

## Case report

### The Tornwaldt cyst



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#### Abstract

We report the case of a patient who presented otological and neurological symptoms; an endoscopic examination has objectified formation of the nasopharynx and the imaging has confirmed the cystic nature of this formation compatible with a Tornwaldt cyst. This lesion is quite rare, benign and often asymptomatic, its knowledge is important to eliminate other malignant causes and invasive management.

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## Introduction

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The Tornwaldt cyst is a benign cystic lesion that develops in the posterior medial wall of the nasopharynx, the etiopathogeny is still controversial, several clinical signs can guide the diagnosis but the discovery is in the majority of fortuitous cases and the MRI represents the examination of choice.

## Patient and observation

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A 32-year-old woman admitted for a sensation of fullness and buzzing in her right ear with repeated episodes of otitis. The blood test was normal. Endoscopy revealed a solitary nodule in the posterior wall of the nasopharynx. A computed tomodensitometry (CT) showed the presence of a nodular formation of the posterior wall of the nasopharynx, lateralized on the right with a fluid density and without enhancement after injection of contrast medium; magnetic resonance imaging (MRI) confirmed the fluid nature of the lesion by the T2 hyper signal (Figure 1) and the T1 intermediate signal (Figure 2) allowing the diagnosis of a Tornwaldt cyst.

## Discussion

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The Tornwaldt cyst is a benign cystic lesion that develops in the posterior medial wall of the nasopharynx; its incidence is 4% on autopsy samples, however an incidence of 0.2 to 5% has been observed on routine brain and cervical MRI [1,2]. The etiopathogeny remains controversial, some assume that it is a relic of the notochord (embryonic tissues from which vertebrae are formed), while others evoke an iatrogenic occlusion of normal structure after adenoidectomy or chronic inflammation [3]. The Tornwaldt cyst is most often asymptomatic; however, an increase in its volume or inflammation may cause occipital headache, nasal obstruction

with persistent discharge, bad breath, cervical myalgia, eustachian tube dysfunction, and sometimes infections of the middle ear [3]. During endoscopic examination, the cyst appears as a solitary, medial and superficial mass on the posterior medial wall of the nasopharynx; its size can vary from a few millimeters to two centimeters with sometimes visualization of a drainage hole [1]. CT visualizes the largest cysts in the form of a fluid density lesion, but MRI remains the reference examination to identify this lesion, with a hypo or a T1 signal (depending on the protein content of the cyst) and a hyper signal T2 [1,4]. The main differential diagnoses are: Rathke's pocket cyst, meningocele, meningoencephalocele and necrotic nasopharyngeal tumors [1]. Surgical treatment is reserved for symptomatic forms outside a possible infectious episode, either by nasal endoscopy, or by oral retro palate [3].

## Conclusion

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The Tornwaldt cyst is a congenital cystic formation developed in the posterior part of the nasopharynx; it is a rare benign lesion whose diagnosis must be known to eliminate any malignant cause and eventual invasive treatment.

## Competing interests

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The authors declare no competing interest.

## Authors' contributions

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All the authors have read and agreed to the final manuscript.

## Figures

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**Figure 1:** T2-weighted axial section showing a well-defined cystic lesion, lateralized to the right at the posterior wall of the nasopharynx

**Figure 2:** T1-weighted sagittal section showing cystic lesion of posterior wall of nasopharynx in iso-signal

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**Figure 1:** T2-weighted axial section showing a well-defined cystic lesion, lateralized to the right at the posterior wall of the nasopharynx



**Figure 2:** T1-weighted sagittal section showing cystic lesion of posterior wall of nasopharynx in iso-signal