

Case Report

Hypoplasia of the maxillary, sphenoid and frontal sinus in the patient with nasopharyngeal branchial cyst: Case Report

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ABSTRACT

Cystic lesions of the nasopharynx are typically benign and often found incidentally. The authors report a case of nasopharyngeal branchial cyst in a patient with hypoplastic maxillary, sphenoid and frontal sinuses. The patient underwent transnasal endoscopic resection of the cyst. Results showed that in the management of nasopharyngeal branchial cyst it is important to clarify the anatomic details of the paranasal sinuses with Computed tomography (CT) scan respect to correct diagnosis and appropriate surgical planning. Nasopharyngeal branchial cysts and paranasal sinus hypoplasia may have the same developmental cause.

Keywords: Hypoplasia, branchial cyst, maxillary, sphenoid, frontal sinus.

INTRODUCTION

Cystic lesions of the nasopharynx usually found casually [1]. There is no specific microscopic feature that conclusively identifies them. However, the specific site in the nasopharynx can provide helpful clues [2]. Cysts arising from the nasopharynx may be midline or lateral based on their natural origin [3]. Differing from Tornwaldt cysts, nasopharyngeal branchial cysts present laterally and arise from the fossa of Rosenmuller and may track superiorly within the bony confines of the Eustachian tube [4]. Embryogenic cysts of the pharyngeal bursa and Rathke's pouch are usually located in the midline [2].

CASE REPORT

A 35-year-old male was referred because of snoring, mouth breathing and intermittent right side nasal obstruction since childhood. Nasal endoscopy revealed a well-circumscribed mass in the nasopharynx. The submucosal mass located in the right side of nasopharynx. It was attached to the

lateral nasopharyngeal wall. On palpation, the mass was cystic in its consistency. It was compressible with no extension into the nose and oropharynx. Otolaryngological examination showed normal appearance tympanic membrane with no middle ear effusion. The paranasal sinus CT scans showed a well-circumscribed low-density mass 1 cm in diameter in the nasopharynx at the right side and normal-appearing nasal septum and conchae. The notable finding was bilateral hypoplasia of maxillary, frontal and sphenoid sinuses (Figure 1). The patient underwent transnasal endoscopic resection of the mass. Histopathology revealed a squamous lined epithelial wall with lymphoid aggregation, which confirmed branchial cleft cyst. It has had no evidence of recurrence for 1 year following surgery (Figure 2).

DISCUSSION

The second branchial cleft accounts for 95% of branchial anomalies [5]. They can be termed cyst, sinus and fistula according to maintain their connection with skin or pharynx. Cyst is the most common among such abnormalities. It almost always present as a neck mass along with the anterior border

of sternocleidomastoid muscle [6]. Nasopharyngeal branchial cysts are uncommon. They are mostly asymptomatic and infrequently found during routine endoscopies and imaging studies. Rarely they may be the source for unexplained sinonasal symptoms, such as CSF rhinorrhea, visual disturbances and nasal obstruction [7].

The most common midline nasopharyngeal cysts are mucus retention cysts. They are distinguished from Tornwaldt cysts in that they originate superficial to the

pharyngobasilar fascia. Intra-adenoid cysts are an additional cause of midline acquired nasopharyngeal cysts. Branchiogenic cysts are the most common cause of lateral nasopharyngeal cysts [8]. They have been reported in only a limited number of literatures. Mucus retention cysts and Oncocytic cysts (Warthin's tumor) are additional rare causes of acquired lateral nasopharyngeal cysts [9].



Figure 1: bilateral hypoplasia of maxillary, frontal and sphenoid sinuses

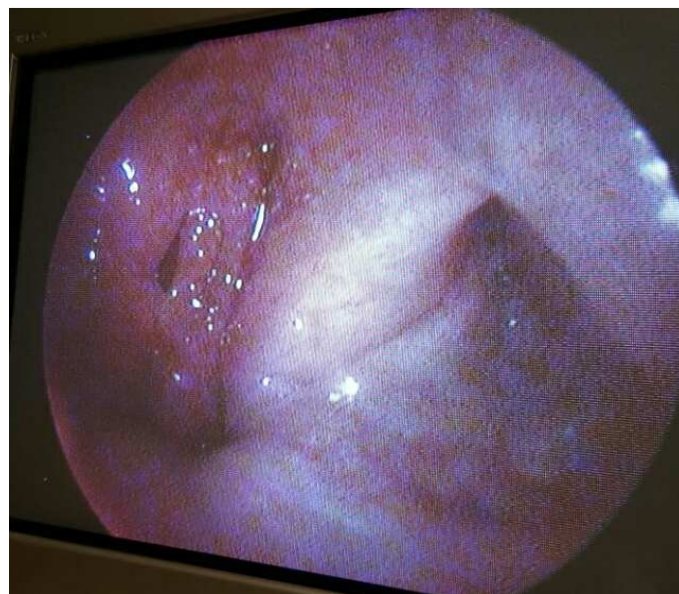


Figure 2: No evidence of recurrence for 1 years surgery

The association between nasopharyngeal branchialcysts with paranasalsinus hypoplasia is an interesting finding in these patients. Hypoplasia of the paranasal sinuses is a rare event that frequently involved The frontal and sphenoid sinuses [10-11].Hypoplasia of the maxillary sinus is rare than sphenoid and frontal sinuses that occurred because of the acquired or congenital causes. Among the acquired reasons Trauma, Thalassemia, cretinism, Wegener's granuloma (inflammatory osteitis) Neoplasms (that cause osteitis) can be mentioned.

On the other hand it can happen because of the congenital reason such as:

Arresting of the development because of infection, injuries and irradiation, Congenital first arch syndrome and Developmental anomalies such as craniosynostosis, osteodysplasia, and Down syndrome [12].

Development of paranasal sinuses begins in the 3rd week of gestation but their expansion continues after birth throughout early adulthood [13].The branchial arches develop between the fourth and seventh week of gestation and form the embryological precursors of the muscles, blood vessels, bones, cartilage and mucosal lining of the face, neck and pharynx [14]. synchronism of this two condition in our patient may comment a common pathology affect the fetus at the same time.

Management of bronchogenic nasopharyngeal cysts varied from a simple endonasal approach to powered instrument assisted marsupialization. Although Electivetransoral excision under general anesthesia is the treatment of choice[15]. Before surgery It is important to clarify the anatomic details of the paranasal sinuses with respect to correct diagnosis and appropriate surgical planning .Computed tomography (CT) scan is an excellent tool used for this purpose [16].

CONCLUSION

Although paranasal sinus hypoplasia and nasopharyngeal branchial cyst are reported in separate cases in the literature, to our knowledge there is no case similar to ours, with the sphenoid, maxillary and frontal sinus hypoplasia concomitant with nasopharyngealbranchialcyst. With the advent endoscopic technology and modern imaging techniques, nasopharyngeal cysts and paranasalsinus hypoplasia recognition is more common than previous times and appropriate

consideration is necessary. Because both conditions are rare diagnose requirement, a larger long-term study will be useful to assess this attitude.

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