J Korean Med Sci 2002; 17: 564-6
ISSN 1011-8934

A Case of Second Branchial Cleft Cyst with Oropharyngeal Presentation

Second branchial cleft cysts are the most common type of branchial abnormalities and usually found high in the neck. Oropharyngeal presence of branchial cleft cyst is very rare. We report a case of oropharyngeal branchial cleft cyst in 2-yr-old girl with about 1×1 cm sized cystic mass, which had not any specific symptom. It was removed completely under impression of mucocele and did not have tract-like structure. However, cyst had a squamous epithelium-lined wall with lymphoid aggregation in histopathologic study, which was characteristic finding of branchial cleft cyst. Patient discharged without any complication and there was no evidence of recurrence for 18 months follow-up. We review reported oropharyngeal or nasopharyngeal presentation of these cases in English literature and embryological explanation.

Key Words : *Branchial Region; Cysts; Oropharynx*

Moo-Jin Choo, Yong-Jin Kim, Hong-Ryul Jin

Department of Otolaryngology, Chungbuk National University Hospital, Cheongju, Korea

Received : 16 April 2001
Accepted : 21 August 2001

Address for correspondence
Moo-Jin Choo, M.D.
Department of Otolaryngology, Soonchunhyang University Hospital, 1174 Jung-dong, Wonmi-gu, Bucheon 420-021, Korea
Tel : +82.32-621-5437, Fax : +82.32-621-5016
E-mail : mjchoo@schbc.ac.kr

INTRODUCTION

Second branchial cleft cysts are the most common of the branchial anomalies and originate from the remnants of the cervical sinus of His and its duct during the differentiation of branchial apparatus. They are usually found at the junction of the lower and middle thirds of the anterior border of the sternocleidomastoid muscle as a cystic mass. We present a rare case of second branchial cleft cyst without sinus tract located in the oropharynx and review its embryological explanation.

CASE REPORT

A 2-yr-old girl had a left oropharyngeal mass, which was noticed about 1 yr before by her parents. The mass was located just medial to the posterior pilla and had no history of rupture or size change. Symptoms related to this mass were absent. Axial computerized tomography revealed a 1×1 cm cystic mass, which was not enhanced. Any structure related to the mass was not found (Fig. 1). We decided surgical removal under impression of mucocele or mucous retension cyst. The mass was well capsulated at the posterior pharyngeal wall and not attached to the posterior pilla or the palatine tonsil (Fig. 2). It was easily dissected at surgery and was excised completely without rupture. There was no evidence of tract. Histopathologic study revealed a squamous epithelium-lined cyst with lymphoid infiltration, consistent with a branchial cleft cyst (Fig. 3). Patient discharged without any complication and there was no evidence of recurrence for 18 months follow-up.

DISCUSSION

Branchial cleft remnant accounts for the majority of branchial cleft anomalies. Clinically they can present as different morphologic patterns of cyst, sinus, or fistula. A branchial cleft cyst can first come to clinical attention most commonly in the second through fourth decades of life, and is rare in the neonatal period (1). In contrast, a branchial sinus or fistula almost always presents in neonates or at early age (2).

Cystic type of these anomalies is common rather than fistula or sinus type. Cystic type can occur clinically from the first to forth branchial cleft. Cysts originating from the second branchial cleft are the most common among all of these. They are often infected after upper respiratory track infection and are found as rapidly expanding cystic mass on the neck. The cyst or fistula occurs from the tonsillar fossa to the cervical skin along the embryologic tract of the second branchial cleft. Fistula may have two openings. The internal opening may occur in the region of the inferior tonsillar fossa. The epithelium-lined embryologic tract passes inferiorly and medially between the internal and external carotid arteries superficial to the cranial nerve IX and XII. The external opening may locate the anterior cervical triangle along the anterior border of sternocleidomastoid muscle. Pus may drain from a draining sinus onto the skin and rarely into the pharynx through internal opening (3). Clinical symptoms vary

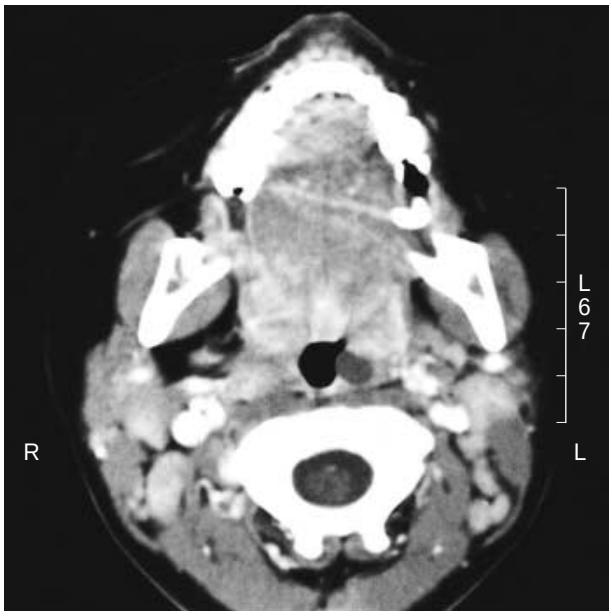

Fig. 1. Axial CT scan shows a cystic mass underneath the left palatine tonsil.

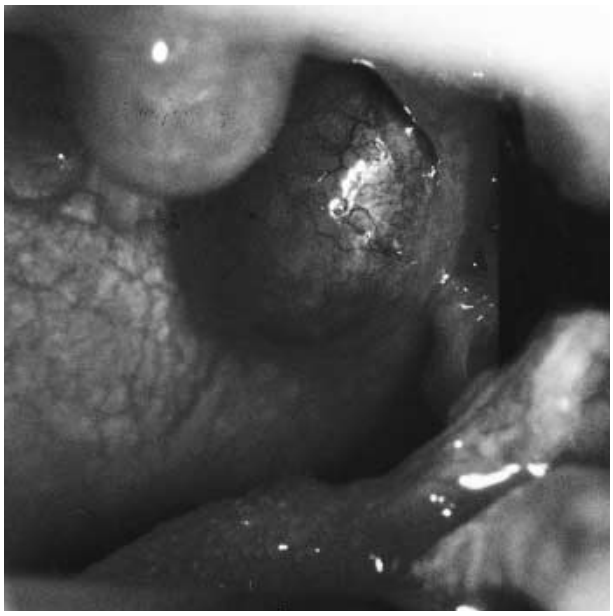

Fig. 2. Gross photo of the mass with retraction of the posterior pilla.

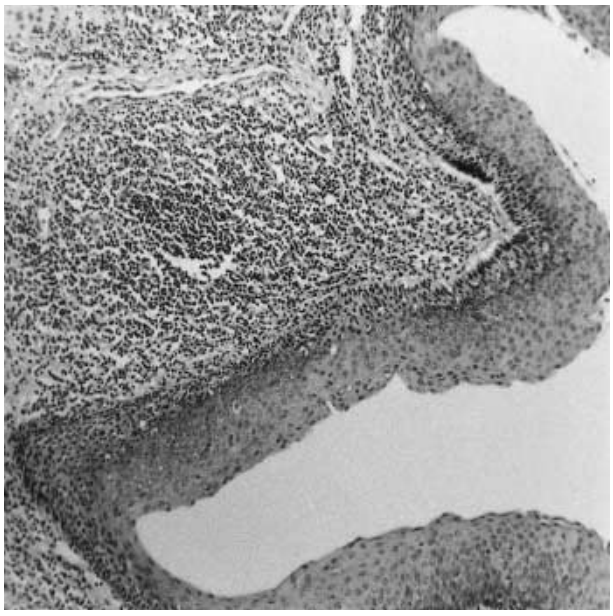

Fig. 3. Histopathology of the specimen shows squamous epithelium-lined cyst wall with subepithelial lymphoid follicle (Hematoxylin-eosin, ×200).

depending on the location of cyst.

True branchial cleft cyst is often lined with stratified squamous epithelium or ciliated columnar epithelium because it originates from the ectodermal side of the invagination of the cleft. The presence of lymphoid aggregates in the wall of the lesion is a frequent and typical characteristic to confirm. Keratin debris sometimes presents.

Pharyngeal presentation of branchial cleft cysts is very rare in English literature. In 1993, Thaler and colleagues reported a case of presenting as oropharyngeal cyst without sinus tract, which was very similar to our case (4). It was explained that the preserved branchial plate without mesodermic arch interposition or plate breakdown would allow ectodermic-endodermic apposition without a fistula into the oropharynx and an epithelial cyst could be just underneath the endothelium of the palatine tonsil. In addition, the second arch mesoderm must have grown only toward the third branchial arch. The present case also could be explained like aforementioned one. In adult cases with pharyngeal presentation, the disease is often initially diagnosed as parapharyngeal abscess (5).

The cyst could occur at the nasopharynx, which cause the initial proper diagnosis to be difficult. Papay and colleagues (6) have reported a case of nasopharyngeal branchial cleft cyst and explained the embryological origin as the formation from the most lateral extension of the second branchial apparatus.

Mucous retension cyst, lymphangioma, and hemangioma must be pathologically differentiated in the oropharyngeal cystic lesions around the tonsillar fossa. Mucous retension cyst does not have epithelium-lined cyst wall in histopathologic study.

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