

Branchial Cleft Cyst - A Rare Presentation

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Abstract :

The objective of this study is to present the case report of a three year old male with branchial cyst in the right paramedian region of two months duration. The swelling was found to be non tender and not mobile on deglutition. Pre-operative FNAC report suggested thyroglossal duct cyst and smears were negative for malignant cells. USG neck suggested thyroglossal duct cyst with internal haemorrhage or previous infection. The cyst was surgically excised and sent for histopathological examination . Histopathological examination report was confirmed to be branchial cleft cyst. Branchial cleft cyst usually present in the lateral side of the neck along the anterior border of sternocleidomastoid muscle . This is a rare case report of a branchial cleft cyst in the right para median position.

Key words: Thyroglossal duct cyst , Branchial cleft cyst.

Introduction:

Swellings in the neck are a common problem in children. Branchial cleft cyst is a developmental cyst that has a controversial pathogenesis. The term "branchial cleft cyst" refers to the lesions which can be considered synonymous with the cervical lymphoepithelial cyst.¹⁻⁵

Of the congenital masses related to embryonic remnants, approximately 70% are thyroglossal duct sinuses and cysts, 25% are branchial cysts and sinuses, and 5% are cystic hygromas.⁶ Branchial cyst usually occur on the lateral aspect of the neck in relation to the sternocleidomastoid muscle. We present a rare case of right paramedian branchial cyst.

Case Report :

A three year old male reported to our hospital with a swelling on the right side. Swelling was insidious in onset and gradually progressed to the present size of 3X2 cms. The swelling was not associated with pain, change in voice or difficulty in breathing or deglutition. (Fig-1) There was no history of similar swelling elsewhere in the body.

On general examination the patient was healthy, afebrile and well nourished. There was no lymphadenopathy. On examination an ovoid solitary swelling with well defined margins was observed. Swelling was situated in the right paramedian position. It was around 1cm above the medial end of clavicle.

The swelling did not move with deglutition or protrusion of tongue. Transillumination test was found to be

negative. On palpation there was no local rise of temperature or tenderness. The swelling was soft in consistency non pulsatile and movable in all directions. Skin over the swelling was free and normal. Examination of nose, pharynx and larynx demonstrated no abnormality. Extra-oral and intra-oral examination revealed no significant finding. Radiographs of anterior and lateral neck revealed no abnormality.

USG neck showed an anechoic cystic lesion measuring 2x1 cm in the right paramedian position just above the thyroid with internal echoes, septation and debris. The thyroid gland appeared normal and there was no evidence of cervical lymphadenopathy. The submandibular, parotid and sublingual glands were of normal shape and size. Carotid artery and internal jugular vein appear normal.

FNAC report showed RBC's, foam cells and occasional small epithelial cells. Malignant cells were not seen . FNAC suggested the possibility of a thyroglossal cyst.

Surgical excision of the cyst was planned. (Fig-2) Transverse incision line was marked just below the swelling. Incision was placed and the cyst was identified and found to be biloculated. One locule was found superficial to the strap muscles, superior to thyroid gland, other locule was found deep to the submandibular gland. The two locules were intercommunicating. There was no invasion into the adjacent vital structures such as the carotid vessels and internal jugular vein. The cyst was found to contain amber coloured fluid. The cyst was excised in toto by blunt dissection. The surgical wound was sutured in layers.

Specimen was sent for histopathological examination.

Figure 3 shows lymphoid aggregates lined by epithelium at various places; the features are suggestive of branchial

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cleft cyst. S, lining of stratified squamous epithelium; I, free lymphoid cells; a, lymphoid aggregates in band-like or follicular pattern. Patient was followed up for two years and no evidence of recurrence was found.

Discussion:

The branchial apparatus develops during the second and sixth weeks of fetal life. The second arch extends down the neck (as the platysma) to overlap the second, third and fourth branchial clefts. The second, third and fourth branchial clefts merge to form the sinus of His, which will normally become involuted. When a branchial cleft is not properly involuted, a branchial cleft cyst forms. The second branchial cleft cyst is found along the anterior surface of the sternocleidomastoid muscle, lateral to the carotid space and posterior to the submandibular gland at the level of the hyoid bone.

The clinical differential diagnosis of branchial cleft cyst includes odontogenic infection, parotid swelling, tuberculous lymphadenitis, lipoma, cystic hygroma, carotid body tumours, thyroglossal duct cysts, suppurative lymphadenitis, branchial fistulas or sinus, dermoid cysts, neurofibroma, haemangioma, lymphangioma, teratoma, ectopic salivary tissue, pharyngeal diverticulum, laryngocele and plunging ranula.

Surgical excision of the branchial cleft cyst is the treatment of choice and is considered definitive. Complications of surgical treatment include recurrence, formation of a persistent fistula and damage to the cranial

nerves. Alternative treatments, such as percutaneous sclerotherapy, are promising but remain unproven.^{3,4}

Recurrences are known to occur following complete surgical excision of the branchial cleft cysts, as seen in a large retrospective study where the overall recurrence rate was noted to be 4.9% after a 2 year follow-up period, while in other studies a recurrence rate of 3–20% was reported.⁶

In conclusion the differential diagnosis of a branchial cleft cyst should be kept in mind in the case of a paramedian neck swelling. The swelling should be excised completely to avoid recurrences. Careful attention should be paid to closely related vital structures like main vessels of neck, hypoglossal nerve and recurrent laryngeal nerve to avoid complications.

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fig 1



fig 2

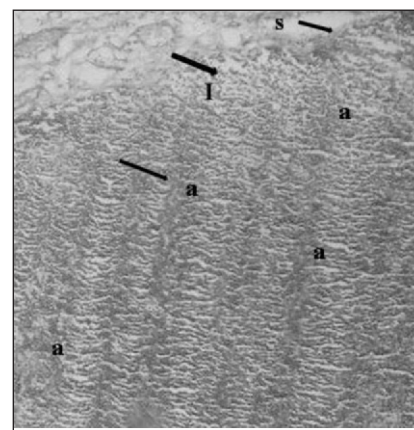


fig 3

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