

CASE REPORT

A RARE CASE OF PAROTID CYST

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ABSTRACT: A 28 years old male presented with a case of painless soft fluctuant swelling of right parotid gland is reported to our hospital. The lesion was found to be a cystic lesion through the pre-operative examinations and investigations. The cyst was completely excised, taking care not to injure the lower division of the facial nerve. Post recovery was uneventful with no defect of the facial nerve functions. The histologic picture confirmed that the cyst was lymphoepithelial cyst which is so called "branchial cyst". Through the literature reviews of parotid lymphoepithelial cyst the discussions on prevalence, origin, diagnosis, histological finding, investigation and the modes of treatment are made. The ultra sound was found to be valuable in the pre-operative evaluation of the parotid swelling furthermore it is non-invasive, harmless, painless and relatively quick.

KEYWORDS: Parotid cyst, Lymphoepithelial cyst, Facial nerve.

INTRODUCTION: Cystic lesions within the parotid gland are uncommon, comprising approximately 5% of all salivary gland tumours; many of them represent cystic components of neoplasms.⁽¹⁾ Lymphoepithelial cysts are most often found in the lateral cervical area just below the angle of the mandible, anterior to the sternocleidomastoid muscle.^(2,3) However, sometimes they may occur in the parotid gland.⁽⁴⁾ The cysts have equal distributions among males and females, and usually present as a painless swelling in the parotid area without attachment to the facial nerve.⁽⁵⁾ The true origin of this cyst which thought to be congenital remained unclear, however several theories/hypothesis have been proposed such as classic branchial cleft theory, parotid gland inclusion Primary theory and thymopharyngeal duct theory.^(6,7,8,9) Primary epidermal cysts of salivary glands appear to be very rare and literature search for the past 25 years revealed only very few cases in parotid gland and some cases in submandibular gland⁽¹⁰⁾ the epidermal cyst is a benign cyst and develops out of ectodermal tissue. The several synonyms are epidermal cyst, epidermal inclusion cyst, infundibular cysts, and keratin cysts.⁽⁴⁾ However, in the last few years, such cysts have been found in increasing numbers in aids patients as well as in the patients belonging to the risk groups.^(5,11,12) While the etiology of these cysts is controversial^(4,13) many authors suggested for complete excision with sufficient margin of normal tissue surrounding. However the diagnosis is seldom made preoperatively therefore superficial parotidectomy is another form of treatment.^(2,3,10)

CASE REPORT: A 28 years old male presented with the big swelling in the right parotid region to our governmental hospital. He is noticed this swelling in the parotid region since 2months. Since then it is gradually increased in its size, however it was entirely asymptomatic. He has no history of upper respiratory tract infection or trauma to the parotid area. Generally, he was stable and afebrile. He was an agricultural labourer. On examination revealed there is a 6 cm x 6 cm

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diffused soft fluctuant swelling in the right auricular area and the overlying skin is shiny and reddish blue in colour and freely moveable over the swelling. There were no facial nerve palsy signs. The swelling was in cystic in nature, with no audible bruit was detected. There was no associated regional lymphadenopathy or thyroid enlargement. Intra oral examination revealed a free flow of saliva from the right parotid duct papilla (Stensen duct). Ultra sound was then performed at Radiology Department and the report was a hypo echoic lesion with posterior enhancement which suggestive for cystic swelling. The content of the cyst aspirated to look for the nature of the fluid, in which was found to be a straw colour containing whitish cheesy materials. The aspirate was then sent to the Pathology Department for cytology examination. The result was favour with no malignancy cells and again suggestion of parotid cyst was made. Based on clinical history and presentation, aspiration and ultra sound, the pre-operative diagnosis of parotid cyst was made. The finding was explained and patient agreed for the surgical excision under general anaesthesia. After skin preparation with povidon solution, an incision made over the swelling as the cyst was preauricular region. This will help to minimised the postoperative scarring, avoiding from puncturing the cyst and avoid injuring branches of facial nerve. The surgery was then performed layer by layer until it reached the platysma muscle. This muscle was dissected to exposed the underneath cyst capsule. Once the plane between cyst capsule and platysma muscle was identified the blunt dissection was carried out carefully separating the cyst from the platysma muscle underneath with the preservation of facial nerve. However the upper part of the cyst was found embedded in the parotid tissue, so part of the parotid tail was excised together with the cyst. The specimen was then sent for histopathology examination. After the haemostasis was achieved, the surgical area was placed with romovag drain and then closure was done in layers with 4-O vicryl and 2-0 prolene. The patient recovered from surgery uneventful.

Post-surgery there is no evidence of facial nerve palsy and wound infection. The histopathology examination showed a collapsed cyst wall with adjacent salivary gland and small reactive lymphoid tissue. The cyst was lined by columnar epithelium with abundant, granular cytoplasm and densely eosinophilic. However no nuclear atypia was seen. The appearances were those of a lymphoepithelial cyst.



Fig. 1: Swelling in right parotid region

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Fig. 2: Intra operative photographs showing parotid duct and parotid cyst

DISCUSSION: The origin and development of branchial cysts is a controversial subject, and many theories have been suggested.^(8,9,13) The theories simply attempt to collate known embryological fact with histological and clinical findings. However to this day the controversy still exists and at least four theories have been put forward to explain the origins of branchial cysts, which are 1) Branchial apparatus theory 2) Cervical sinus theory 3) Thymus-pharyngeal duct theory 4) Inclusion theory.^(5,14,9,13) The first two theories are also known as classic theory holds that the cysts develop from the remnants of the branchial cleft because it occurs in the area of the embryonic gill apparatus.⁽⁴⁾ However for this present case, the inclusion theory or so called recent theory would seem the most feasible explanation for the lymphoepithelial cyst which was found in the parotid gland. Where this theory considers that the cysts arise from cystic changes in parotid gland epithelium that become entrapped in the upper cervical lymph nodes during embryonic life. However, in the recent years the parotid lymphoepithelial cysts have been reported increasing in numbers and in close association with human immunodeficiency virus (HIV) infected as well as HIV-high risk patients.^(11,12,5) These are probably related to intra parotid lymphadenopathy associated with HIV infection.⁽¹³⁾

The pre-operative diagnosis of this case remains uncertain as the nature and clinical symptoms resemble the other cystic lesions of the parotid such as retention cysts, extravasation cysts or cystic degenerative salivary gland tumour.^(5,14) In which the latter will affect the choice of the treatment. The investigations are important in diagnosis and treatment planning of these lesions as the clinical examination may not always confirm the cystic nature of the lesions.^(15,6,7) In this present case, ultra sound scanning was found to be helpful in showing the cystic nature of lesions. In review of literature, authors concluded that ultra sound scanning was a simple investigation that was recommended for pre-operative diagnosis of cervical swelling.⁽⁵⁾ In which the most common sites for lymphoepithelial cysts were in the lateral cervical area. The nature of echoes could be used to distinguish between cystic and solid tissue.⁽⁵⁾ In the review of 468 cases of branchial cyst from the file of the Armed Forces Institute of Pathology only 5 cases were located in the parotid area.⁽³⁾ On the other hand, a review of 149 cases of brachial cysts, reported that only 14 cases were found at upper part of the neck above the angle of the mandible.⁽²⁾

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Many authors presented the similar clinical presentation of these cysts which appears to be slow growing painless swelling with normal movable overlying skin. The age and clinical symptoms of present case were found to be consistent with the literature.^(5,14) Besides that, aspiration was particularly useful in identification of the nature of the cystic content.^(6,4) The aspirate was usually clear watery or straw colour fluid. Although it was not a sensitive investigation technique however further evaluation of the aspirate can provide additional information about the presence of cells, their type and morphology. In this case, magnetic resonance imaging (MRI) was not done as it was not available in our hospital. MRI could give clear images of the lesion and its anatomical relations, and it was generally more sensitive than CT scanning in detecting small intra-parotid masses.⁽⁵⁾ The histologic picture in this present case was in accordance with that of a lymphoepithelial cyst, where the epithelial-lined cysts were observed in a lymph node, adjacent to or embedded in a major salivary gland.^(6,7,8) In the review of literatures reported that more than 90 % of these cysts were lined by stratified squamous epithelium that might or might not be keratinized.^(8,9,4) Some cysts demonstrated respiratory epithelium. However there were reported cases where the cysts were lined by either columnar or cuboidal epithelium which was consistent with our present case.⁽⁸⁾ Regardless of possible theories of origin, anatomy, histological and clinical behaviour which was discussed, clearly, many authors suggested total excision of these cysts were necessary to prevent infection and sinus formation.^(3,2,5) However, the diagnosis was seldom made pre operatively therefore superficial parotidectomy was suggested in the case which the nature is doubtful during operation. In present case the lesion was found well capsulated however the upper part of the cyst was stuck and embedded in the parotid tail tissues. The attempt to excise the part of parotid gland together with the cyst was made as suggested by some authors.^(3,2,14) The recurrence following complete surgical excision had not been reported. Rare examples of malignant transformation in these cysts had been reported.^(2,8,9) Although such an occurrence is theoretically possible, most of these cases represent cystic metastases from previously undetected carcinomas of the head and neck region, especially the nasopharynx.^(14,10)

CONCLUSION: The cysts of the parotid gland origin are extremely rare and a diagnostic challenge But epidermal cyst should be considered as differential diagnosis in any cases of painless Long standing enlargement of Parotid gland which is soft in consistency nature.

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