



FIRST BRANCHIAL CLEFT CYST: A CASE REPORT

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ABSTRACT **Introduction:** Branchial cleft cysts are congenital anomalies which usually present in the age group of 5-10 years but in some cases might present later in life. These anomalies usually arise from 2nd cleft but rarely have seen to arise from 1st, 3rd or 4th cleft in the form of cyst, sinuses or fistulae. A case of Branchial Cleft cyst in a young male over right pre auricular area treated successfully in Goa Medical College is reported. Case-A 36 year old male presented with a swelling anterior to the tragus of right ear. The swelling had gradually increased in size over the period of 5 years and was measuring 2.5 x 2 cm with a cystic consistency at the time of presentation. The swelling was non tender with no discharging sinus around the swelling. Radiological investigations revealed a well defined cystic swelling in close relation with superficial lobe of right parotid gland measuring 2.2 x 2.0 x 3.0 cm (AP x TR x SI) in size. Patient underwent a surgery for excision of the branchial cyst. On follow up, diagnosis of branchial cleft cyst was confirmed histopathologically.

KEYWORDS : Branchial Cleft Cyst, Anomalies, Tragus, Congenital, Malformations.

INTRODUCTION

Branchial cleft anomalies are congenital malformations with which patients usually present at an early age group of about 5 to 10 years. Occasionally patients can present in later age group if it is asymptomatic. Branchial cleft anomalies arise from first to fourth clefts but most commonly arises from second branchial cleft which constitutes to about 90 - 95% of cases. Infrequently the anomalies are seen to arise from 1st which makes up about 5-10% of the total cases and very rarely might originate from 3rd or 4th cleft. The clinical presentation of these remnants range from continuous mucoid discharging sinus, fistula, infected cystic masses, recurrent tender swellings in the neck etc. Branchial remnants may also be palpable as cartilaginous masses corresponding to the fistulas track which might be associated with dermal pits and skin tags.

Case Report

A 36 year old male was admitted in our department with a swelling over right preauricular area. Patient first noticed the swelling about 5 years back which was small to begin with but had gradually increased in size. There was no prior history of trauma at the site of swelling. The patient did not have any history of mucoid or pus discharge. Patient did not give any history of recurrent respiratory infections or any ear complaints. There was no significant past history. Patient did not have any comorbidities like Diabetes Mellitus or Hypertension. No significant family history was noted in the patient



Clinical And Radiological Images Depicting Firrst Branchial Cleft Cyst.

General Examination of the patient was unremarkable. Systemic examination was within normal limits. On local examination there was a swelling measuring 2.5 x 2.0cm in the right preauricular area. There was no punctum or discharging sinus seen on inspection. It was non tender with no signs of surrounding inflammation. The swelling was cystic in consistency. ENT examination did not disclose any significant finding.

Soft tissue USG revealed a cystic lesion in right parotid region, in the

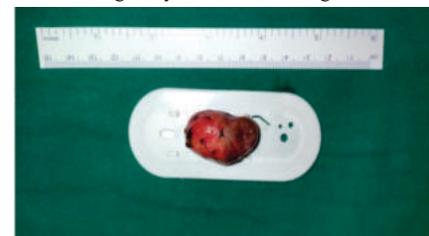
subcutaneous plane measuring 2.3 x 1.2 cm with few internal echoes. CT scan revealed a well defined rounded cystic lesion in close relation to the superficial lobe of the right parotid gland measuring 2.2 x 2.0 x 3.0 (AP x TR x SI) in size. Laterally it was seen to extend into adjacent subcutaneous fat reaching upto the skin producing a bulge. No extension was noted in the deep lobe of the parotid gland. The nasopharynx, oropharynx and hypopharynx were normal. All blood parameters were within normal limits. Radiological investigations were suggestive of first branchial cleft cyst. FNAC showed amorphous material with cholesterol crystals in it.

Patient underwent a surgery under general anaesthesia for excision of the branchial cleft cyst. Modified blaire incision was used. Intraoperatively a cystic swelling was noted in the right preauricular area measuring about 2.2 x 1.5 cm in size in the subcutaneous plane. There was no extension into the parotid gland. The cystic swelling was excised in total as shown in the image.



Intraoperative Picture Of Branchial Cleft Cyst

The gross examination of the specimen revealed a smooth contour. Post operative period was uneventful and the patient was discharged the next day after the surgery. On follow up, histopathology confirmed the diagnosis of branchial cleft cyst. On subsequent follow up upto 3 months patient did not get any recurrent swelling at the same site.



Branchial Cleft Cyst Specimen

DISCUSSION

Branchial cleft cysts are congenital epithelial cysts that are usually

benign in nature. Embryologically these structures are derived from six pairs of branchial arches and their intervening clefts and the pouches. Congenital malformations result from failure of these structures to regress, persisting in aberrant locations. Branchial cysts have anastomosed squamous epithelial lining without any external opening and therefore might remain asymptomatic for a long time. Branchial sinus track might be communicating externally to the skin or internally to the larynx or pharynx wherein the internal opening will be seen on endoscopy. Branchial cleft fistulas are true communications which course through the parotid gland, deep or through branches of facial nerve and end in the external auditory canal. Frequently, the fistula penetrates the platysma, ascends along the carotid sheath to the level of hyoid bone and turns medially to extend between the carotid artery bifurcations.

First branchial cleft cysts comprise about 5% to 10% of all branchial cleft cysts. In the literature, two subtypes are mentioned within the first branchial cleft cysts category. Work's type I first branchial cleft cyst presents as a preauricular cystic swelling. There is due to duplication of the external auditory canal which is comprised of ectodermal elements only. The tract of the type I cleft passes lateral to facial nerve, parallel to the external auditory canal and ends in the mesotympanum. Work's type II branchial cleft cyst is usually found along the angle of the mandible, preauricular area or in the submandibular area. Fifty-seven percent of type II first branchial cleft cysts pass laterally to the facial nerve, while 30% of them pass medially. These cysts frequently end within or near the external auditory canal.

Second branchial cleft cysts are the most common type and comprise up to 95% of all branchial cleft cysts. Second branchial cleft cysts run between internal and external carotid arteries, pass deep to the facial nerve, superficial to glossopharyngeal and hypoglossal nerves, and end internally in the tonsillar fossa if there is an associated sinus. Third branchial cleft cyst is more commonly found on the left side in the lower portion of the anterior neck whereas fourth branchial cleft cyst typically presents as a low anterior neck mass, usually beneath the platysma and is anterior to the sternocleidomastoid muscle.

The diagnosis of the branchial cleft cyst is made mainly depending on thorough clinical examination. Radiological investigations play a major role in confirming the extent of the swelling.

Complete surgical excision remains as the mainstay and definitive treatment in branchial cleft cyst. Medical management do not have any role in the management of the cyst. The aim is to surgically excise the swelling in total to prevent any spillage of the contents of the cyst.

CONCLUSION

The branchial cleft cyst is considered to arise from remnants of the embryonic branchial arches and because lymphoid tissue is found in the cyst wall, it also is known as a **cervical lymphoepithelial cyst**. Early diagnosis and surgical excision is essential to prevent any complication due to the cysts. Close follow up should be kept to see for any recurrence in these cases.

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