RADIOLOGY CASE DISCUSSION -PDF SERIES / CASE-1

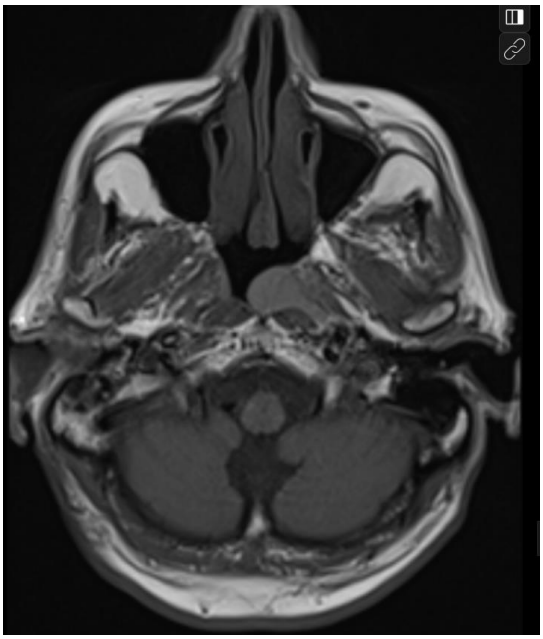
CASE SUMMARY:

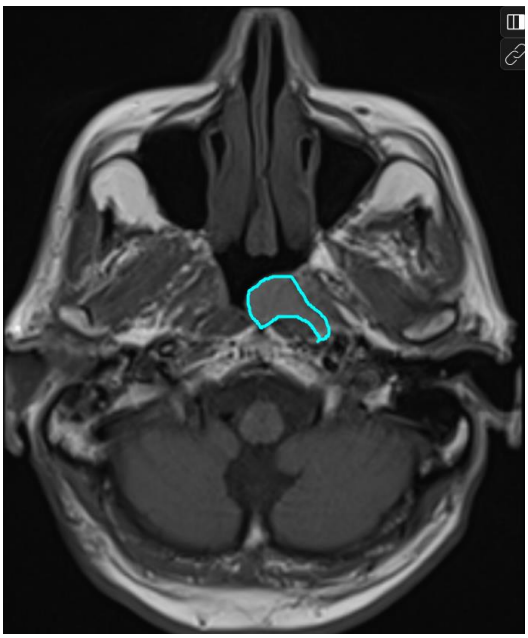
A 70-year-old male patient was found to have a lesion in the posterior wall of the nasopharynx, located on the left paracentral region, measuring approximately 30 × 16 mm.

Location:

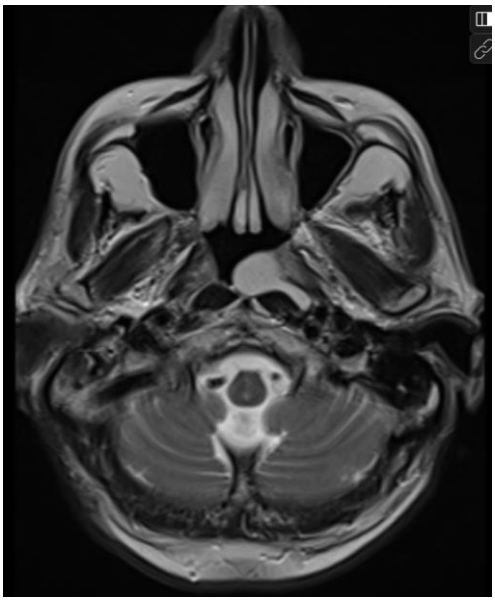
- Posterior wall of the nasopharynx
- Left paracentral
- Extending in a finger-like projection toward the Rosenmüller fossa

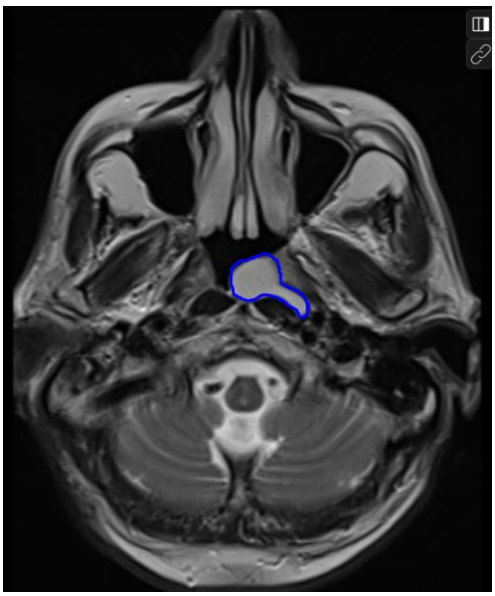
MRI characteristics:



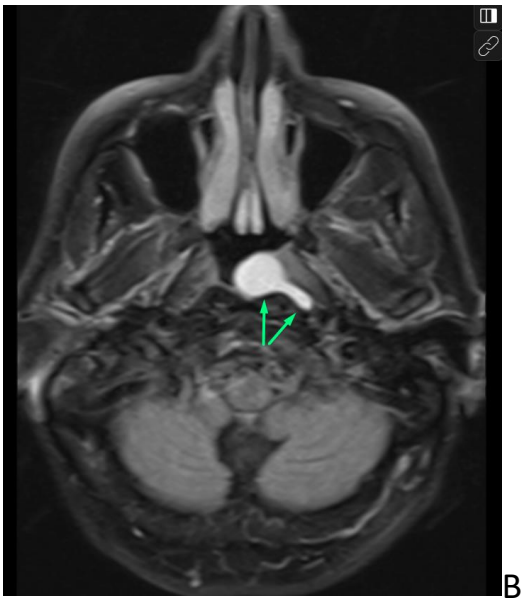


T1-weighted: isointense





- T2-weighted: hyperintense compared to CSF, but lower than CSF signal



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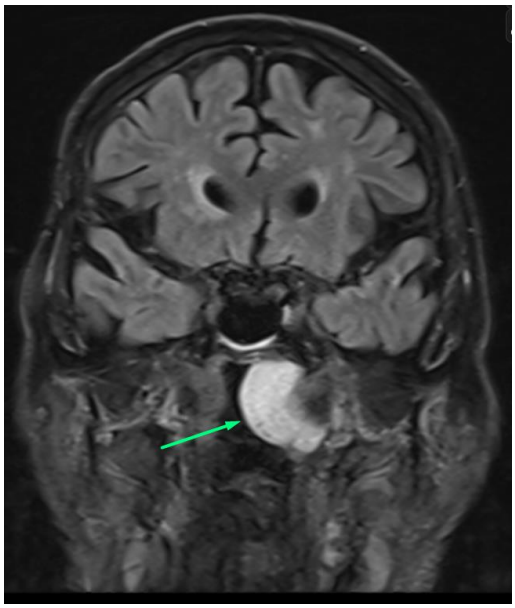
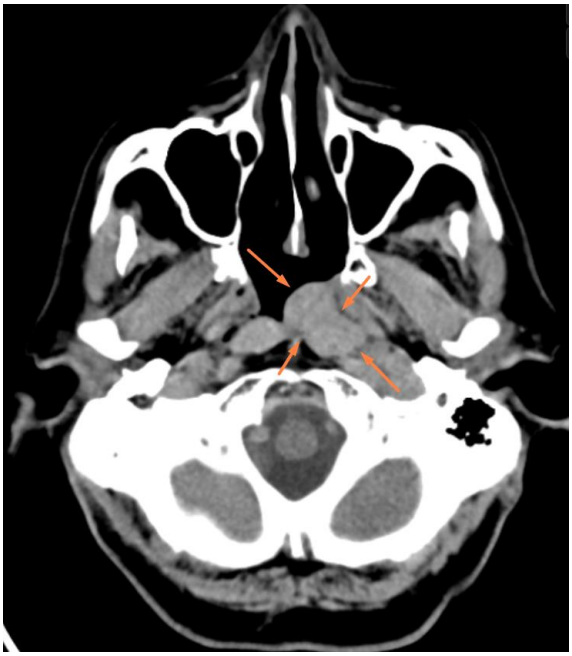


- FLAIR: markedly hyperintense

At this point, the initial consideration was a **highly proteinaceous Thornwaldt cyst**.

However, recent CT imaging was available:



- The lesion measured approximately **60–70 HU** on CT
- **Note:** This density is higher than expected for a simple cyst
    - Typical Thornwaldt cyst: 10–30 HU (serous)
    - Occasionally proteinaceous: 40–50 HU
    - 60–70 HU = approaching soft tissue density

Additionally, the lesion extended toward the **Rosenmüller fossa**, which is classically associated with **nasopharyngeal carcinoma (NPC)** rather than a midline Thornwaldt cyst.

Key diagnostic considerations:

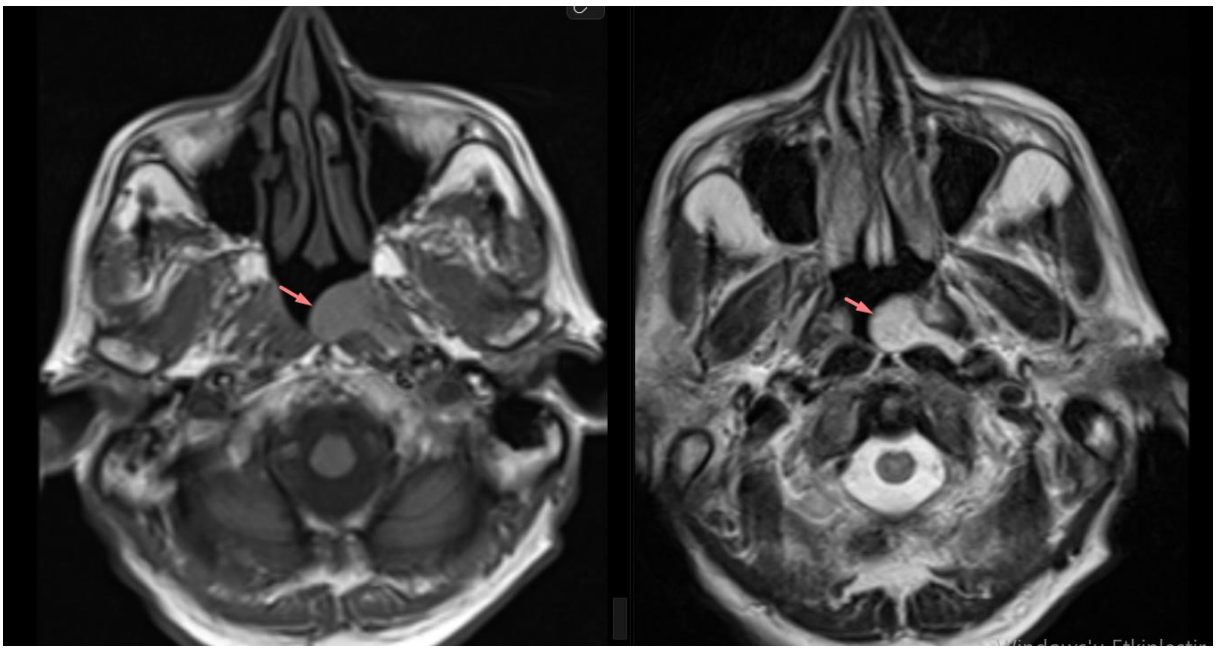
1. **Post-contrast imaging**
    - If enhancement is present → not a cyst
    - If only thin wall enhancement → favors cyst
2. **Diffusion-weighted imaging (DWI)**
    - Cyst: typically no restriction
    - Solid tumor: may show restriction
3. **Nasopharyngeal mucosa**
    - Any associated mucosal thickening/asymmetry?
    - Changes near the Eustachian tube orifice?

Differential diagnosis:

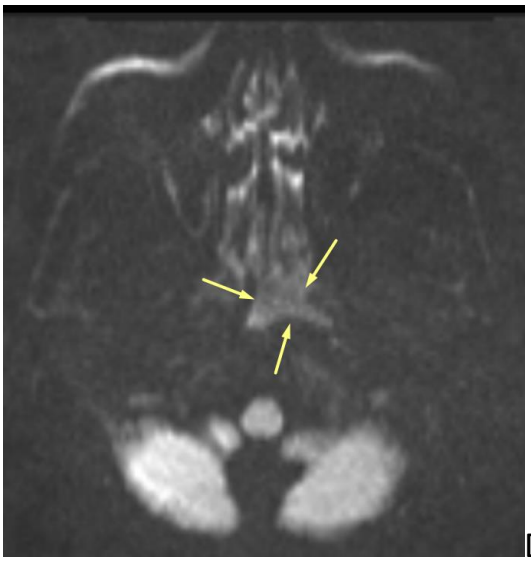
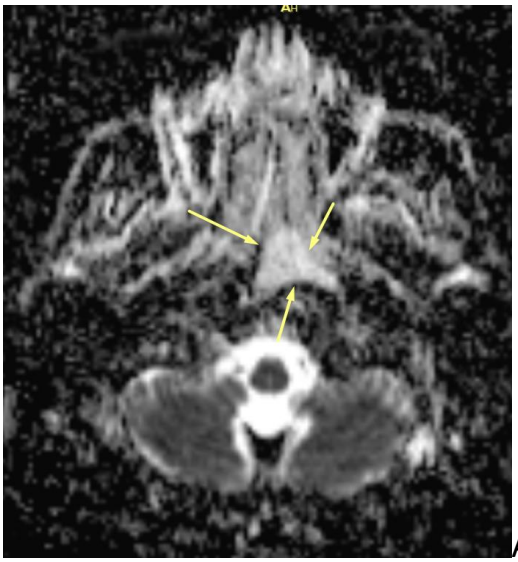
1. **Nasopharyngeal carcinoma (early/submucosal)**
    - May appear well-circumscribed in early stages
    - Prefers Rosenmüller fossa
    - T1: isointense
    - T2: slightly hyperintense relative to CSF
    - CT: 70–80 HU → concerning
    - Post-contrast enhancement crucial for differentiation
2. **Lymphoid hyperplasia / submucosal lymphoid tissue**
    - Age 70 → malignancy more likely, but benign possibility exists
    - Well-circumscribed
    - Soft tissue density
    - Usually symmetric, may rarely be unilateral
3. **Mucus retention cyst**
    - Typically midline and small
    - Lateral extension uncommon
    - More frequent in children/adolescents
    - T2: high signal (similar to CSF)
    - CT HU: low (≈10–40 HU)

Historical imaging review:

- The patient had a brain MRI and diffusion MRI performed 4 years prior



- The lesion was **stable in size and morphology**

 DWI  ADC

- No diffusion restriction observed

Crucial diagnostic points:

1. **Time factor** → stable over 4 years → NPC effectively excluded
2. **Diffusion** → no restriction → solid malignant lesion unlikely

Conclusion:

The lesion is most consistent with a **proteinaceous / high-density Thornwaldt cyst**:

- Posterior nasopharyngeal location
- Well-circumscribed
- T1: isointense
- T2: hyperintense, but lower than CSF
- FLAIR: bright
- DWI: negative
- Stable over 4 years
- CT: high HU reflecting chronic, protein-rich content

Note on Rosenmüller fossa extension:

- Thornwaldt cysts may lateralize as they enlarge
- Finger-like projection likely represents cyst herniation / mucosal pouching
- No mucosal infiltration, bone destruction, or effusion → favors benign behavior

Radiology report phrasing:

A well-circumscribed lesion located along the posterior wall of the nasopharynx in the left paracentral region, extending toward the Rosenmüller fossa, demonstrating isointense signal on T1-weighted images, hyperintense signal on T2-weighted images relative to cerebrospinal fluid, and marked hyperintensity on FLAIR sequences, showing high attenuation on CT despite the absence of diffusion restriction, and remaining stable in size and morphology compared with imaging obtained 4 years earlier, is most consistent with a proteinaceous Thornwaldt cyst.