

# A case of Oropharyngeal Branchial Cleft Cyst

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**Abstract-** Second branchial cleft cysts are most common type of branchial abnormalities and usually found high in the neck. Oropharyngeal presence of a Branchial cleft cyst is very rare. 22year old male presented with intraoral swelling since 3 year with history of difficulty in breathing/ difficulty in swallowing/ change in voice since 1 week. Video endoscopy with 70degree endoscope Pedunculated cystic mass, 10 x 3 cm arising from right lateral wall of pharynx, extending superiorly behind the soft palate and inferiorly reaching up to arytenoids. CECT neck showed soft cystic swelling arising from the right lateral wall of pharynx extending posteriorly above soft palate, inferiorly reaching up to arytenoids. Electrocautery and co-ablation assisted complete excision of pedunculated soft cystic oropharyngeal mass was achieved via Intraoral trans-palatine approach. Intraoperatively soft cystic swelling of 10\*3 cm with peduncle near supra-tonsillar region was noted. Histopathological report findings were suggestive of Branchial cleft cyst. Having reviewed the literature, it seems to be that this is the second case to be reported of a multilocular branchial cleft cyst, excised of this size, from the oropharyngeal area in an adult.<sup>7</sup>

**Index Terms:** branchial cleft cyst, intraoral swelling.

## INTRODUCTION

Branchial cleft cyst appears as a developmental failure of branchial apparatus. Persistence of branchial apparatus remnants will result in anomalies such as cysts, sinuses, fistulas, or an island of cartilage. Second branchial cleft cysts (BCC) are the most common branchial abnormalities. Branchial cleft cyst often manifests in young adult with peak incidence in third decade of life. Approximately 80% of branchial cleft anomalies present as a cyst and about 95% are formed from the region of the second branchial arch. The remaining 5% arise from the regions of the first, third, or fourth arches. A second Branchial Cleft Cyst (BCC) typically presents as a painless, mobile, and fluctuant mass located along the anterior border of The Sternocleidomastoid Muscle (SCM), usually just above the clavicle. Approximately 97% to 98% of the lesions are unilateral.

## CASE REPORT

22year old male patient reported with right oropharyngeal swelling since 3 years with history of difficulty in breathing/ dysphagia/ change in voice since 1 week. Videoendoscopy with 70degree rigid endoscope showed Pedunculated cystic mass, 10 x 3 cm arising from right lateral wall of pharynx, extending superiorly behind the soft palate and inferiorly reaching up to arytenoids.



Fig 1. Videoendoscope image of oropharynx

CECT neck showed a non enhancing well circumscribed cystic lesion arising from the right posterolateral wall of oropharynx extending just above the level of soft palate superiorly and to the level of aryepiglottic fold inferiorly.



Fig 2. Cect neck – sagittal section

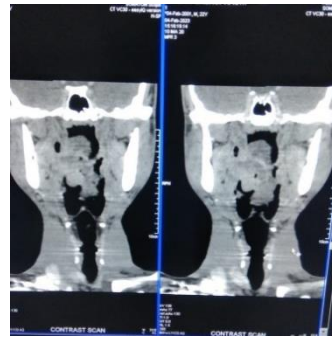


Fig 3. Cect neck – coronal section

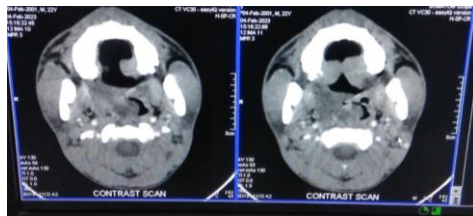


Fig 4. Cect neck – axial section

Patient underwent Electrocautery and co-ablation assisted complete excision of pedunculated soft cystic oropharyngeal mass via Intraoral trans-palatine approach under general anaesthesia. Patient underwent tonsillectomy in same sitting. Written and informed consent was taken before surgery. Excised specimens were sent for histopathological examination. Patient surgery was uneventful and showed no recurrence in follow up till 6month duration. Histopathological examination report showed Cysts of varying size lined by pseudo-stratified ciliated columnar epithelium & stratified squamous keratinized epithelium, Sub-epithelium showed lobules of benign salivary glands & numerous lymphoid follicles, features were suggestive of branchial cleft cyst. Section studied from right tonsil showed follicular hyperplasia of lymphoid tissue with an active germinal center, suggestive of chronic parenchymatous tonsillitis.



Fig 5. Excised specimen of right oropharyngeal BCC



Fig 6. Excised specimen of right oropharyngeal BCC

## DISCUSSION

Branchial cleft anomalies present as cyst, sinus and fistulas, in which, second branchial cleft cyst is the most common occurrence. Several theories have been proposed for its origin but the most accepted theory is incomplete evolution of branchial apparatus.



Fig 7. Post operative day 07

Branchial cleft abnormalities present as cleft, sinus, fistula etc. More than 90 % Branchial cleft cyst arise from second branchial cleft. Second branchial cleft usually present as solitary neck swelling. Contrary to this, in our case patient reported with oropharyngeal swelling. Only one more case of oropharyngeal BCC has been noted in literature so far.<sup>7</sup> 90% of the Branchial cleft cysts are lined by stratified squamous epithelium except for 10% such as this case have respiratory epithelium lining. Oropharyngeal swelling can have differential diagnosis such as lymphangioma, vascular tumor, ectopic salivary tissue, lymphangitis etc. Thus it is important to rule out other causes for oropharyngeal swelling to avoid any misdiagnosis. Unusual presentation as in this case can add difficulty in diagnosis accurately. Videoendoscopic examination of oropharynx, CECT/MRI neck can help in diagnosis and assessing the swelling. Histopathological examination plays a vital role in confirming the diagnosis. CECT/MRI neck have role in assessing the nature, extent of swelling and planning the management. The definitive management for Branchial cleft cyst is surgery, alternative method can be sclerotherapy. Most common complications following surgery is recurrence.

## CONCLUSION

Oropharyngeal presentation of branchial cleft cyst is rare, this case being the second to be reported.<sup>7</sup> Other differential diagnosis should be ruled out while dealing with oropharyngeal swelling. CT/MRI can help in diagnosis but Histopathological examination plays a vital role in confirming the diagnosis. Surgery is the definitive management for Branchial cleft cyst.

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