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CASE STUDY

Rare case of tubal ridge chondroma in the nasopharynx: a case report and literature review

Rzadki przypadek chrzęstniaka wału trąbkowego w nosogardle: opis przypadku i przegląd literatury naukowej

Authors' Contribution:
A – Study Design
B – Data Collection
C – Statistical Analysis
D – Data Interpretation
E – Manuscript Preparation
F – Literature Search
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ABSTRACT:

Introduction: Chondromas of the nasopharynx are extremely rare benign mesenchymal tumors originating from mature hyaline cartilage. Fewer than 30 documented cases have been reported worldwide, which makes diagnosis and treatment challenging. Due to non-specific symptoms, such as unilateral conductive hearing loss, nasal obstruction, or postnasal drip, these tumors are often detected incidentally during imaging.

Aim: The aim of this paper is to present a case of a 41-year-old patient with a tubal ridge chondroma and to review the available literature regarding diagnosis, differential diagnosis, and treatment.

Materials and methods: The patient presented with persistent right-sided hearing loss and nasal discharge. MRI revealed a well-defined mass in the nasopharynx near the right Eustachian tube. Endoscopic and audiological examinations were performed. Surgical treatment consisted of a complete endoscopic excision of the tumor with a healthy tissue margin.

Results: The approximately 1.5-cm lesion was entirely resected. Histopathology confirmed a benign chondroma without atypia. The postoperative period was uneventful. No recurrence was observed on follow-up endoscopic examinations and MRI. The patient remains under regular outpatient surveillance.

Conclusions: Differential diagnosis of nasopharyngeal masses should include rare benign lesions such as chondromas. Accurate diagnosis requires a combination of high-quality imaging and histopathological evaluation. Endoscopic surgical removal is effective, safe, and reduces complication risk.

Significance: This case report expands the limited clinical data on nasopharyngeal chondromas and provides practical guidance for ENT specialists managing similar cases.

KEYWORDS: benign tumor, chondroma, endoscopy, imaging, nasopharynx

STRESZCZENIE:

Wstęp: Chrzęstniaki nosogardła są wyjątkowo rzadkimi, łagodnymi guzami mezenchymalnymi, które wywodzą się z dojrzałej chrząstki szklistej. W piśmiennictwie opisano dotychczas mniej niż 30 udokumentowanych przypadków w tej lokalizacji, co powoduje trudności diagnostyczne i terapeutyczne. Ze względu na niespecyficzne objawy, takie jak niedosłuch, uczucie zatkania nosa czy spływanie wydzieliny po tylnej ścianie gardła, rozpoznanie często następuje przypadkowo podczas badań obrazowych czy endoskopii.

Cel: Celem pracy jest przedstawienie przypadku 41-letniego pacjenta z chrzęstniakiem wału trąbkowego oraz przegląd piśmiennictwa dotyczącego diagnostyki i leczenia tego rzadkiego nowotworu.

Materiał i metody: Pacjent zgłosił się z objawami przewlekłego niedosłuchu ucha prawego i spływania wydzieliny do gardła. Wykonano badanie MRI, które uwidoczniło dobrze odgraniczoną zmianę guzowatą w nosogardle. Przeprowadzono diagnostykę endoskopową i audiologiczną. Leczenie operacyjne polegało na endoskopowym, całkowitym wycięciu guza wraz z marginesem zdrowych tkanek.

Wyniki: Guz o wymiarach ok. 1,5 cm został usunięty w całości. Badanie histopatologiczne potwierdziło rozpoznanie chrzęstniaka bez cech atypii. Pacjent przebył zabieg bez powikłań, a w kontrolnych badaniach endoskopowych i obrazowych nie stwierdzono cech wznowy. Aktualnie pozostaje pod stałą kontrolą ambulatoryjną.

Wnioski: Diagnostyka różnicowa guzów nosogardła powinna uwzględniać również rzadkie zmiany, takie jak chrzęstniaki. Kluczowe znaczenie ma połączenie badań obrazowych z oceną histopatologiczną. Leczenie chirurgiczne metodą endoskopową jest skuteczne, bezpieczne i minimalizuje ryzyko powikłań.

Znaczenie: Przedstawiony opis przypadku poszerza skąpą dokumentację literaturową dotyczącą chrząstniaków nosogardła i może stanowić praktyczny punkt odniesienia dla otorynolaryngologów w diagnostyce i leczeniu podobnych przypadków.

SŁOWA KLUCZOWE: chrząstniak, diagnostyka obrazowa, endoskopia, guz łagodny, nosogardło

ABBREVIATIONS

COREAH – chondro-osseous respiratory epithelial adenomatoid hamartoma
CT – computed tomography
MRI – magnetic resonance imaging
NPC – nasopharyngeal carcinoma

INTRODUCTION

Chondromas are benign tumors that originate from mature hyaline cartilage. The lesions usually develop within the long bones of the extremities, with head and neck structures being less common locations [1].

In contrast to the nasal cavity and paranasal sinuses, where benign lesions make up the majority of tumors, tumors within the nasopharyngeal region are predominantly malignant, with nasopharyngeal carcinoma accounting for more than 90% of cases as per the WHO data [2]. Benign lesions, such as Thornwald's cysts, choanal polyps, and chondromas, are incidental in character.

Nasopharyngeal carcinoma (NPC) is, by far the most common malignant neoplasm of the nasopharynx, accounting for more than 80–90% of all malignant tumors within this area [3, 4]. Undifferentiated carcinoma (WHO type III) is the most common histological type of NPC, particularly in the Southeast Asian populations, where it can account for 95% of all NPC cases [5]. Although the overall incidence of NPC in the European population is somewhat lower, the disease remains the predominant neoplasm of the nasopharyngeal region [3].

Chondromas, on the other hand, remain casuistic and scant and may be confused with other lesions with similar radiographic features, such as chondrosarcoma or chondromesenchymal hamartoma [1, 6]. Fewer than 30 cases of nasopharyngeal chondroma have been reported in the literature [7, 8].

Diagnosis without histopathological examination is difficult due to nonspecific symptoms and radiological similarity to other tumors. Magnetic resonance imaging (MRI) and computed tomography (CT) imaging studies are particularly important in assessing the location and relationship between the lesion and the adjacent structures [9]. MRI has a high sensitivity in detecting soft tissue infiltration, while CT is better in assessing the presence of calcification and the degree of bone destruction.

This paper describes a case of a benign chondroma of the right tubal ridge shaft and reviews the available literature to discuss the diagnosis, treatment, and postoperative follow-up.

AIM

The aim of this paper is to present a case of a tubal ridge chondroma and to discuss the principles of diagnosis and management of this type of lesion.

CASE REPORT

A 41-year-old male patient presented at the Department of Otorhinolaryngology of the A. Mielęcki Clinical Hospital of the Medical University of Silesia in Katowice in April 2025, with the diagnosis of right-sided nasopharyngeal tumor. The lesion was detected incidentally in a previous imaging study, namely an MRI scan of the head.

The MRI scan dated 13 Feb 2025 revealed a well-demarcated structure of ambiguous nature, up to about 15 mm in size, within the right side of the nasopharynx (Fig. 1., 2.).

Upon admission, the patient reported symptoms such as a runny nose, postnasal drip, and impaired hearing in the right ear for several months. Audiological examination revealed conductive hearing loss in the right ear. The patient denied experiencing pain.

He also reported no comorbidities and no fixed medication regimens while declaring the history of surgical procedures, including adenotomy in childhood, left hip arthroscopy in 2018, and right knee arthroscopy in 2010.

The patient reported no sensitizations or allergies. The patient occasionally used alcohol and used to smoke about 5 pack-years while at college; currently non-smoking.

ENT examination of the nasopharynx revealed a nodular lesion covered with smooth mucosa located on the tubal ridge on the right side.

On 10 April 2025, the lesion was removed during an endoscopic procedure at the Department of Otorhinolaryngology of the A. Mielęcki Clinical Hospital of the Medical University of Silesia in Katowice. The tumor was removed in its entirety. No perioperative complications were encountered. Histopathological examination of specimen no. 50212 dated 18 April 2025 (right-sided tubal ridge tumor with tissue margins) revealed "(s)triated muscle fibers, mucosal fragments with scanty chronic inflammatory infiltrates, and unremarkable salivary glands along with fragments of cartilaginous tissue. Chondrocytes free of atypic features, irregularly distributed. Microscopic presentation consistent with chondroma".

After the discharge, the patient remains under close follow-up at the ENT outpatient clinic. He has reported a slight subjective improvement in hearing.

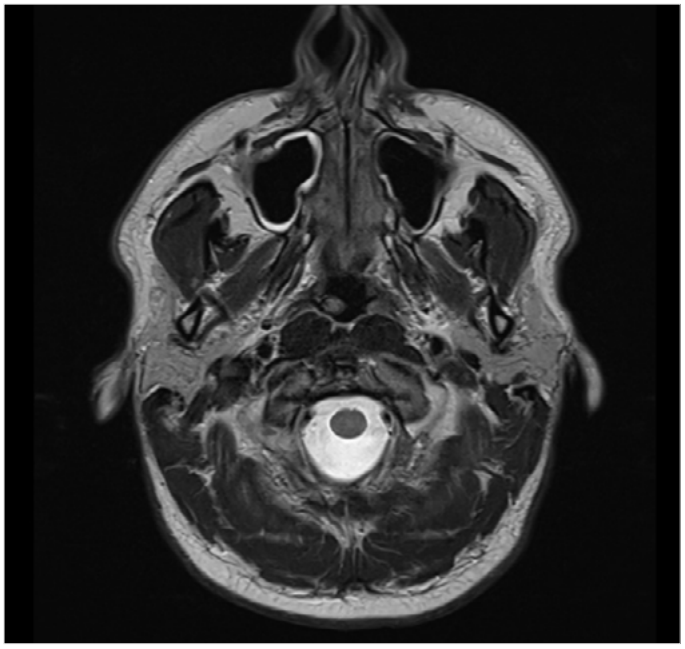


Fig. 1. Visible nasopharyngeal tumor in MRI examination – axial section.

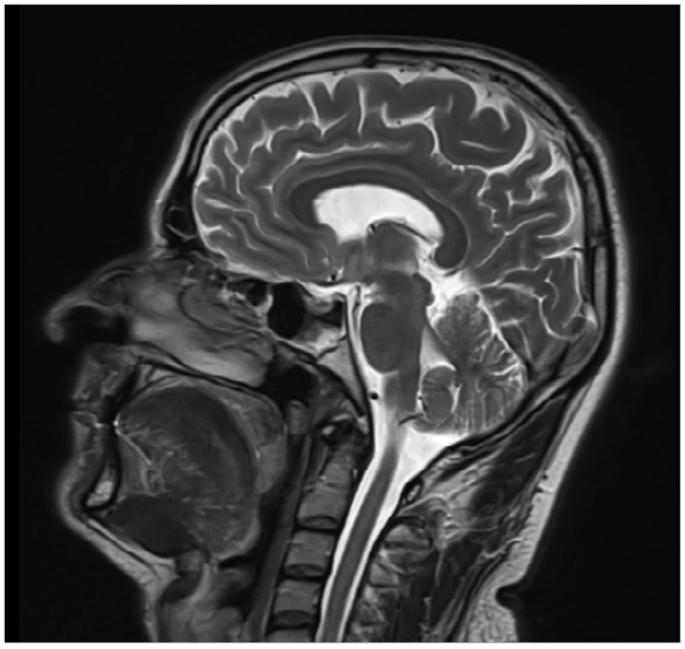


Fig. 2. Visible nasopharyngeal tumor in the patient's MRI examination – sagittal section.

DISCUSSION

Nasopharyngeal chondromas are extremely rare benign tumors with low proliferative potential. Symptoms such as nasal congestion, hearing loss, or the feeling of fullness in the ear are not very specific and may mimic inflammatory lesions, hypertrophy of the pharyngeal tonsil, or polyposis [1, 8].

As emphasized by Suh et al. [8], chondromas tend to remain undiagnosed for a long time due to the lack of characteristic symptoms and slow growth rate. In the presented case, hearing loss was the leading symptom, most likely due to the tumor's obstructing the Eustachian tube outlet.

The diagnosis is based on imaging studies, namely magnetic resonance imaging. MRI is characterized by its superior capability of visualizing the relationships between the tumor and the soft tissue structures and the skull base, while CT facilitates the detection of calcification and bone destruction [9]. In the case of tumors of the nasopharyngeal region, imaging along with physical examination is absolutely essential for proper identification of the location of the lesion and appropriate surgery planning [9].

Differential diagnosis should include chondrosarcoma, ossifying fibroma, chordoma, choanal polyps, and chondro-osseous respiratory epithelial adenomatoid hamartoma (COREAH) [6, 10, 11]. Histopathological examination is crucial for the diagnosis: chondromas are characterized by the presence of mature hyaline cartilage without atypical features [1, 8].

Reports have been published on the possibility of malignant transformation of chondroma into chondrosarcoma, although such cases are very rare [2]. In their systematic review of a total of 161 cases of sinus chondrosarcoma, Khan et al. pointed to the risk of progression from benign to malignant lesions [12]. In a review of 200 cases, Coca-Pelaz et al. showed that malignant transformation of benign chondromas occurs in about 10% of all chondromas in the head and neck region [13]. Similarly, Liu et al. confirmed 2 cases of malignant transformation in their study of 17 cases of skull base chondromas (11.7%) [14]. This risk, albeit small, warrants diagnostic caution and long-term follow-up after treatment.

The recommended treatment consists in complete resection of the tumor with a margin of healthy tissue. In recent years, endoscopic techniques have become the preferred management method due to their low invasiveness and good visibility of the surgical field [7, 8].

Postoperative surveillance should include:

- endoscopic examinations every 6 months for 2 years;
- follow-up MRI scans at months 6 and 12 and then once a year for the next 1–2 years [9, 12].

CONCLUSIONS

- Tubal ridge chondroma is a rare benign tumor that is difficult to diagnose on the basis of clinical symptoms alone.
- Diagnosis requires a combination of MRI/CT imaging and histopathological confirmation;
- Surgical treatment using endoscopic techniques is effective and safe;
- Due to the risk of recurrence and possible malignant transformation, continued ENT follow-up is necessary.

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