



A Giant Thornwaldt Cyst: Case Report

CASE REPORT

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ABSTRACT

Thornwaldt cyst develops if the opening of the bursa to the nasopharynx is obstructed due to infections, adenoidectomy, or radiotherapy. In this manuscript, a 53-year-old man who was admitted to the hospital with the complaint of nasal obstruction was discussed. In his nasopharyngoscopic examination, a smooth-surfaced, frustrating coana was found. Computerized tomography revealed a cystic lesion. This lesion was not destroying the bones, and it was marsupialized under general anesthesia with the diagnosis of Thornwaldt cyst.

Keywords: Nasal obstruction, nasopharyngeal diseases, nasal airway obstruction

INTRODUCTION

Nasopharyngeal bursa is a notochordal remnant, which is a recess just above the superior constrictor muscles, lined with respiratory mucosa along the midline posterior wall of the nasopharynx between the longus capitis muscles (1). If the opening of the bursa to the nasopharynx is obstructed due to some reason, such as infection, adenoidectomy, and radiotherapy, Thornwaldt cyst (TC) develops. Its incidence has been reported to be 3%-7% in the general population, 0.2% in magnetic resonance imaging (MRI), and 3%-4% in postmortem studies (2). It is seen in both sexes equally and more often between the ages of 15 and 30 years (2). In cases diagnosed incidentally, the mean cyst volume has been measured to be 0.66 cm³ in computed tomography (CT) and 0.58 cm³ in MRI (3).

Lesions in the nasopharynx can be overlooked in patients who are admitted with the complaint of nasal obstruction, since nasal pathologies are concentrated on. In patients presenting with this complaint, the nasopharynx should be evaluated before suggesting medical treatment. Endoscopy, which is an easy, inexpensive, and comfortable method, should be performed, and Thornwaldt cyst, among nasopharyngeal pathologies, should also be considered. In this case report, a patient diagnosed with Thornwaldt cyst was evaluated in the article with the literature.

CASE REPORT

A 53-year-old male patient, who had been treated for a diagnosis of allergic rhinitis due to increasing nasal obstruction for 3 months, applied to the outpatient clinic, because his complaints still continued. In his medical history, it was found that he had been being followed up and treated for a diagnosis of mitral valve prolapse for 24 years, and he had been using coumadin for 9 years. Moreover, the patient did not report previous nasopharyngeal surgery, nasotracheal intubation, and radiotherapy applied on the nasopharynx.

The posterior rhinoscopy examination revealed the presence of a round, smooth-surfaced, semisolid mass having mucosal defects and serous secretion on it (Figure 1). Other otorhinolaryngological examination results were normal.

In axial and coronal CT images of the patient, a 2.4x3.4-cm-sized, well-circumscribed cystic mass that was covering the nasopharynx was found. Intracranial extension of the mass and findings of destruction in the sphenoid bone were not observed (Figure 2). The patient was pre-diagnosed with Thornwaldt cyst and prepared for surgical intervention.

The nasopharynx was reached through the nose with a 0° endoscope, and the mass was incised using a sickle blade under general anesthesia. Thick and brown-colored fluid was discharged. The cyst was removed with the help of cutting forceps as much as possible. Histopathological examination of the removed tissues revealed a small amount of lymphoid tissue and blood vessels under the respiratory tract epithelium. In addition, respiratory tract epithelium, under which loose connective tissue existed, was found in the cyst lumen, and the diagnosis of Thornwaldt cyst was established.

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At the end of the 27-month follow-up, it was observed that the patient was clinically relieved, and no pathological finding was found, except for scar formed in the nasopharynx due to cyst (Figure 3).

DISCUSSION

In 1912, it was reported that a Thornwaldt cyst developed as a recess, called Thornwaldt's bursa, formed by the remnants of the notochord tissue with pharyngeal respiratory epithelium along the midline wall of the nasopharynx (4).



Figure 1. A smooth-surfaced and spheric mass covering the nasopharynx almost completely (black arrows)

Thornwaldt cysts are clinically classified into two types. The first is the cystic type, which is more frequent and can not drain into the nasopharynx spontaneously. The other is the crusting type, which regularly and spontaneously drains into the nasopharynx (5). The case was observed to be consistent with cystic type.

The signs of the cyst are defined as proximal and associated symptoms. Proximal symptoms are characterized by nasopharyngeal inflammation (hyperemia and hyperplasia in the nasal mucosa). On the other hand, middle ear diseases due to obstruction of the Eustachian tube, granular pharyngitis, chronic laryngitis, bronchitis, bronchial asthma, cough because of laryngeal irritation, occipital headache, and cervical pain are associated symptoms (6). Occipital headache occurs due to myalgia of the cervical muscles remaining under the protuberance of the occipital bone (7). No other symptoms were observed in the case, apart from nasal obstruction.

When nasopharyngeal mass is encountered, Thornwaldt cyst, branchial cleft cyst, Rathke's pouch cyst, adenoid retention cyst, meningocele or meningoencephalocele, choanal polyp, sphenoid sinus mucocele, angiofibroma, nasopharyngeal carcinoma, and papillary thyroid cancer metastases should be considered in the differential diagnosis (8-10). Nasopharyngeal mass has been differentiated from meningocele and meningoencephalocele owing to intact skull base bones and from mucocele due to normal sphenoid sinus. Other differential diagnoses can be performed only after a pathological examination.

Thornwaldt cyst can easily be detected by nasopharyngoscopy and imaging methods. CT or MRI techniques should be used for evaluating asymptomatic and submucosal lesions, most of which are smaller than 10 mm (11). In our patient, a cystic structure may not always be seen, depending on the content of fluid on CT (12).

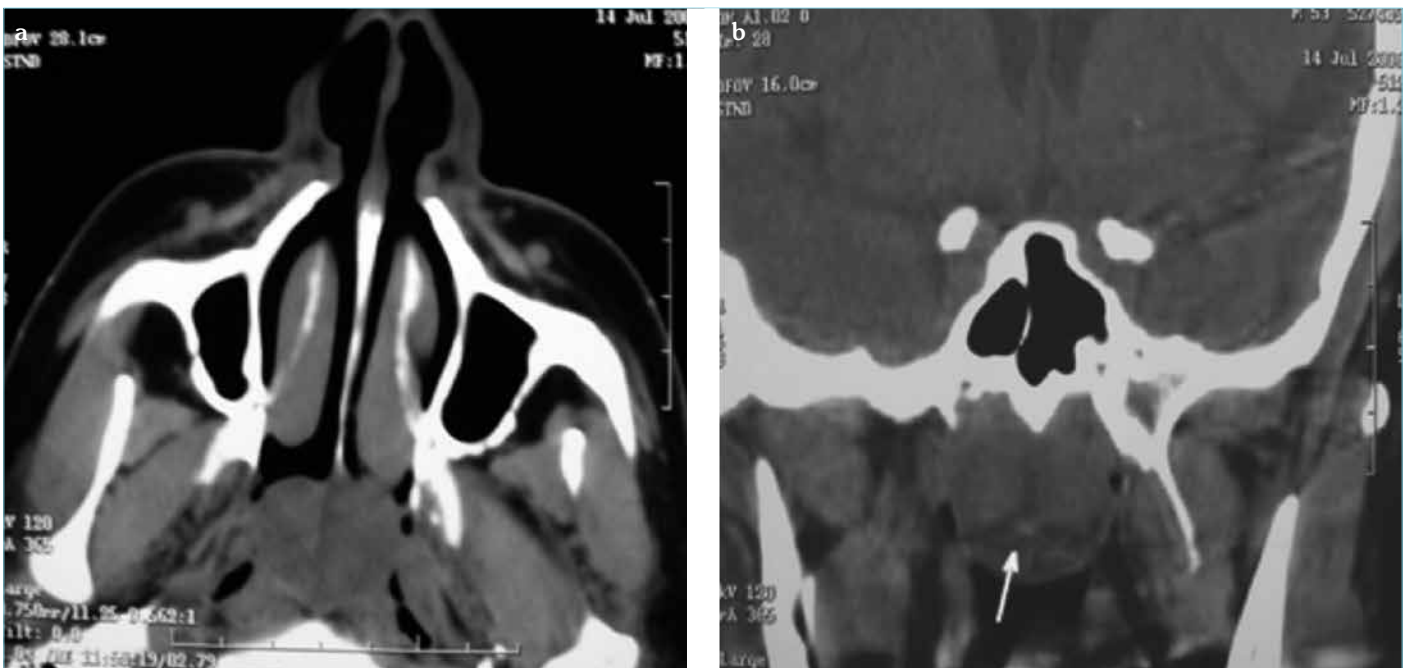


Figure 2. a, b. (a) In CT, a smooth-surfaced and hypointense mass having borders partially seen, extending into the vomer anteriorly and the corpus of the sphenoid and the longus capitis muscles posteriorly, and covering the nasopharynx almost completely. (b) In the coronal section of CT, a mass adjacent to the sphenoid corpus in the upper region, covering the nasopharynx, having a smooth lower border, with intact bone tissue and central adjacency consistent with hypointense cystic material (white arrow)



Figure 3. In the endoscopic evaluation, the torus tubarius in the nasopharynx and an image consistent with star-shaped scar tissue just on the right (black arrow)

Thornwaldt cyst is evaluated better through MRI because of its soft tissue structure.

Although it was reported that Thornwaldt cysts with the size of 20-25 mm and larger cause nasopharyngeal symptoms, focal neurological signs, and nasopharyngeal abscess (2, 3, 13), no neurological symptom and abscess were observed in the case presented in this study. Moreover, as in another case reported in the literature, in our case, no other symptom, except nasal obstruction, was found in spite of the fact that the mass covered the choana completely (1). Malignant diseases of the nasopharynx should be taken into consideration in cases with asymptomatic and small masses.

Surgical intervention can be performed under local or general anesthesia, depending on the size of the cyst and the presence of the symptoms. If the Thornwaldt cyst is small in size and asymptomatic, surgical treatment is not needed. For the treatment of a symptomatic and large cyst leaning on the torus tubarius, the cyst is marsupialized with surgical intervention of transoral retrovelar or endonasal endoscopic approaches (14, 15). Microdebrider, laser, and computer-assisted endoscopic surgeries can also be used as advanced endoscopic surgery techniques. Marsupialization of the cyst by using a transoral approach with an angled microdebrider and a 70° endoscope can be performed with less bleeding and less trauma on the surrounding tissues (15). However, the difficulty in the histopathological evaluation due to the loss of palpation feeling and of tissue integrity and the need for practical experience are the disadvantages of the microdebrider technique (16). The use of laser in rhinology provides less bleeding, but longer operation time, more postoperative edema and granulation tissue compared to conventional surgery, and delayed healing are the disadvantages of this method (17, 18). Computer-assisted endoscopic surgery allows 3-dimensional reconstruction of the lesion from thin-section CT images preoperatively performed in the axial plane with a special cap. When the neuroprobe of the device is at the suspicious point in the nose, the anatomic region that is worked on is seen in the axial, coronal, and sagittal planes, and this allows one to continue the

surgery (17). On the other hand, the cost of the system per patient, the need for a special technician and equipment, difficult endonasal use of the neuroprobe and the likelihood of its being affected by the patient's movement, and its leading to a longer operation time are among its disadvantages (16, 19). In the case presented in this study, endoscopic marsupialization was preferred because of the shorter surgery time, better palpation feeling, less morbidity, and its being convenient for histopathological evaluation due to maintained lesion integrity. However, combined or open surgery might have been required if bone destruction with the suspicion of malignancy, extension into the pterygopalatine and/or the infratemporal fossa, or intracranial extension had been observed.

CONCLUSION

For patients presenting only with the complaint of nasal obstruction without infection and neurological findings, the nasopharynx should absolutely be evaluated before giving any medical therapy. Thornwaldt cyst should be remembered when a soft, smooth-surfaced, and huge nasopharyngeal mass is observed in endoscopy. However, considering pharmacoeconomy in its diagnosis, intracranial extension of the lesion, its relationship with bone tissues, and its vascularity should be evaluated with contrast-enhanced CT, showing only the pterygopalatine and infratemporal fossa and the corpus of the sphenoid bone in sagittal and axial planes. If any of these findings is observed in CT, MRI and, if needed, advanced examinations, like angiography should be carried out. We think that the surgery of huge cysts with the endoscopic endonasal technique under general anesthesia will decrease the morbidity and aspiration risk for cyst content and bleeding.

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