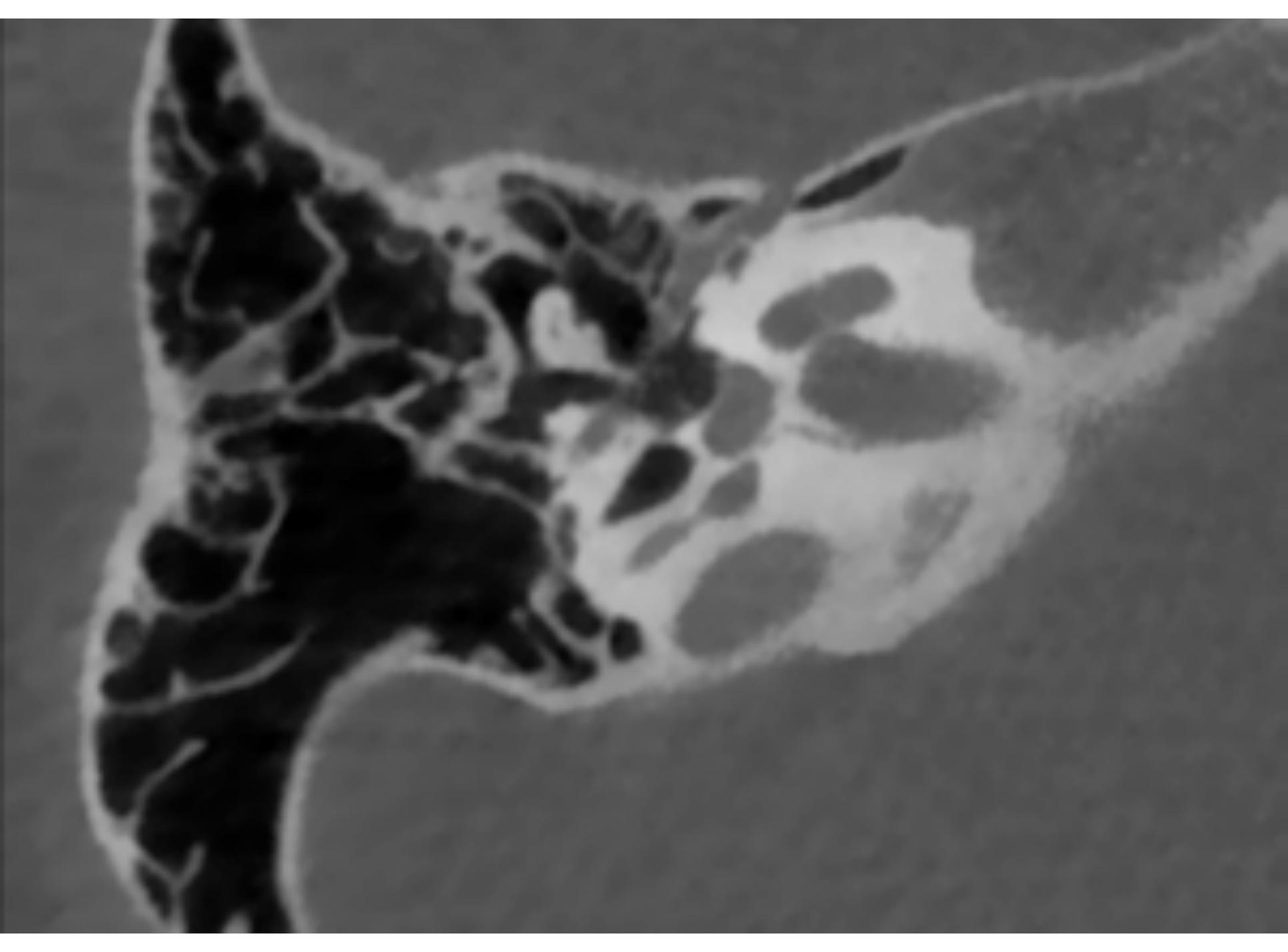


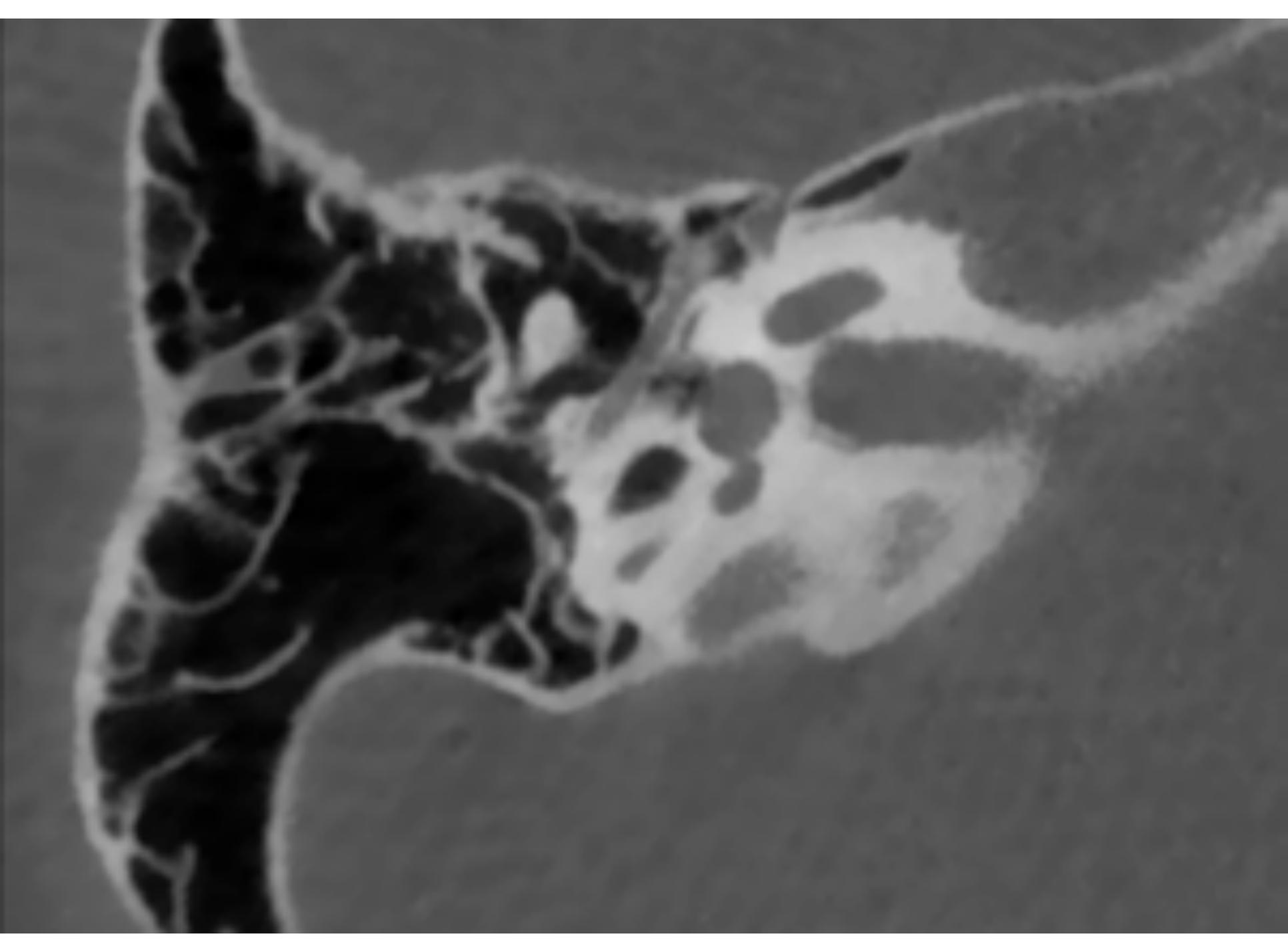


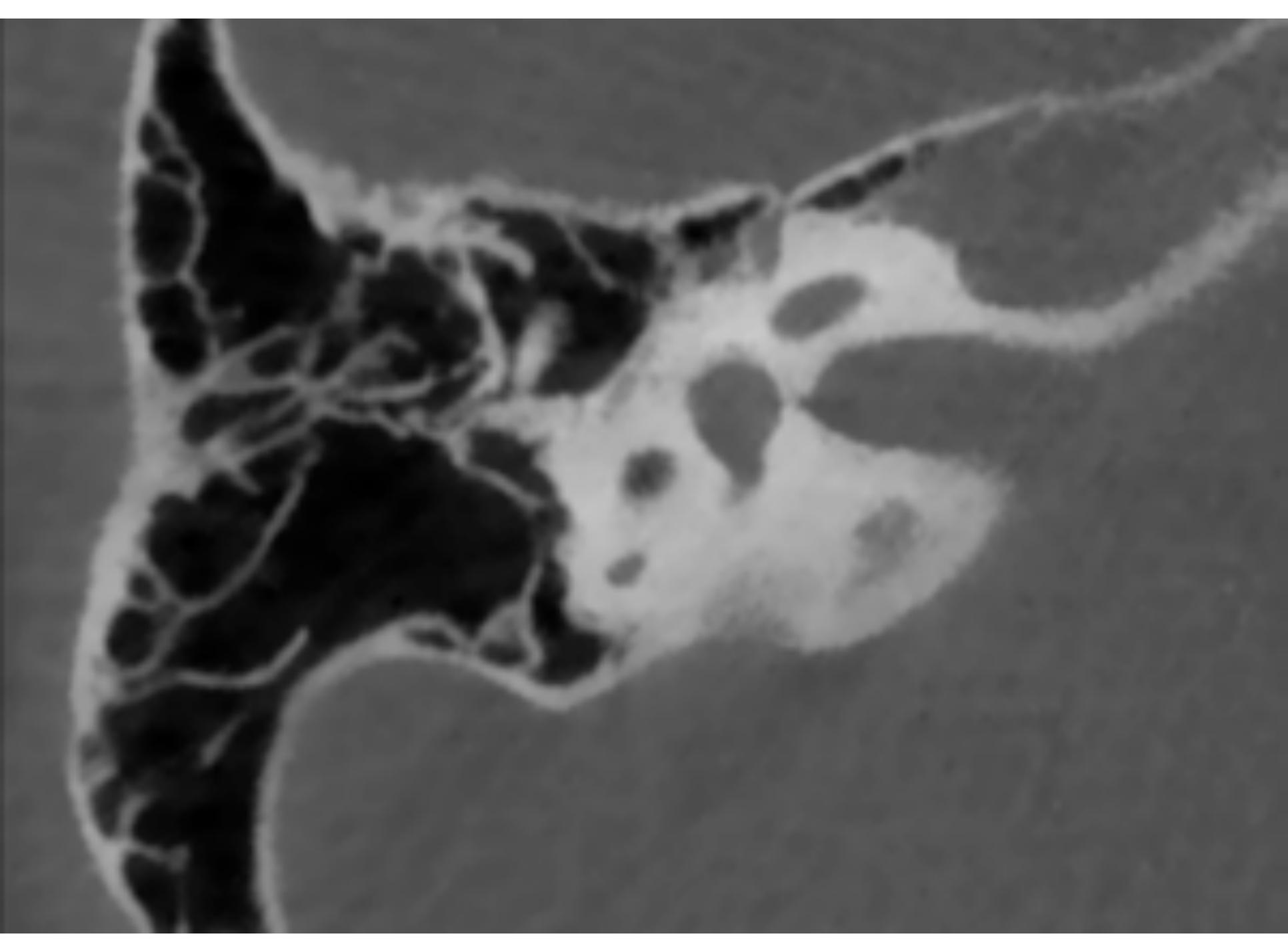








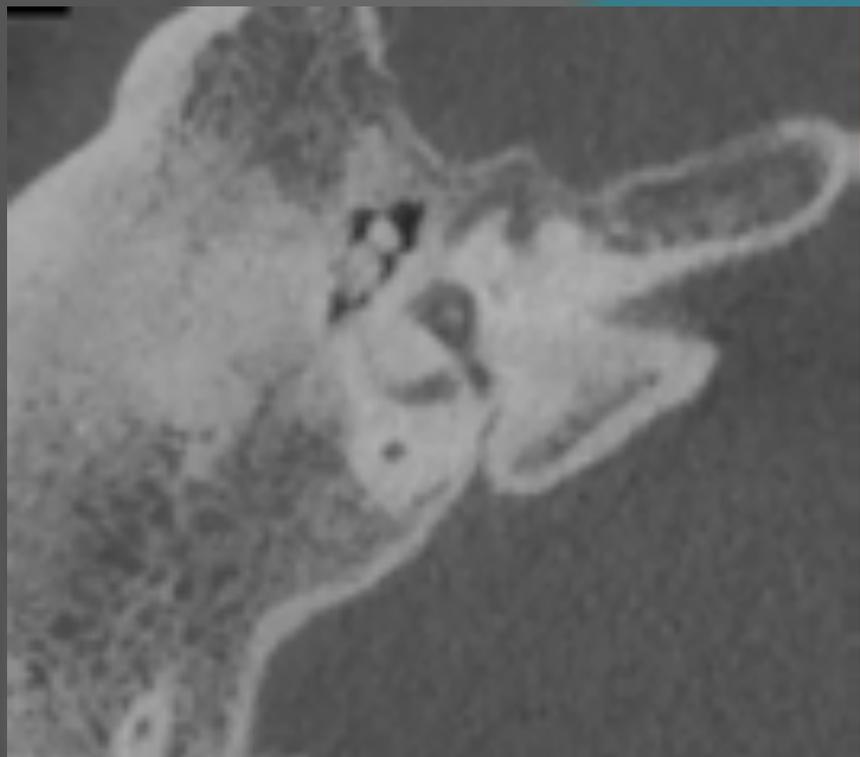




- Paciente de 60 años de edad con antecedentes de Osteopetrosis, Enfermedad de Albers-Schomberg,
- Antecedentes quirúrgicos en ambos oídos.
- Severa hipoacusia neurosensorial bilateral, OD>OI
- Valoración para implante coclear.
- 60-year-old patient with a history of osteopetrosis, Albers-Schomberg disease.
- Surgical history in both ears. Severe bilateral sensorineural hearing loss, RE > LE
- Evaluation prior to cochlear implant.

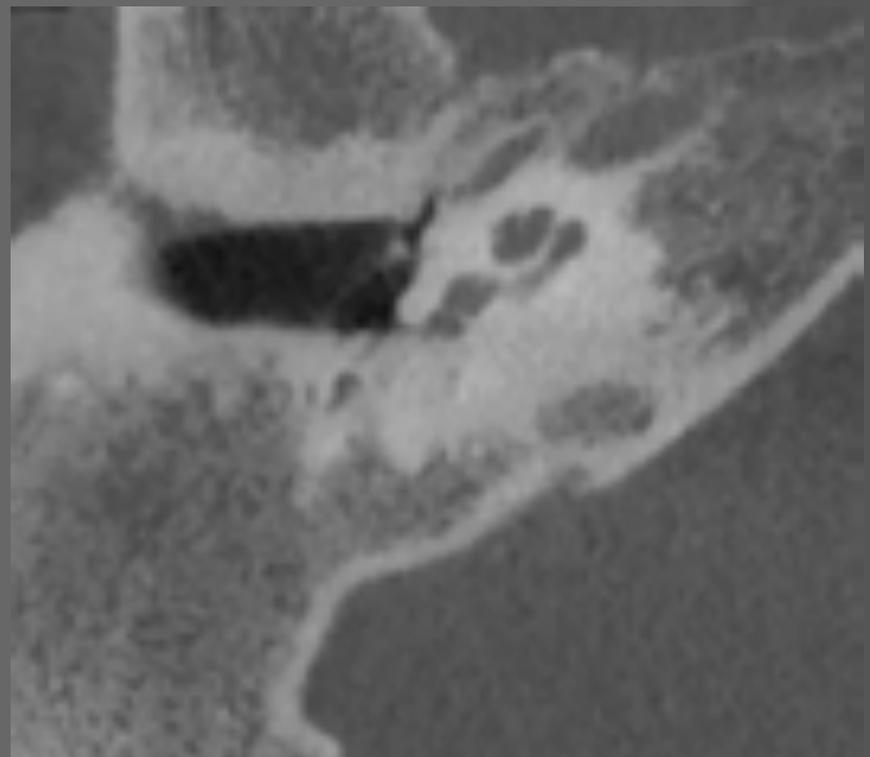


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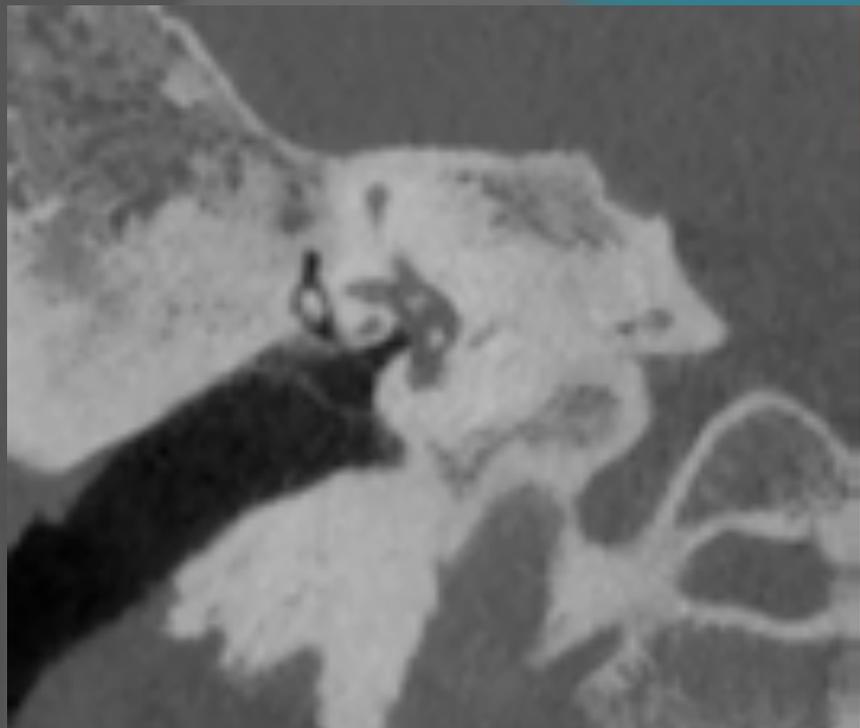
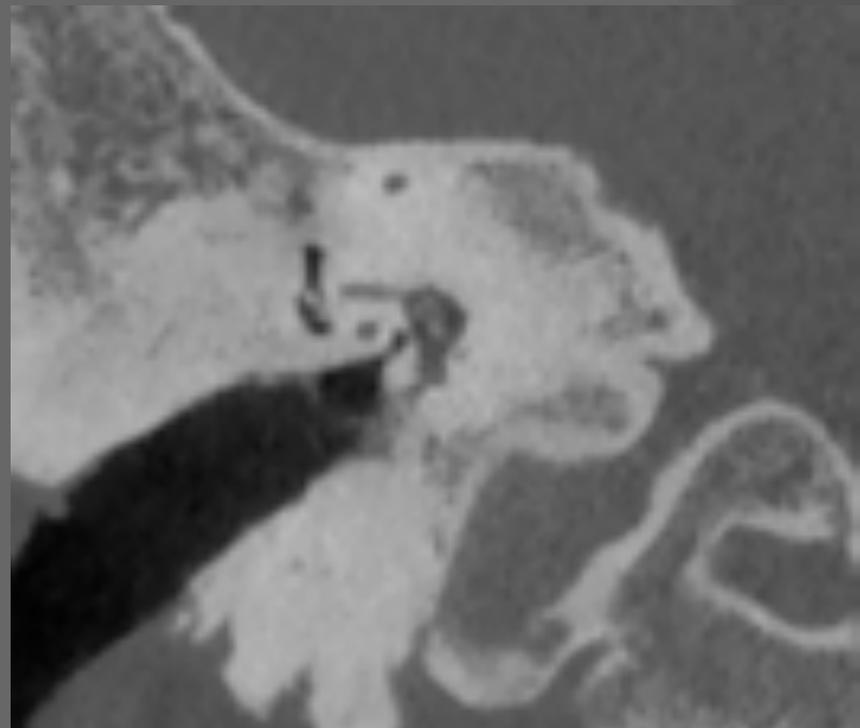


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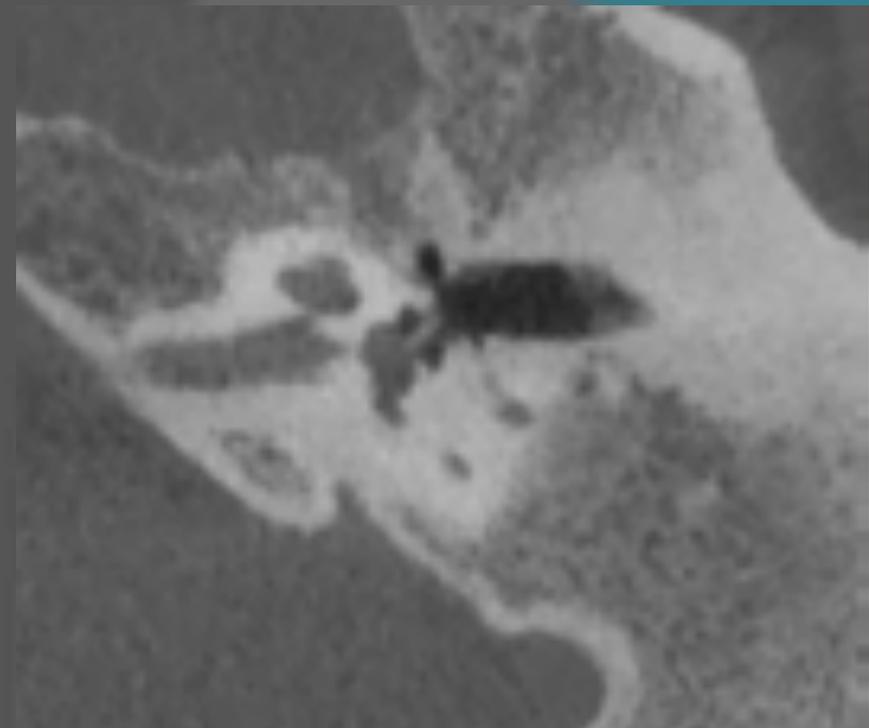
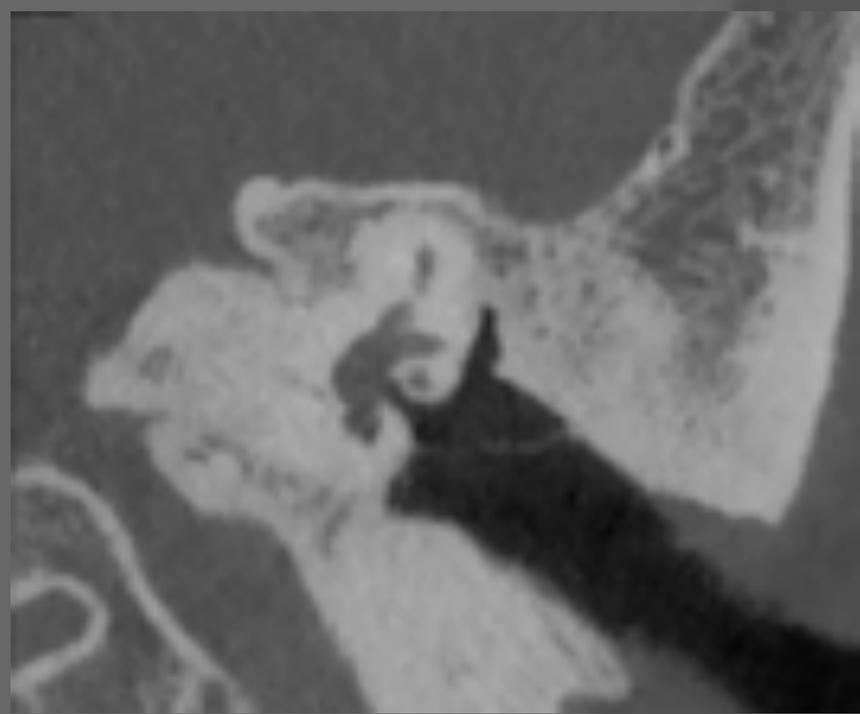


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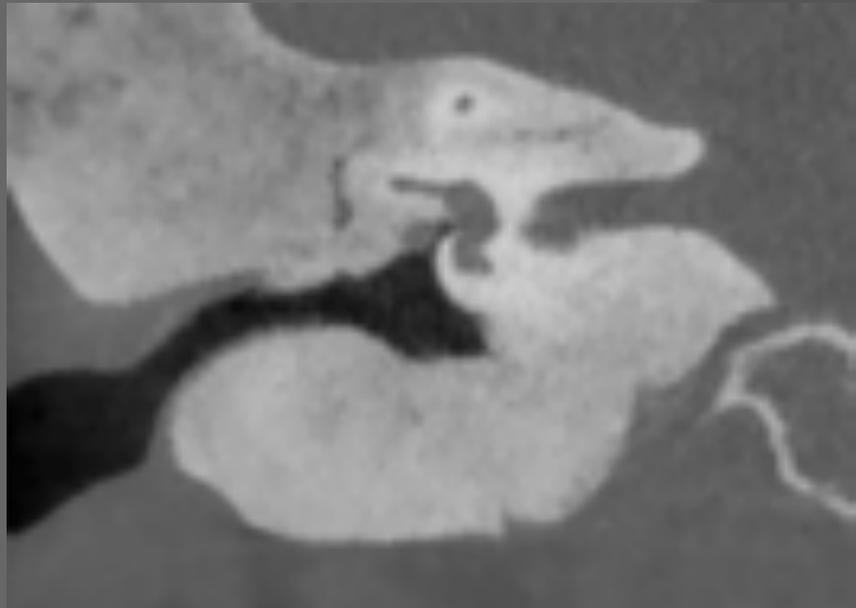


- 54 años de edad
- Hipoacusia OD conductiva severa.
- Antecedentes de displasia fibrosa.
- Estudio prequirúrgico



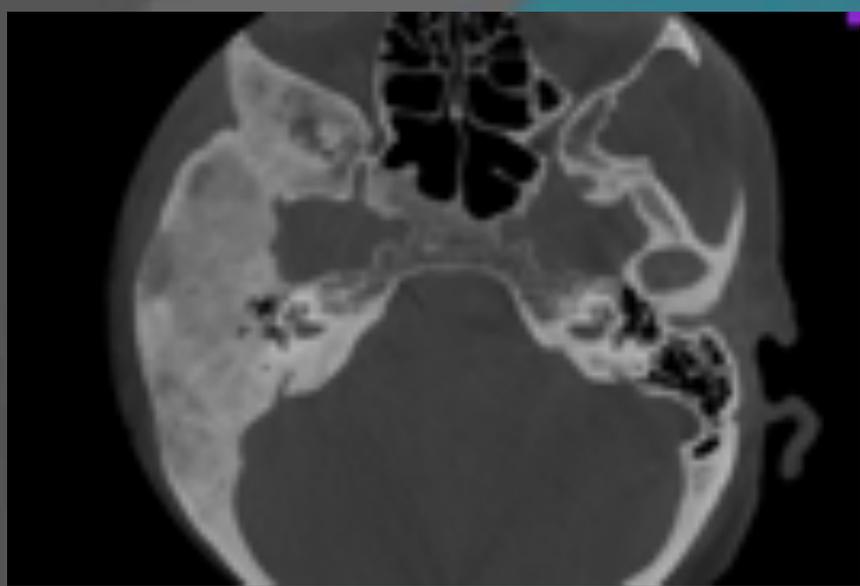
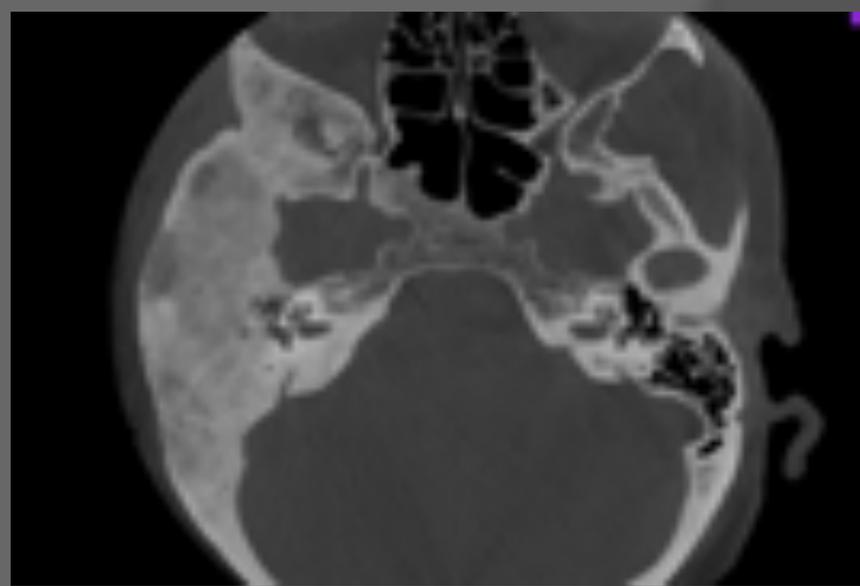
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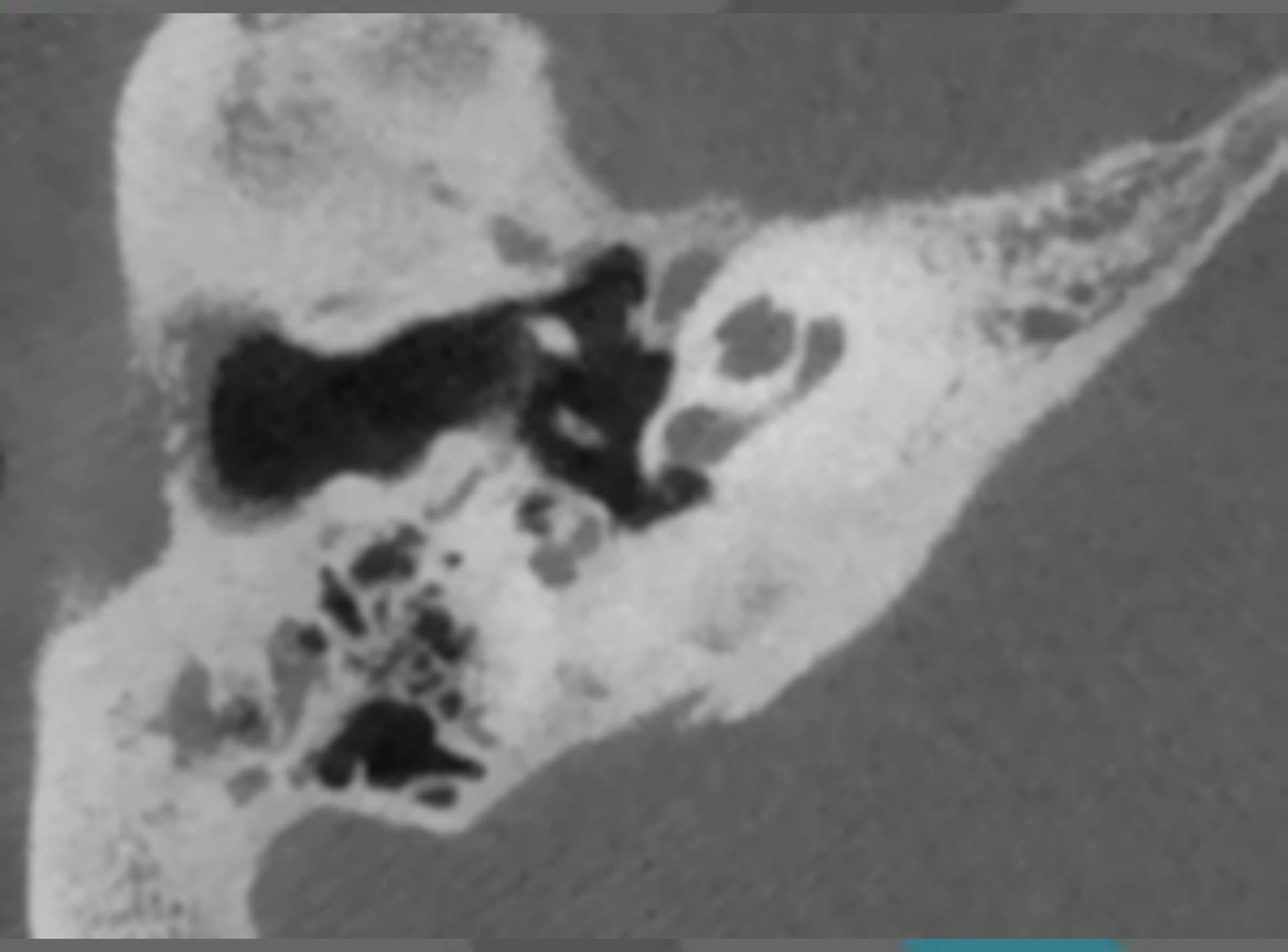


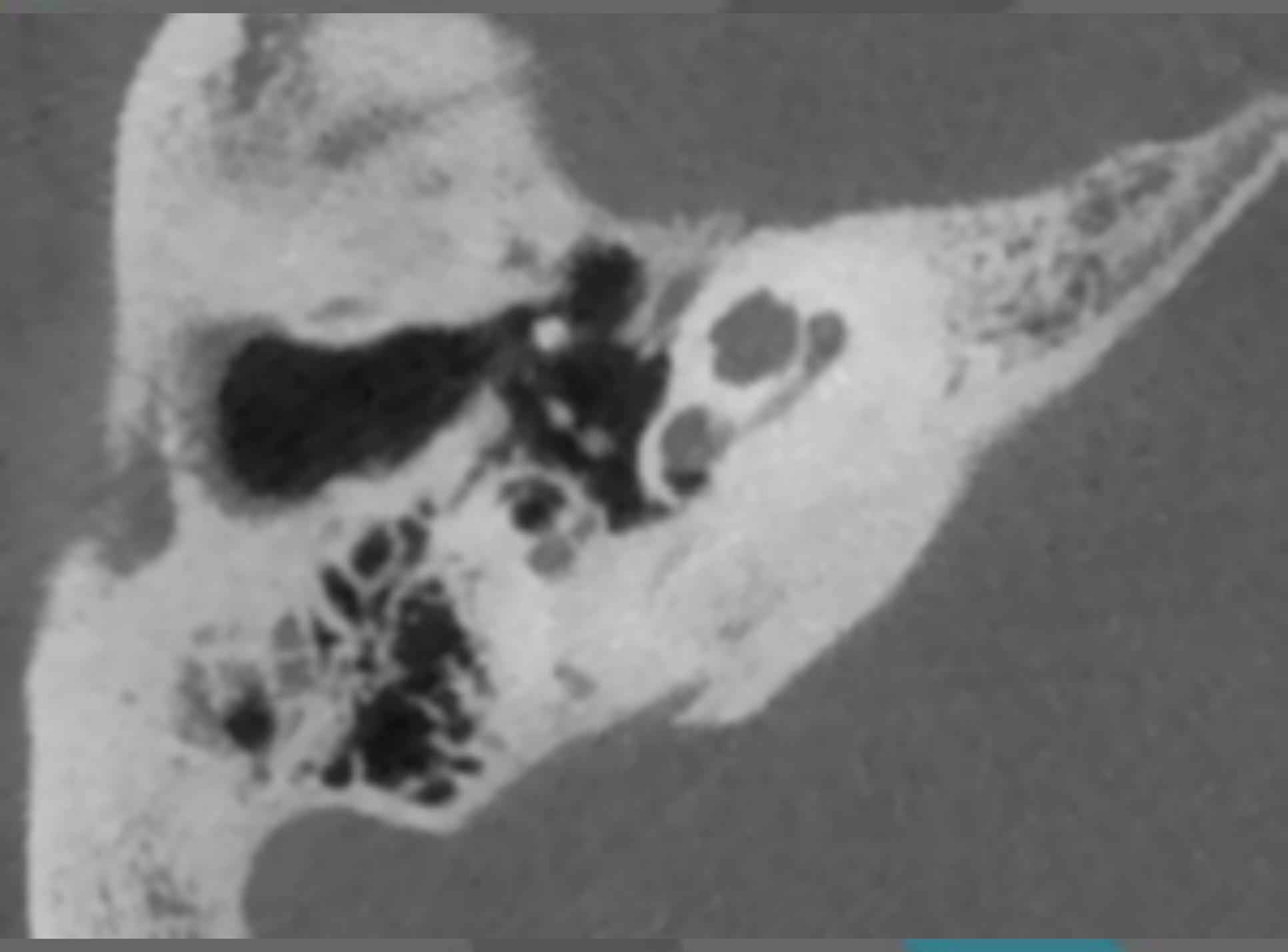


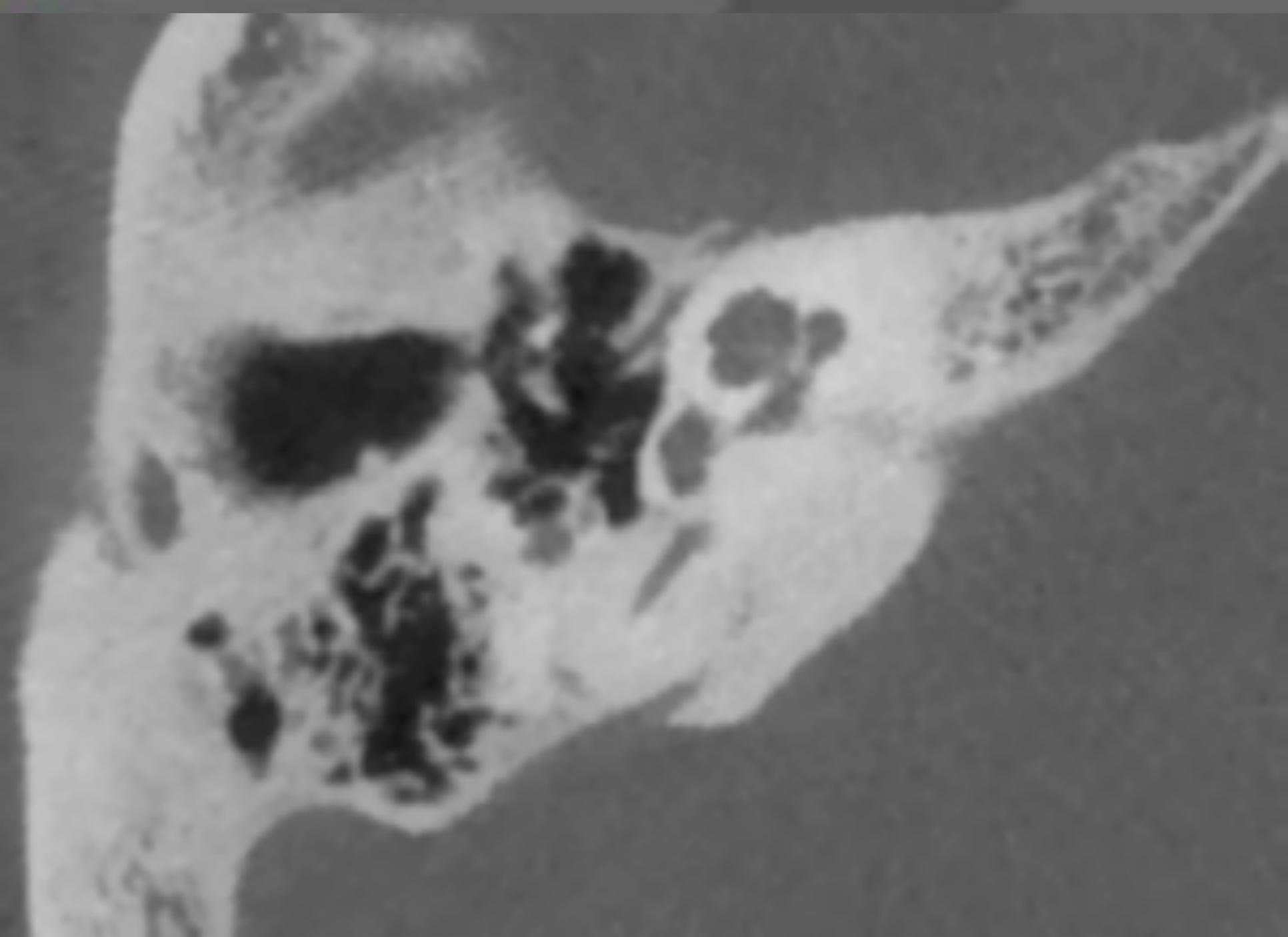
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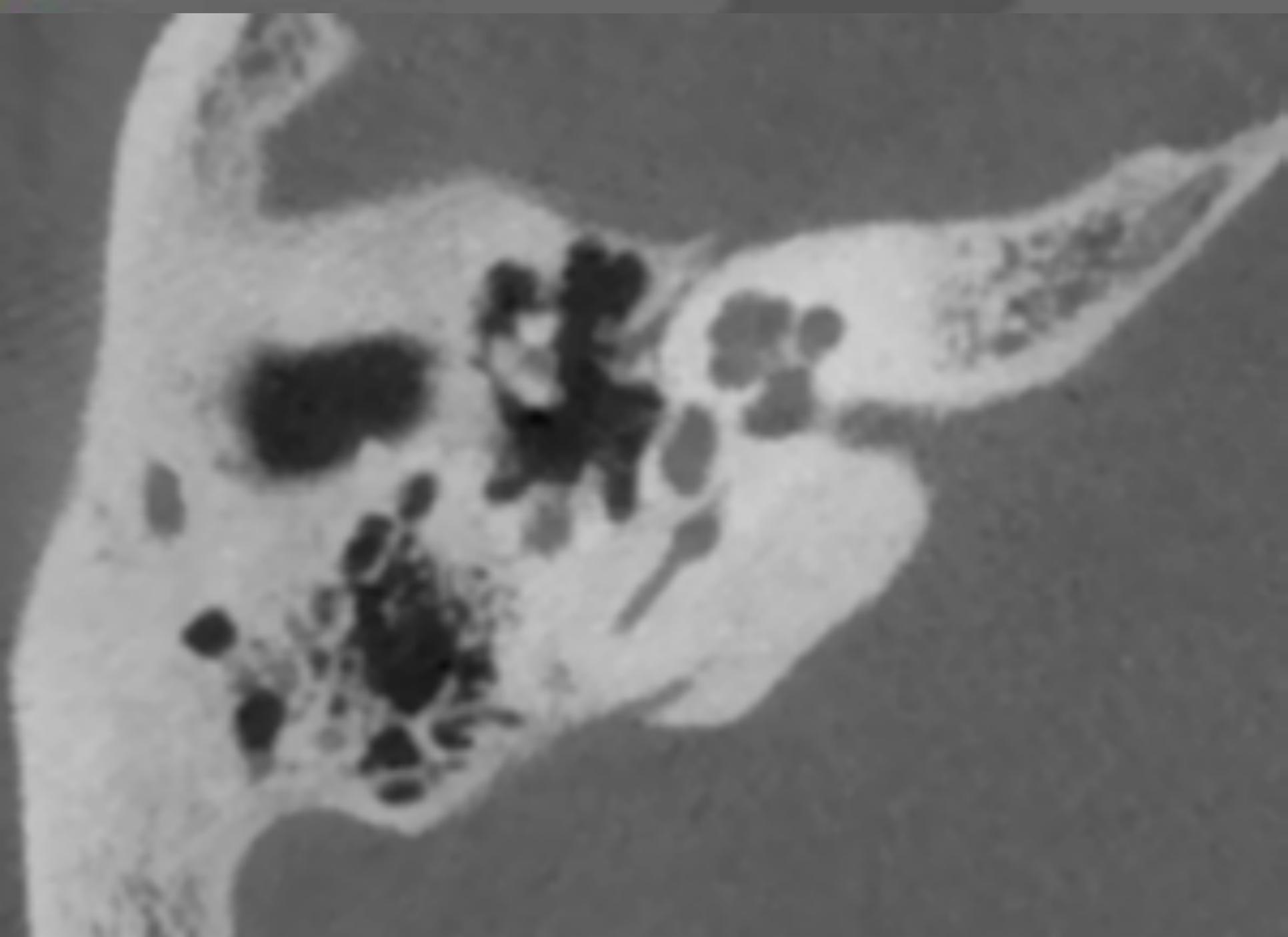


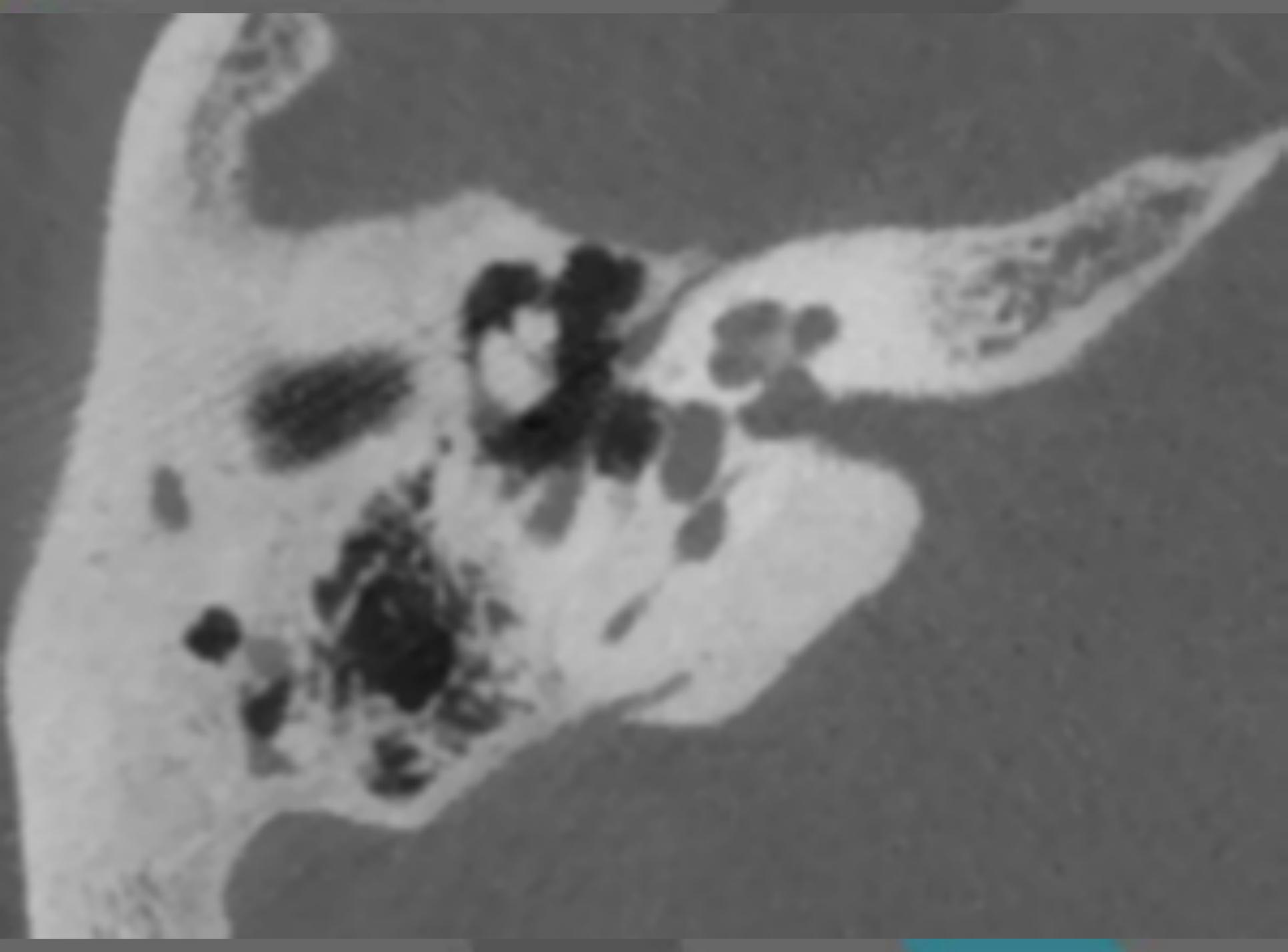
- Paciente de 54 años de edad
- Hipoacusia mixta oído derecho en paciente con antecedentes de traumatismo craneoencefálico hace 15 años.

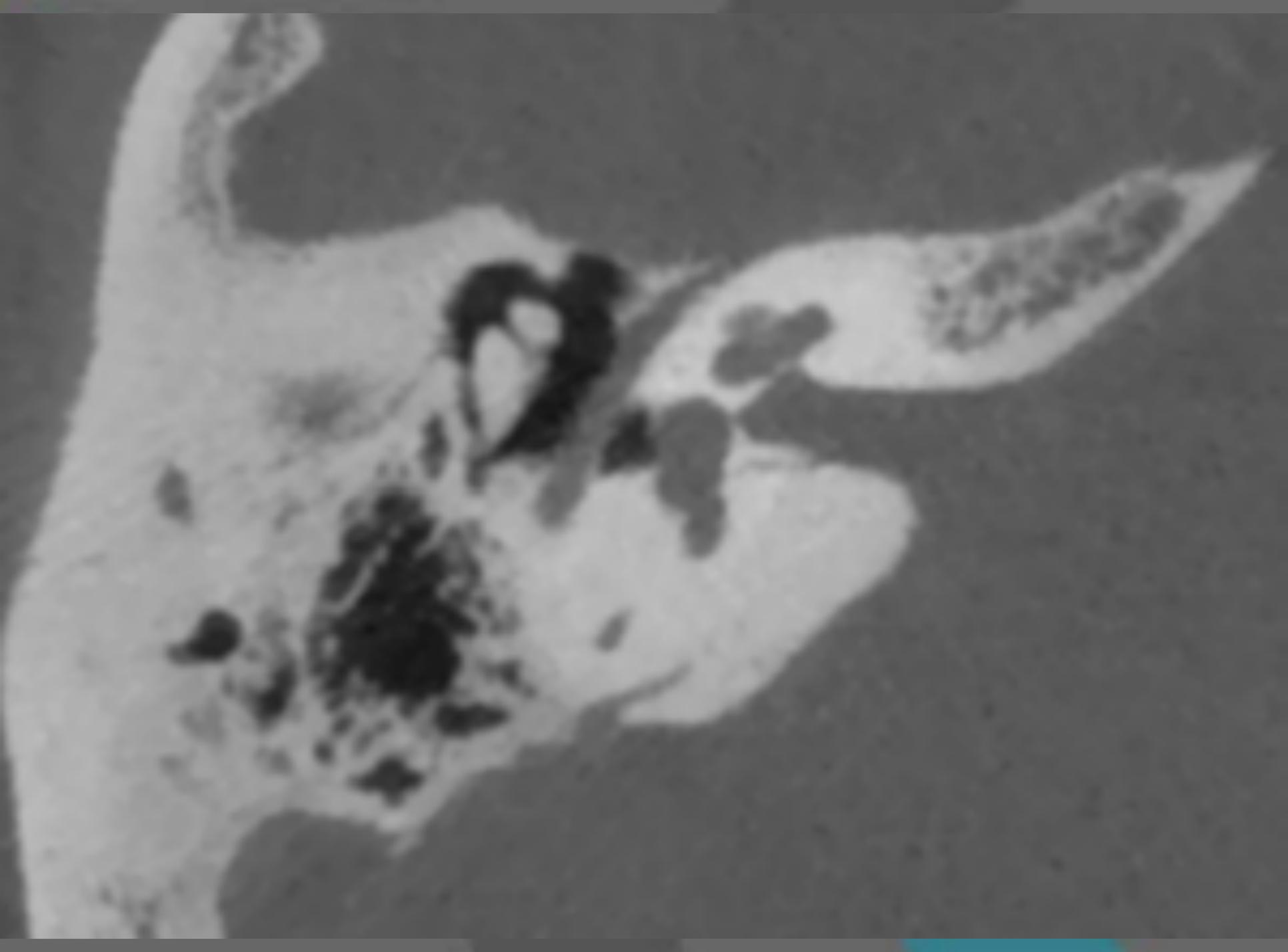


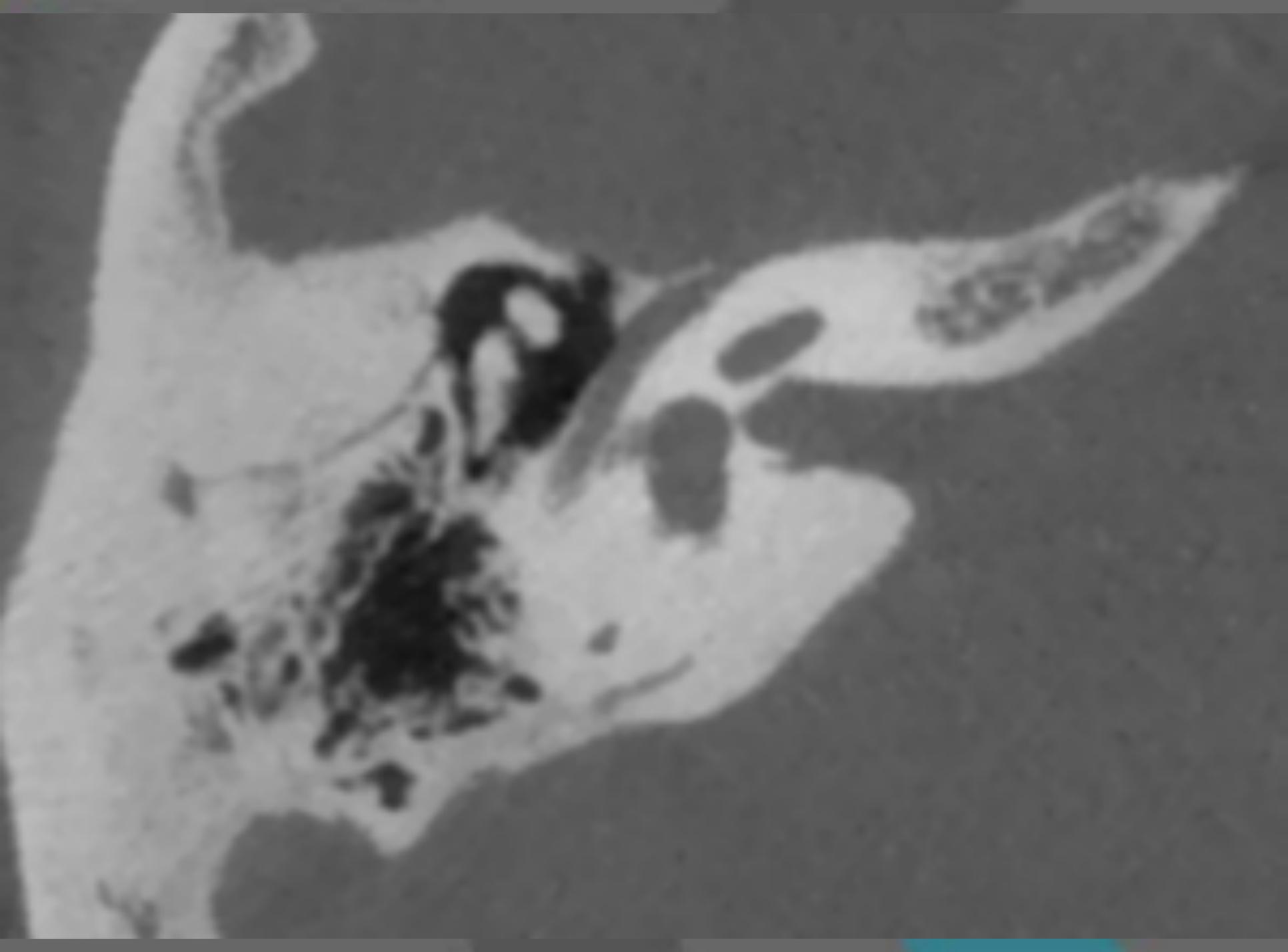


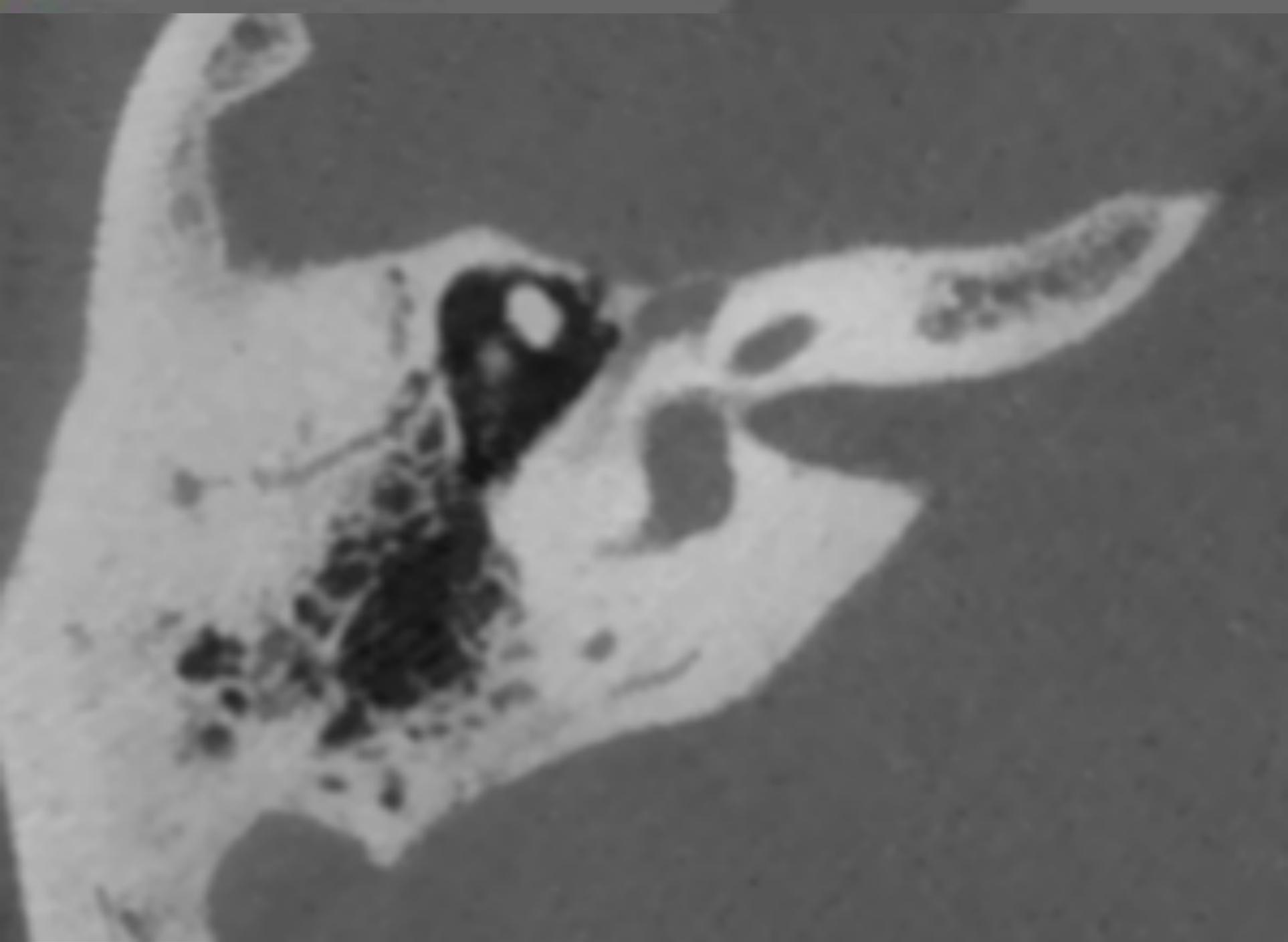
















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50-year-old patient with right severe mixed hearing loss since infancy. According to the patient, the hearing loss followed a mumps or measles episode.

Otoscopy with no pathological findings

Unreliable old audiometry provided by the patient.

Paciente de 50 años de edad con hipoacusia mixta severa derecha desde la infancia. Según paciente la hipoacusia fue tras una parotiditis o un sarampión.

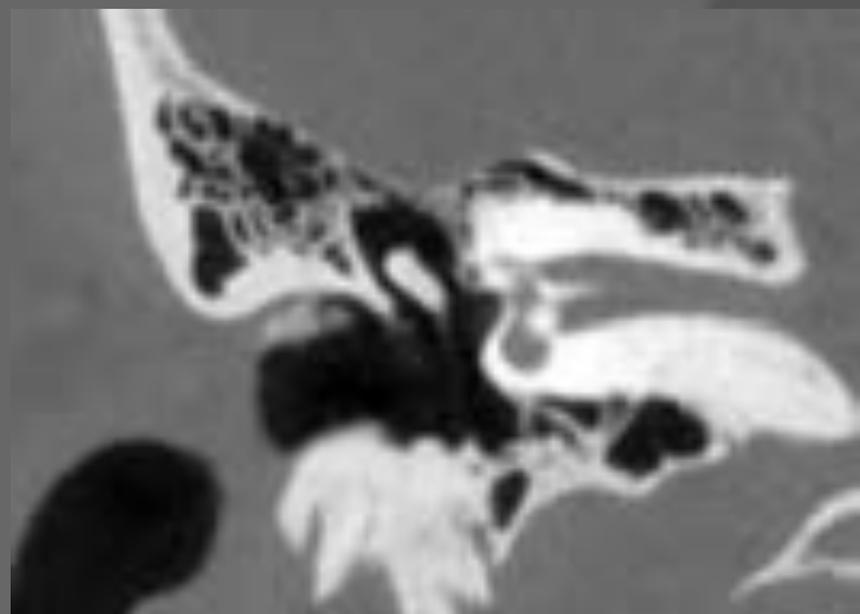
Otoscopia sin hallazgos patológicos

Audiometría antigua poco fiable aportada por la paciente.



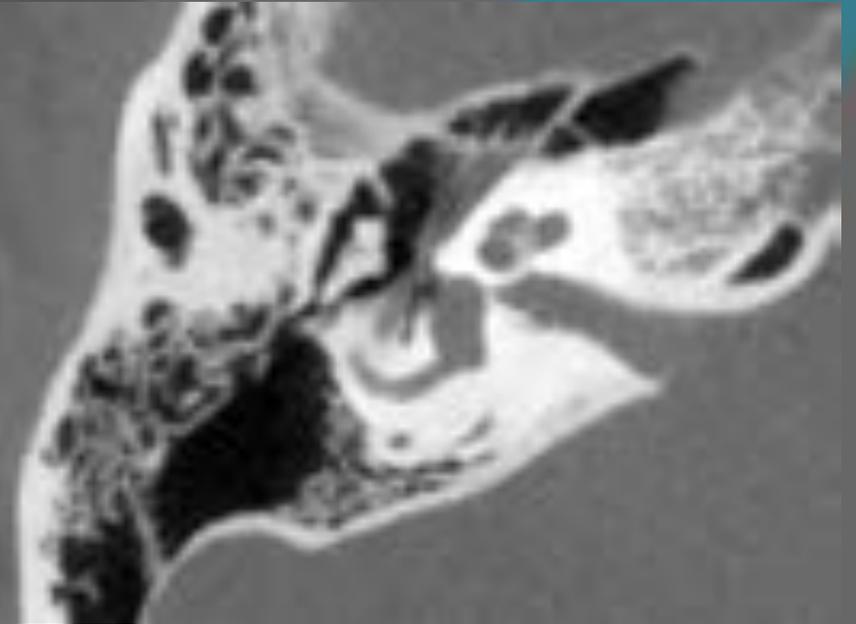
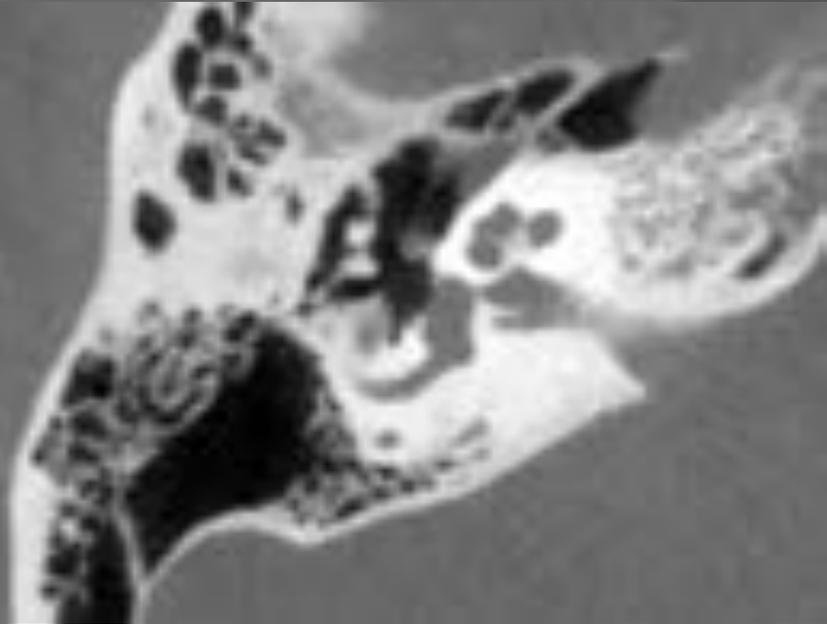


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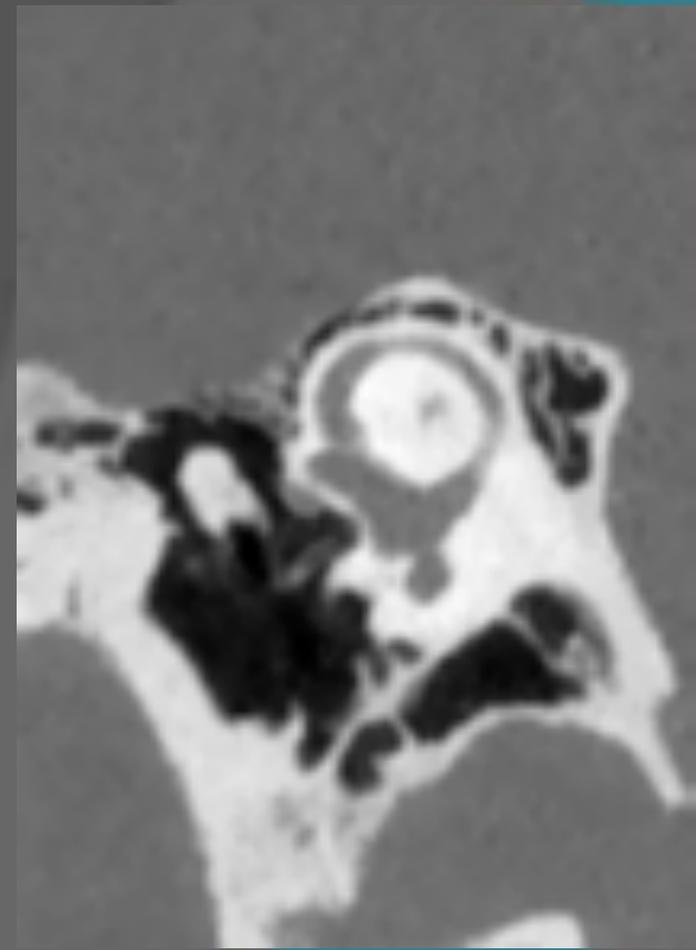
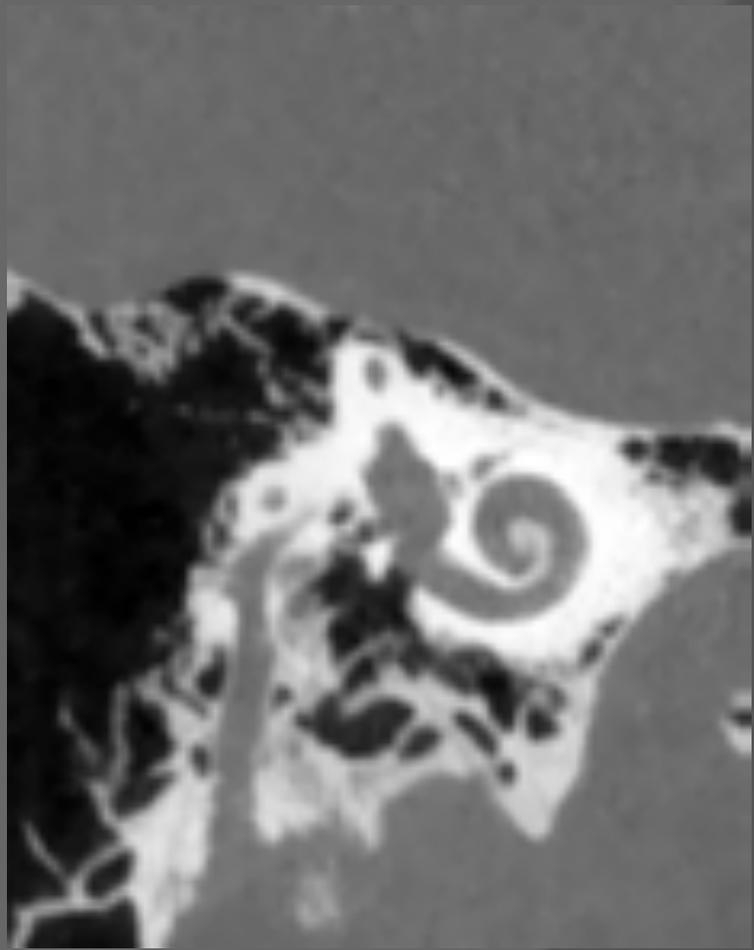


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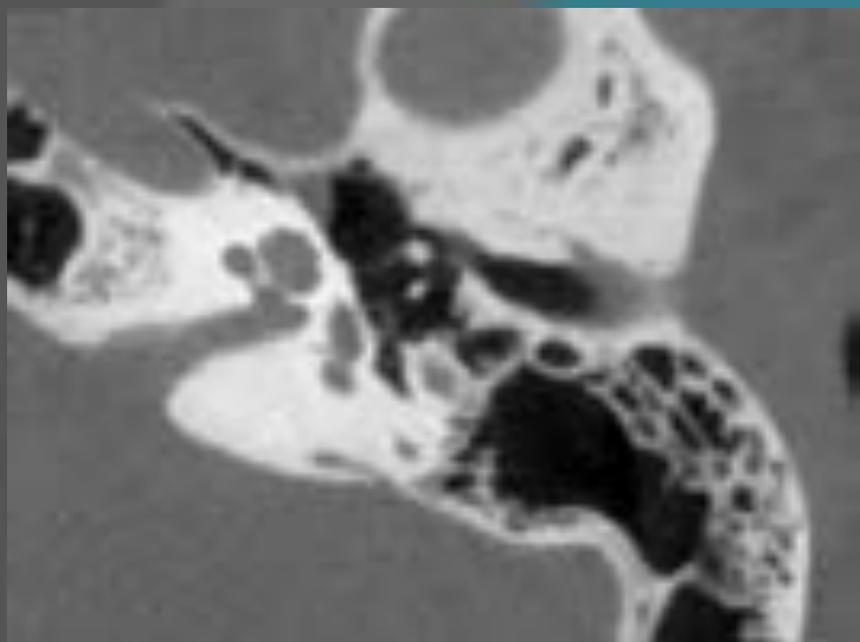
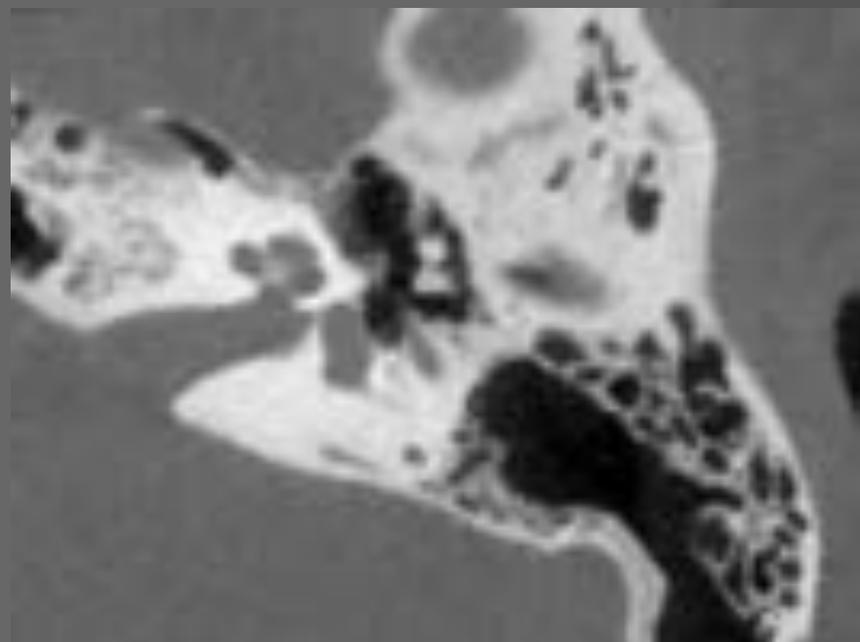


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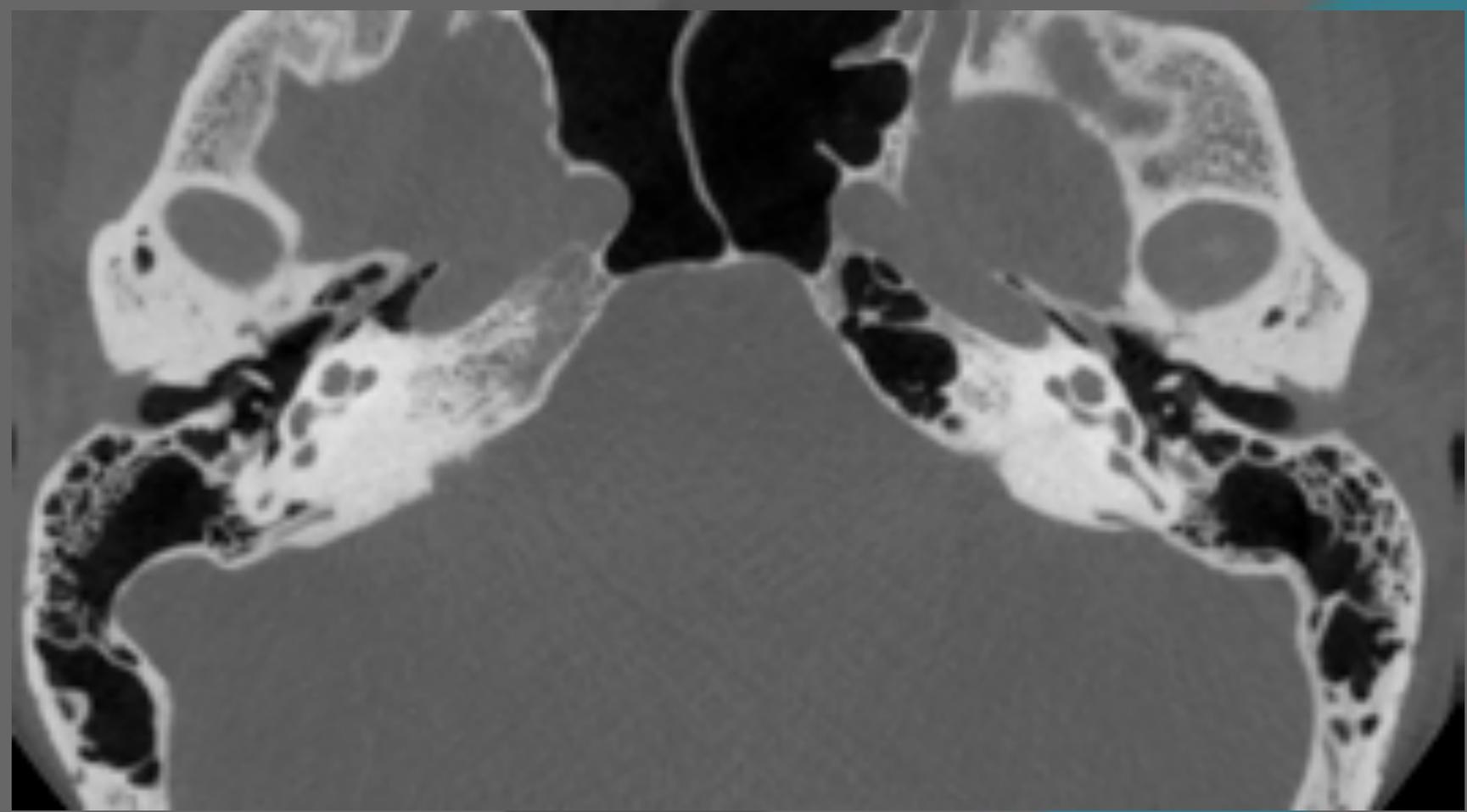


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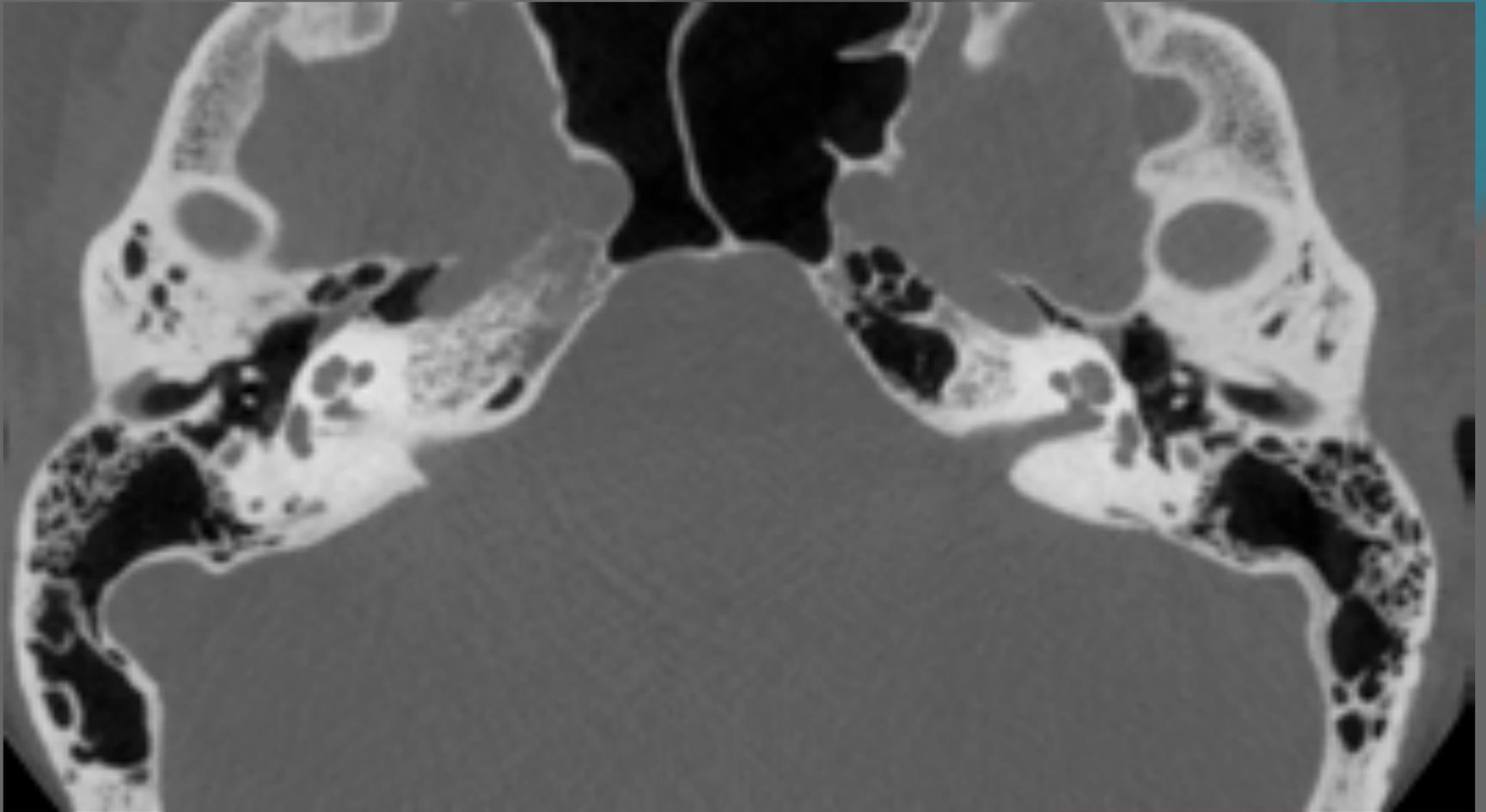
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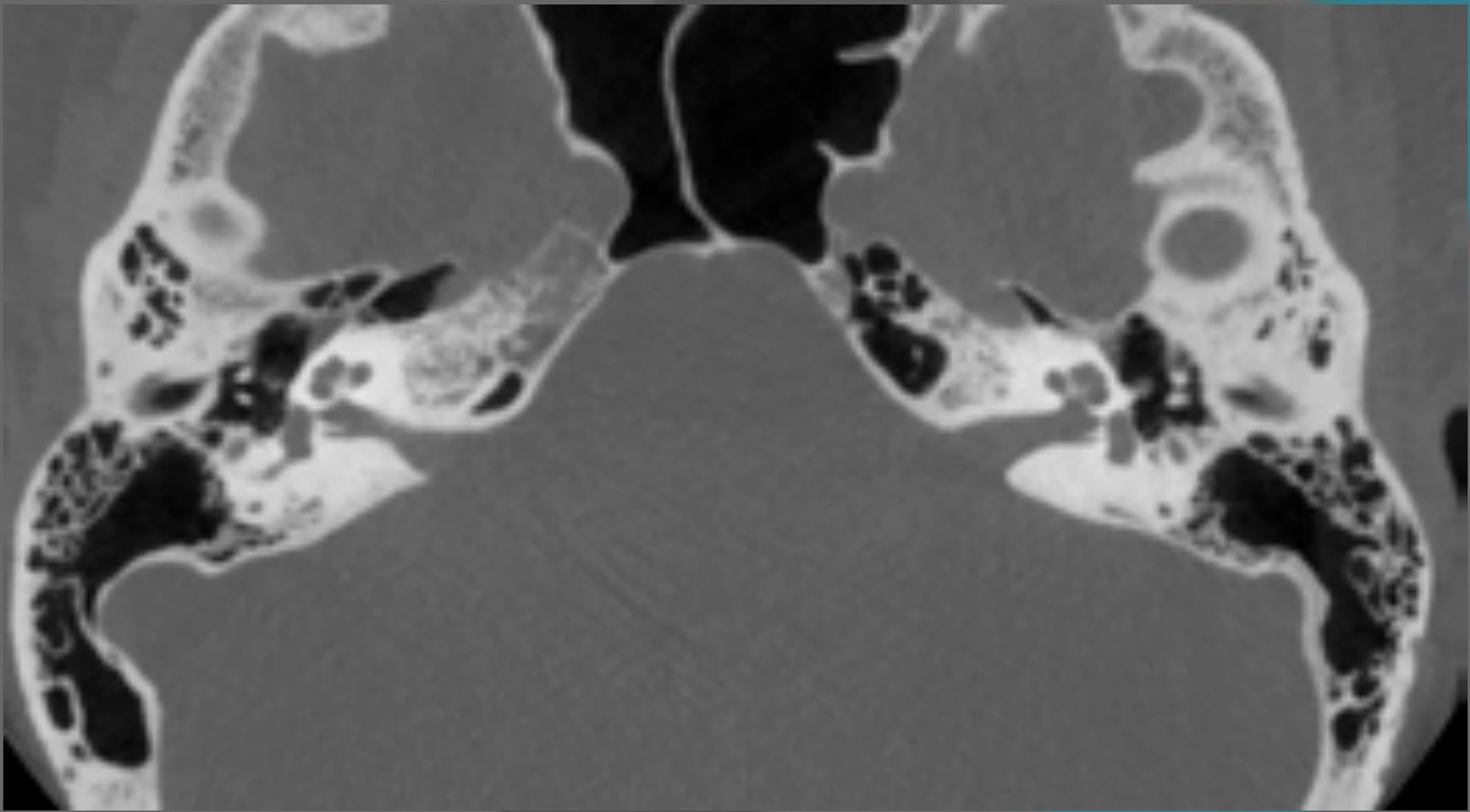
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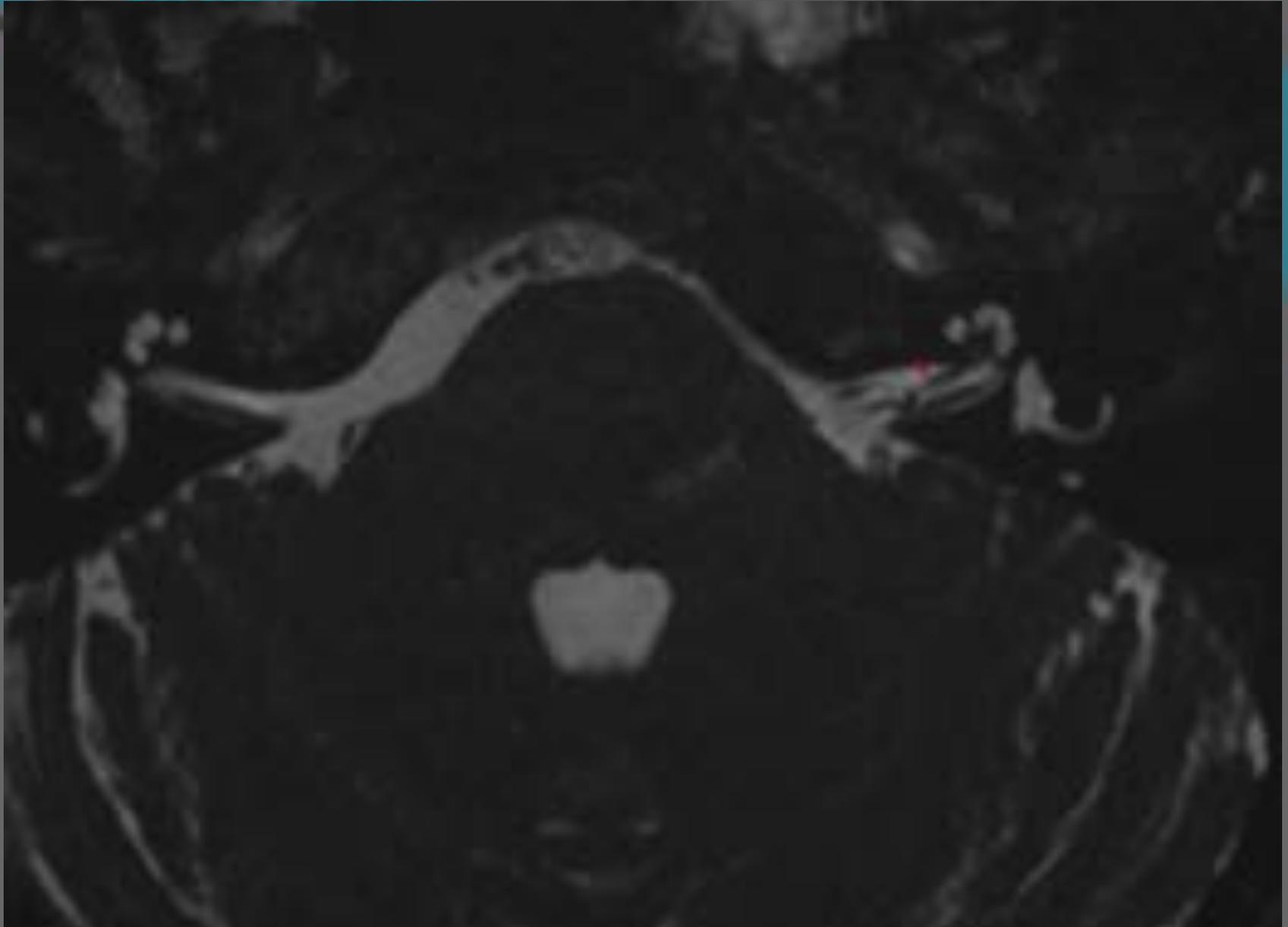




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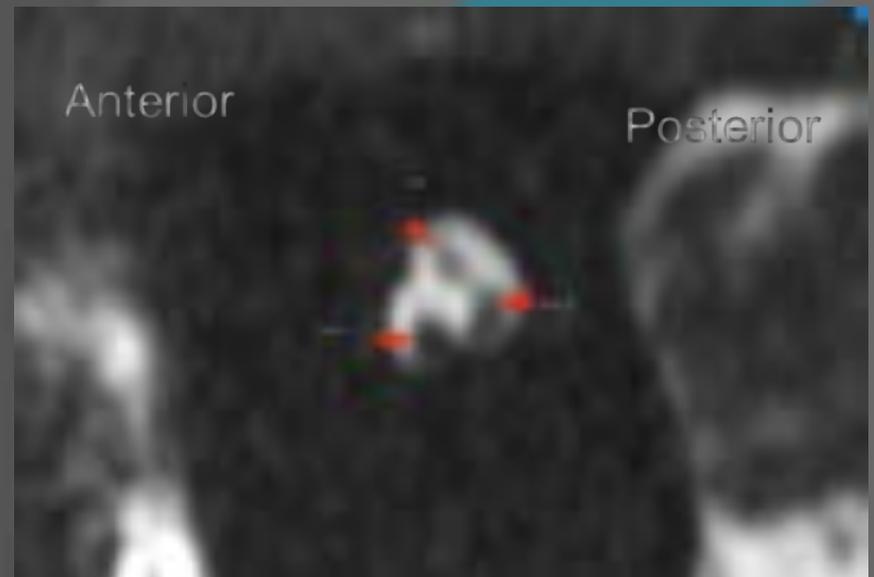
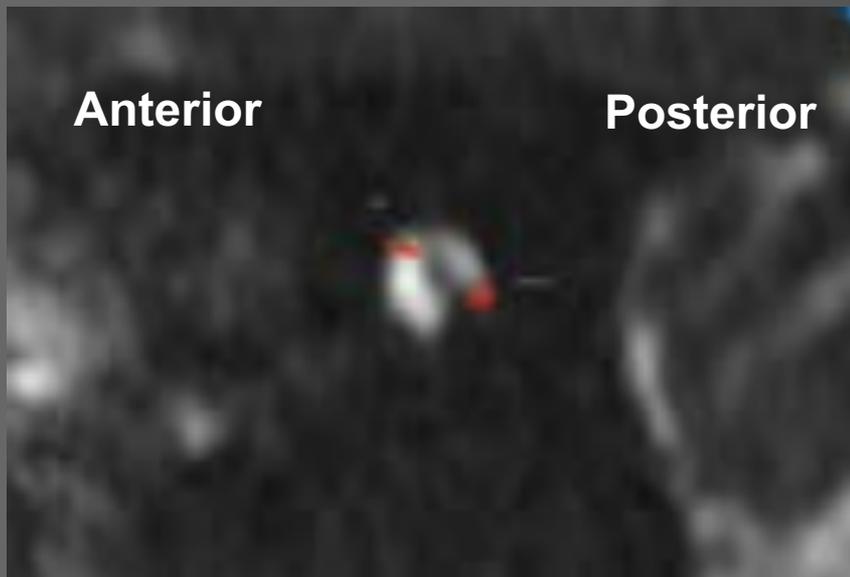
# Left cochlear nerve



# Sagittal slices, bilateral inner ear

**Absence of right cochlear  
nerve**

**Normality of the left  
acoustic-facial package**





# CT in Conductive and Mixed Hearing Loss Review “”

Febrero 2019 Hospital Universitari de Girona

Doctor Josep Trueta

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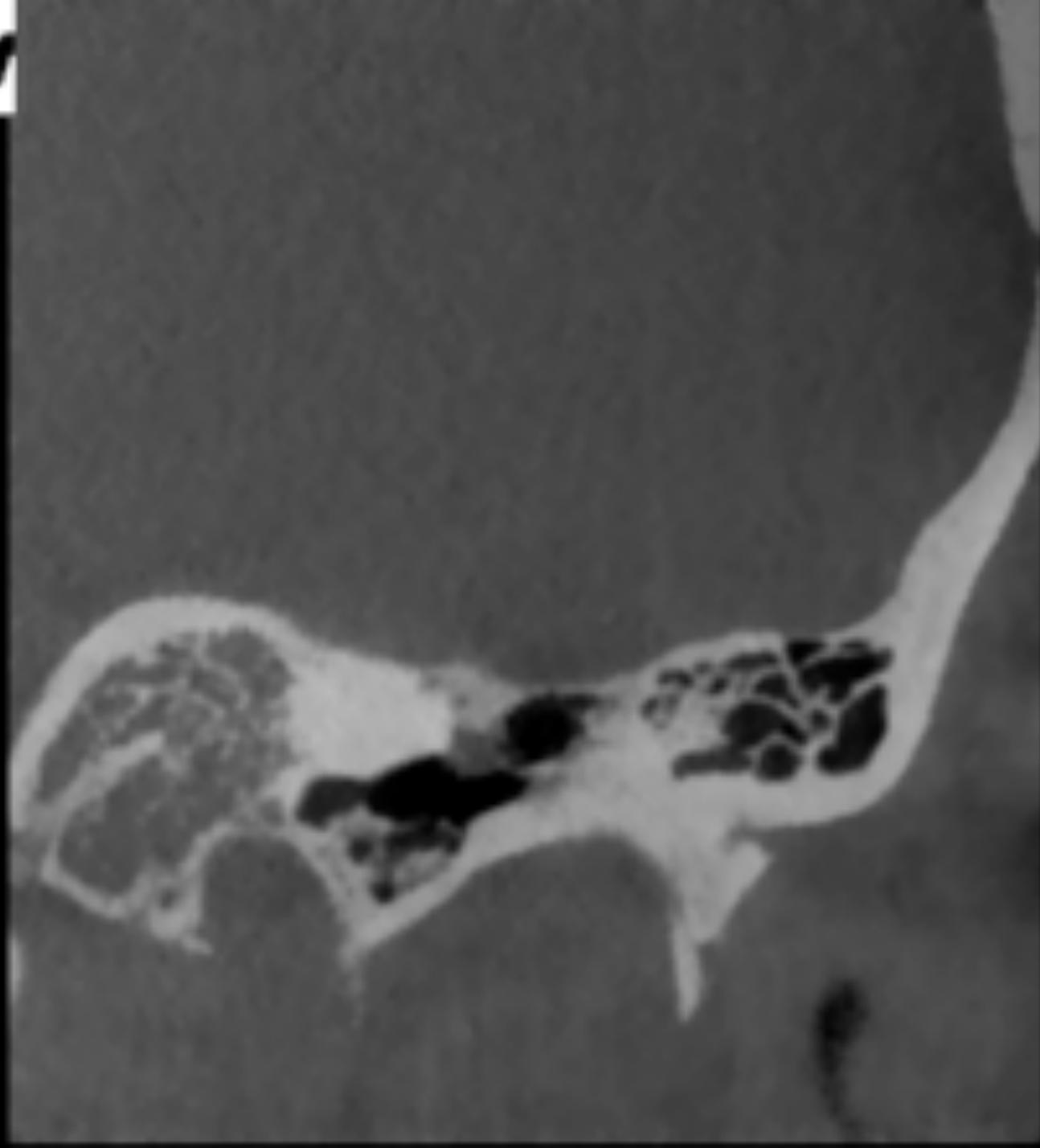
Jorge Salmerón

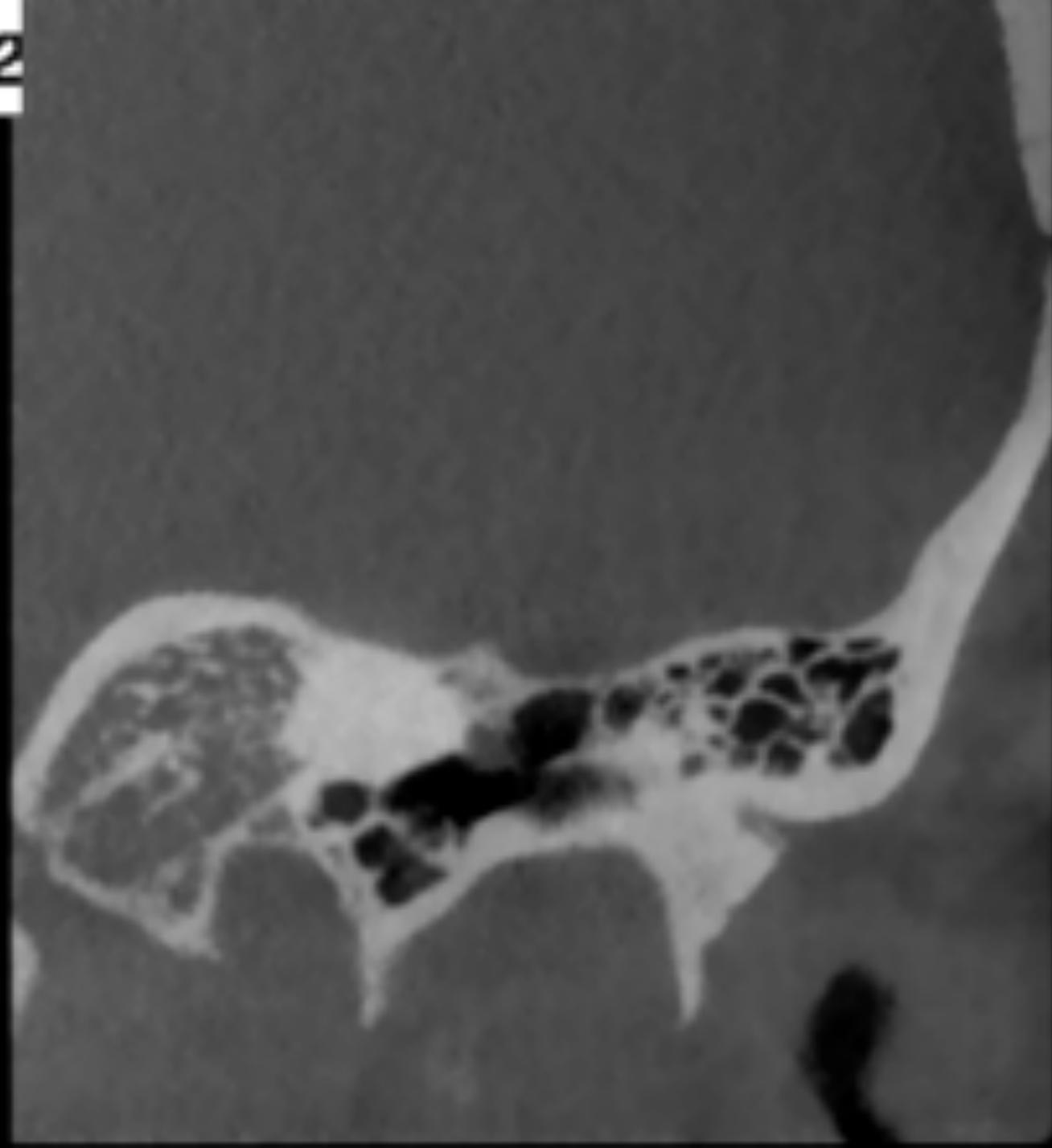
Barcelona

[jsalmeron@institutsguirado.com](mailto:jsalmeron@institutsguirado.com)

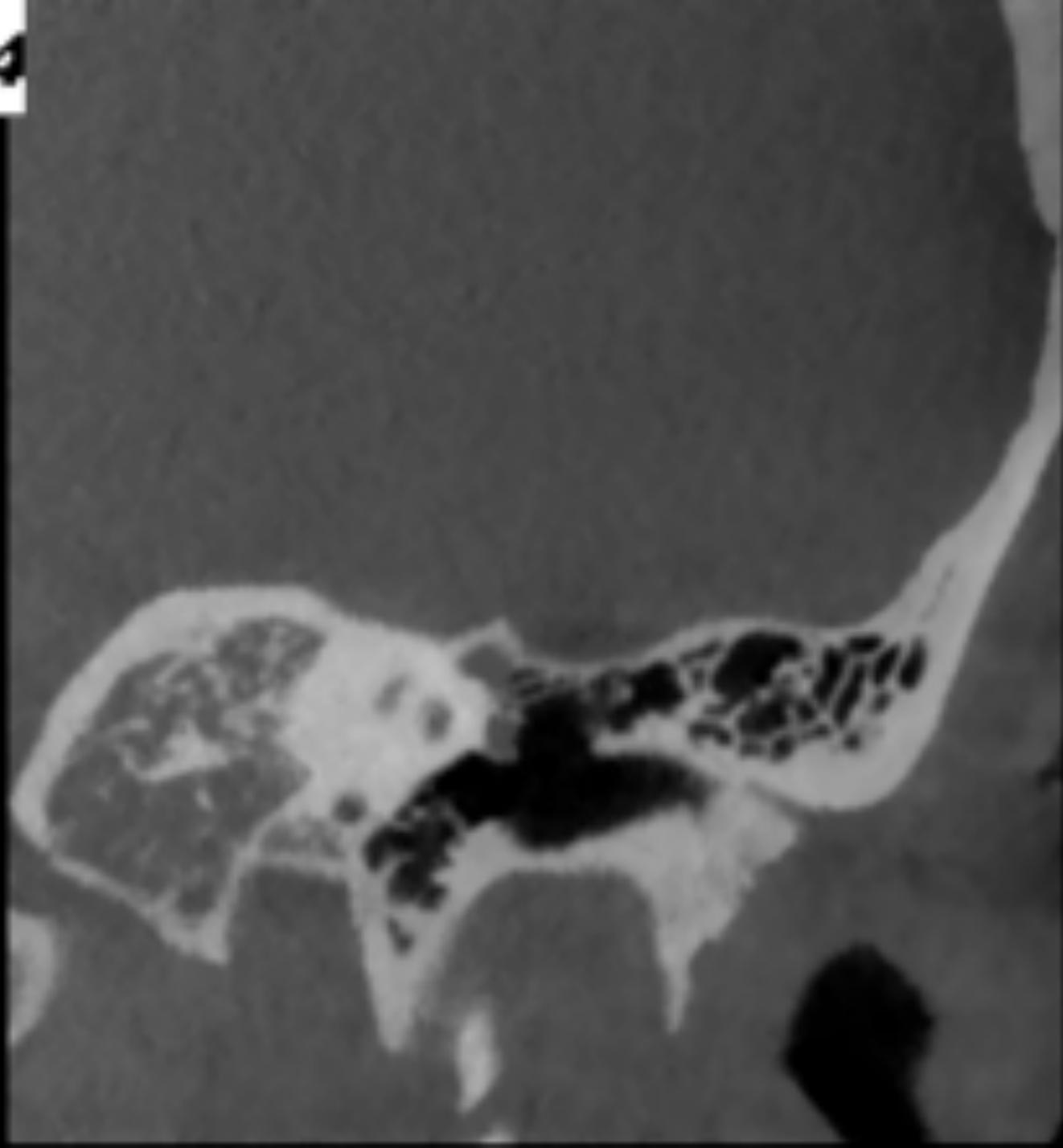
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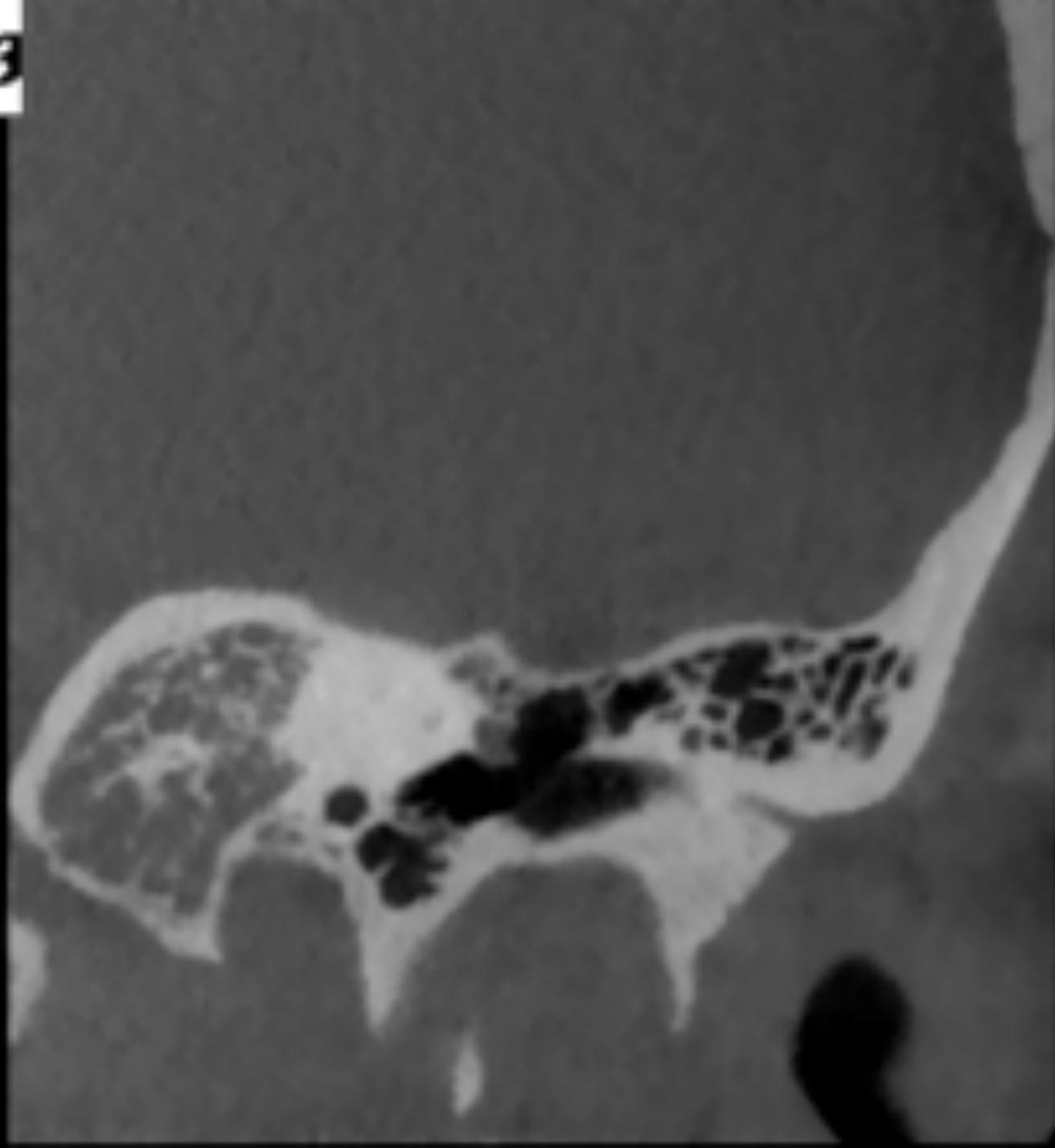




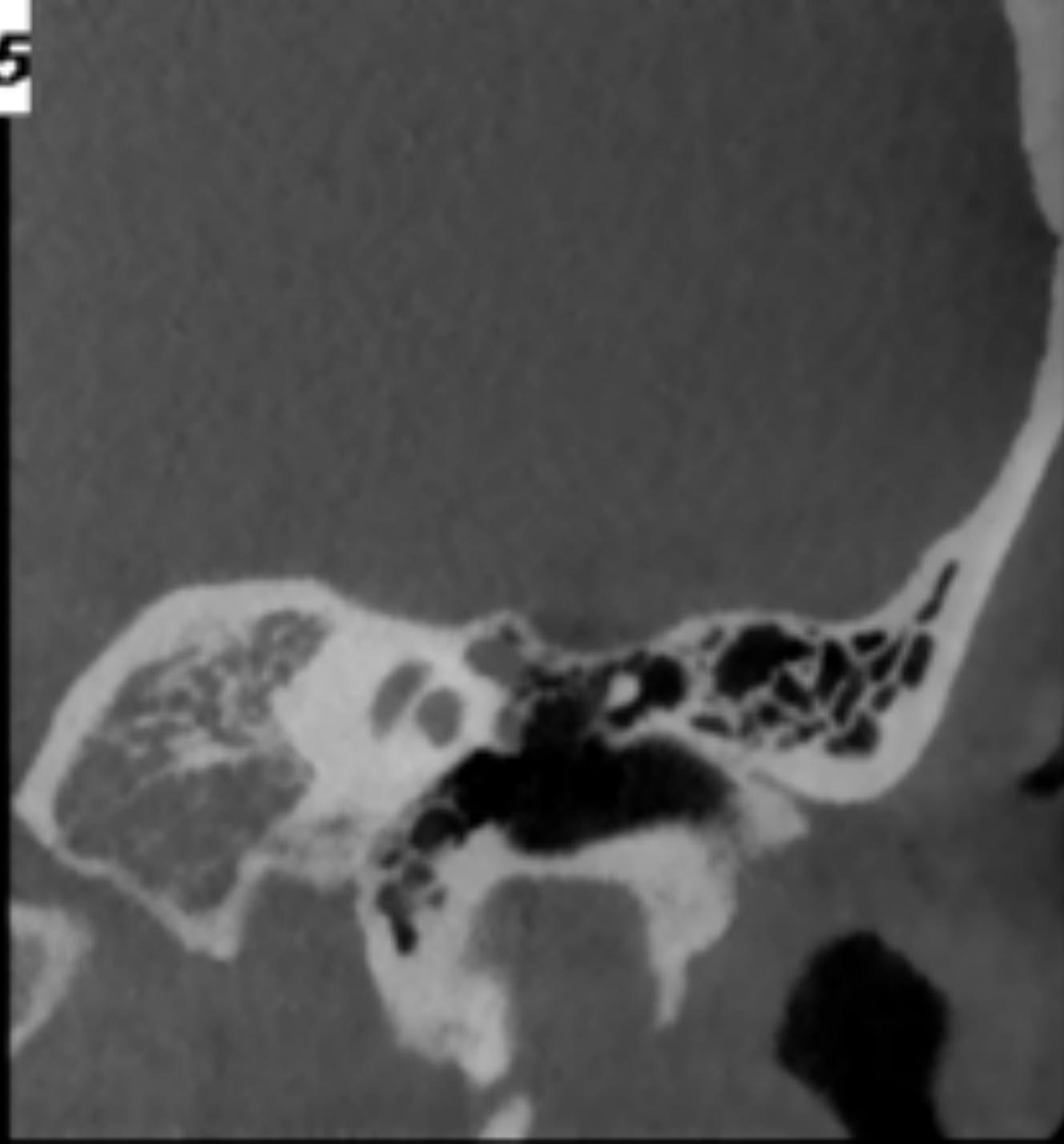
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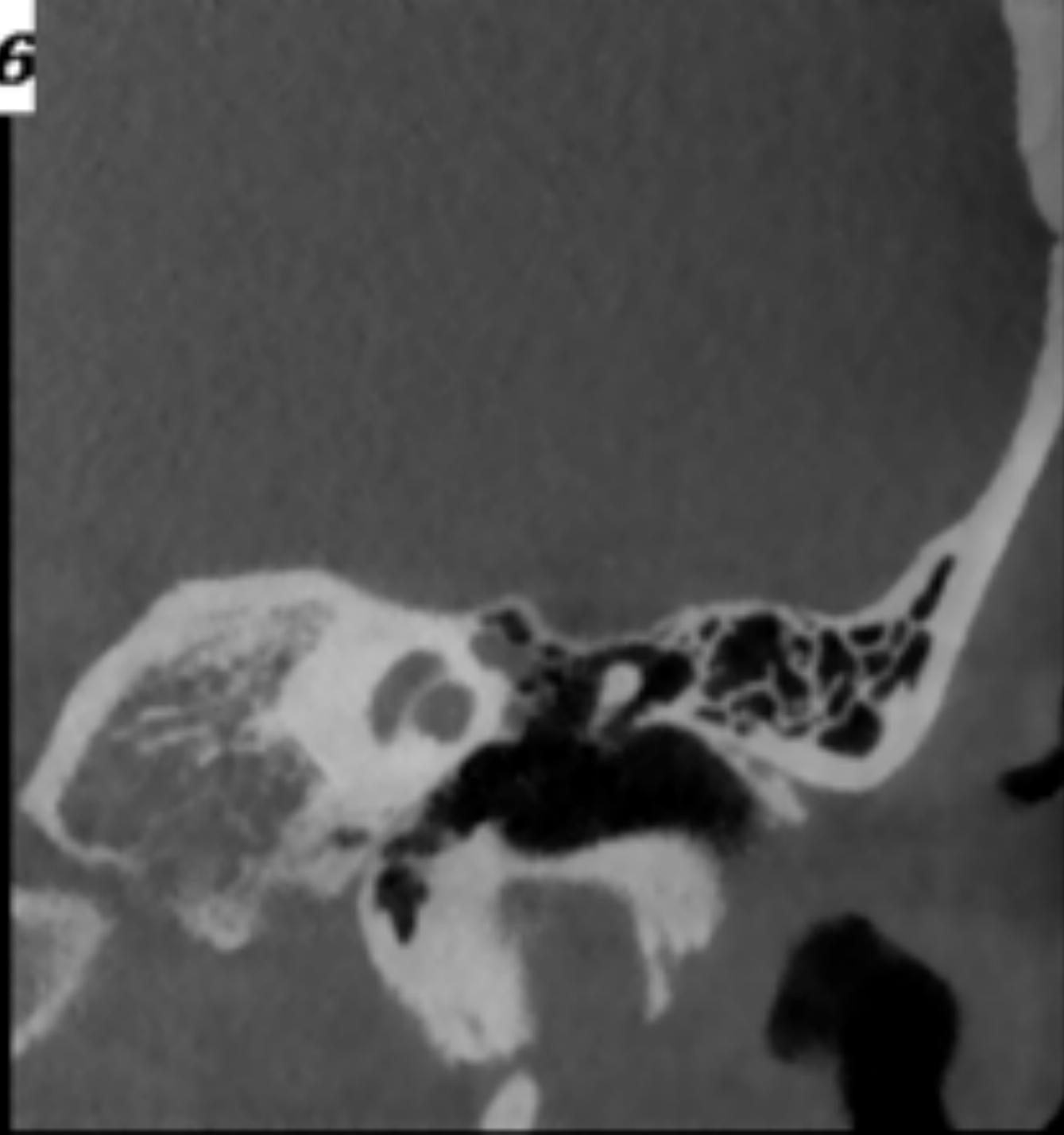
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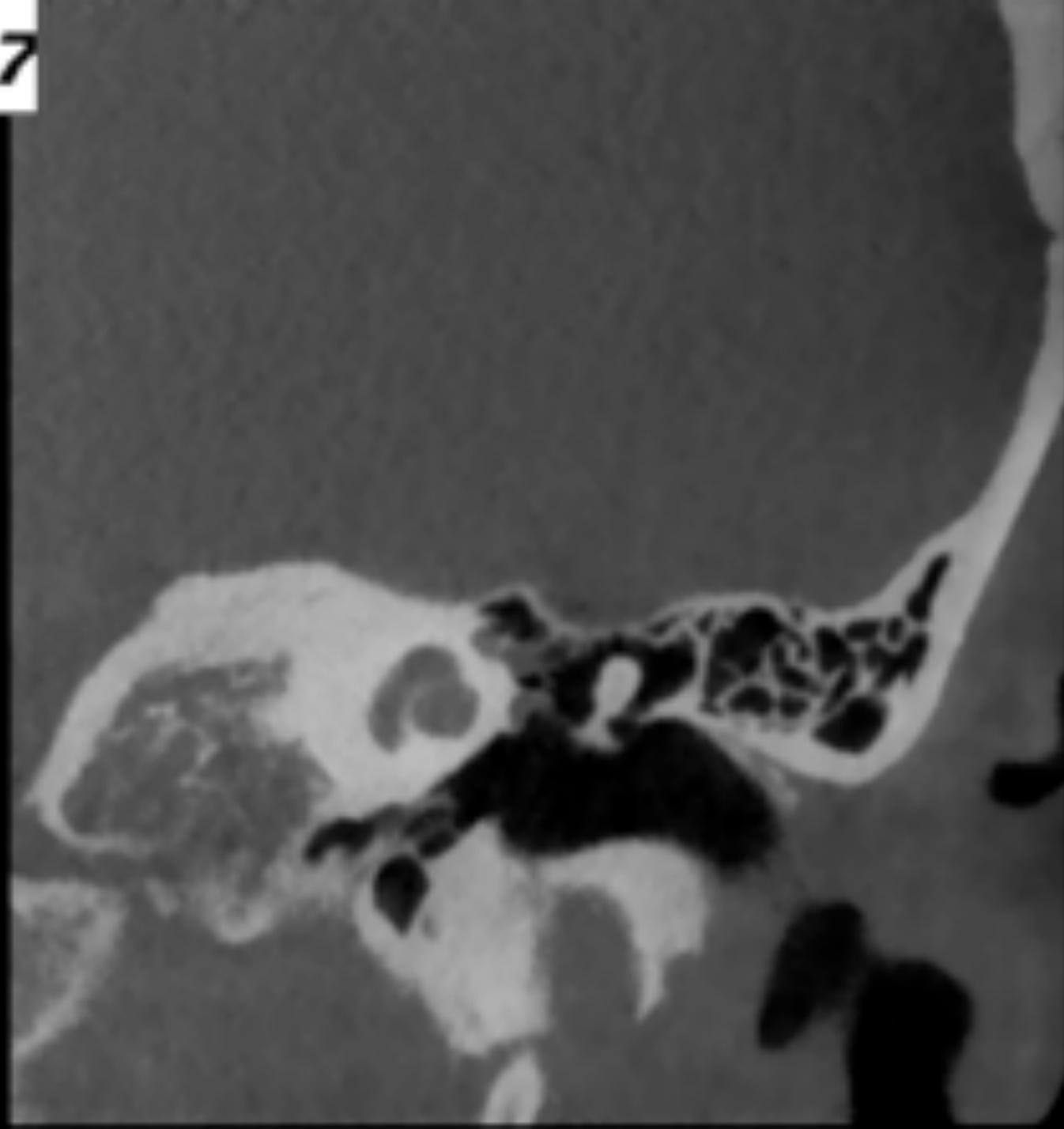
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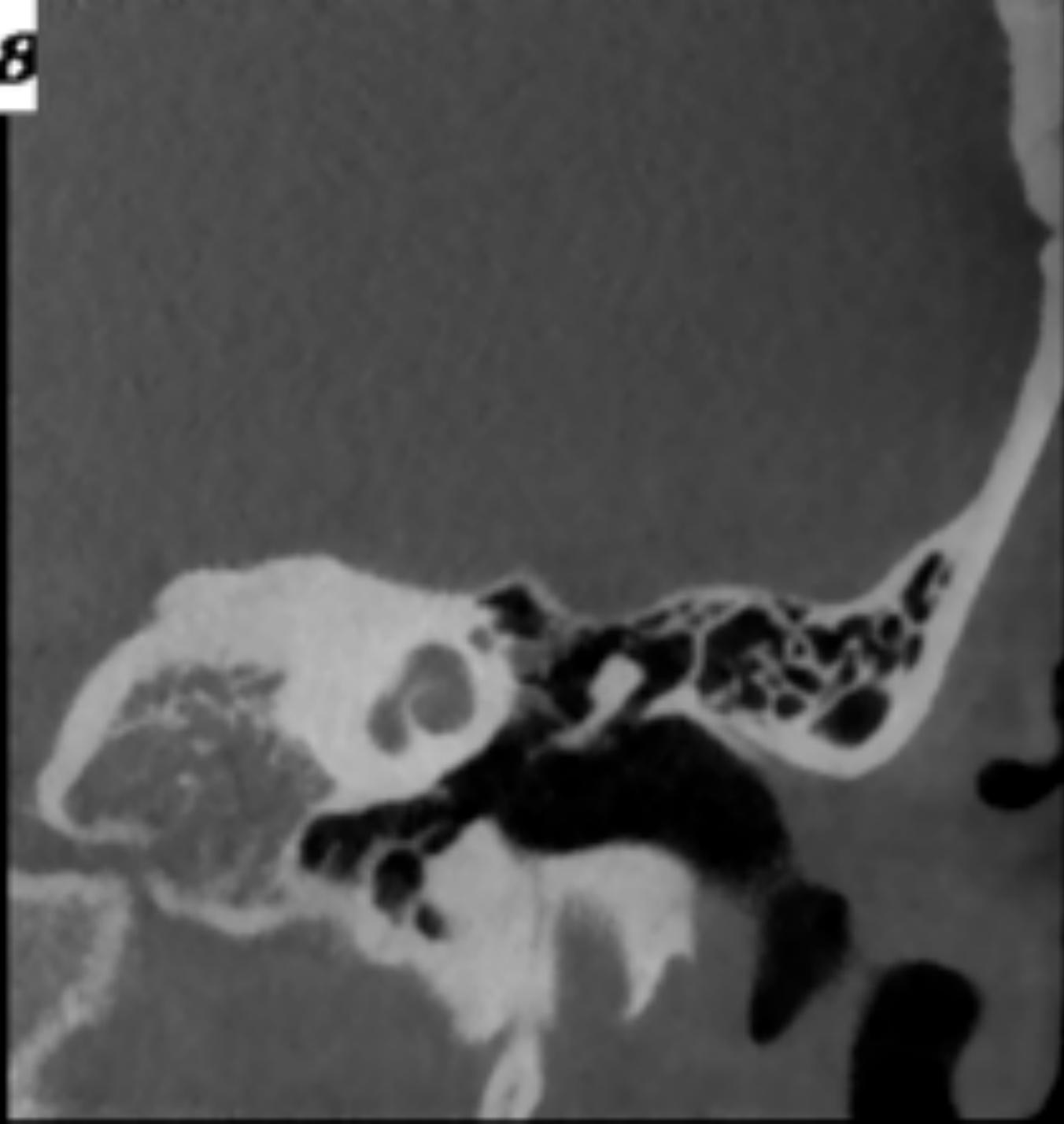


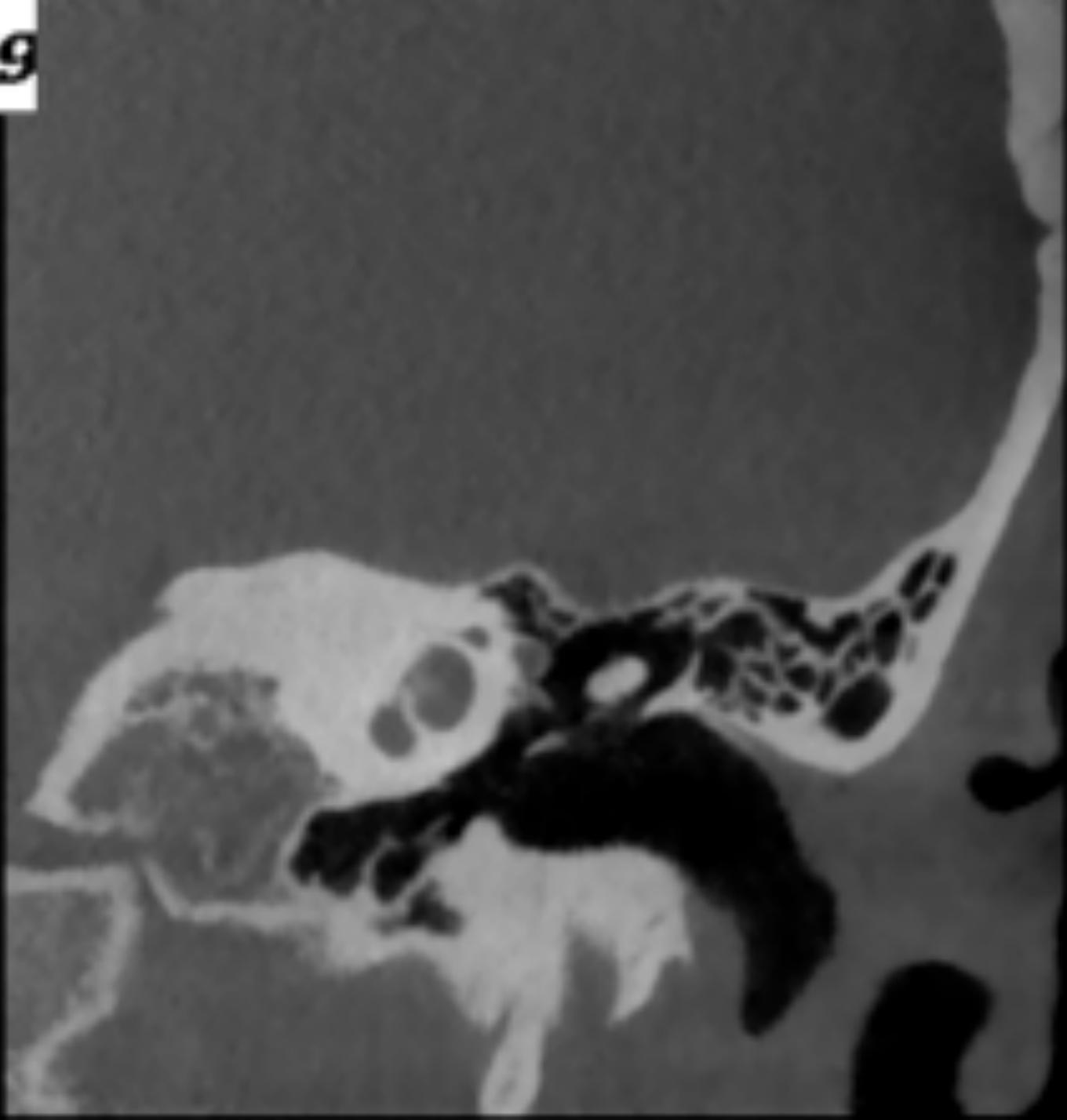
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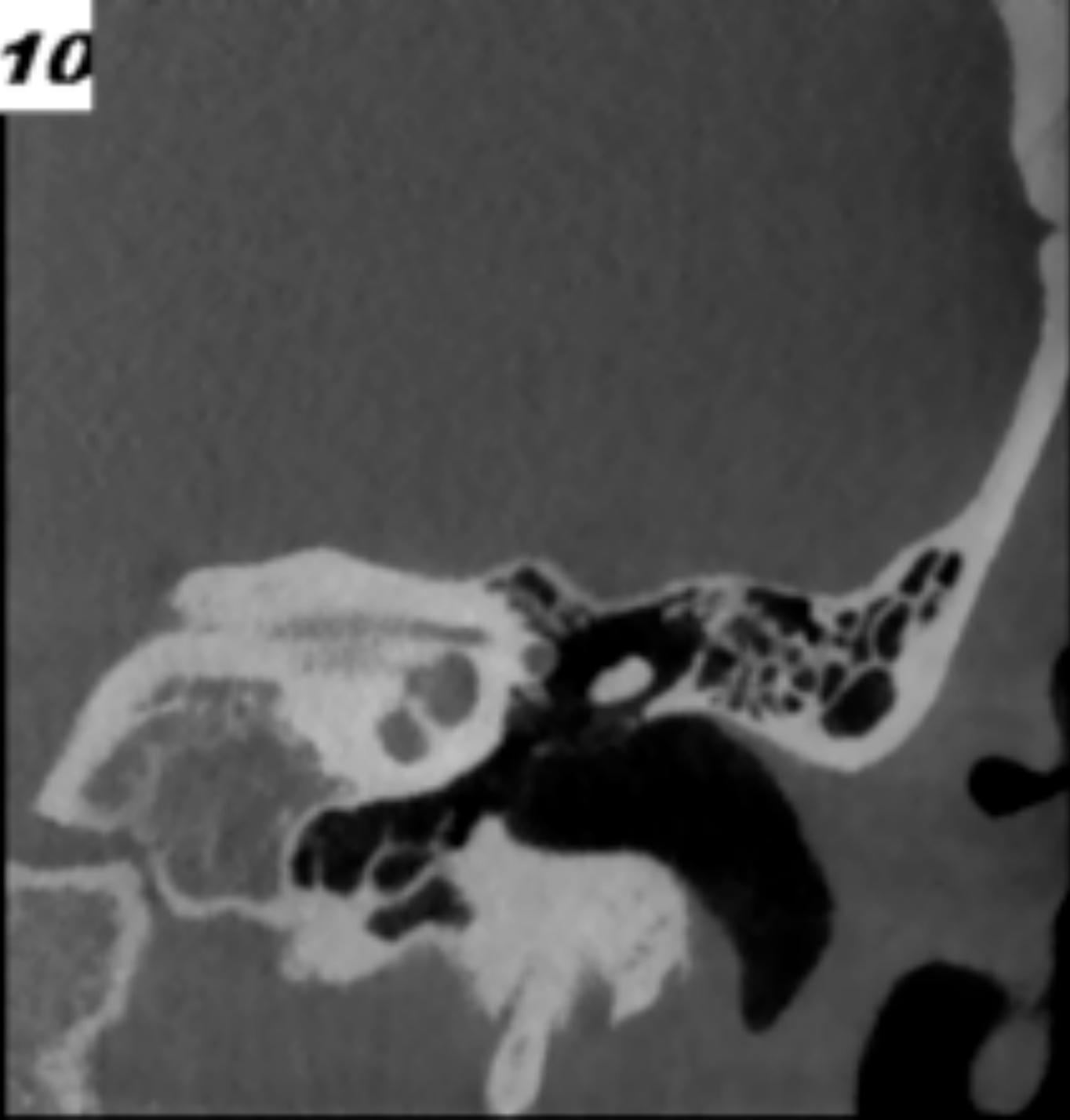


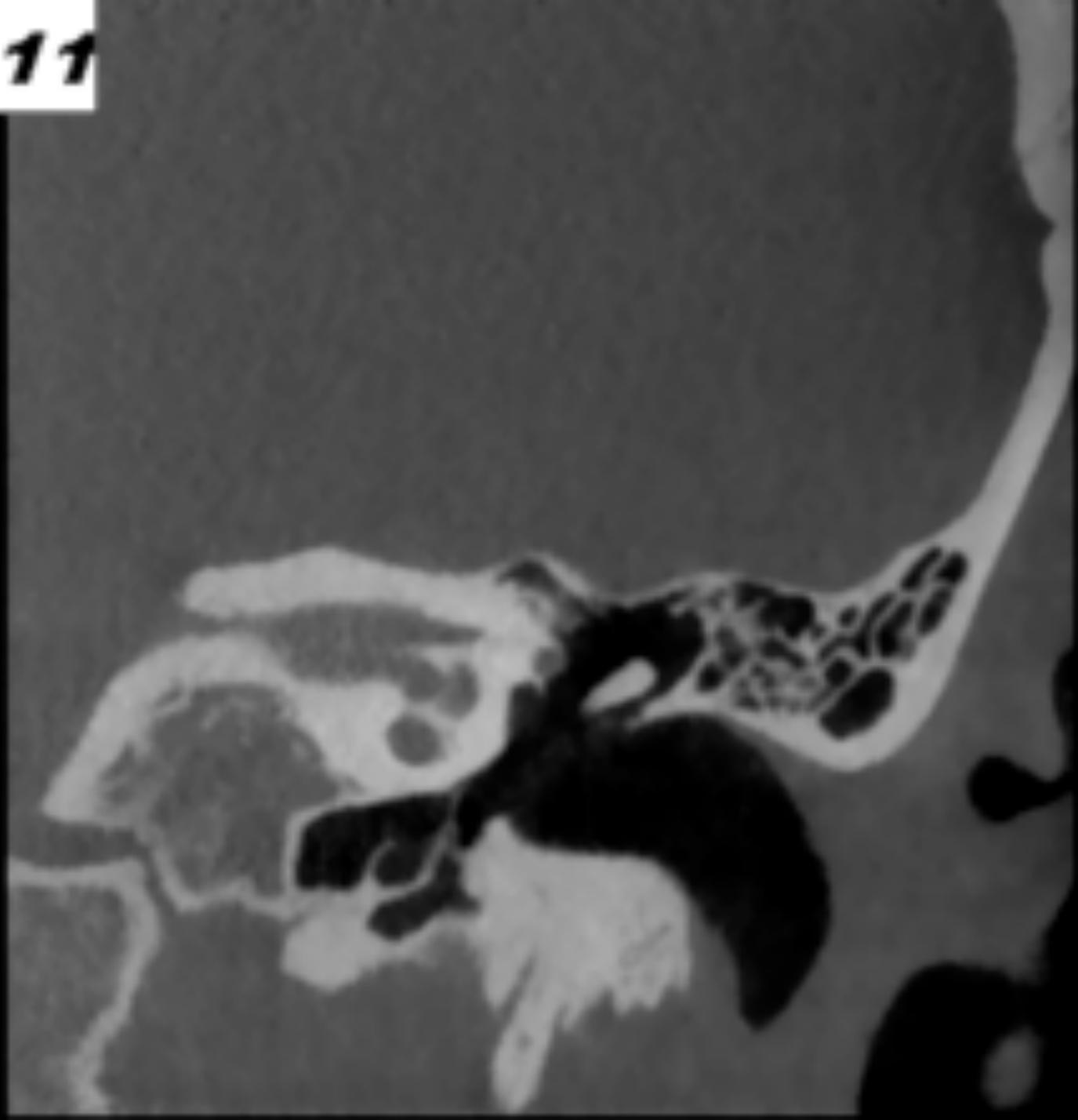
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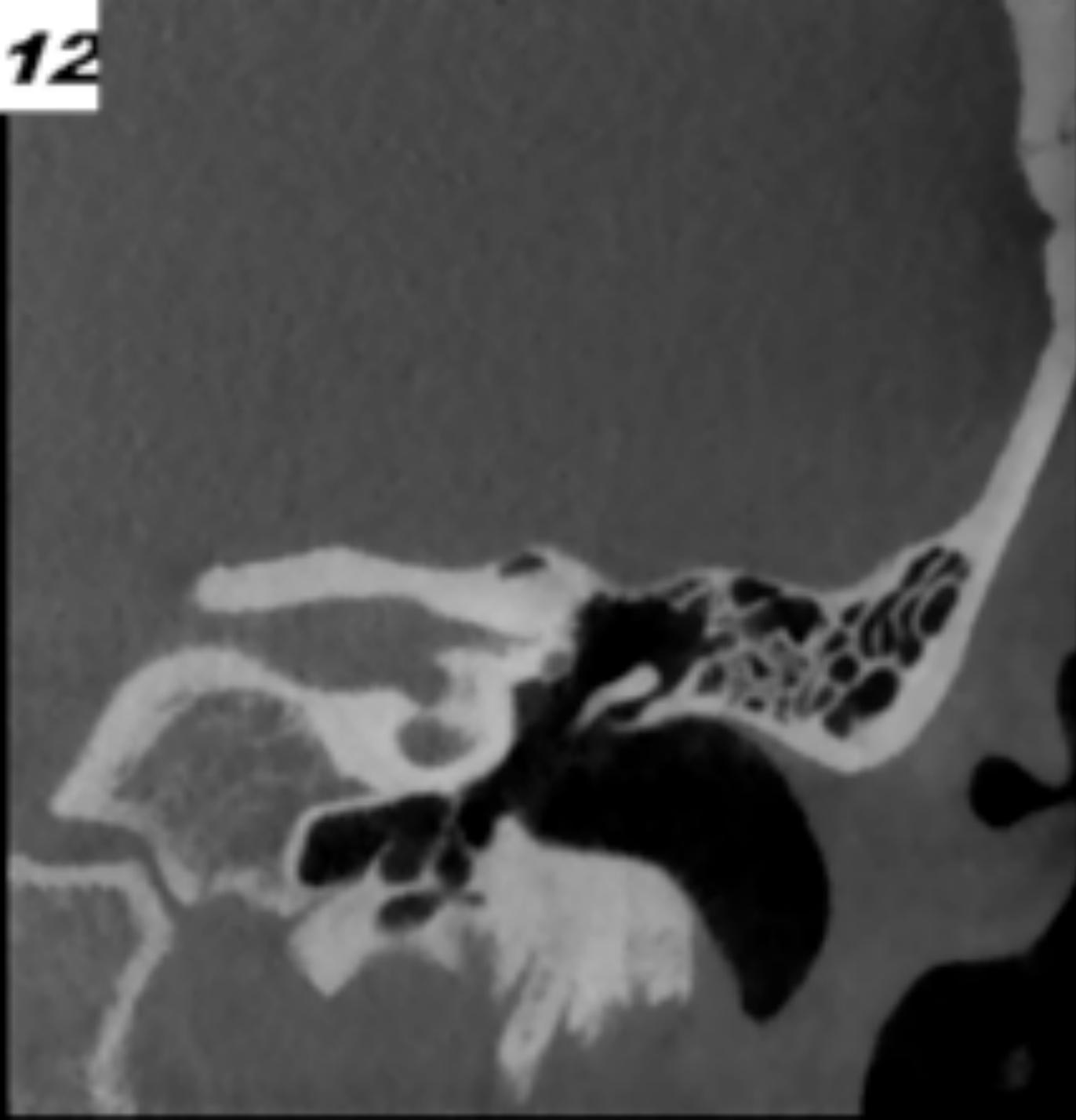


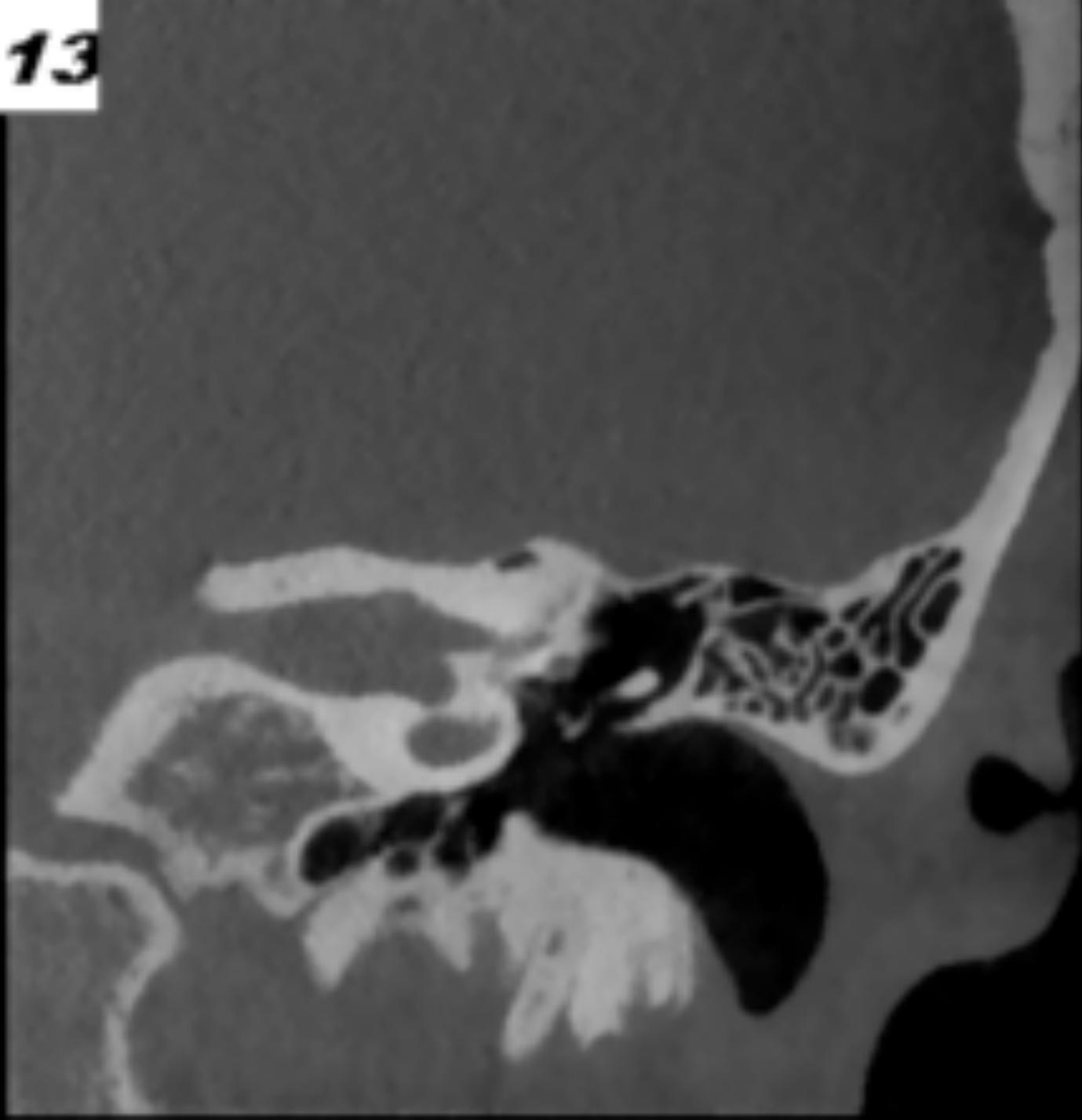


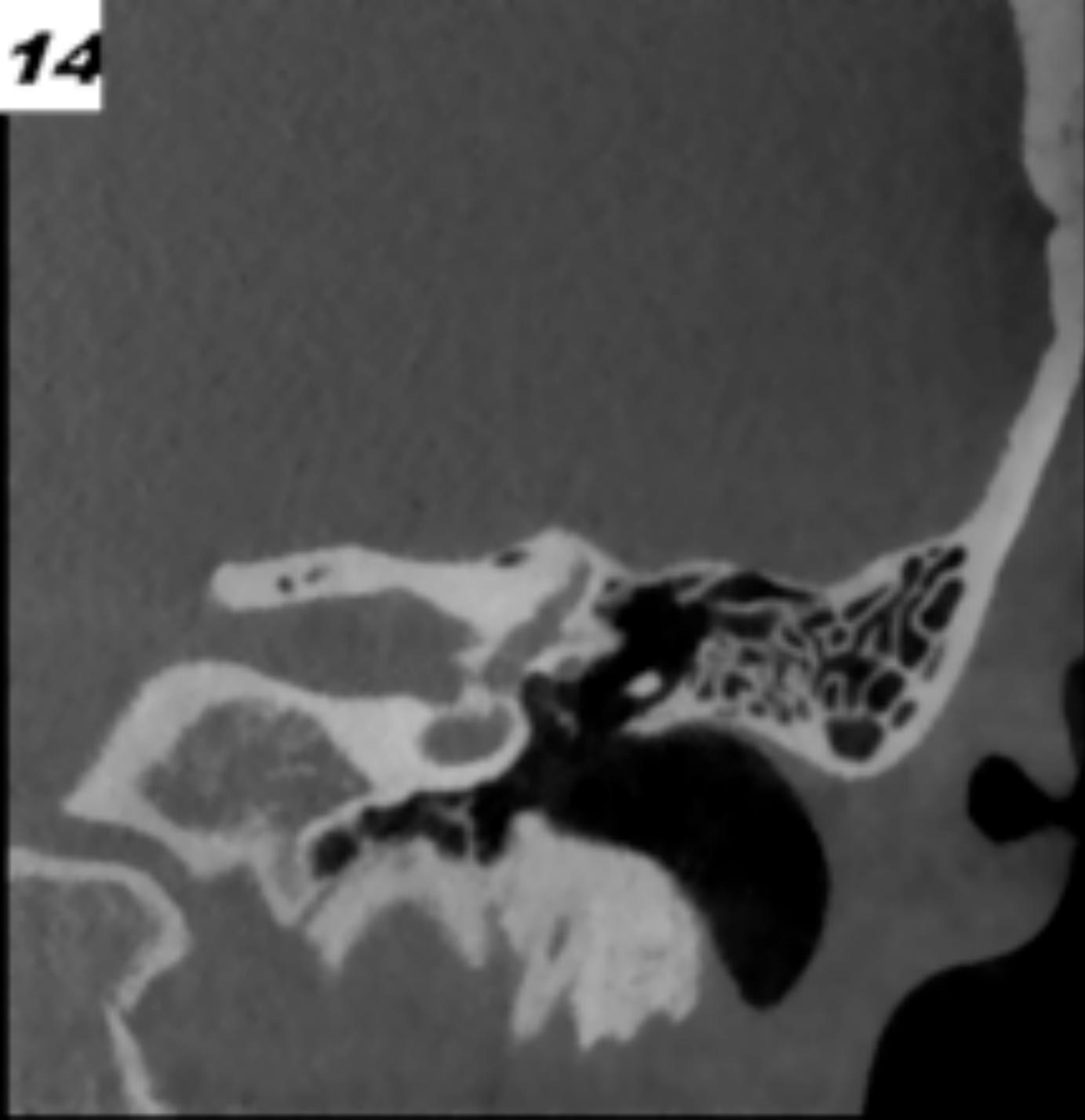


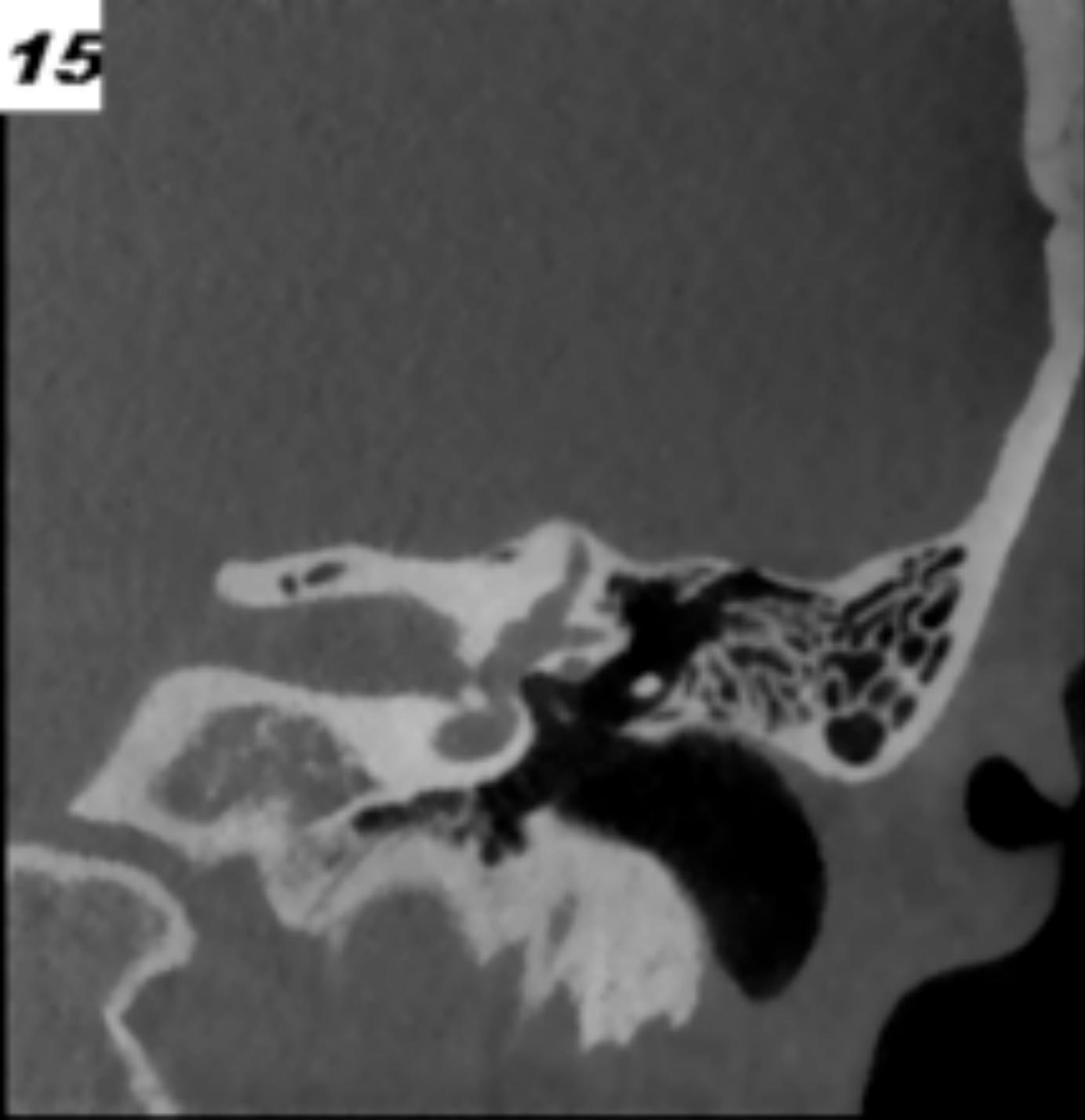


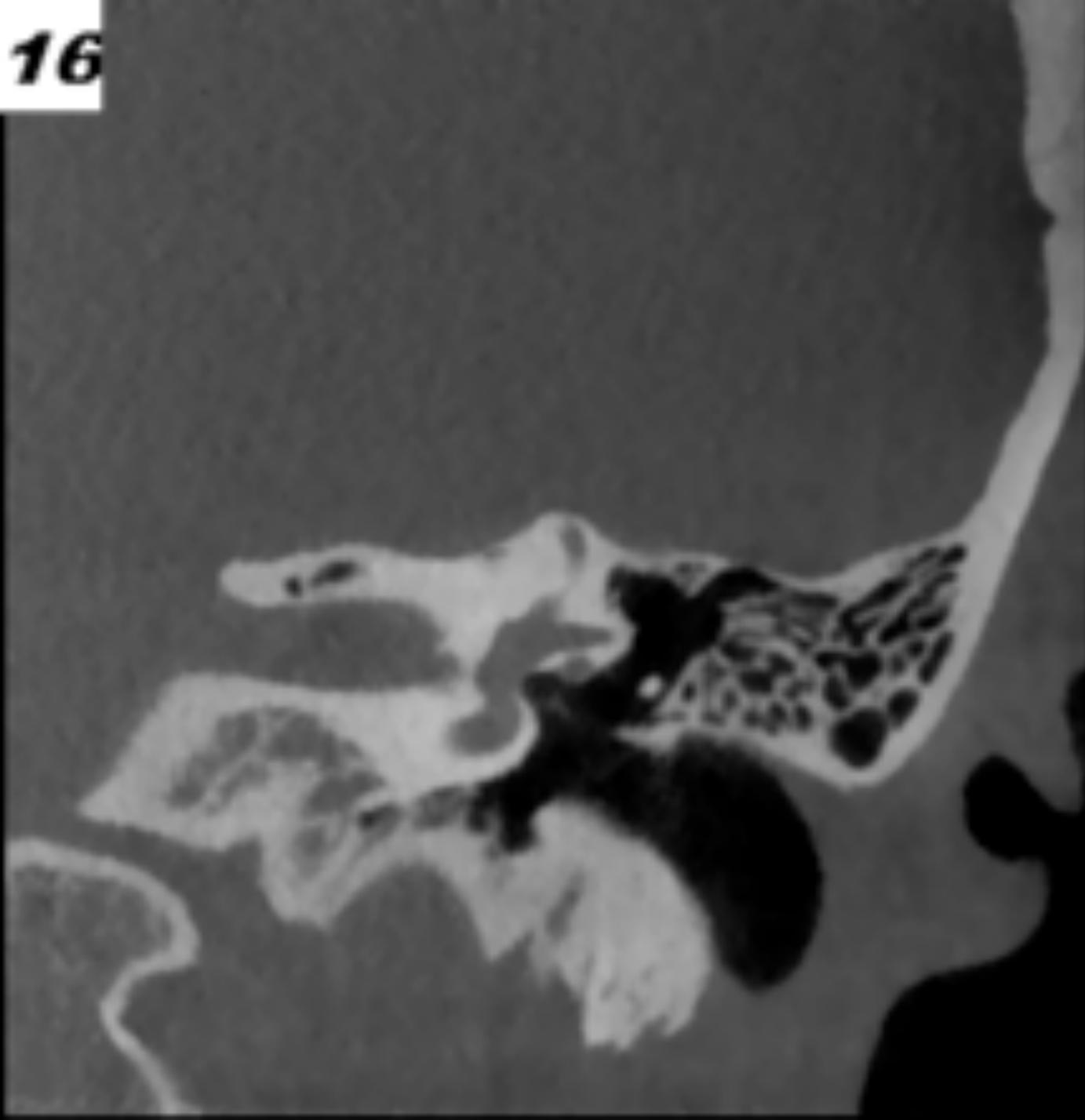


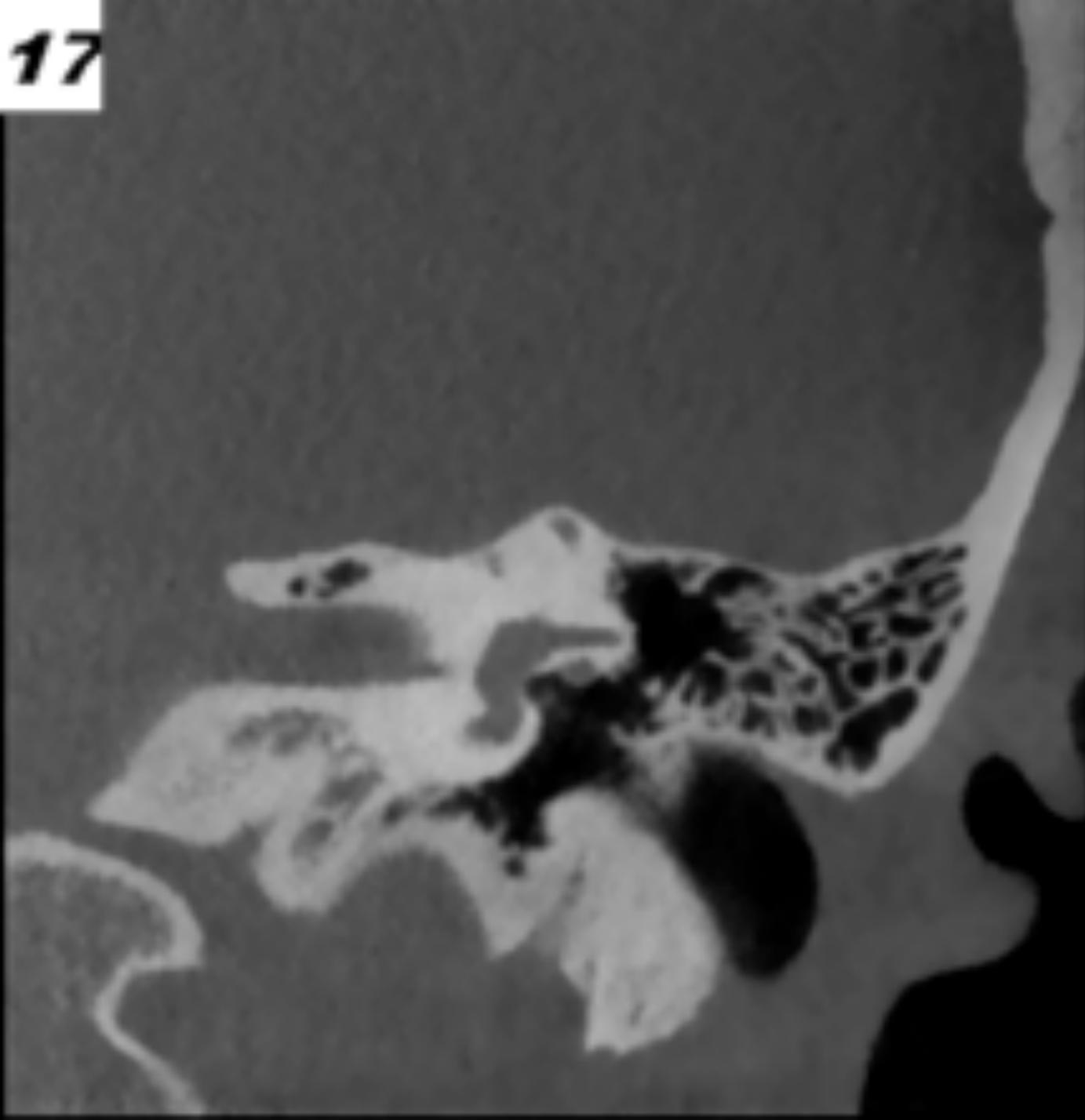


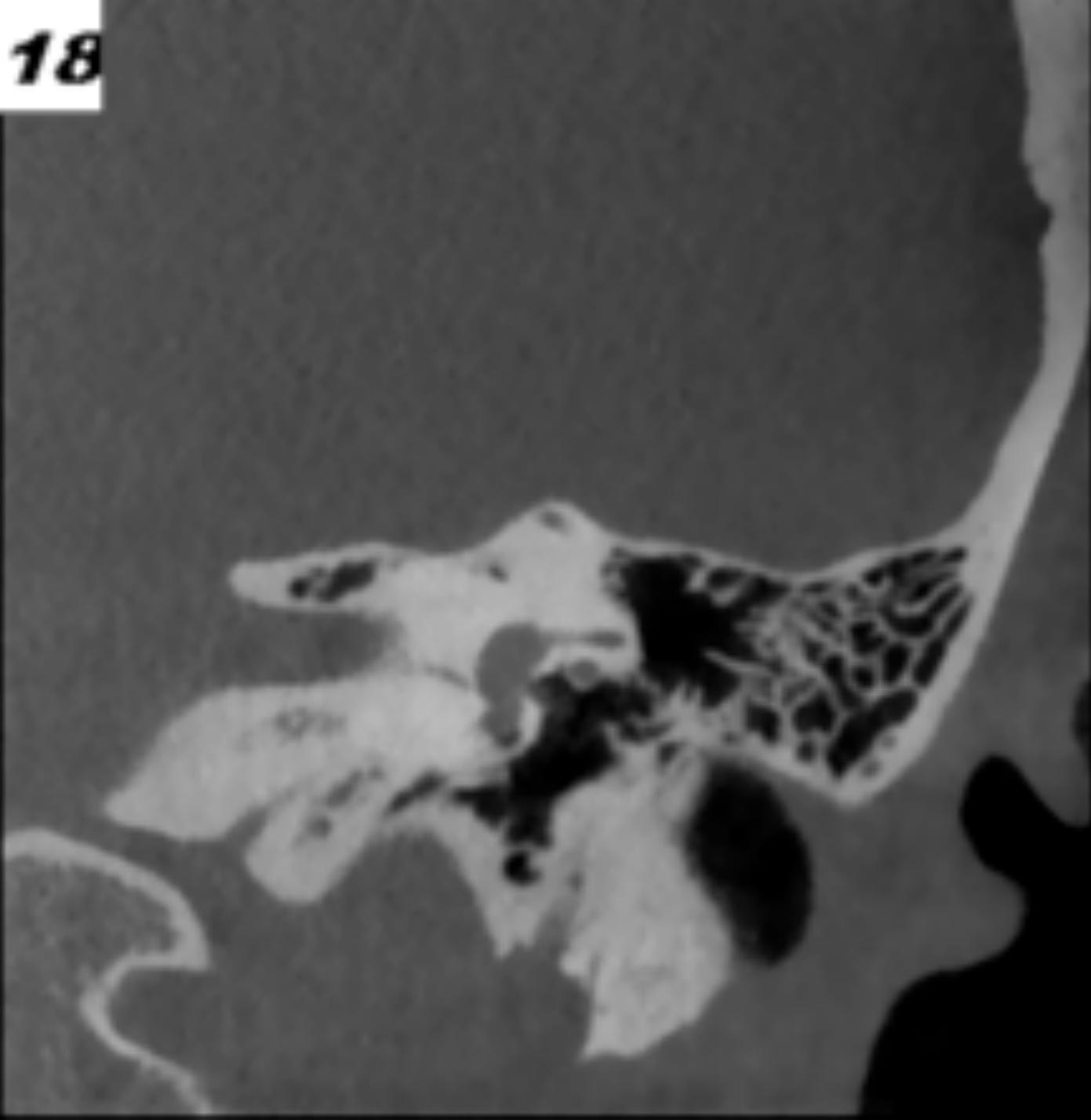


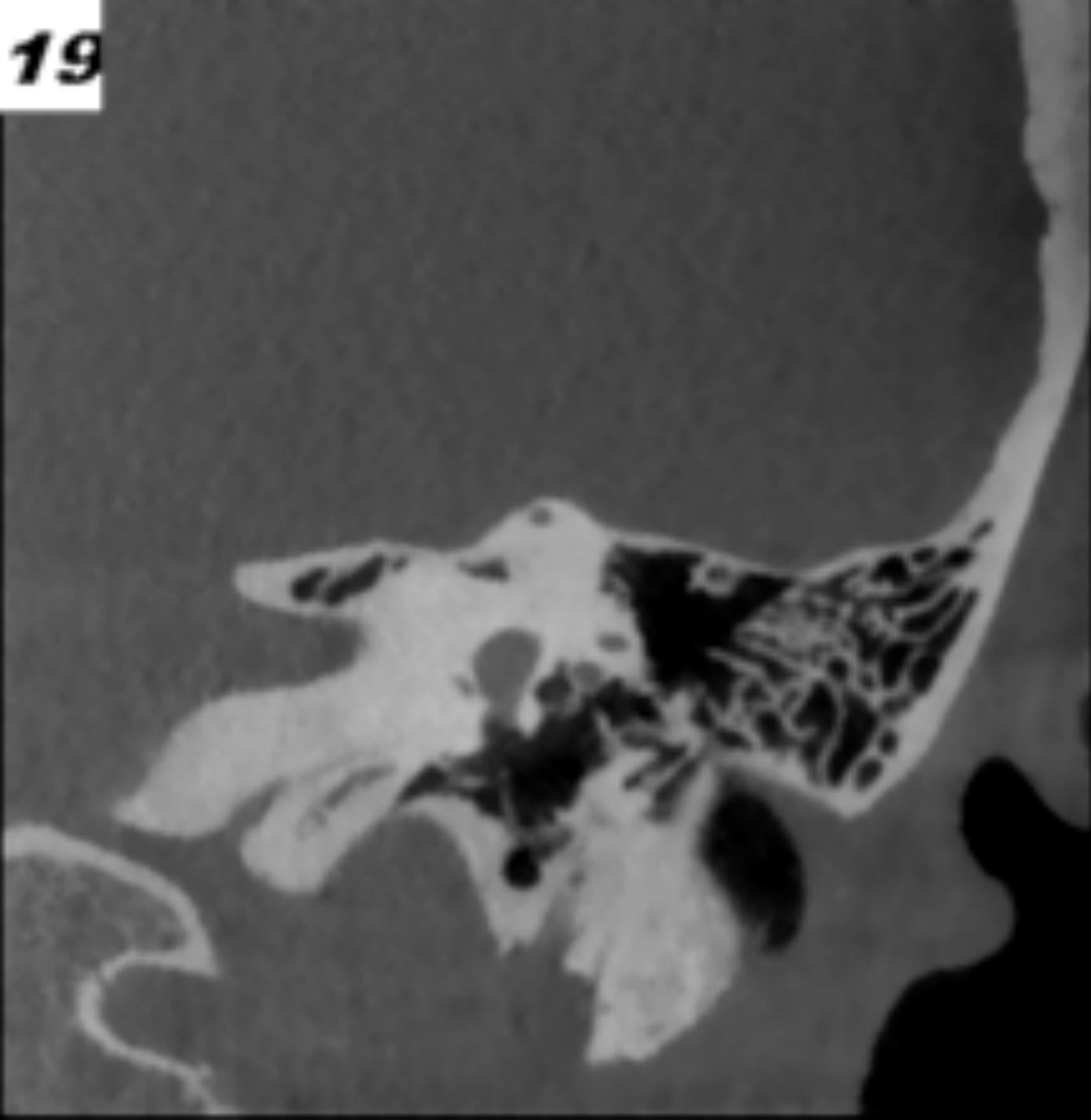


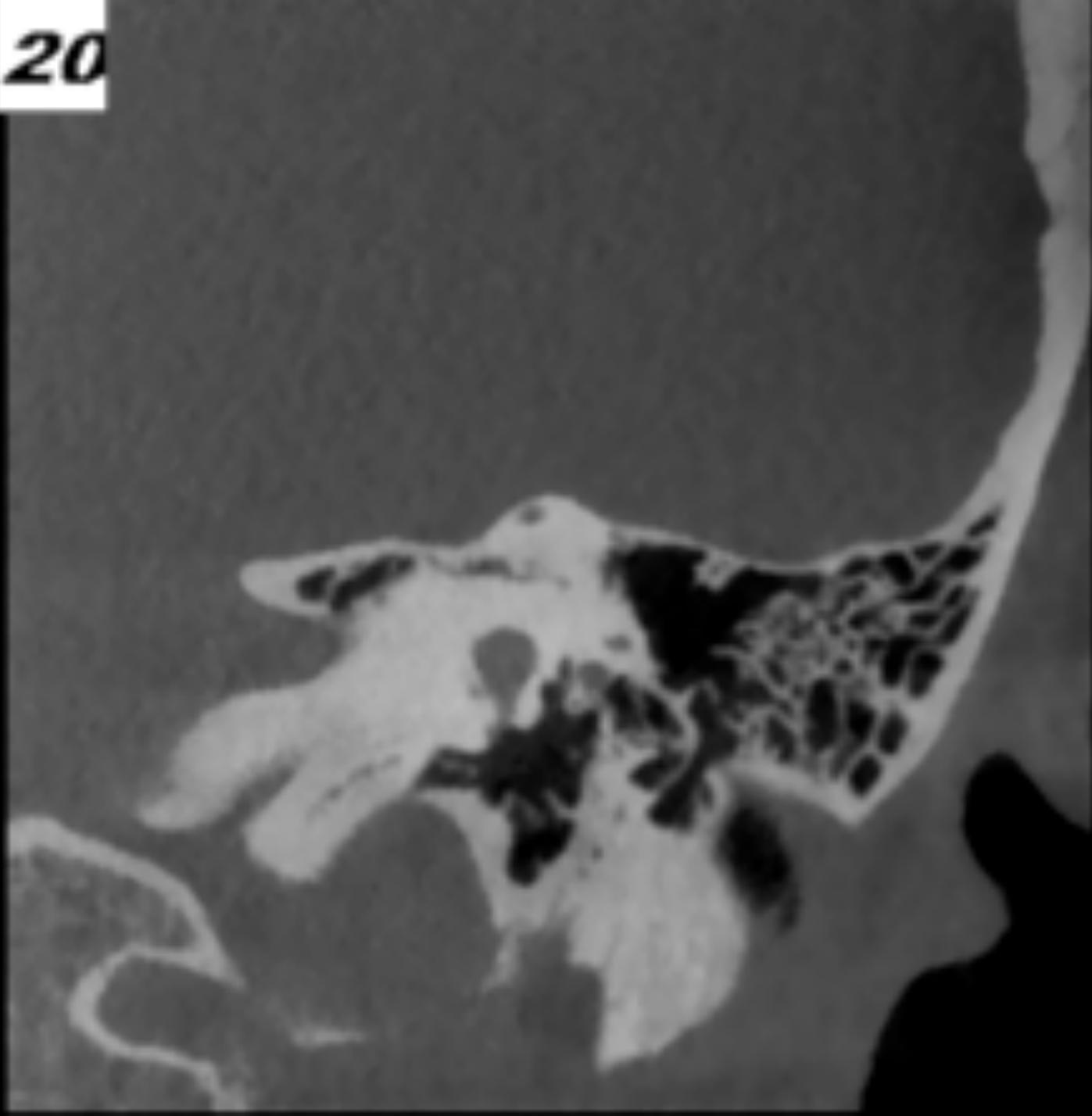




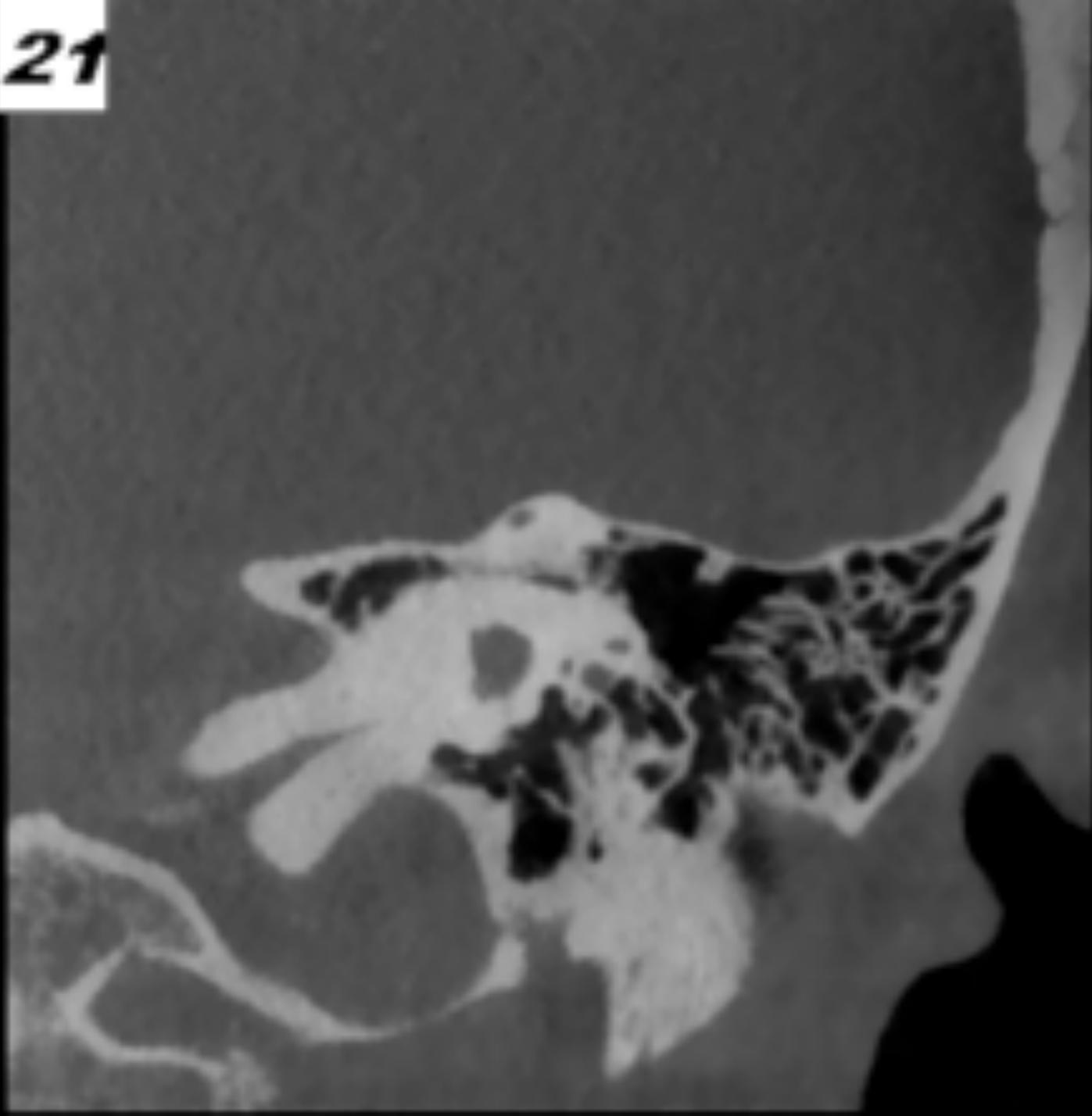


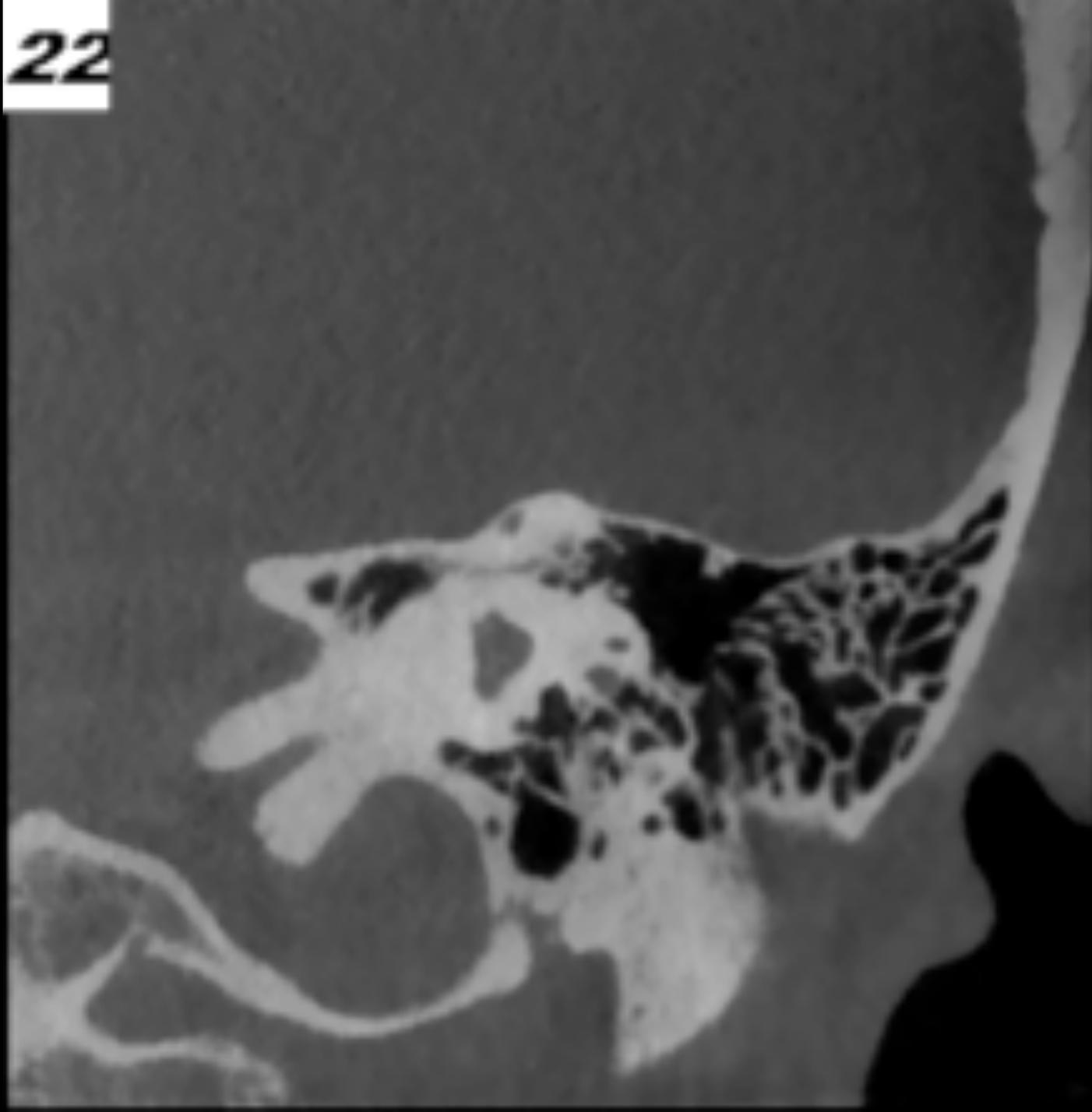


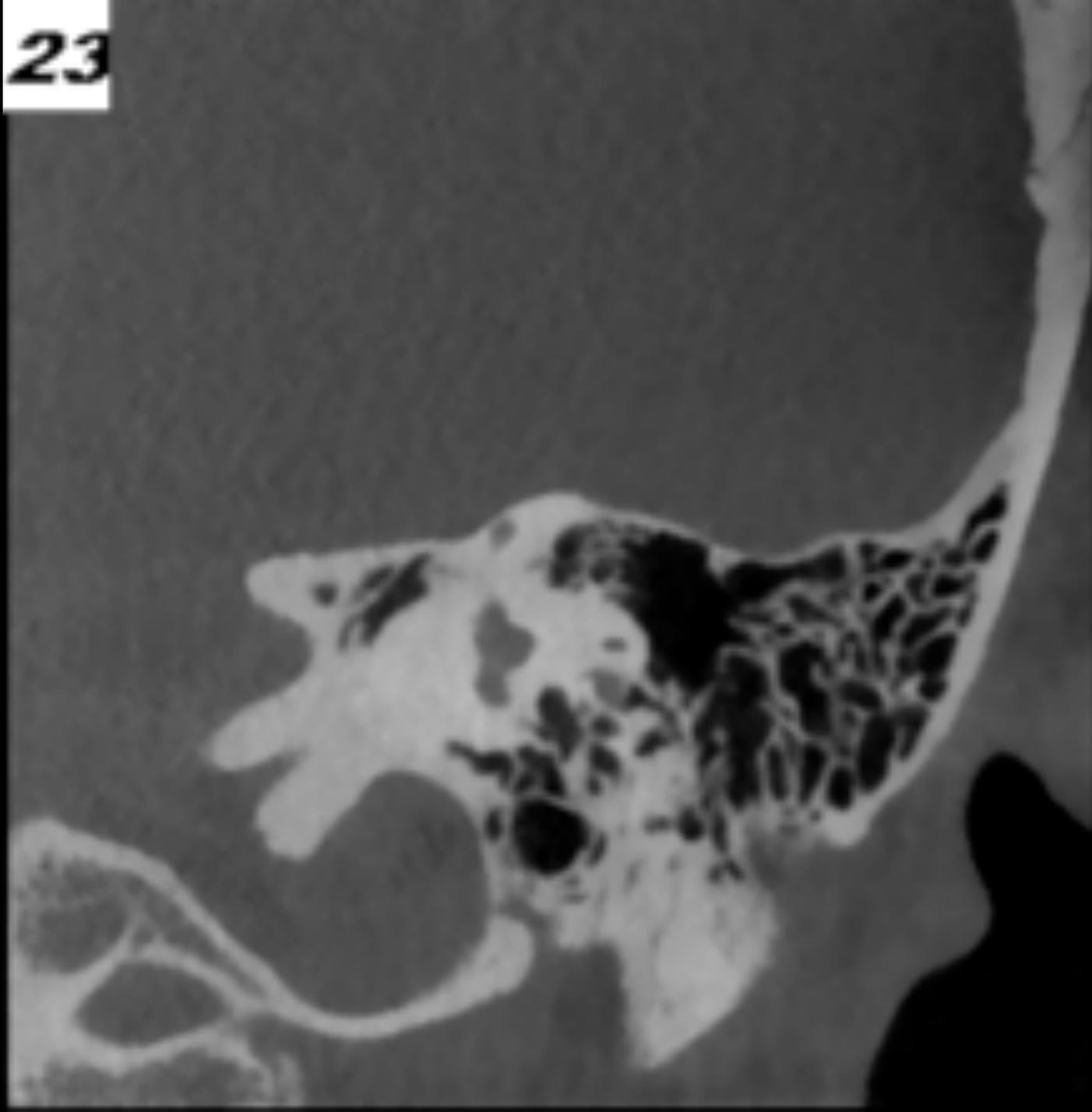


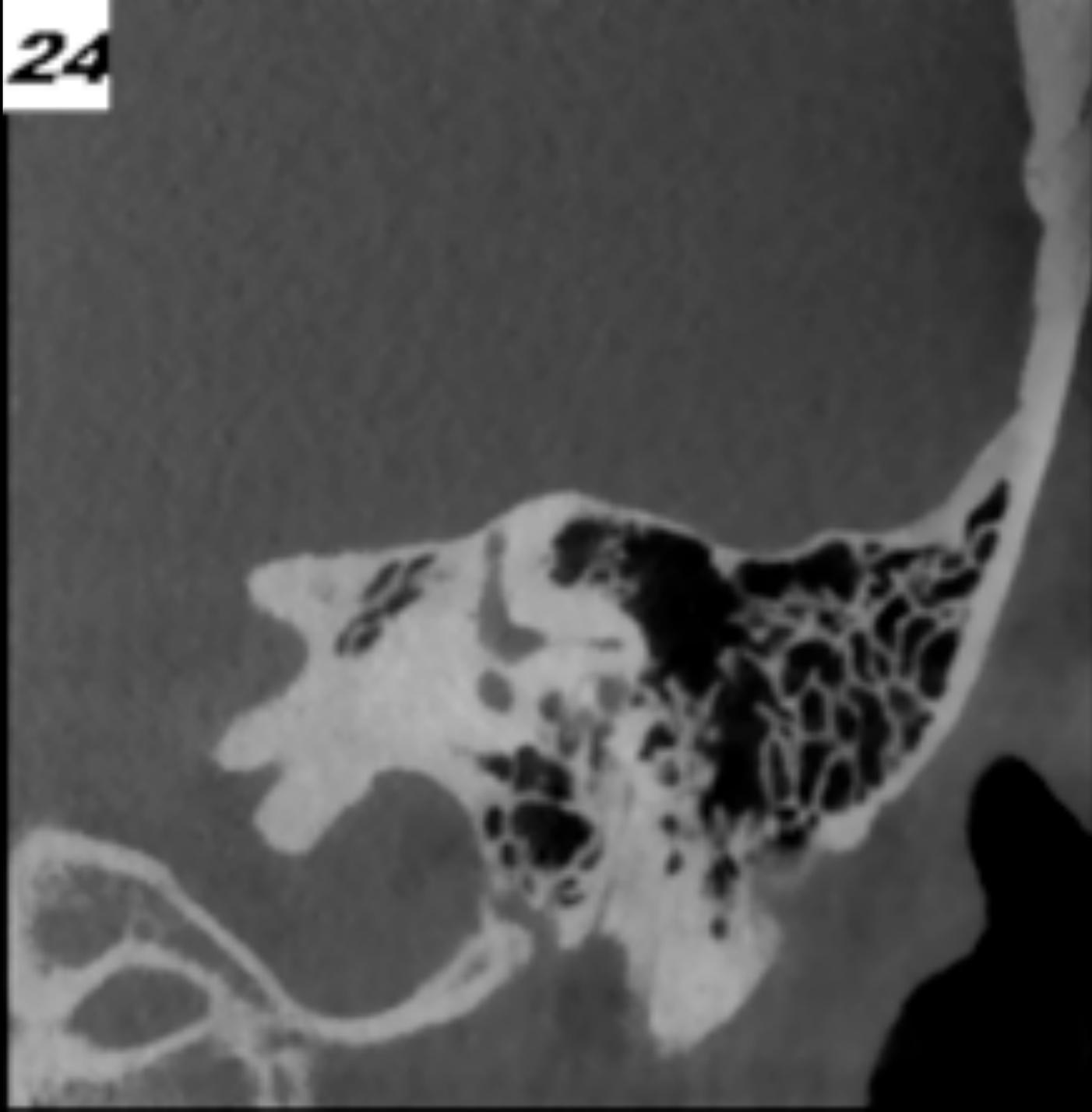


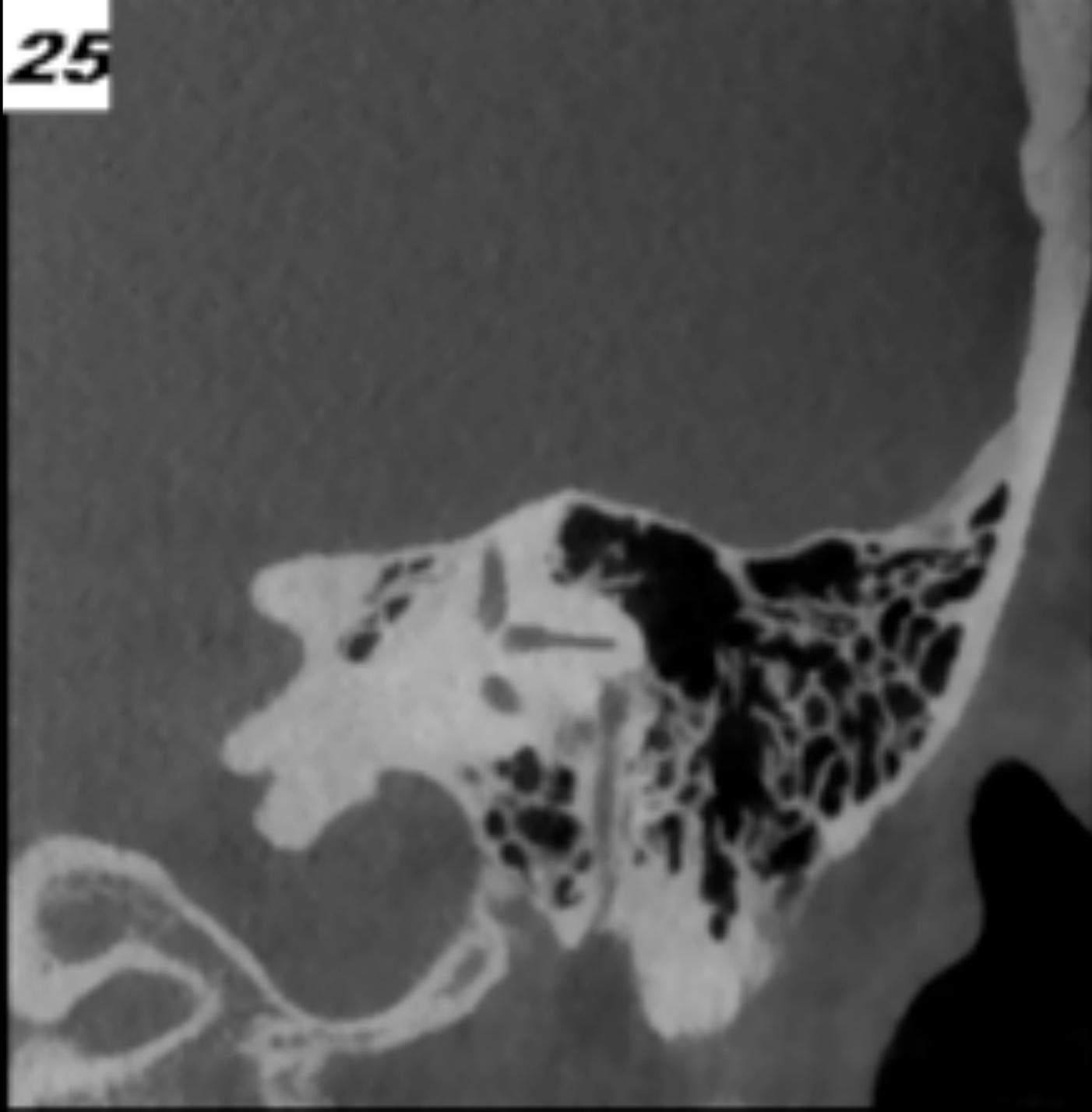
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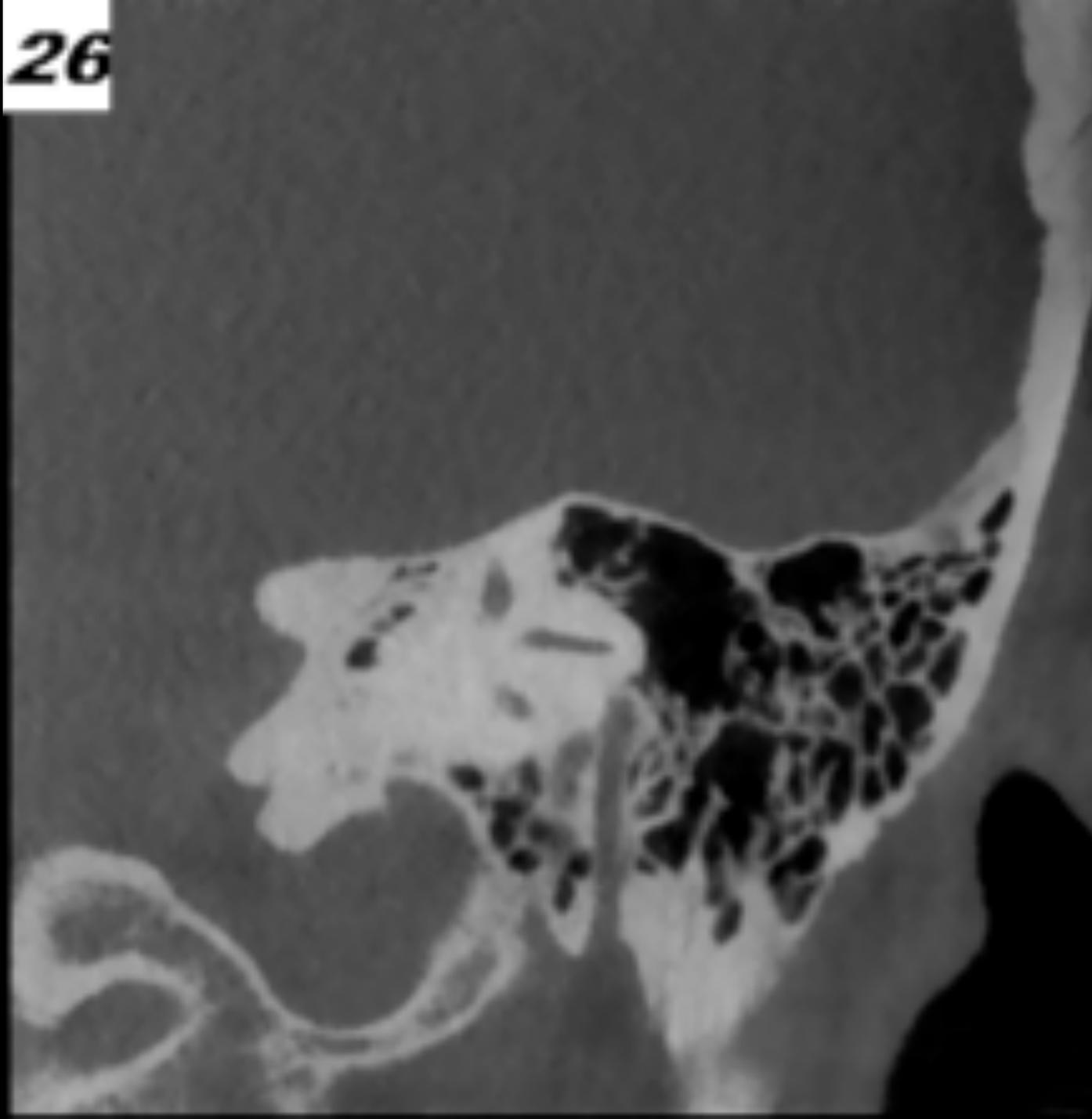


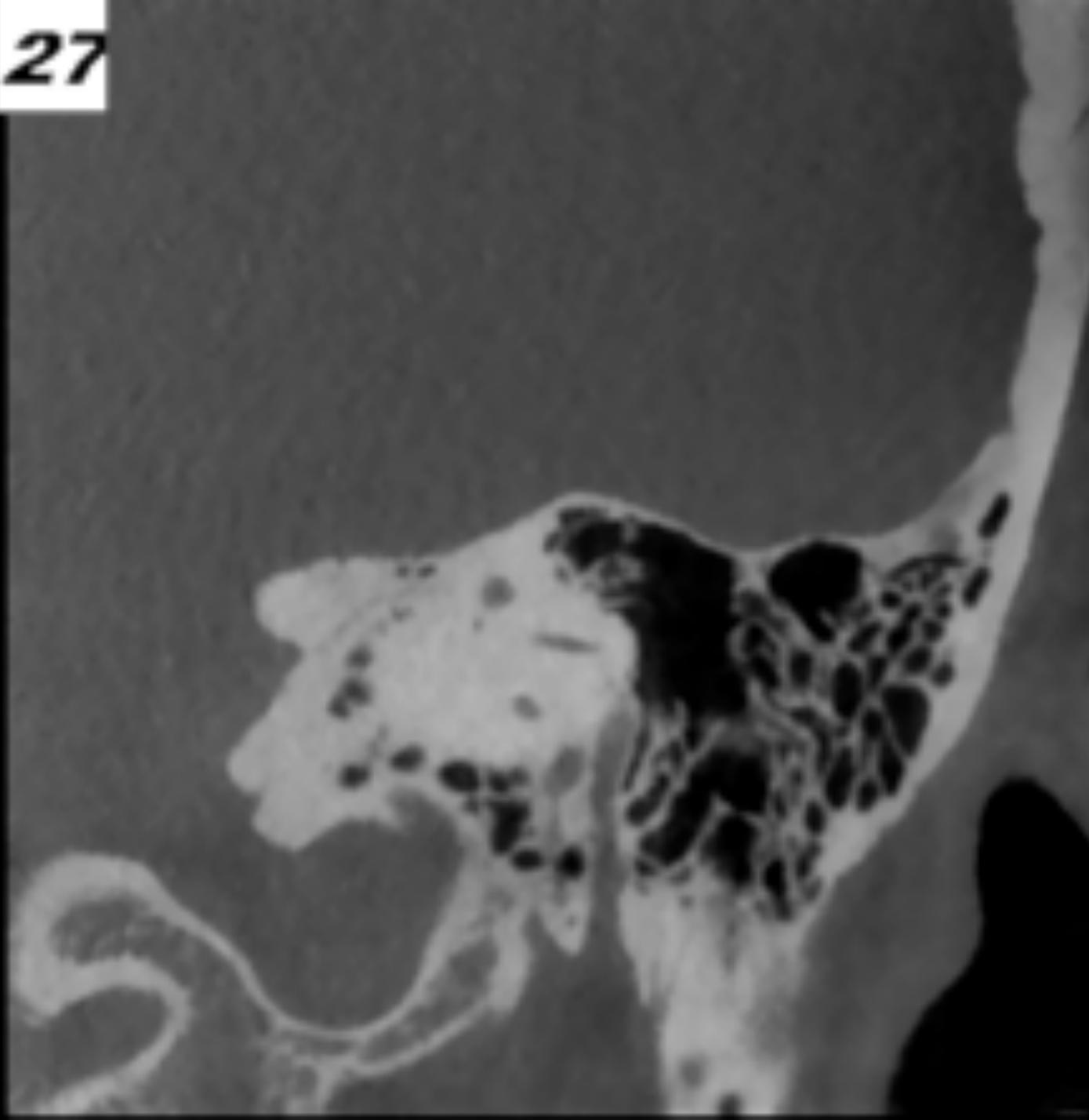


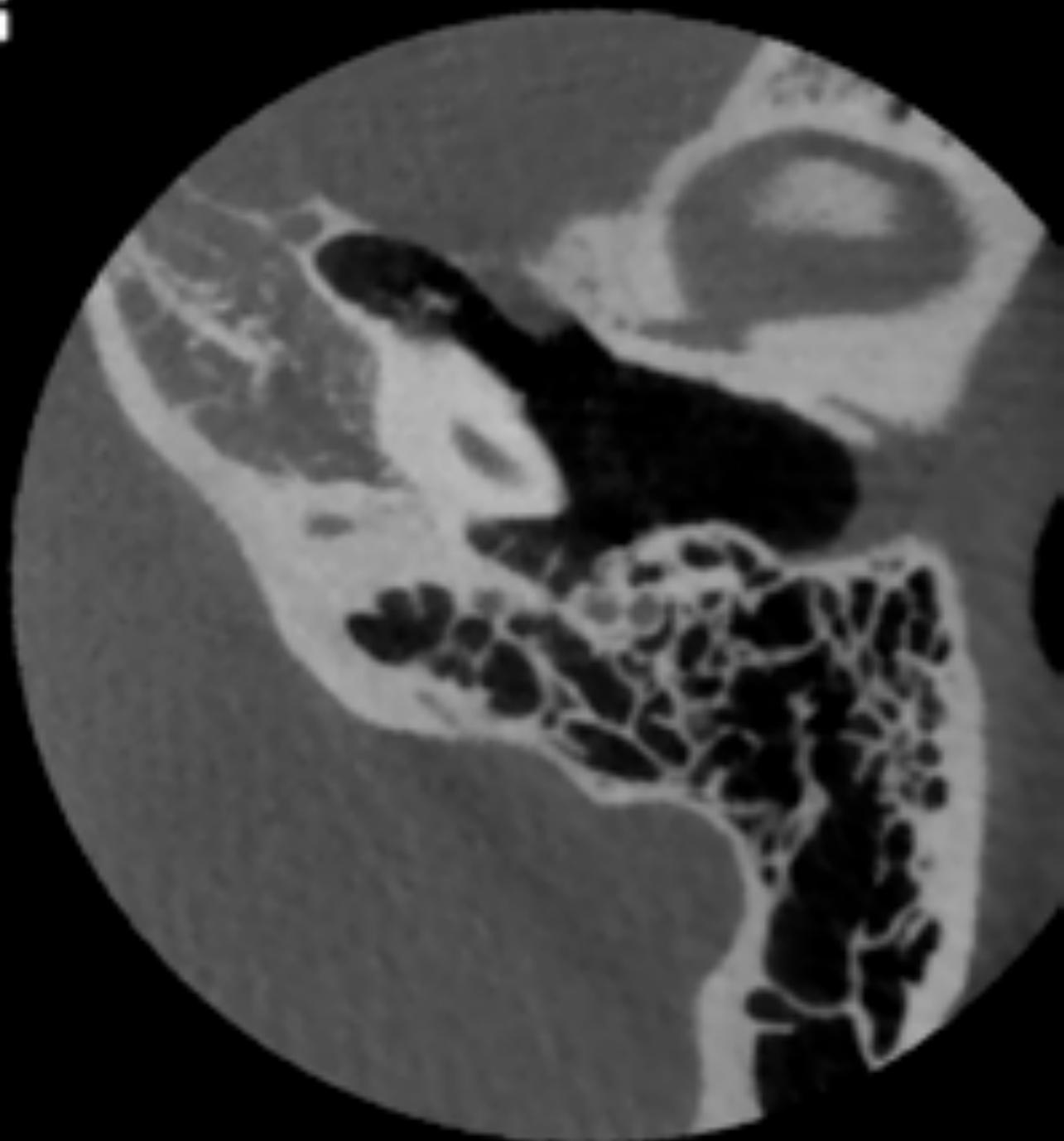


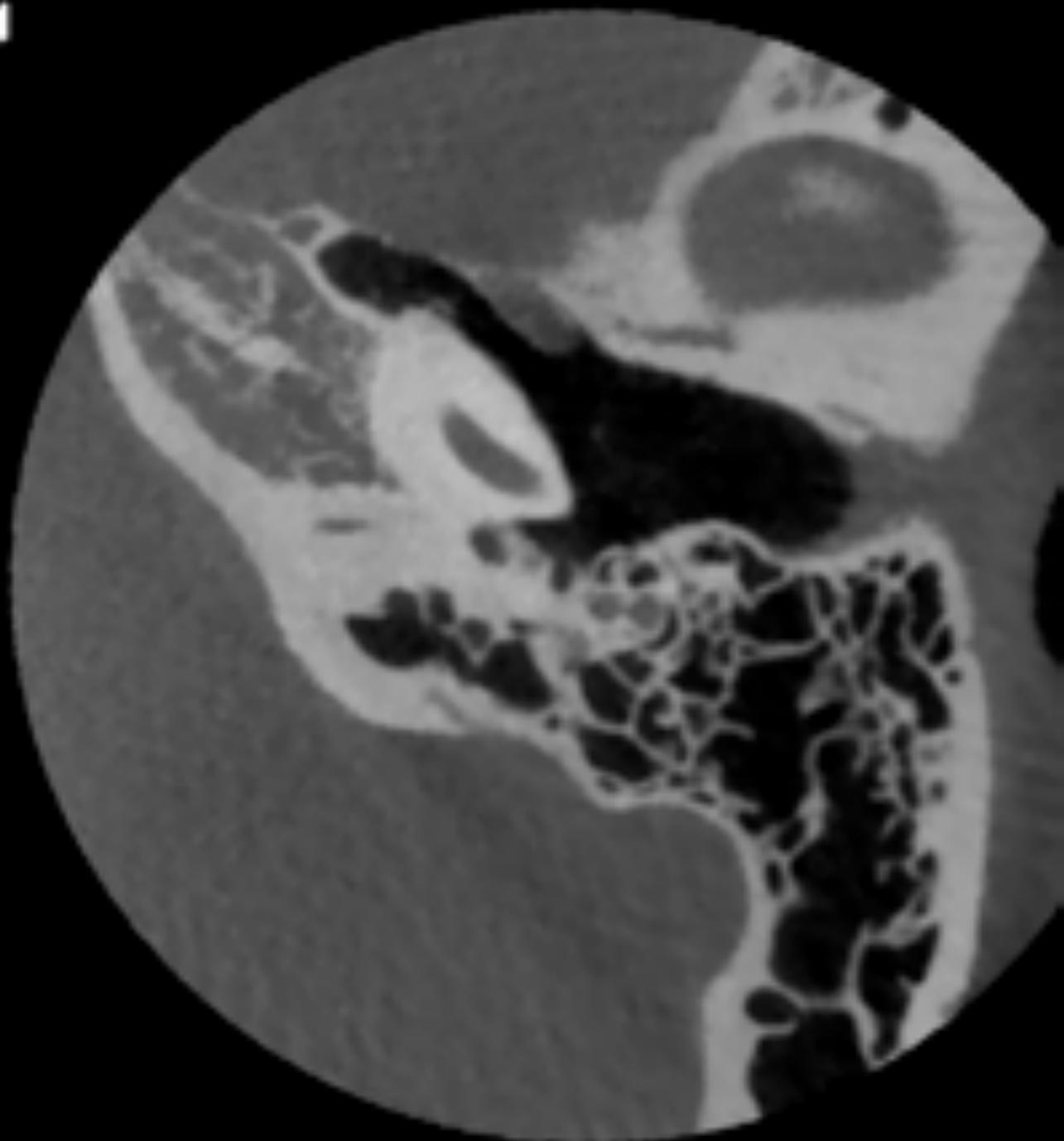


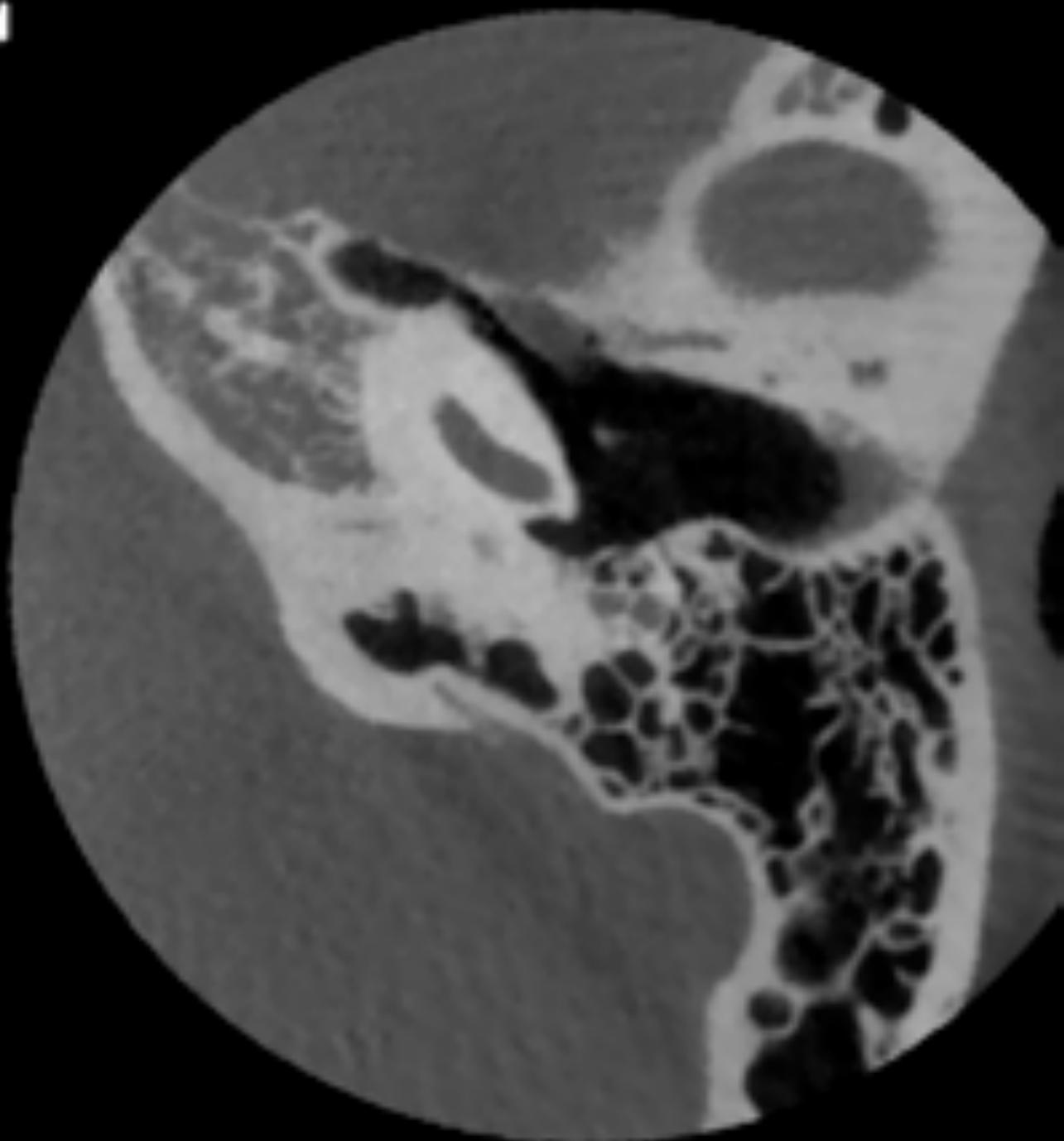


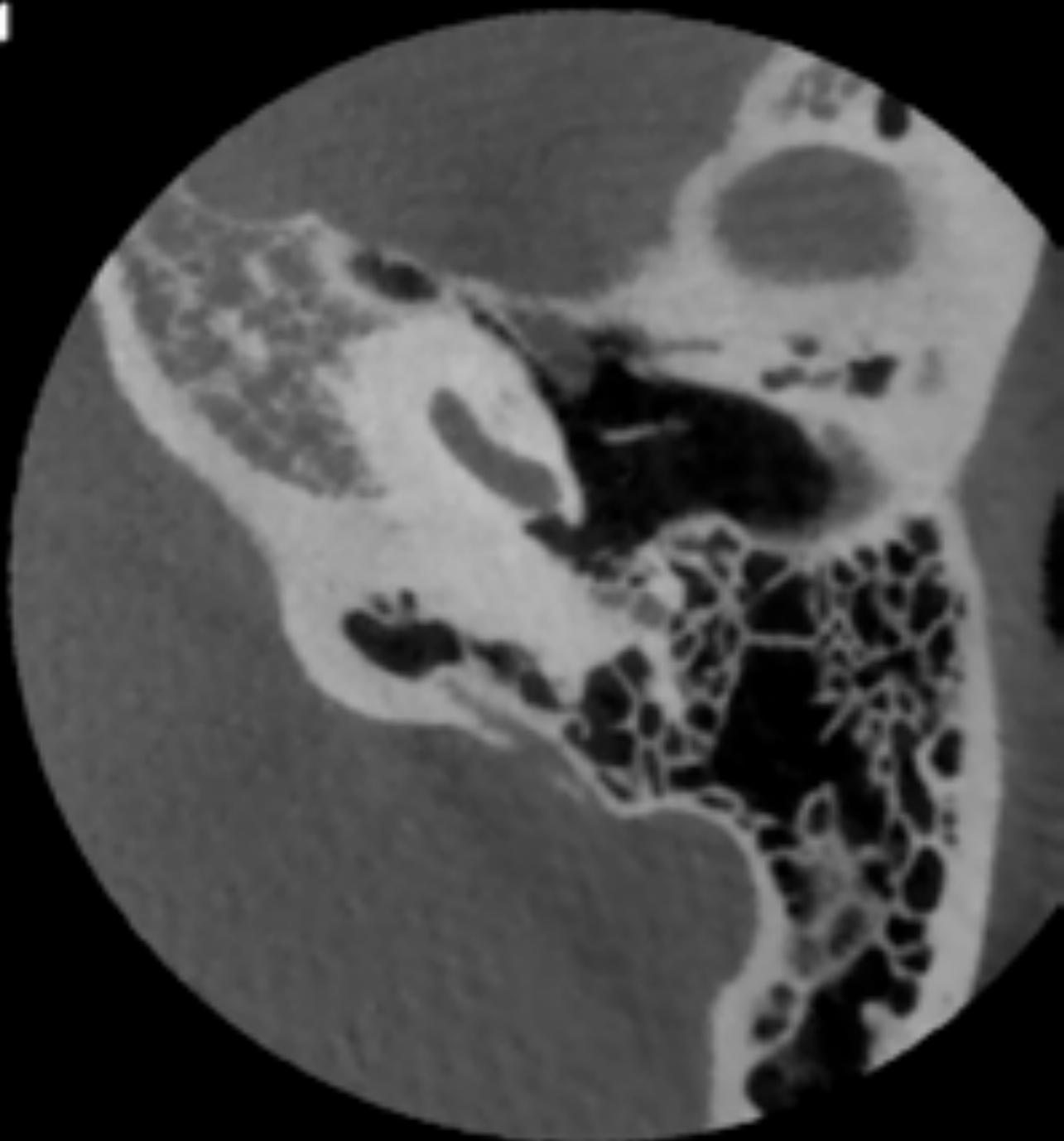


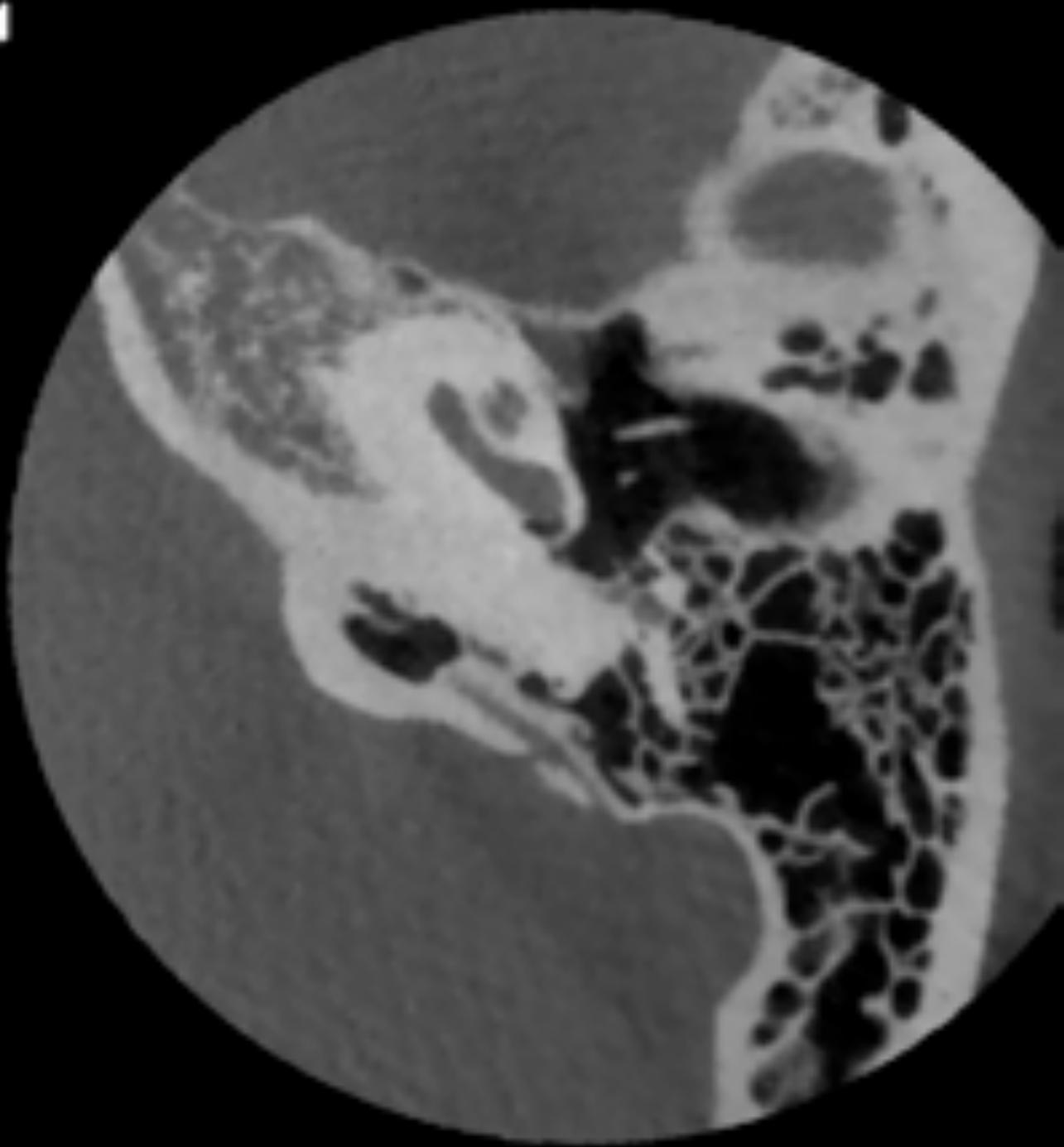


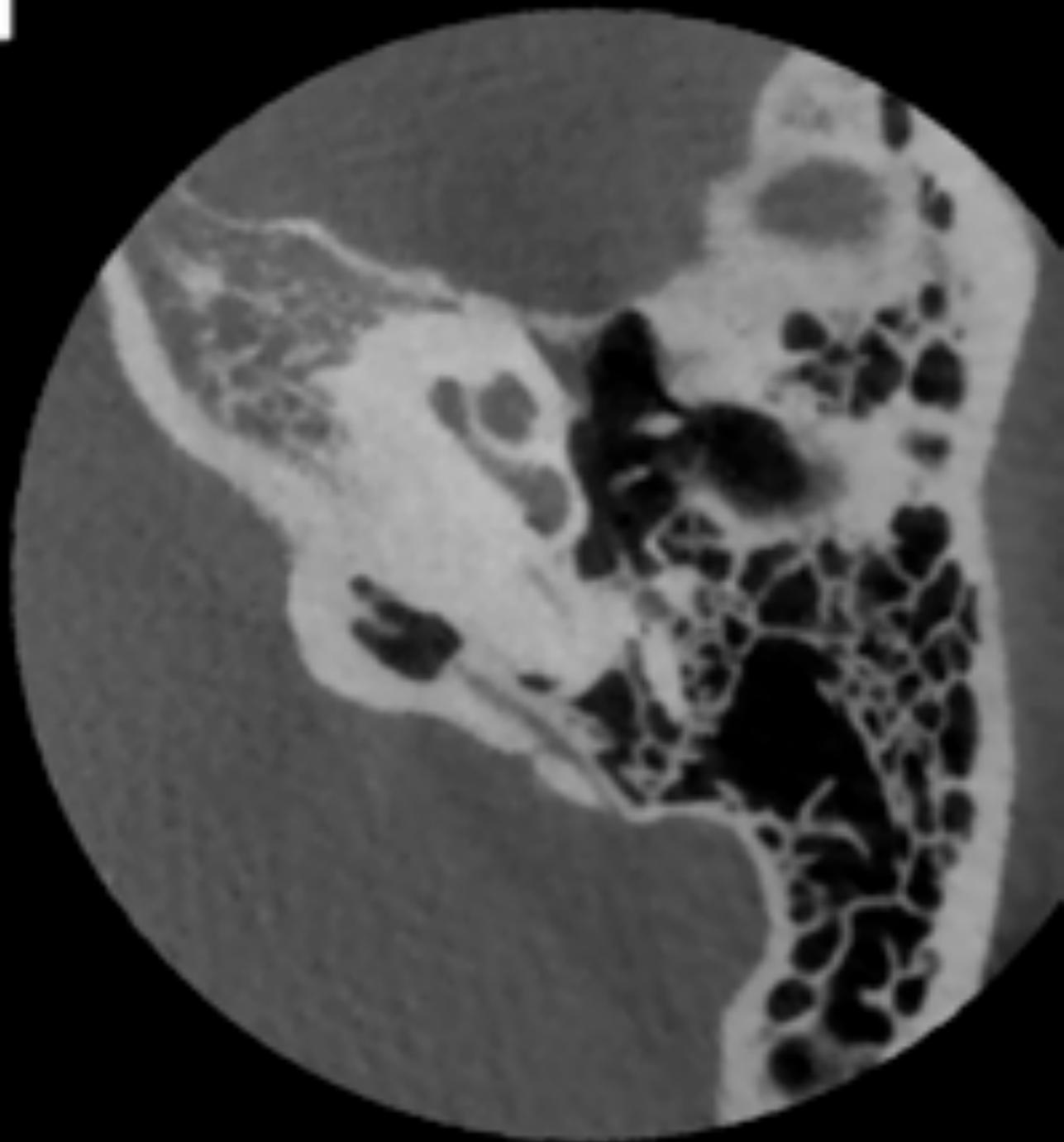


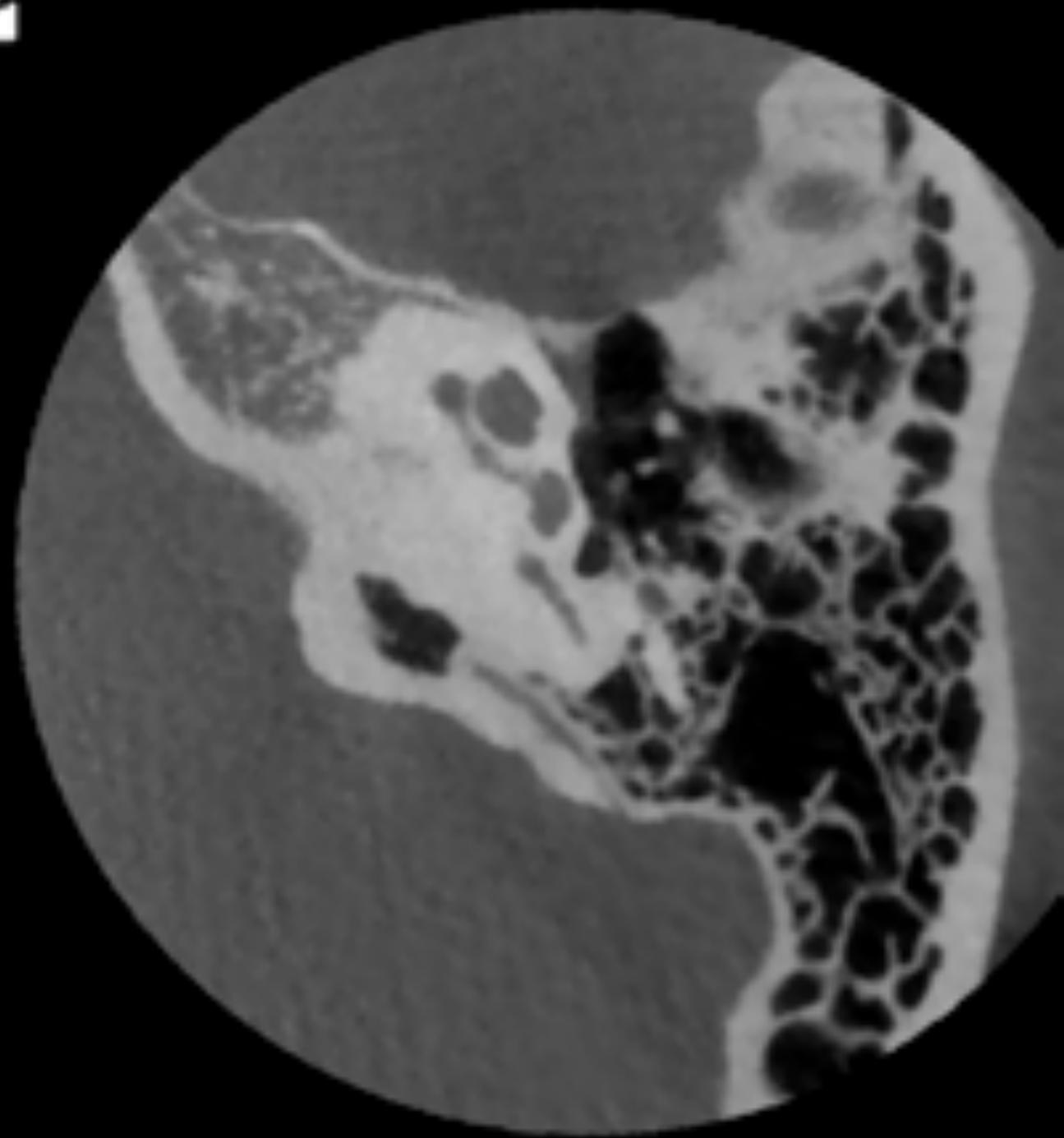


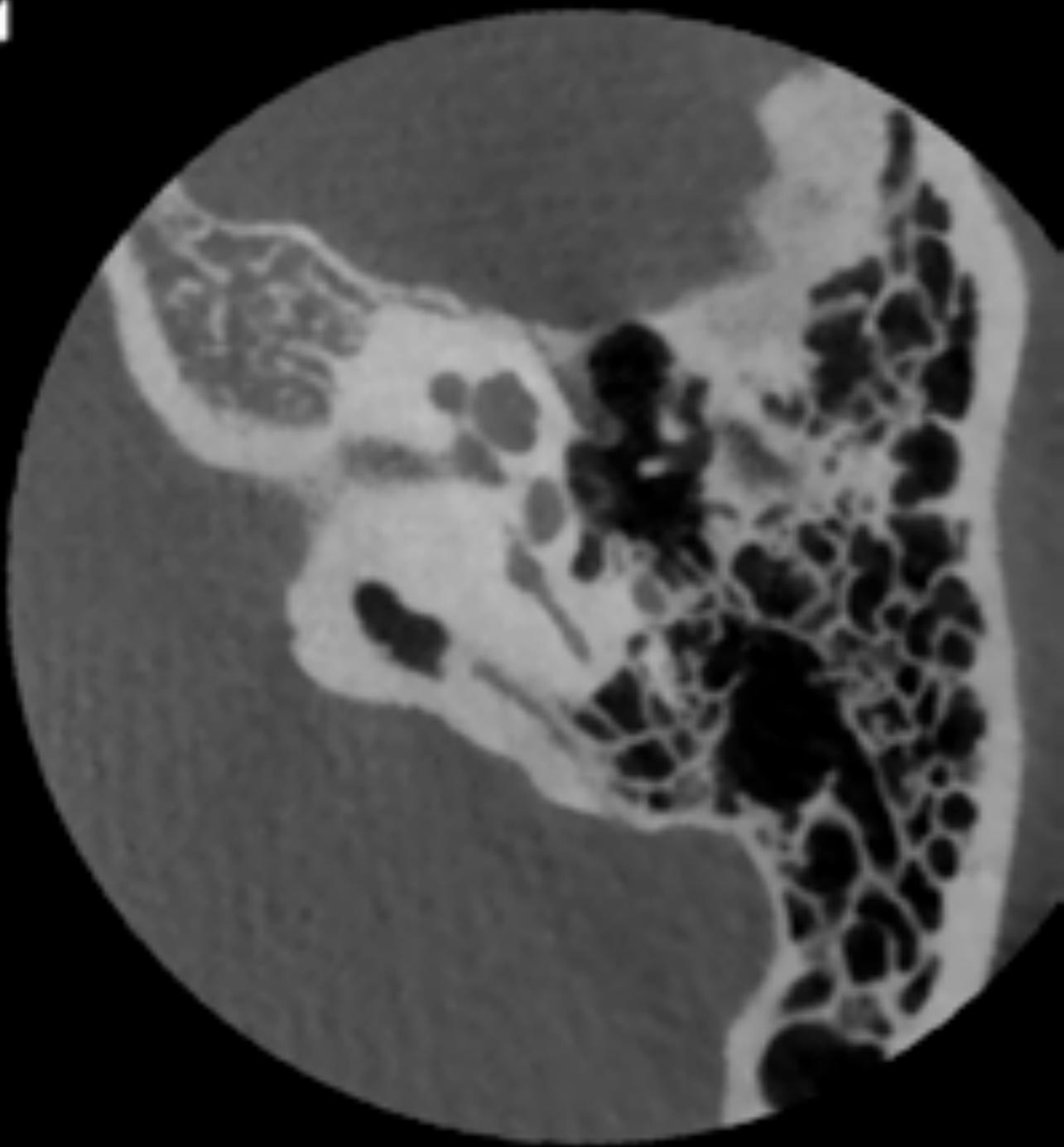


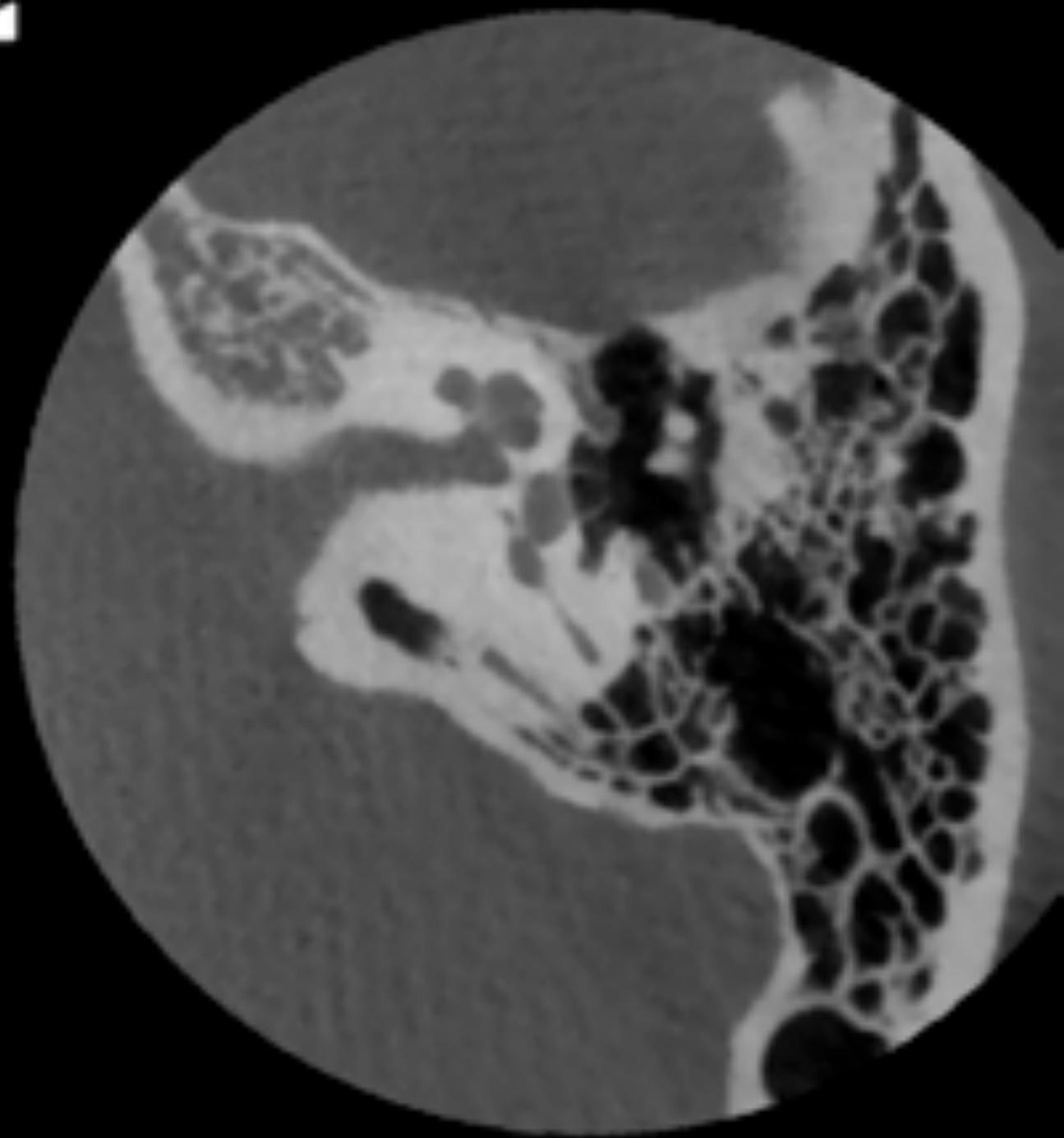


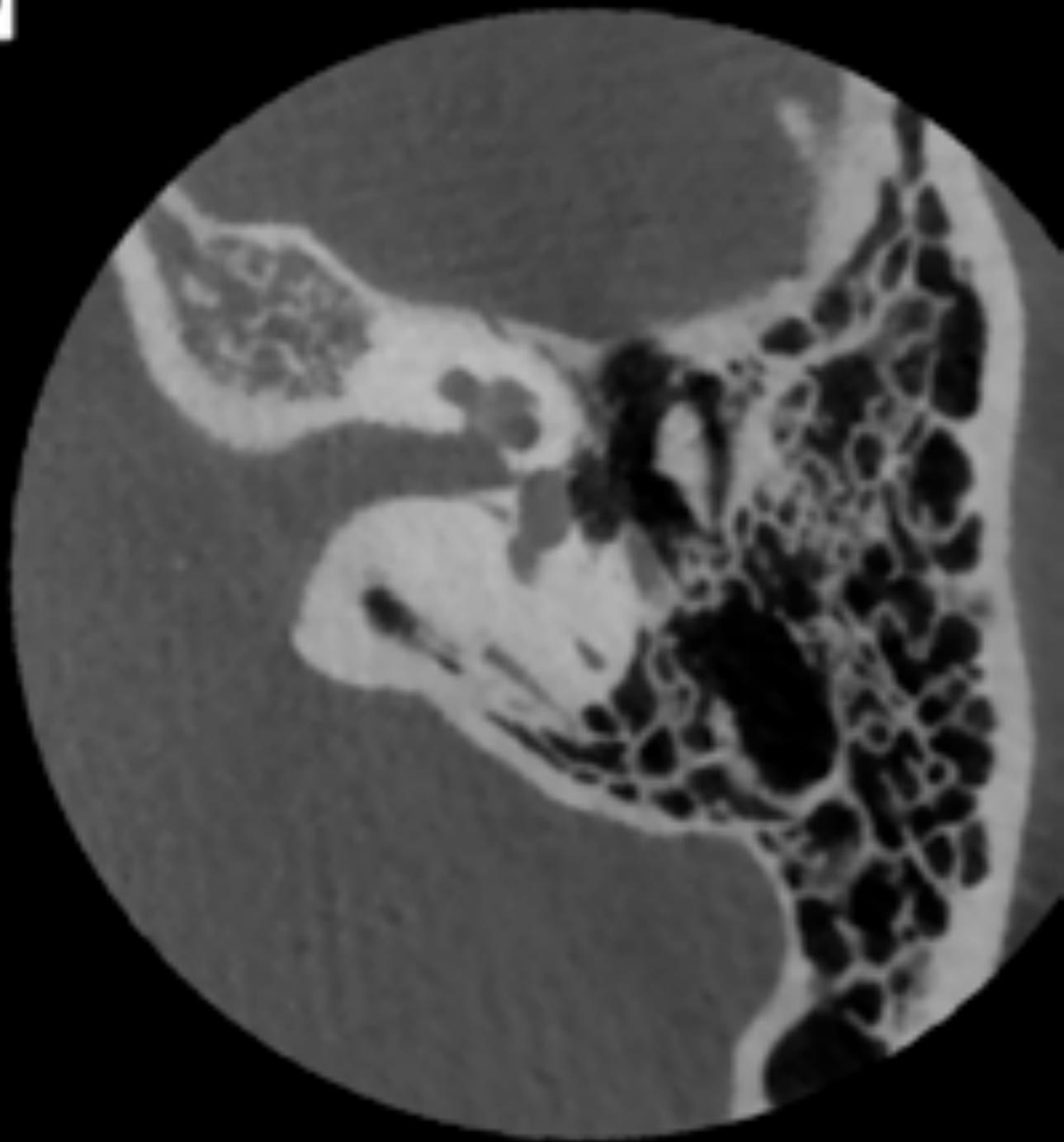


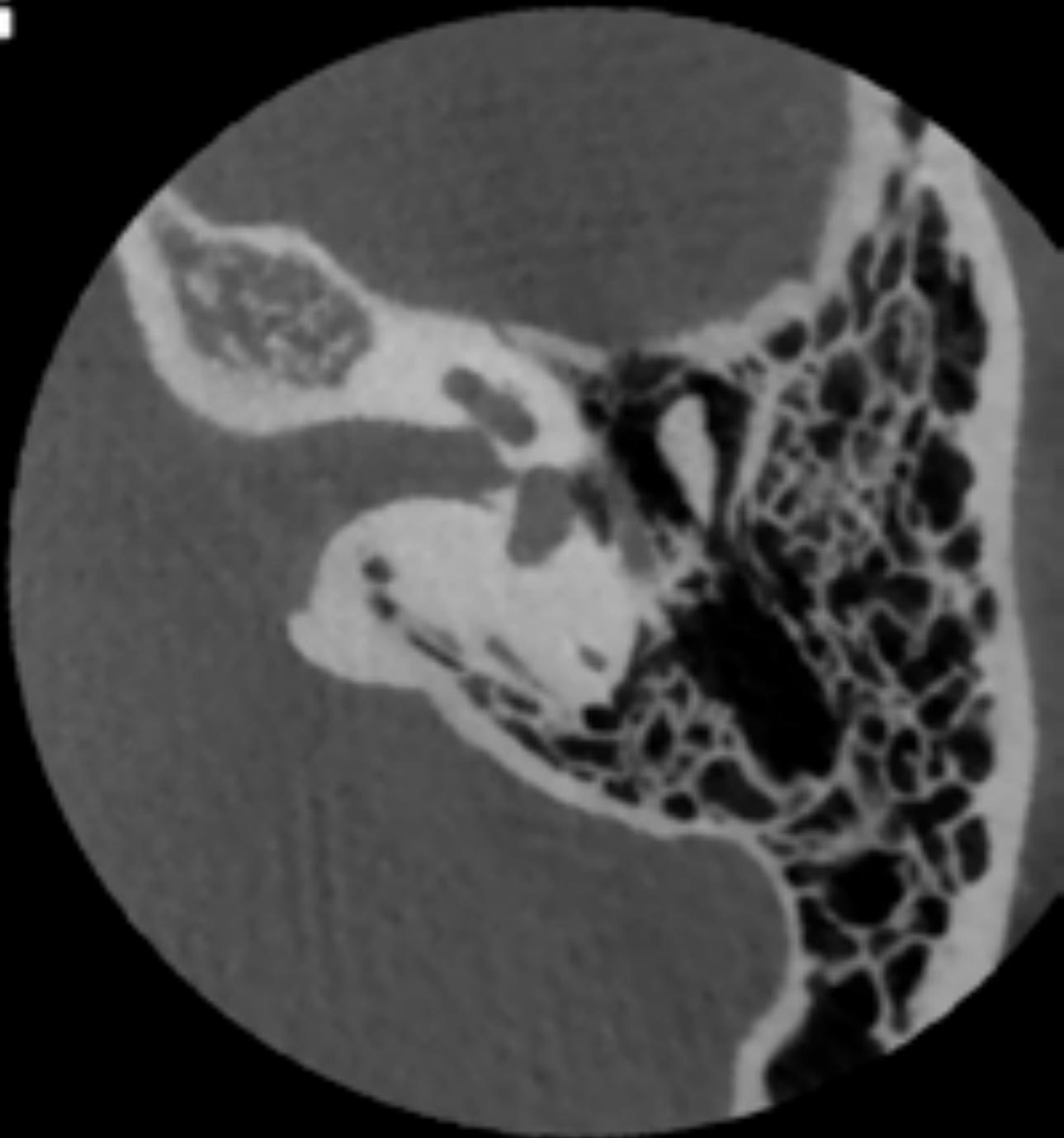


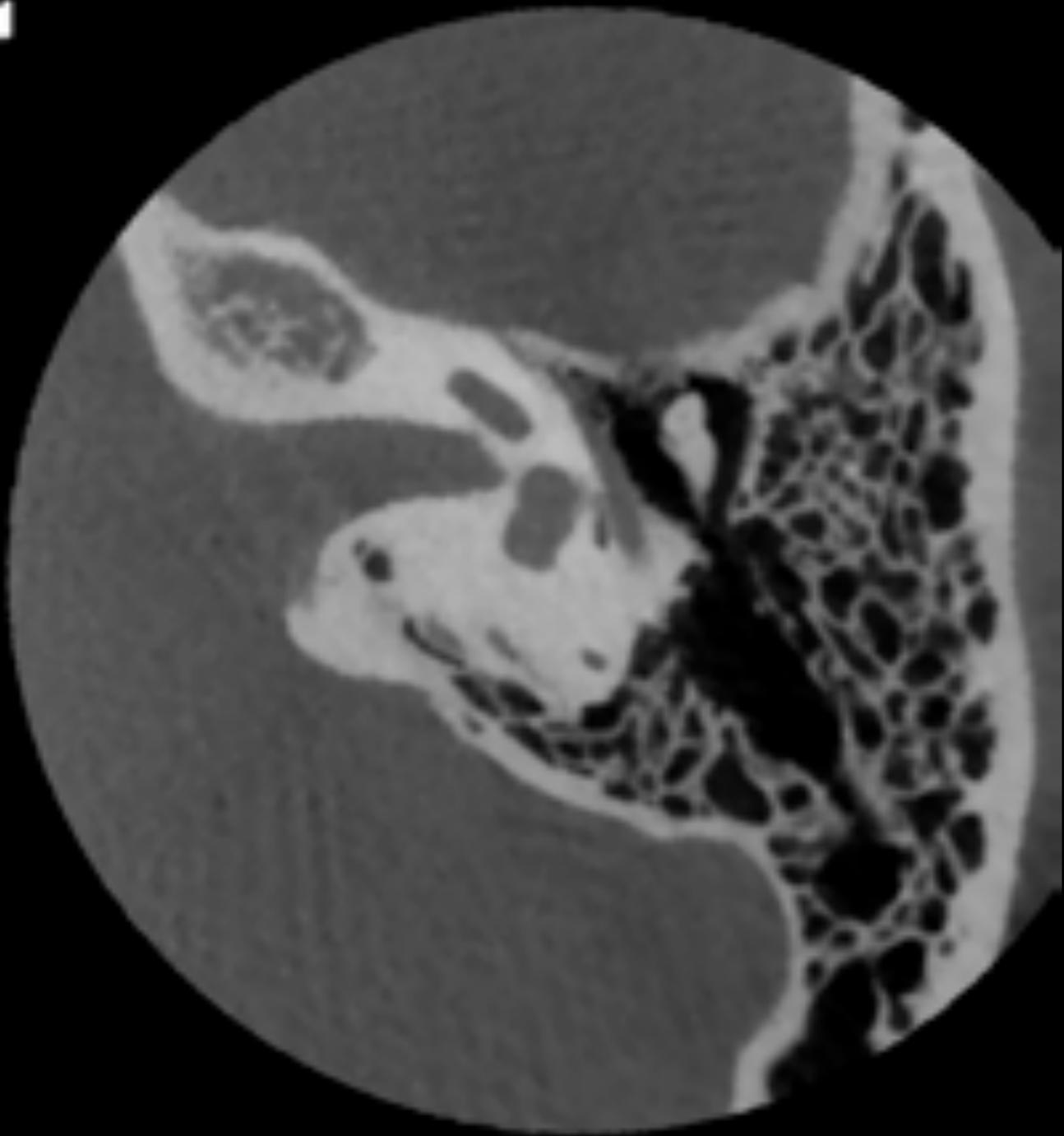


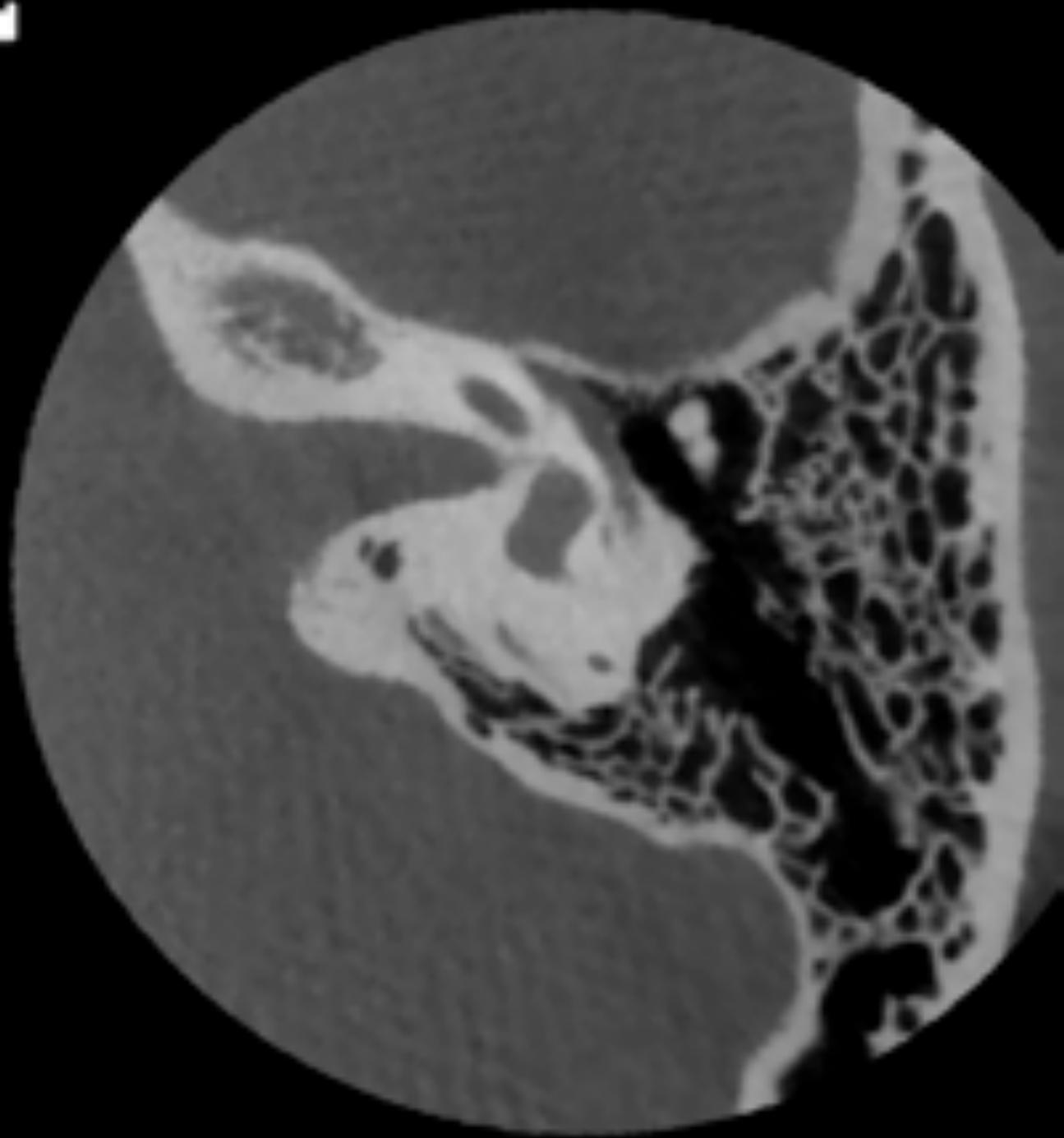


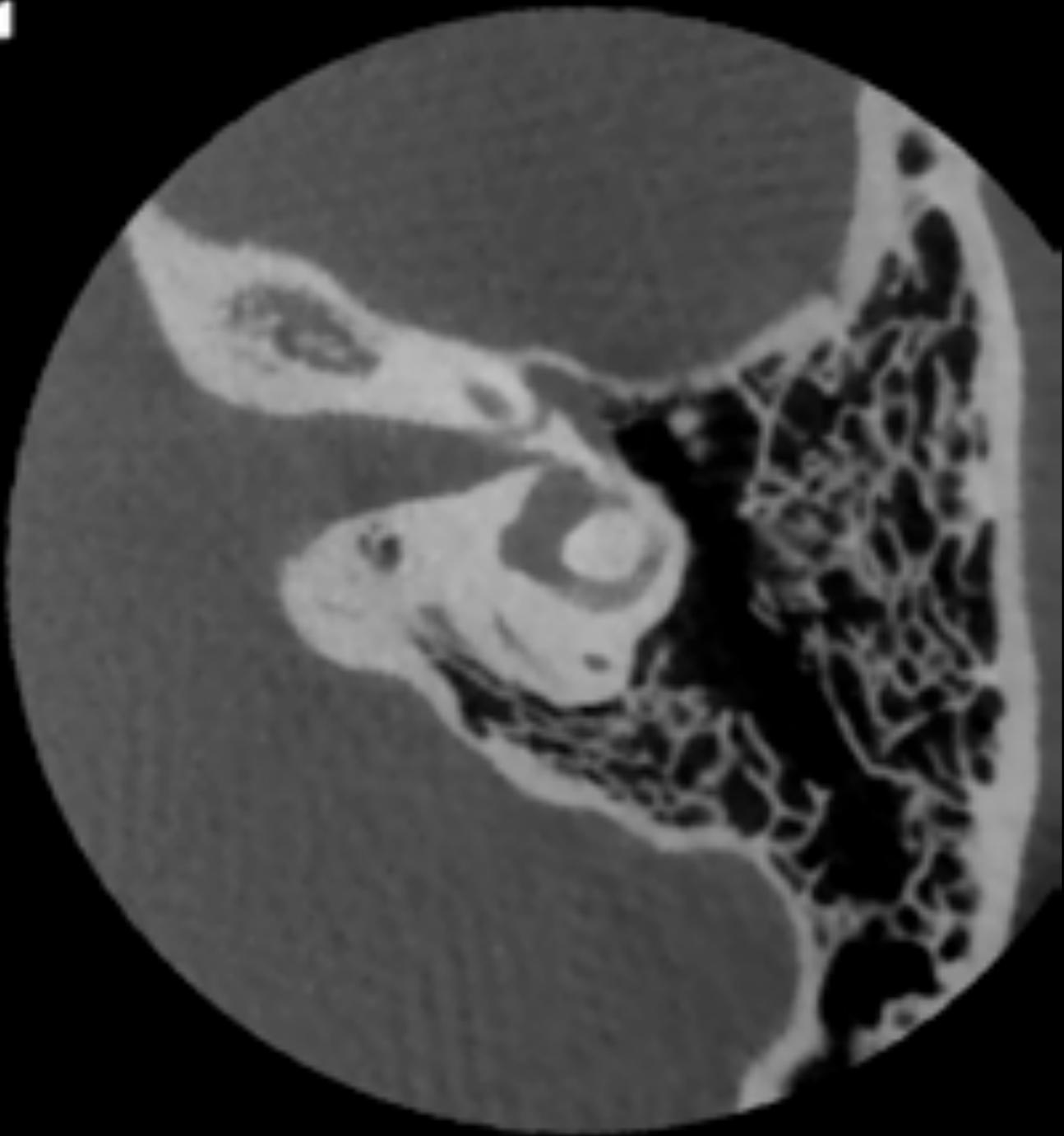


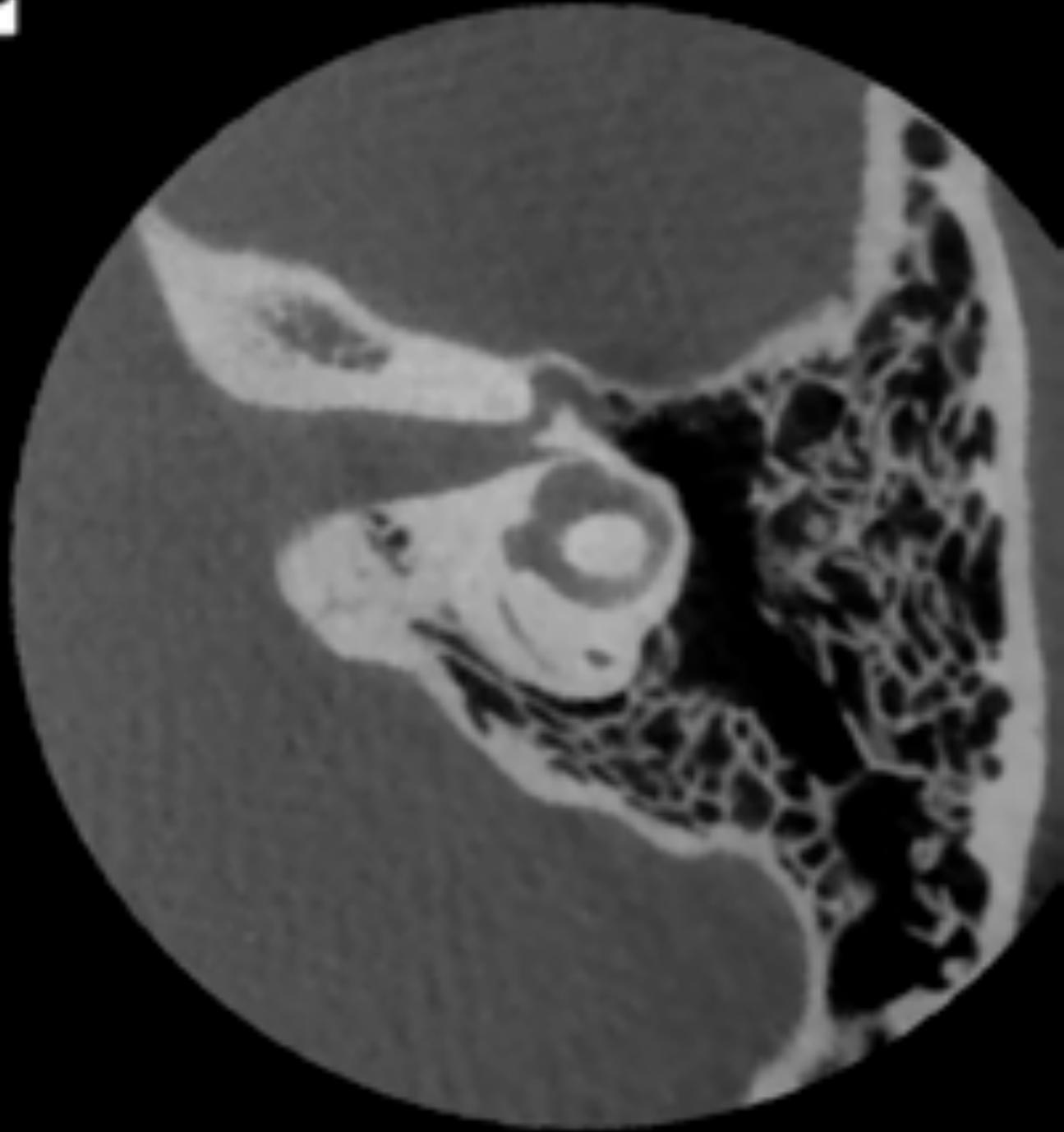


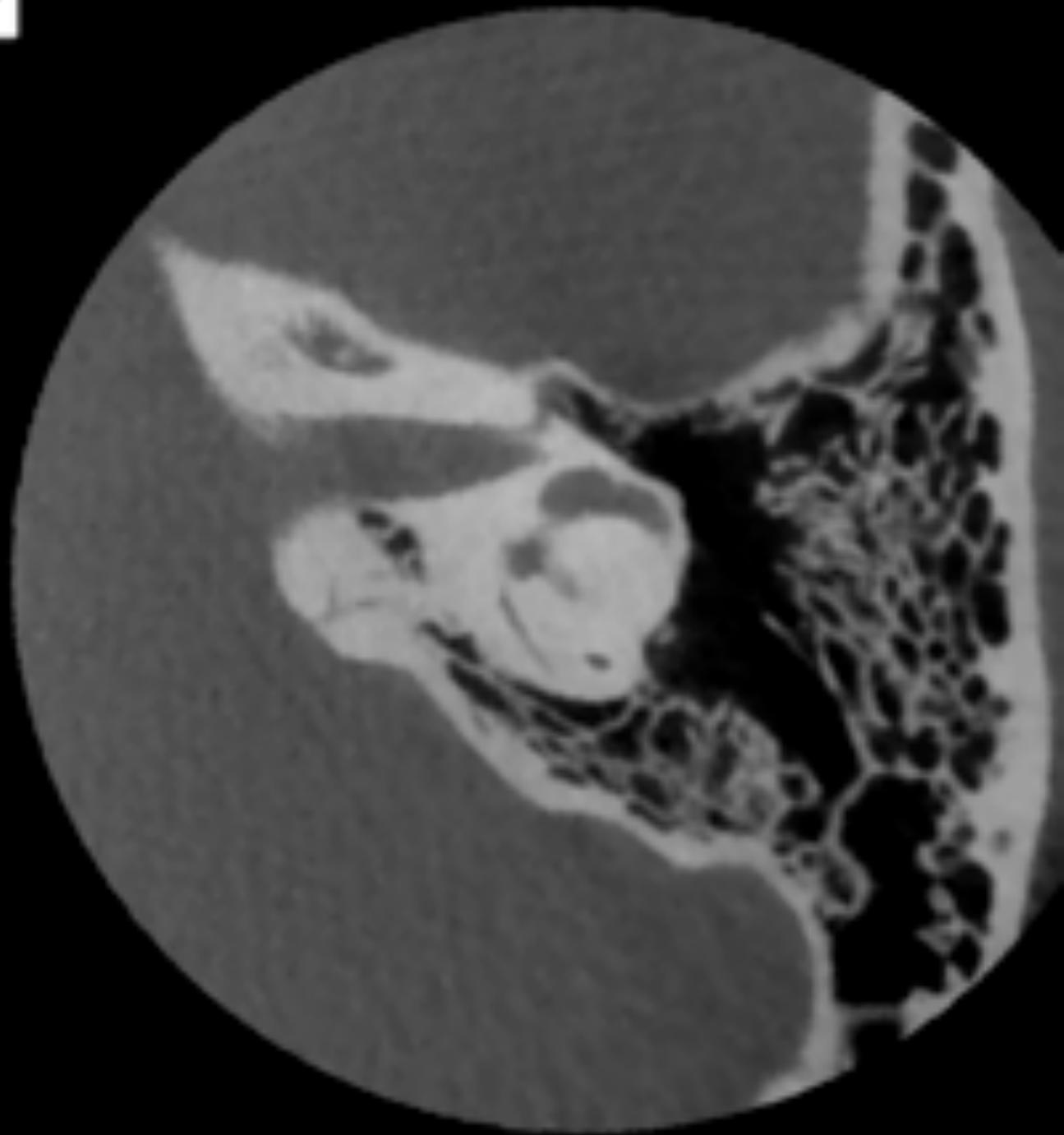


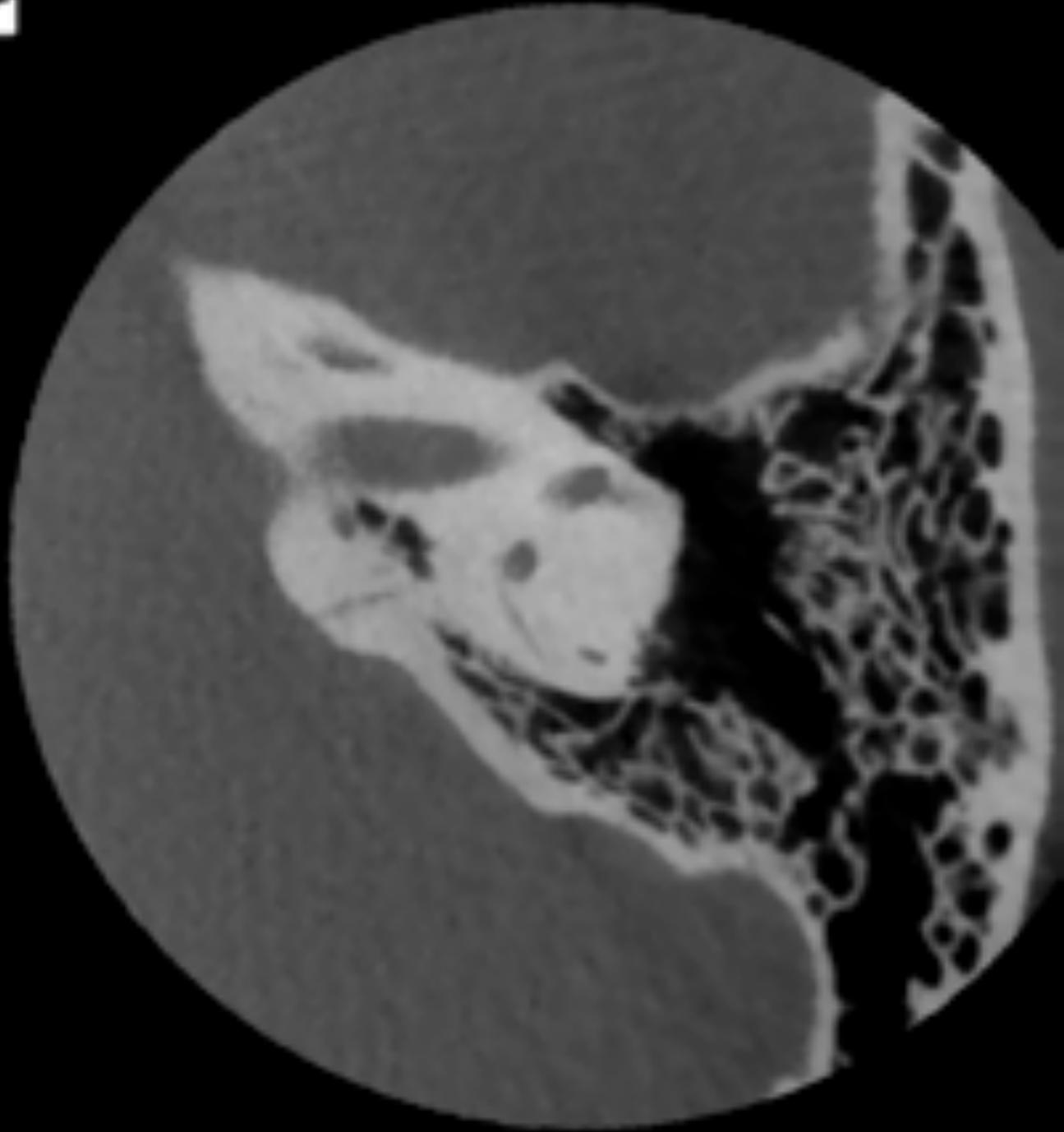


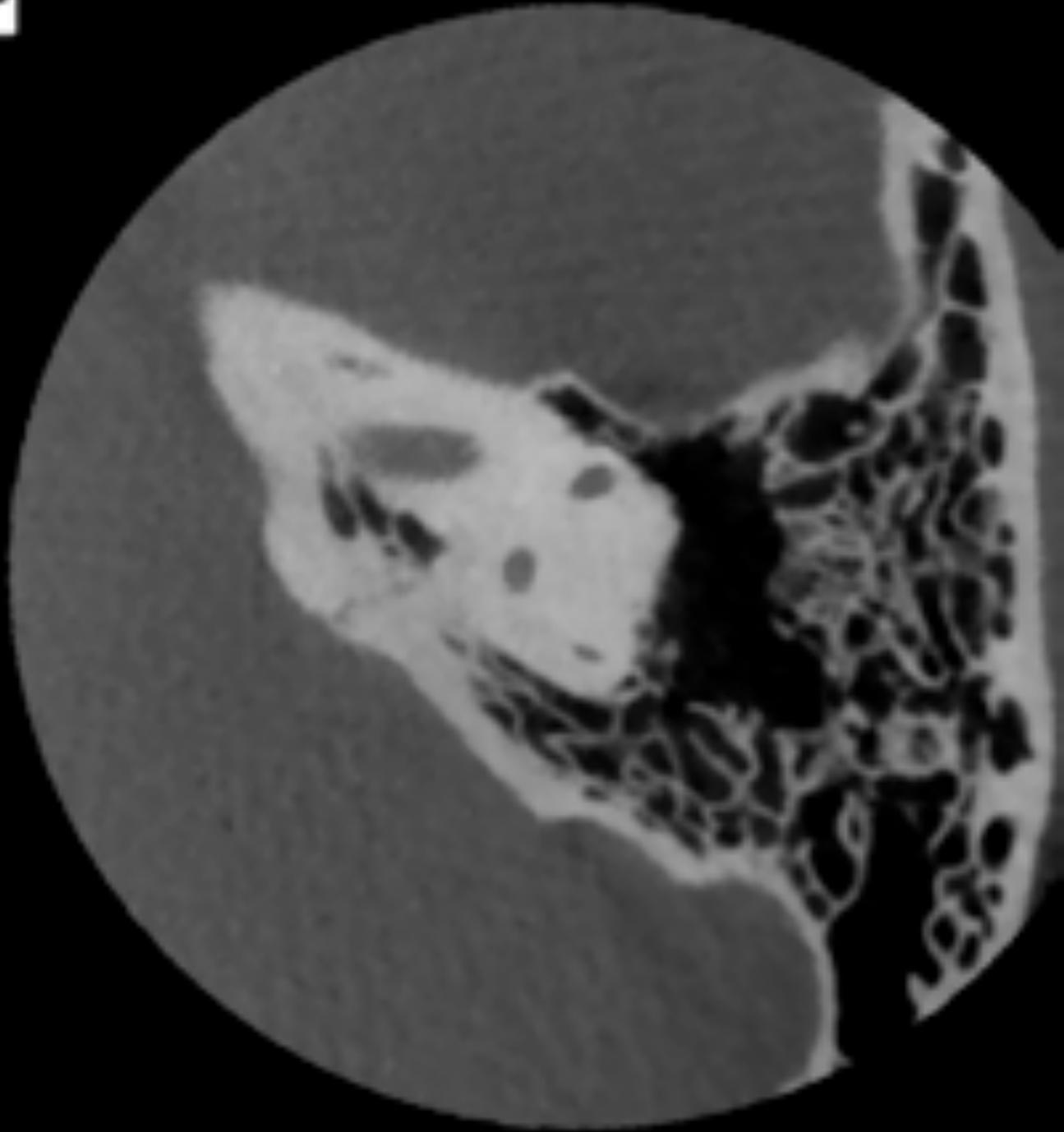


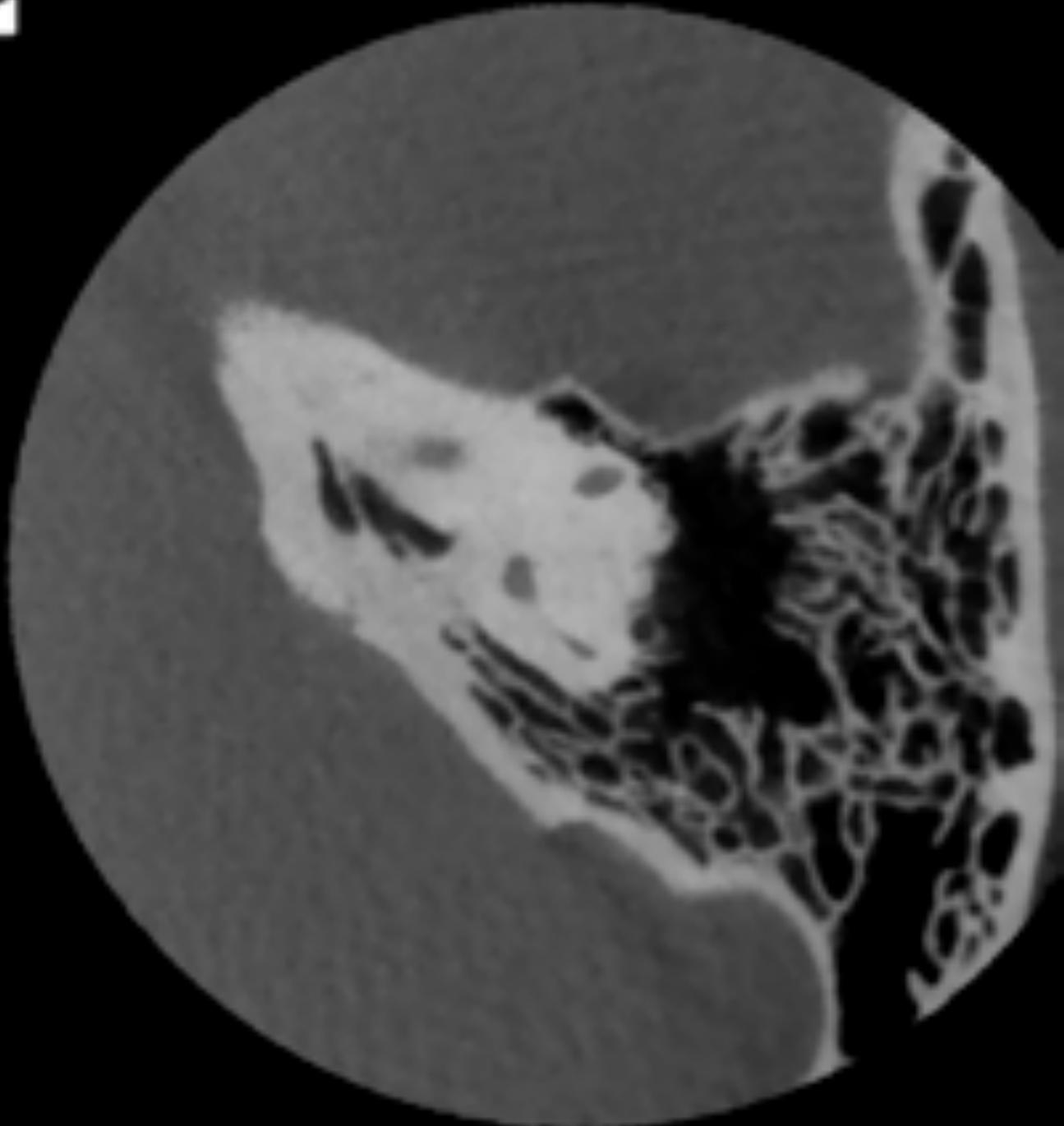


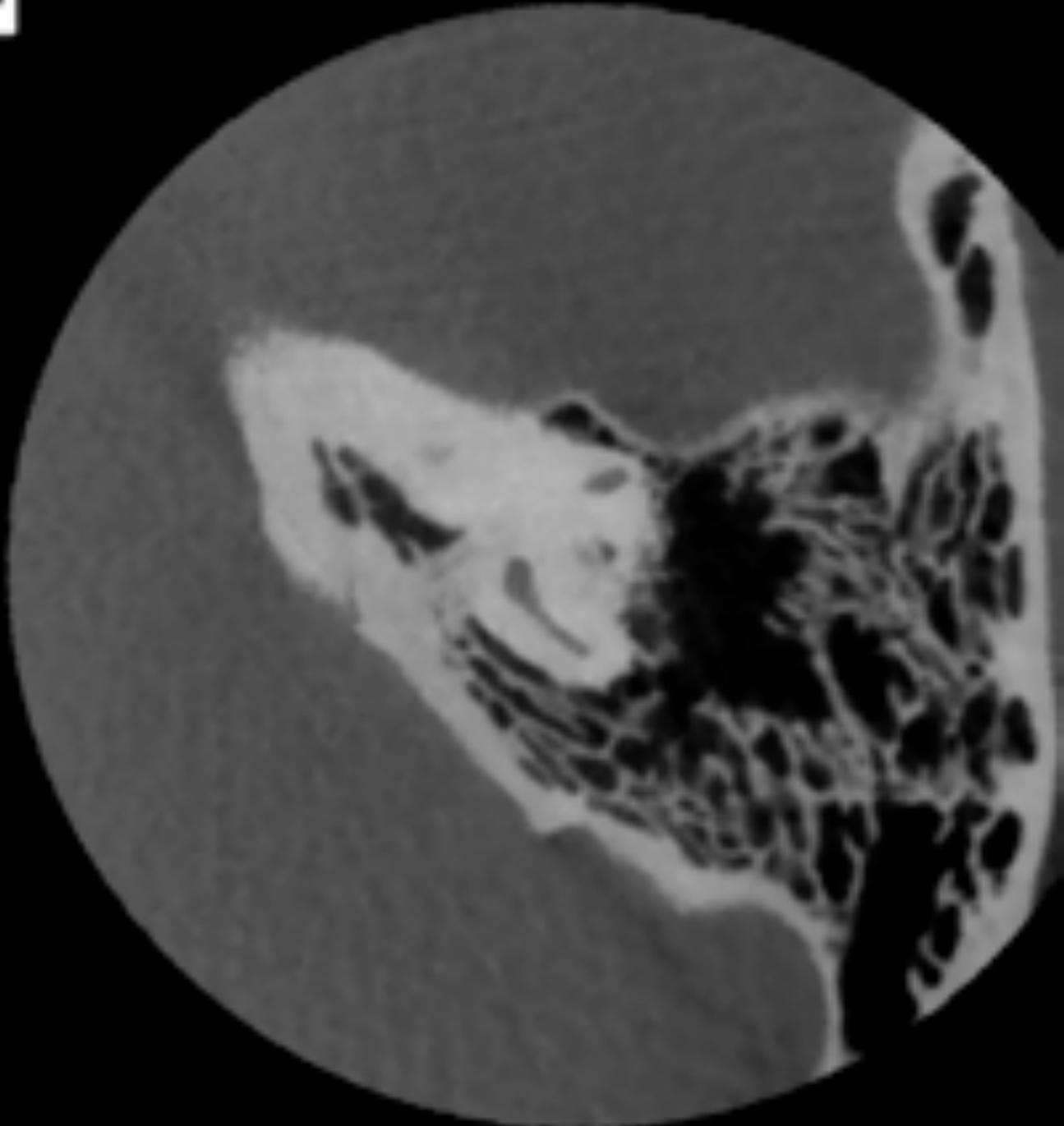












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