A midline nasopharyngeal cystic structure — Thornwaldt's cyst

Ralph Drosten

MB BCh, FCRad Diag

Department of Thoracic Imaging
Brigham and Women's Hospital
Boston, USA

Case presentation

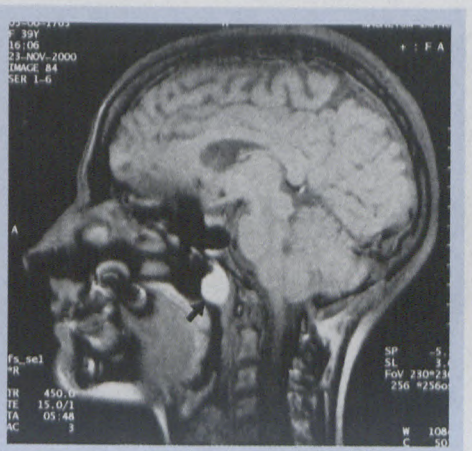
A 39-year-old woman presented to her doctor complaining of a non-productive cough. On examination, the clinician identified a non-inflamed cystic lesion in the soft tissues of the posterior nasopharynx, slightly to the right of the midline.

Magnetic resonance imaging (MRI) examination of the region of interest confirmed a 12 x 11 mm well-defined cystic lesion in the posterior nasopharynx, slightly to the right of centre. It demonstrated a homogeneously hyperintense signal on T1-weighted images, fat suppression and STIR sequences (Figs 1, 2 and 3). It had a thin wall and did not infiltrate the adjacent soft tissues.

On the basis of these imaging characteristics, the diagnosis of a Thornwaldt's cyst was made.

Discussion

Thornwaldt's cyst is a midline congenital pouch or cyst, lined by ectoderm, within the nasopharyngeal mucosal space. It is present in 4% of autopsy specimens and develops from an ectopic portion of notochordal remnants in the nasopharynx. The peak age of presentation is 15 - 30 years.[1] Clinical symptoms range from it being completely asymptomatic and an incidental finding, to persistent nasopharyngeal drainage, halitosis and a foul taste in the mouth. The presenting cough in our patient's case was presumably secondary to nasopharyngeal drainage and irritation. MRI is the imaging modality of choice. Cysts measure from 1 to 30 mm in diameter and have a high signal intensity on T1 and T2-weighted images, probably



Figs 1 and 2. T1 and fat suppression saggital MRI images demonstrating a well-defined hyperintense posterior nasopharyngeal midline cystic lesion (arrow).

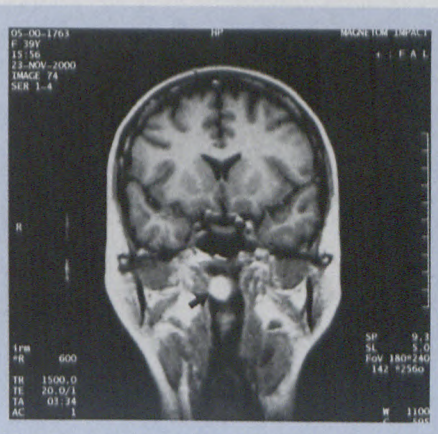


Fig. 3. Coronal STIR image demonstrating a retained high signal intensity in the posterior nasopharyngeal midline cystic lesion (arrow).

because of proteinaceous fluid content.

Thornwaldt's cyst is thought to be a persistent focal adhesion between the notochord and ectoderm extending to the pharyngeal tubercle of the occipital bone.[1] The notochord remnants occasionally give rise to an epithelial tract which empties into the midline of the nasopharynx.[2] This tract may close over and result in a midline cyst which on occasion may become infected.

The cyst is usually located in the midline in the longis capitus muscle. Extension off the midline is rarely seen. Secondary infection may lead to a syndrome consisting of prevertebral muscular spasm and postnasal discharge. Thornwaldt's abscess must be surgically drained to prevent extension and retropharyngeal abscess formation.[3]

The differential diagnosis includes a Rathke's pouch — but this lesion occurs in the craniopharyngeal canal, anterior and cephalad to Thornwaldt's cyst.

References

1. Dahnert W. *Radiology Review Manual.* 3rd ed, Williams and Wilkins, 1996: 295.
2. Higgins CB, Hricak H, Helms C. *MRI of the Body.* Raven Press, 1992: 368-369.
3. Grainger RG, Allison DJ. *Diagnostic Radiology.* Vol. 3. Churchill Livingstone, 1999: 2284.