



ORIGINAL RESEARCH PAPER

Otorhinolaryngology

BRANCHIAL CYST – A RARE CASE REPORT

KEY WORDS:

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ABSTRACT Branchial fistulas and cysts are uncommon anomalies of embryonic development that involve soft tissues of the neck. Branchial cleft cysts are benign lesions caused by anomalous development of the branchial cleft. Cases that arise in the lateral neck region are often misdiagnosed, resulting initially in inappropriate management.

INTRODUCTION

Branchial fistulas and cysts are uncommon anomalies of embryonic development that involve soft tissues of the neck. A **branchial cleft cyst** or simply **branchial cyst** is a cyst as a swelling in the upper part of neck anterior to sternocleidomastoid. The cause is usually a developmental abnormality arising in the early prenatal period, typically failure of obliteration of the second, third, and fourth branchial cleft, i.e. failure of fusion of the second branchial arches and epicardial ridge in lower part of the neck. Branchial cleft cysts account for almost 20% of neck masses in children. Less commonly, the cysts can develop from the first, third, or fourth clefts, and their location and the location of associated fistulas differs accordingly.

Case Report

A 12 yr old child presented to ENT OPD with swelling on left side of neck since 4 years . According to his mother the swelling was first noted when the child was 8 yrs old. The swelling was solitary and on the left side of the neck. The swelling was initially small in size comparable to the size of pea and then gradually progressed to the size of orange. The swelling was not associated with pain. There were no compressive symptoms. The child also complained of low grade fever and dry cough since 7 days.

On examination a solitary swelling was seen on the left side of neck. The swelling measured 4*3 cm in size. The swelling was soft cystic in consistency and was present in carotid triangle. Transillumination test was positive when performed in a dark room. Skin above the swelling was not adherent .There was no tenderness and local rise of temperature.

Ultrasound neck was done which demonstrated a well circumscribed , homogenously hypoechoic cyst with internal debris, below the left mandibular angle anterior to the carotid bifurcation measuring 2.6 cm *4.7 cm*3.6 cm in size. Excision of the cyst was done and the specimen was sent for histopathology which confirmed the presence of Branchial Cyst.

DISCUSSION

Branchial cyst are heterogeneous congenital malformations

that form secondary to incomplete closure of pharyngeal clefts and pouches, which start to develop during the fourth week of gestation¹. They are the second most common etiology of a congenital neck mass The term branchial cyst was first used by Ascherson in 1832.

Various Theories Explain Its Origin²

- 1. Branchial Apparatus Theory** – Branchial cysts are remnants of pharyngeal pouches or branchial clefts or a fusion of the two. However, this does not explain the incidence in young adults instead of at birth.
- 2. Cervical Sinus Theory** – These are formed from the remains of the cervical sinus of His, which is formed by the growing down of the second arch and its fusion with the fifth arch.
- 3. Thymopharyngeal Duct Theory** – These cysts are remnants of original connection between thymus and third branchial pouch.
- 4. Inclusion Theory** – These are epithelial inclusions within a lymph node.

The diagnosis of branchial cleft cysts is typically done clinically due to their relatively consistent location in the neck, typically anterior to the sternocleidomastoid muscle³. For masses presenting in adulthood, the presumption should be a malignancy until proven otherwise, since carcinomas of the tonsil, tongue base and thyroid may all present as cystic masses of the neck⁴. Unlike a thyroglossal duct cyst, when swallowing, the mass should not move up or down.

While branchial cysts are present at birth, they may remain unnoticed and asymptomatic for years. By the time surgical excision is considered, nearly one third of cysts have developed a prior infection⁵. During infection, the cysts may become inflamed and enlarged with associated symptoms of fever and pain. An incomplete resection of the cyst may lead to recurrence. In some instances, branchial cleft cysts may develop within a constrained deep neck space, which may lead to cranial nerve (CN) neuropathy⁶.

CONCLUSION

Branchial cleft cysts are the second most common congenital neck mass. They may develop within small-volume neck

spaces and cause cranial nerve palsies secondary to mass effect. Left untreated, branchial cleft cysts may increase in size enough to cause local vascular compression and secondary hypertension. Surgical treatment to relieve compression may improve blood pressure in conjunction with appropriate medical management.

Images With Legends



Preoperative Picture Showing Left Side Branchial Cyst

****F.N.A.C***

SITE: F.N.A.C from:-left cervical region swelling
 Q/A:- thin fluid with whitish particulate material obtained

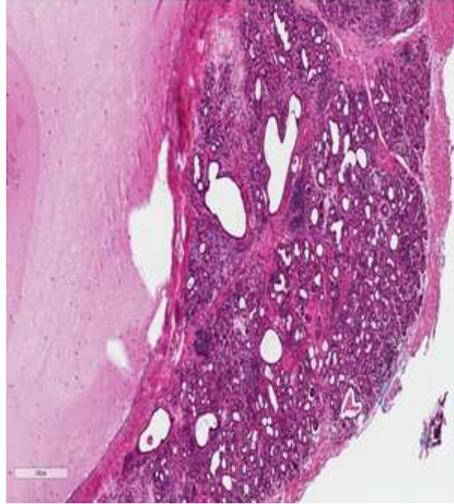
MICROSCOPIC EXAMINATION:- Cytosmears are of adequate cellular yield consisting of predominantly of anucleated and nucleated keratinising squamous cells, squamous epithelial cells with variable maturity, neutrophils in background of amorphous debris. No epitheloid cell granulomas, no langhans giant cells, no atypia is seen.

IMPRESSION:- s/o branchial cyst

Advice:- Clinicoradiological correlation, biopsy for confirmation



Gross Specimen



Histopathology Showing Cyst Lined With Squamous As Well As Columnar Ciliated Epithelium.

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