



## A CASE REPORT OF BRANCHIAL CYST

### ENT

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### ABSTRACT

The poster is a case report of a 39 year old male patient presenting with swelling over right lower jaw which was then diagnosed to be a branchial cyst and was excised. Branchial cleft cysts are congenital anomalies formed due to incomplete involution of branchial cleft structures. Other branchial cleft anomalies include sinus and fistula. Diagnosis is done on the basis of pathological and radiological investigation and the cyst is then operated on and excised. The aim of this case report is to study a case of branchial cyst including its clinical presentation, investigation, diagnosis, treatment and post operative status of the patient.

### KEYWORDS

Branchial cyst, lower jaw and neck swelling, congenital anomaly

### INTRODUCTION

Branchial cleft cyst is a congenital anomaly formed due to failure of obliteration of second, third and fourth branchial cleft.[1][2][13] The most common type of branchial cleft cyst arises from the second cleft.[1][3][13] As this is a congenital anomaly it is present at birth, though may not be obvious or symptomatic until later.[1][2][13] Branchial anomalies account for up to 17 percent of all paediatric cervical masses.[4] They often manifest in young adults with an incidence peak in the third decade. [4] Branchial cleft anomalies present in one of three forms: cysts, sinuses or fistulae.[3][4] Cysts have an epithelial lining without external openings.[3][5][12]

Branchial cleft anomalies form due to the incomplete involution of branchial cleft structures. If the clefts do not involute, or incompletely involute, these pathological remnants will form cysts, sinuses, or fistulae in predictable locations according to their branchial cleft of origin.[6][7][8][9]

### AIM & OBJECTIVE

- To study a case of Branchial cyst
- To study the investigations and treatment of branchial cyst

### CASE HISTORY

A case report of a 39 year old male patient working as a factory labourer. Patient presented with swelling over right side of neck with duration of 1 month which was insidious in onset and gradually progressive. Associated with local site pain and on examination, a swelling of 5cm×4cm extending superiorly up to infraaural region with inferior margin just 2 cm above clavicle and was soft, non tender, non fluctuant on palpation.

- Ear – Both tympanic membrane intact
- Nose – NAD
- Oral cavity- Stained teeth



### Investigation

- FNAC report: smears show abundant benign squamous epithelial cells and few anucleated squamous cells, suggestive of Branchial cleft cyst most likely

- USG suggestive of benign lesion, Differential diagnosis includes: 1) Branchial cleft cyst 2) Epidermoid cyst
- CECT Neck suggestive of well defined non-invasive, non enhancing cystic lesion with enhancing margins in right carotid space p/o Benign cystic lesion in right carotid space (likely diagnosis of 2nd branchial cleft cyst) with early infective changes and lymphadenopathy (Bailey type II)
- ROUTINE BLOOD INVESTIGATIONS

### Operative Procedure

Patient was taken under general anaesthesia in supine position. The procedure is initiated by a transverse cervical incision made on the neck skin crest overlying the cyst. The marginal branch of facial nerve, vagus, accessory and hypoglossal nerves are identified and preserved. The cyst is excised completely. 7.5×4.5×1 cm sized creamish, brownish soft to firm cystic tissue was excised. The excised cyst was sent for histopathological study. Suturing was done over the excised part.



### Post Operative

Post operative histopathology report shows histomorphology consistent with clinical diagnosis of branchial cyst. The patient recovered well and had no recurrence at 1-year of follow up.



### DISCUSSION

Branchial cleft cyst is a common cause of soft tissue swelling in the neck of a young adult. [10] 60 percent of branchial cysts are located in the

upper third of neck, at the anterior margin of sternocleidomastoid muscle although they have been reported in any site of neck or parotid gland.[4] They generally occur unilaterally and are typically seen in the lateral aspect of the neck. It is clinically apparent in late childhood or early adulthood. [10] In older adults with this presentation, it is important to exclude metastatic lymphadenopathy, lymphoma or tuberculosis.[10][12] Etiology of branchial cleft cyst is controversial. There are four main theories of origin of branchial cyst postulated till now. These include incomplete obliteration of branchial mucosa, persistence of vestiges of the pre-cervical sinus, thymo-pharyngeal ductal origin and cystic lymph node origin.[11] The branchial apparatus that begins to form in the second week of fetal life and is completed by the sixth or seventh week; which is probably the structure most widely believed to be the source of branchial cyst. [11][13] Ascherson in 1832 suggested that branchial cleft cyst arises from incomplete obliteration of branchial cleft mucosa, which remains dormant until stimulated to grow later in life, resulting in cyst formation.[11]

## CONCLUSION

A CT scan or an MRI scan will show a picture of a fluid-filled cyst and will outline its size and anatomic relationships. The CT scan will also show the characteristic thick wall of a branchial cyst.[7][12] There is no specific laboratory test needed for evaluation.[10] Fine-needle aspiration is helpful to distinguish a branchial cleft cyst from malignant neoplasm.[8][9] Branchial cysts are excised and their residual tract ligated. [8] Branchial cysts are permanently eradicated by surgical excision. Rarely, a recurrence or carcinoma within or associated with the cyst may develop.[7][8]

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