

**ROLE OF ENDOSCOPE-ASSISTED POWERED INSTRUMENTATION IN
MANAGEMENT OF THORNWALDT'S CYST: A CASE REPORT**

Roohie Singh¹, Jeevan R Galagali², N Ramakrishnan³, Santosh Kumar⁴

Abstract

Thornwaldt's cyst occurs in the midline of the nasopharynx (space behind nasal cavity). Although it is relatively uncommon and majority are asymptomatic, it may cause significant symptoms. We present a case of young male who presented with history of snoring, stuffy nose and unusual heaviness in head. He had a history of irregular clinician consultation due to transferable nature of his job. On detailed history and work-up, he was found to have symptomatic Thornwaldt's cyst with chronic pansinusitis. This case report highlights the importance of endoscope-assisted powered instrumentation; ie. microdebrider assisted surgery (MAS) under endoscopic guidance in management of the case.

Author Affiliations: ¹Roohie Singh, Military Hospital, Jodhpur (India), ²Jeevan R Galagali, Command Hospital, Pune (India), ³ N Ramakrishnan, Armed Forces Medical College, Pune (India), ⁴Santosh Kumar, Military Hospital, Jodhpur (India).

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***Corresponding Author:** Dr. Roohie Singh, Consultant ENT surgeon, Department of ENT, Military Hospital, Jodhpur, Rajasthan-342010, India. Tele- +919468515451, Email- roohiesingh@yahoo.in.

INTRODUCTION

Thornwaldt's cyst is a benign developmental nasopharyngeal midline cyst covered by mucosa anteriorly and bounded by longus muscles posteriorly. It was first noted by Mayer in 1840 in autopsy specimens.^[1] It was established as a pathologic entity by Thornwaldt in 1885.^[2] Huber described how irregular notochord regression in the sixth week of gestation leads to its formation.^[3] We present a case of symptomatic Thornwaldt's cyst with chronic pansinusitis which was managed by microdebrider assisted surgery (MAS) under endoscopic guidance. To the best of our knowledge not many such cases have been reported so far.

CASE PRESENTATION:

A 22 years old male presented with history of snoring, stuffy nose and unusual heaviness in head since one and half years. Anterior rhinoscopy revealed deviated nasal septum (DNS) with inferior spur towards left; and mucopurulent discharge in both middle meatus. Posterior rhinoscopy revealed gross mucopurulence in postnasal space. The patient was reviewed after a week of antibiotics. The patient complained of not only persistence of heaviness in head this time, but also bad taste in mouth on and off. Neurological and ophthalmic evaluation for headache was negative.

A diagnostic nasal endoscopy confirmed DNS with septal spur (Fig 1) on left with cystic globular mass with yellowish hue in nasopharynx superior to remnant adenoid. The mass was obstructing almost one-third of nasopharyngeal passage (Fig 2). An MRI (Magnetic Resonance Imaging) in our patient showed findings consistent with Thornwaldt's cyst of size 13.7 mm x 11.2mm x 13.9mm (AP x TR x CC) with Bilateral chronic pansinusitis (Fig 3).

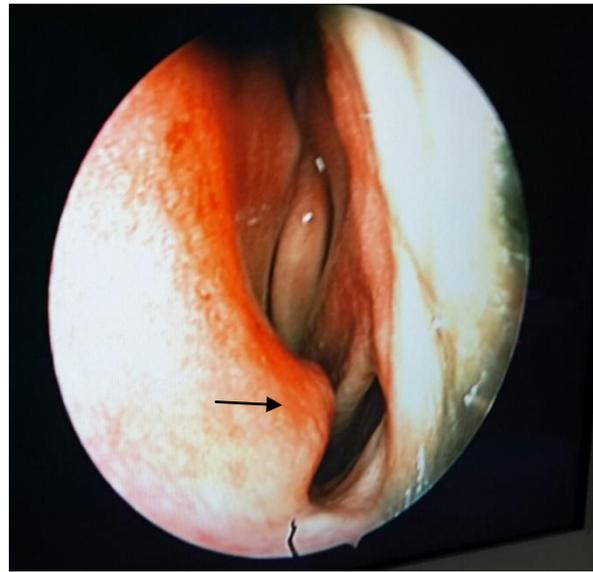


Figure 1: Nasal Endoscopic view showing Deviated nasal septum and septal spur (arrow) on left side.

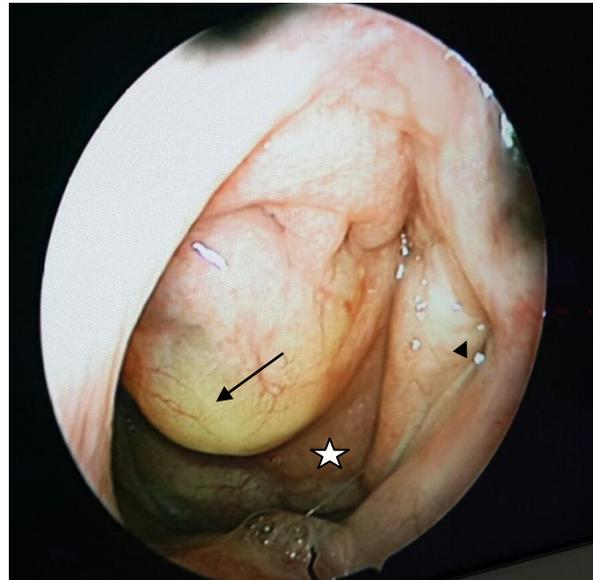


Figure 2: Pre-op Nasal endoscopic view showing smooth globular cyst (arrow) in nasopharynx, remnant adenoid (asterisk) and left Eustachian tube orifice (arrowhead).

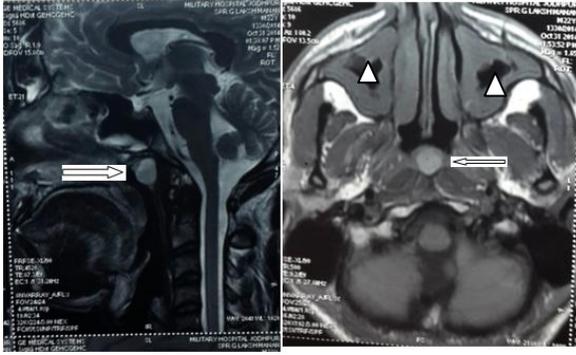


Figure 3: MRI suggestive of Thornwaldt cyst (arrows) and mucosal thickening in both maxillary sinuses (arrowheads).

The patient then underwent Septoplasty plus FESS (Functional Endoscopic Sinus Surgery) plus Microdebrider assisted marsupialisation of Thornwaldt cyst.

Surgical Technique: Surgery was performed under general anaesthesia with orotracheal intubation. Anterior to posterior approach was followed. Septoplasty was done which provided adequate space for further instrumentation required for FESS. For dealing with the Thornwaldt's cyst, a 0 degree, 4 mm rigid nasal endoscope was introduced through left nostril to get a view of the cyst. The cyst was aspirated under vision and mucopurulent aspirate was sent for culture and antibiotic sensitivity. A 45 degree curved 4 mm adenoid microdebrider blade (Fig 4) was introduced through right nostril to reach the cyst. The device was set at 500 rpm (rotations per minute) in the oscillating mode, with concomitant irrigation. Under constant endoscopic vision, the cyst was then marsupialised. To finish with the procedure; 70 degree, 4 mm endoscope was introduced peroral and pernasal microdebrider assisted marsupialisation of cyst was completed. The aspirate showed no microbial growth. Histopathologic examination of cyst wall confirmed the diagnosis of Thornwaldt's cyst. The post-operative period was uneventful and the patient was discharged after 1 week.



Figure 4: Microdebrider blade (45 degree, 4 mm adenoid).

Follow up at one week (Fig 5) and three months (Fig 6) post-op was done. The patient had improved symptomatically and nasal endoscopy showed no active sinus disease or recurrence of the cyst.



Figure 5: Nasal Endoscopic view of nasopharynx at 1 week follow-up.

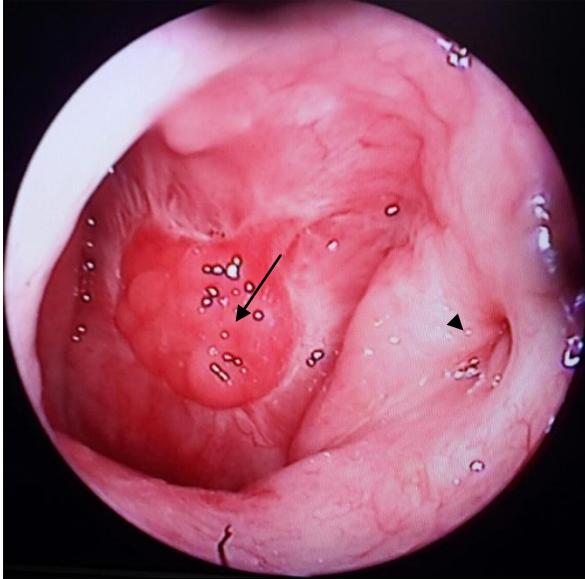


Figure 6: Nasal Endoscopic view of nasopharynx at 3 months follow-up. No recurrence, healthy pad of adenoid tissue (arrow) and Eustachian tube orifice (arrowhead)

DISCUSSION:

Thornwaldt's cyst is a benign nasopharyngeal midline cyst. It was established as a pathologic entity by Gustav L Thornwaldt in 1885. However, it was first noted by Mayer in 1840. [1, 2] Huber later described how irregular notochord regression in the sixth week of gestation leads to its formation. [3]

Its incidence is 4% in autopsy specimens and on routine Magnetic resonance imaging (MRI) its incidence is 0.2-5 %. It has been seen in all age groups, with peak incidence of 15-30 years. There is no sex preponderance. [4]

Thornwaldt's cysts are classified as crusting and cystic. The crusting types drain regularly and spontaneously into the nasopharynx while the cystic types do not drain because the drainage pathway is completely obstructed. The aetiology could be mechanical obstruction, inflammation, or abscess of the pharyngeal bursa. [5] Adenoidectomy [6] and concurrent chemoradiotherapy [7] has also been described as etiologic factor .

Most cysts are small, asymptomatic and discovered incidentally. Some are larger, causing

nasal obstruction, snoring, halitosis, clearing of throat, eustachian tube dysfunction, and a feeling of ear fullness. When the cysts become inflamed or infected, fluid may accumulate within the cyst leading to symptoms of occipital headache, pharyngeal pain, purulent postnasal drip with foul taste, and changes in olfaction. [8] Our patient presented with history of snoring, stuffy nose, unusual heaviness in head and also bad taste in mouth on and off.

Nasal endoscopy by either a fibrescope or a telescope (0 degree) is a simple and rapid procedure to visualise the cyst. [9] MRI is now considered the best radiographic imaging study to diagnose the Thornwaldt's cyst as the findings are highly characteristic. [8] In our patient, nasal endoscopy and MRI confirmed the diagnosis.

Asymptomatic cysts which may be an incidental finding require no treatment. When the cyst is large and symptomatic, surgical marsupialisation is the treatment option. [9] For smaller lesions, the endonasal approach is recommended but for large lesions, a transoral retrovelar approach using 70 degree telescope is the method of choice. The powered instrumentation (microdebrider) with specific blade for adenoid resection permits large marsupialisation with minimal trauma and bleeding and excellent postoperative results. [8]

The present case highlights the vital role of nasal endoscopy and MRI in diagnosis. We have made use of endoscope guided MAS with both endonasal and peroral approach in marsupialisation of the cyst. Apart from it, a Functional endoscopic sinus surgery (FESS) was also done to deal with associated chronic pansinusitis.

CONCLUSION:

Thornwaldt's cysts are uncommon clinical entity and may go undiagnosed as source of Ear, nose and throat complaints. Clinical suspicion must be exercised and diagnosis can be effectively done with nasal endoscopy and MRI. Marsupialisation of the cyst is the choice of

treatment and preferred way is by microdebrider under endoscopic guidance as it is safe and time saving. It provides with good visualisation and the specific blades serves better tissue respect to the healthy surrounding tissues of nasopharynx and eustachian tube. This innovative approach should be considered a good surgical option in managing this disease.

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