

## Case Report

# A rare presentation of nasopharyngeal mass: a case report

**Prabu Velayutham, Senbagadevi S. Selvan, Anbulavanya Anbumani, Vignesh Palani\***

Department of ENT, Sri Venkateshwara Medical College Hospital and Research Centre, Ariyur, Puducherry, India

**Received:** 05 August 2024

**Accepted:** 16 September 2024

### \*Correspondence:

Dr. Vignesh Palani,

E-mail: [vigneshseptember1997@gmail.com](mailto:vigneshseptember1997@gmail.com)

**Copyright:** © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

## ABSTRACT

A Thornwaldt's cyst develops in the nasopharynx, which is the region where the throat and nasal passageways converge, extending from the back of the nasal tube to above the soft palate. A painful throat, obstruction of the eustachian tube, and pus with an unpleasant taste and odour might result from an infection of the cyst. Here in our study, we report a case of a 27-year-old male presented with symptoms of nasal obstruction and voice change for the past 1 year. On zero-degree endoscopic examination, a nasopharyngeal mass was seen arising from the roof of the nasopharynx without bony erosion of skull base. Further based on his radiological investigations, heterogeneous hyperintense lesion in T1/T2 weighted images of size 5×5 mm noted in nasopharynx most likely to be the Thornwaldt's cyst. Thus, the surgical removal of the nasopharyngeal mass has been performed through a transoral and trans nasal endoscopic technique with no remnants at the surgical site. The histopathological findings revealed respiratory-type epithelium with underlying lymphoid tissue confirming Thornwaldt's cyst as diagnosis. The patient was discharged with no complications and have been periodically advised for a follow-up. The differential diagnosis should include a meningocele or meningoencephalocele. Various therapeutic approaches, including endoscopic, transoral, or trans palatal surgical interventions, can be used for treatment of symptomatic cysts.

**Keywords:** Nasopharynx, Nasopharyngeal midline mass, Thornwaldt's cyst, MRI, Transoral endoscopy

## INTRODUCTION

From the base of the skull to the soft palate, there is a cuboidal space known as the nasopharynx. Infrequent presentation of a mucosal congenital cyst seen in the upper nasopharynx is the Thornwaldt's cyst which is an uncommon benign condition.<sup>1</sup> Since, the Thornwaldt's cyst is associated with notochord embryogenesis. A tiny part of the nasopharyngeal mucosa is transported with the notochord if an adhesion forms during its retractions into the clivus and cervical spinal column. This forms a midline diverticulum, which is bordered by pharyngeal mucosa.<sup>2</sup> When nasopharyngeal bursitis occurs, an infection or inflammation obstructs the bursa's entrance, causing a cyst to develop. The age range of 15 to 60 years old has been observed to have the highest occurrence in several reports. 0.2% in magnetic resonance imaging (MRI), and around 4% of autopsies are performed. In adults, it occurs 3% of the time whereas the effects are similar for men and

women.<sup>3</sup> Although the patient is often asymptomatic, they may exhibit post-nasal discharge, halitosis, nasal blockage, and a feeling of a foreign body. Meningocele or meningoencephalocele should be included in the differential diagnosis.

## CASE REPORT

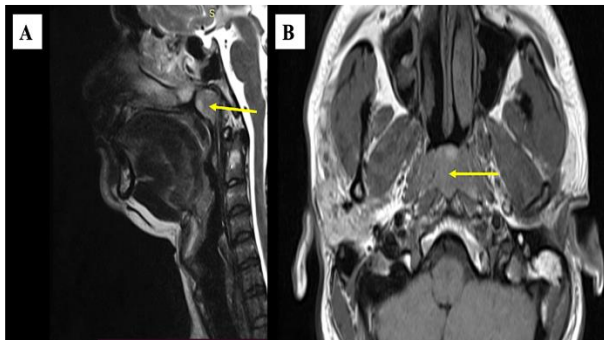
In this case report, a twenty-seven years old male presented with right nasal obstruction and hypo nasal voice for past one year with no other associated complaints. Clinical examination of ear, nose, throat was found to be normal. Nasal endoscopic examination reveals a smooth sessile globular greyish white mass appearing to arise from the roof of the nasopharynx (Figure 1).

MRI showed a heterogeneous hyperintense lesion in T1/T2 weighted images of size 5×5 mm noted in

nasopharynx most likely to be the Thornwaldt's cyst (Figure 2).

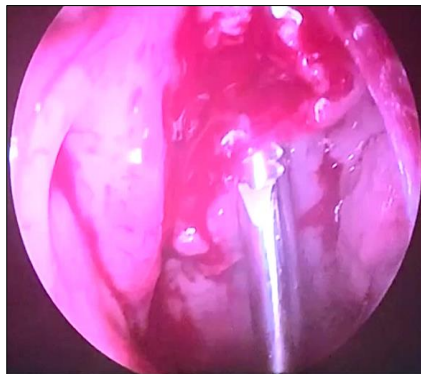


**Figure 1: Endoscopic image showing the attachment of the nasal mass to roof of nasopharynx.**



**Figure 2: (A) Sagittal and (B) axial view of MRI indicating the site of lesion in yellow arrow mark illustrating a heterogeneous hyperintense lesion in T1/T2 weighted images of size 5x5 mm noted in nasopharynx – most likely Thornwaldt's cyst.**

There was no destruction of the surrounding bone. As the mass was seen arising from the nasopharynx, the patient was planned for surgical intervention and the approach was both endonasal and transoral endoscopic guided micro debrider-assisted excision of the nasal mass (Figure 3).



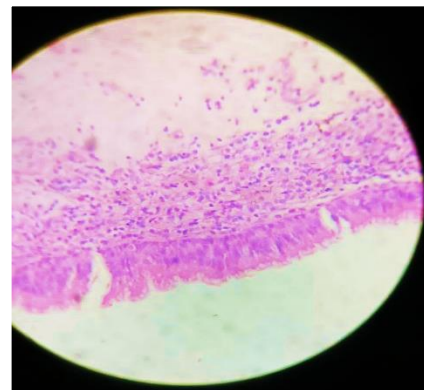
**Figure 3: Angled serrated micro debrider inserted trans orally to clear the remnants of the nasopharyngeal mass.**

There was no bleeding in the immediate intraoperative and post-operative period (Figure 4).



**Figure 4: Nasopharynx post excision of nasopharyngeal mass.**

Histopathology confirmed the cyst to be thornwaldt's cyst showing a pseudostratified ciliated columnar epithelium with subepithelial lymphocyte infiltration (Figure 5). On further, follow-up period of 6 months no recurrence was seen.



**Figure 5: Wall of the benign cyst lined by respiratory-type epithelium with underlying lymphoid tissue.**

## DISCUSSION

The pharyngeal bursa, an embryological remnant of the link between the notochord and nasopharynx, dilates in a Thornwaldt cyst. It can also arise from various surgical traumas, chemoradiation, adenoidectomy, or nasopharyngitis in some situations. Thornwaldt cysts have an incidence rate of 0.2-5% and 4%, respectively, and are often asymptomatic. They are frequently discovered by accident during imaging tests and autopsy.<sup>4,5</sup> They do not exhibit a preference for any one sex and are often detected between the ages of 15 and 60.<sup>4</sup> However, in certain instances, they may become larger and/or infected, resulting in symptoms including hearing loss, halitosis, occipital headache, and Eustachian tube dysfunction with middle ear effusion.<sup>5,6</sup> Differentiating between a number of cysts is necessary for identifying diseases that resemble nasopharyngeal cysts, including meningoencephaloceles

or meningoceles, Rathke's pouch cyst, Thornwaldt's cyst, sphenoid sinus mucocoeles, and nasopharyngeal cancer. While Rathke's pouch, adenoid retention and Thornwaldt's cysts are located in the midline location of the nasopharyngeal cavity, branchial cleft cysts are often observed in the lateral site. Unlike the adenoid retention cyst and Thornwaldt's cyst, which have cylindrical ciliated epithelium, whereas Rathke's pouch cyst contains an interior stratified squamous-lined epithelium. While retention cysts are often seen on the surface of the pharyngobasilar fascia, Thornwaldt's cysts are located deep within the fascia. Histopathology reveals that the walls of a Thornwaldt's cyst have no lymph follicles and are only mildly infiltrated by lymphocytes, whereas several cysts known as adenoid retention cysts are encircled by a large number of inflammatory cells, germinal centers, and lymphoid tissue.<sup>7</sup> Analysis from histopathology might be helpful, particularly when separating benign from malignant tumours. Before a biopsy, a complete imaging study should be carried out if the nasopharyngeal tumour is huge, protruding from the roof of the nasopharyngeal cavity, and has been determined to be malignant.

## CONCLUSION

Histopathological analysis and diagnostic imaging are the primary techniques used to diagnose Thornwaldt cysts. In our instance, the Thornwaldt cyst was linked to unilateral nasal obstruction, we effectively treated the patient by removing the nasopharyngeal mass using endoscopic transoral micro-debrider assistance. Patient had no recurrence six months after surgery.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: Not required*

## REFERENCES

1. Watkinson JC, Clarke RW, editors. Scott-Brown's Otorhinolaryngology and Head and Neck Surgery: 3 volume set. CRC Press. 2018.
2. Yuca K, Varsak YK. Thornwaldt's cyst. Eur J Gen Med. 2012;9(1):S26-9.
3. Shapshay SM, Rebeiz EE, Bohigian RK, Hybels RL, Aretz HT, Pankratov MM. Holmium: Yttrium Aluminium Garnet Laser-Assisted Endoscopic Sinus Surgery: Laboratory Experience. Laryngoscope. 1991;101:142-9.
4. Canatan MO, Canatan MF, Canatan AN. An Incidental Tornwaldt Cyst Finding on the Postoperative Assessment of a Nasal Septum Deviation: A Case Report. Cureus. 2023;15(5):e39606.
5. Baisakhiya N, Deshmukh P, Pawar V. Tornwaldt cyst: a cause of neck pain and stiffness. Indian J Otolaryngol Head Neck Surg. 2011;63(1):147-8.
6. Lee JH. Huge Tornwaldt Cyst With Otitis Media With Effusion. Ear Nose Throat J. 2021;100(5):528S-30S.
7. Miyahara H, Matsunaga T. Thornwaldt's disease. Acta Otolaryngol Suppl. 1994;517:36-9.

**Cite this article as:** Velayutham P, Selvan SS, Anbumani A, Palani V. A rare presentation of nasopharyngeal mass - a case report. Int J Otorhinolaryngol Head Neck Surg 2024;10:569-71.