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BRANCHIAL CLEFT CYST IN ELDERLY- A CASE REPORT

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ABSTRACT Branchial cleft cyst are benign neck lesions arising due to the anomalous development of branchial cleft. The majority of cases arise in young patients between the age of 20 to 40 although branchial cleft cysts can present in infants and children less than 5 years old. This is a case report of a Fifty-five-year-old female patient presenting with a Branchial cleft cyst. This case is reported for its rare age of presentation.

KEYWORDS : Branchial cleft cyst, benign, anomalous

INTRODUCTION

Second branchial cleft cysts are benign developmental cysts probably arising from congenital remnants of the second branchial arch. The second cleft anomalies represent >95 % of all branchial cleft anomalies (1,2). It is usually located in the lateral neck, anywhere from the sternal end of clavicle till level of hyoid, anterior to the sternocleidomastoid muscle. Mostly seen in young patients between the age of 20 to 40 years although branchial cleft cysts can present in infants and children less than 5 years old. Fistulae or sinuses are more common in infants or young children and present as chronic drainage from an opening in the lateral neck. Rarely, second branchial cleft cysts arising in older patients have been reported (1,2). There is no gender predilection. In our scenario a 55-year-old female came with a painless swelling in the right side of neck for 1-year duration. CT imaging and HPE conclusively showed a Branchial cleft cyst.

CASE REPORT

A Fifty-five-year-old female came with complaints of swelling in the Right side of neck for the past one year. The swelling increased in size gradually. There was no c/o increase in size on straining, no h/o pain, no h/o breathing difficulty, no h/o fever, no h/o voice change, no h/o difficulty in swallowing, no h/o throat pain. Patient was diabetic on OHA. On examination a 8*7 cm size swelling noted in the right side of neck. It was extending from anterior to the upper and middle 3rd of right sternocleidomastoid and extending posterior to it also. Superiorly 1 cm from ramus of mandible. Anteriorly 5 cm from the symphysis menti. Inferiorly up to the 6 cm above sternal end of right clavicle. Posteriorly 5 cm from right mastoid tip. Swelling was not warm, not tender on touch, single, tense cystic, smooth surfaced, not fixed, fluctuating, not pulsatile, trans illuminating in nature. It does not move with deglutition, nor with protrusion of tongue. No cough impulse, not compressible, no crackling noted on palpation.

Oral cavity and oropharyngeal examination was done and no obvious lesions noted. Video laryngoscope and Diagnostic nasal endoscopy showed no abnormalities.

Computed tomography of neck showed a well-defined non-enhancing cystic lesion of size 7.3*2.8*6.3 cm along the anterior wall of middle part of right sternocleidomastoid muscle and posterior to the angle of mandible, features suggestive of Right second branchial cyst. FNAC was however inconclusive. After due investigations for surgery, anaesthetic fitness and consent the cyst was excised and sent for HPE, which again showed fibro collagenous tissue, mature adipocytes, aggregates of lymphoid tissue with flattened epithelial lining suggestive of benign lymphoepithelial cyst, possibly branchial cleft cyst. Drain was removed on the second post op day and sutures were removed on seventh post op day.

Figure:1 Pre op picture of the Patient

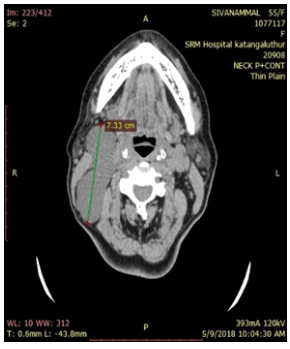

Figure:2 CT image of the cyst

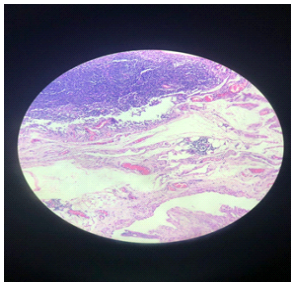

Figure:3 HPE of the cyst shows aggregates of lymphoid tissue with flattened epithelial lining Probably branchial cleft cyst.

DISCUSSION

Nearly 90 % of branchial malformations arise from the second cleft. Second branchial cleft cysts have been classified into four classes by Bailey. Our case belongs to Type II.

- **Type I –** Most superficial and lies along the anterior surface of sternocleidomastoid deep to the platysma, but not in contact with the carotid sheath.
- **Type II –** Most common type where the branchial cleft cyst lies anterior to the sternocleidomastoid muscle, posterior to the submandibular gland, adjacent and lateral to the carotid sheath.
- **Type III** – Extends medially between the bifurcation of the internal and external carotid arteries, lateral to the pharyngeal wall.
- **Type IV-** Lies deep to the carotid sheath within the pharyngeal mucosal space and opens into the pharynx.

They are usually asymptomatic masses which are soft, mobile. It usually arises along the anterior edge of the sternocleidomastoid muscle. It can also arise along the second branchial cleft course, from the skin to the faucial tonsils, and between the internal and external carotid arteries. (3). Most of cases arise in patients between 20 to 40 years of age. Rarely, second branchial cleft cysts arising in older patients have been reported, very rarely in infants and children less than 5 years of age (1,2). There is no gender predilection. Many patients may report a swelling for prolonged duration with periods of increase and decrease in size. Sudden increase in size occurs following URTI. Symptoms such as dysphagia, dyspnoea, dysphonia and stridor arise due to the size and the location of the cyst. The differential diagnosis includes Para pharyngeal masses, such as malignant lymphadenopathy, parotid masses, carotid body tumour, paragangliomas of the vagus nerve and inflammatory lesions such as abscess. In adults any recent onset of mass in lateral aspect of neck must be considered malignant until proven otherwise (4,5). The Branchial Cleft cyst contain a viscous, turbid, yellow-green liquid with cholesterine crystals in the sediment. The thin walled cyst usually lined with stratified squamous non-keratinized epithelium that covers the lymphoid tissue. The cysts are superficial and sonographically it presents as round-oval, hypo- to anechoic masses with well-defined margins and thin walls, making it the first choice of imaging (6). On CT scan, they appear as well-circumscribed, uniformly hypodense lesions with thin wall; wall thickness may increase after an infection (7). MRI provides the deeper extent of the cyst which will be useful during preoperative assessment. T1-weighted images may be hypo- to isointense and T2-weighted images will be hyperintense (8). Fine-needle aspiration cytology is useful for reaching a preoperative diagnosis but can be challenging at times. The cytological picture shows yellow, pus-like fluid with keratinized anuclear cells, squamous epithelium, and a matrix of amorphous debris. But often the cytologic specimen shows a paucity of epithelial cells and/or degraded epithelial cells or contains inflammatory cells. If the pathologists and treating clinician are concerned for a cystic metastases p16 staining can be done to confirm their suspicion (9,10). Surgical excision is the treatment of choice. The existence of branchial cleft cyst (branchiogenic) carcinoma has been hotly debated. Khafif et al. (13) reviewed the published literature of all 67 cases reported in the English literature since the publication of Martin's criteria. They concluded from their review that it seems 'unequivocal that epidermoid carcinoma may, and in fact does occur in congenital branchial cleft cysts' and that the incidence of Branchial Cleft Cyst Carcinoma is extremely low, with no more than 20–30 cases reported. With improved pan endoscopic evaluation and imaging studies, including positron emission tomography (PET), p16 immunohistochemistry and/or high-risk HPV in situ hybridization the conditions like malignant lymphadenopathy, parotid, carotid body tumours, paragangliomas of the vagus nerve and inflammatory lesions such as abscess a primary tumour can be ruled out. (11,12). In our case imaging, pan endoscopic evaluation were done to rule out other diagnosis. Our patient is on regular follow up and there is no evidence of recurrence of cyst or any other new lesions.

CONCLUSION:

Branchial cleft cyst is a benign developmental lesion seen arising in young adults. However, it can rarely be seen in old age people too. With advent of various diagnostic modalities like the imaging, FNAC the diagnosis becomes simpler. Look for and exclude the possibilities of a primary malignant tumour before excising the cyst in old adults. This case is presented for it's rarity in the age of presentation.

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