



CASE REPORT OF SECOND BRANCHIAL CYST IN 49 YEAR OLD FEMALE

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CASE REPORT

A 49 year old female patient presented to general surgery department with chief complain of swelling over right submandibular region, along the anterior surface of sternocleidomastoid muscle for 3 months which was nontraumatic , afebrile , painless, gradually progressive in size with no change in voice and difficulty in swallowing.

Physical examination: revealed single 2×2 cm sized well defined, nontender, smooth cystic swelling present in right anterior triangle of neck with no active discharge with no movement on deglutition and protrusion of tongue and no history of cough, fever, weightloss, anorexia with no significant past history.

USG Local part : 2.9×3.1×2.1cm sized well defined oval anechoic cystic lesion noted in Right submandibular region with no other evident abnormalitis.

CT scan Local part: 20×23×22 mm sized well defined non enhancing cystic lesion (HU30 to 40) noted anterior to Right sternocleidomastoid near angle of mandible in Right anterior carotid and submandibular space with minimally enhancing thin peripheral wall abutting posteriorly Right internal jugular vein, Medially Right internal carotid artery and external carotid artery with preserved fat plane, Anteroinferiorly Right medial pterygoid muscle and posterior aspect of Right submandibular gland with loss of fat plane. Few subcentimetric homogenously enhancing Lymph nodes in Right level 1b and bilateral level 2,3,4. with inference being Right Branchial cyst.

FNAC : Branchial Cyst . ADV: Biopsy.

Excision biopsy was planned and cyst sent for Histopathological examination and report shows cystic swelling lined with pseudostratified ciliated columnar epithelium. Walls of cyst shows fibrocartilagenous and fibrofatty tissues with congested blood vessels and scanty lymphoid aggregates.

Patient was discharged on second postoperative day and doing well in Follow up.

DISCUSSION:

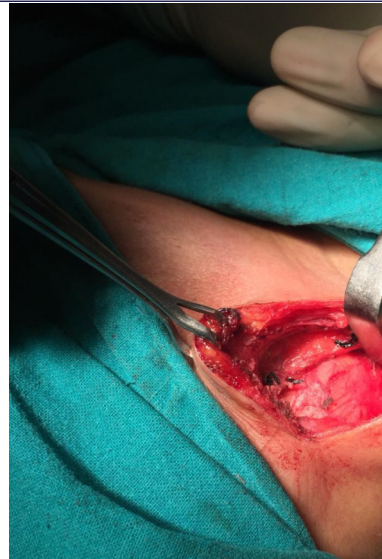
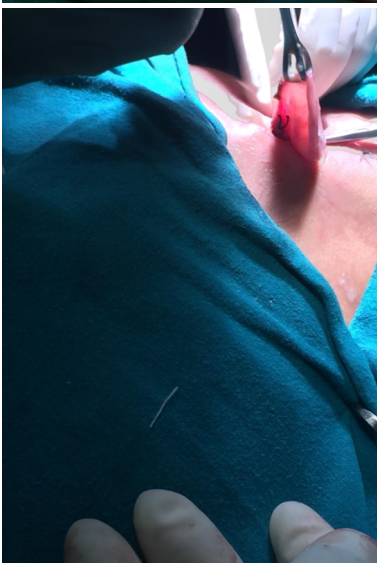
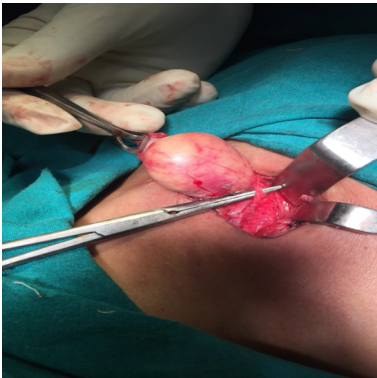
The mature structures of the head and neck are embryologically derived from six pairs of branchial arches, their intervening clefts externally, and pouches internally. Congenital cysts, sinuses, or fistulas result from failure of these structures to regress, persisting in an aberrant location. In children, fistulas are more common than

external sinuses, which are more common than cysts. In adults, cysts predominate(5). Overall cyst predominates fistula and sinus. Ninety-five percent of branchial cleft cysts derive from the remnant of the second branchial cleft(1,2). The rest arises from remnant of other branchial clefts. The maldevelopment appears to be in the branchial groove rather than the branchial cleft. By definition, branchial remnants are present at the time of birth, although they may not become clinically evident until later in life⁵ Such cysts are found more commonly in females and usually occur in the 2nd or 3rd decade of life³ and mostly suspected in all the cystic swellings of the neck except the median ones(3). Classically they are located along the anterior border of upper and lower third of sternocleidomastoid muscle. Other sites like posterior triangle(3), salivary gland(4), oral cavity, thyroid gland, mediastinum and pancreas have also been described. Due to the variability of the position King suggested that any cyst arising outside the midline, with the histological features as above should be regarded as a lymphoepithelial or a branchial cyst . Clinical signs and symptoms may vary in accordance to distant inflammatory processes such as upper respiratory or dental infection resulting in sudden swelling, pain, difficulty in swallowing, hoarseness, sore throat, and fluctuation in size. Complete surgical removal remains the only acceptable form of treatment(3).

- Embryological derivative of branchial cleft The first branchial cleft normally gives rise to the eustachian tube, tympanic cavity, and mastoid antrum and contributes to the formation of the tympanic membrane. It is the only cleft to contribute to an adult structure, the external auditory canal. The second, third, and fourth branchial clefts are part of an ectodermally lined depression known as the cervical sinus of His. As the second and fifth branchial clefts merge with each other, this cervical sinus is obliterated. The second branchial pouch, lined by endoderm, gives rise to the palatine tonsil and tonsillar fossa. The third branchial pouch forms the inferior parathyroid gland, thymus, and pyriform sinus; the fourth branchial pouch leads to the formation of the superior parathyroid gland and apex of the pyriform sinus. Location of these remnants dictates their embryological origin and guides the subsequent operative approach. Failure can result in incomplete resection or injury to adjacent structures.

CONCLUSION:

Branchial cyst should be kept in mind as differential diagnosis in a non transilluminant, cystic swelling of the neck if it is not moving with protrusion of the tongue or with deglutination



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