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Case Report

Salivary Duct Cyst of Parotid Gland– A Case Report

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Abstract: Swellings of the major salivary gland commonly lead to the differential diagnosis which includes benign and malignant tumors that are frequently associated with cystic degeneration or entirely cystic de novo. Only 6-9% of major salivary gland swellings are cystic lesions and 2-5 % are non-neoplastic in nature. This is a case report of such an asymptomatic unilateral parotid gland lesion in a 30-year-old female patient. The authors discuss the significance of clinical, radiographic, macro and microscopic correlations of cystic mass in major salivary glands**.**

Keywords: salivary duct cyst, salivary retention cyst, parotid duct cyst.

INTRODUCTION

6% to 9% of the major salivary gland swellings present as a cystic lesion [1]. Such cystic masses in parotid gland may confuse clinically and radiographic imaging techniques lead to diverse differential diagnoses. Differential diagnoses of cystic swelling in major salivary gland include neoplastic and non neoplastic lesions. Neoplastic lesions include pleomorphic adenoma, warthin's tumor, mucoepidermoid carcinoma, low grade papillary cystadenocarcinoma, and metastatic squamous cell carcinoma [2] and Non-neoplastic pathologies are predominantly cysts that are lymphoepithelial cyst, salivary duct cyst, and dysgenetic cyst. Non-neoplastic cysts are a rarity and comprise 2-5% of all salivary gland lesions [3].

Salivary duct cysts(SDC) are true cysts and are also referred to as mucus retention cyst, mucus duct cyst, sialocyst, and simple cyst that have a congenital or acquired origin [4]. Salivary duct cyst is a common salivary gland lesion in European countries and America, and constitutes about 10 % of all cysts of the salivary glands [5]. However, scanty salivary duct cyst cases have been scientifically documented so far. Although literature states that most of the cases reported are of acquired origin of which duct obstruction often seems to be the cause of the lesion. SDC most commonly involve the minor salivary glands and those in the floor of the mouth, buccal mucosa, and lip are usually involved [2]. They rarely involve the major salivary glands and when they do, they are multiple and are often found in the superficial lobe of the parotid gland [5]. Here we confront a case of a 30 year old female patient diagnosed as salivary duct cyst of parotid gland after a clinical, radiographic and pathologic correlation.

CASE PRESENTATION

A 30 -year-old female patient, presented with a painless mass anterior to the right aricular region for two and half months. Solitary well-defined round to oval shaped extra oral swelling measuring approximately 3× 4 cm in diameter. It was non- tender, mobile, fluctuant, and soft in consistency. No lymph node abnormality was observed. A posteroanterior mandibular radiographic image revealed no abnormal findings. Computer tomographic image interpretation revealed a well-defined oval cystic space measuring 1.8 (Anterioposteriorly) × 1.5 (cranio cardal) ×1.6 (Transverse) cm lateral to the right massester muscle (Figure 1). No obvious wall calcifications observed. Fine needle aspiration cytology (FNAC) shows a mucoid material without any positive epithelial cells. Incisional biopsy was performed and submitted for histopathological evaluation. On macroscopic

examination of the soft tissue measuring around 1×0.4 cm in diameter. The cut surface of the specimen showed cystic lining with fat tissue on the outer surface of the capsular area. Histopathological investigation revealed a cyst wall lined with flat to cuboidal cells with surface projections (Figure 2, 3). These features were consistent with the diagnosis of a salivary duct cyst in incisional biopsy. Superficial lobe parotidectomy was performed and specimen was submitted for histopathologic report. On careful grossing procedure multiple bit were taken and processed for microscopic examination. Histopathology of the excisional biopsy report was also consistent with the incisional microscopic report. Patient was reviewed after 6 months and there was no evidence of recurrence.

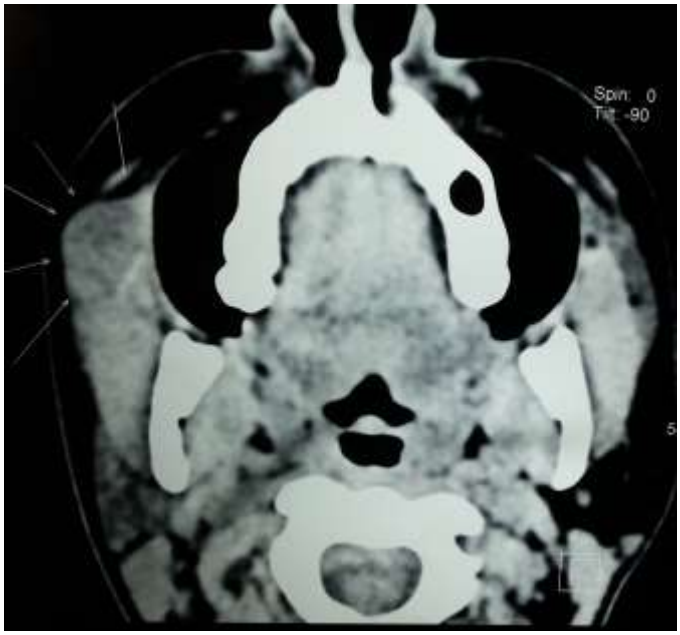

Fig-1: Computer Tomographic image shows that well defined oval swelling on right side parotid gland with diffuse hyperdensities without obvious calcification

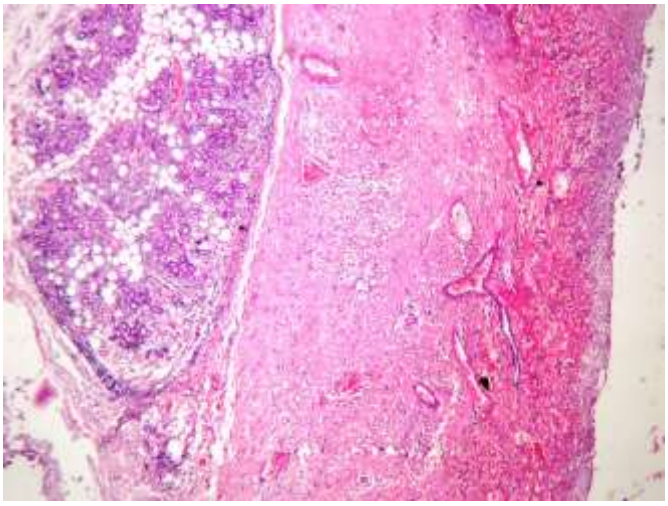

Fig-2: Photomicrograph H and E, 4X -cystic lining with salivary gland with dilated salivary duct

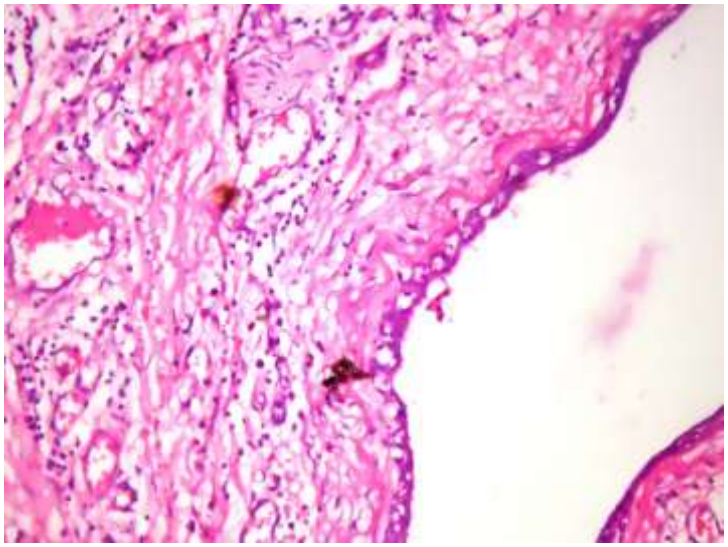

Fig-3: photomicrograph H and E, 20X- epithelial lining with 2 to 3 layer cuboidal cell with diffuse lymphocytic infiltration on connective tissue

DISCUSSION

Majority of Salivary duct cysts are acquired in nature and are postulated to develop from marked cystic dilatation due to partially obstructed duct by a salivary calculi, mucous plug, oncocytic metaplasia [6] postoperative or postinflammatory strictures, neoplasam [7]. Ductal narrowing has also been reported to be associated with frequent mouth wash with hydrogen peroxide, deodorant mouthwashes, or antiplaque solutions and tartar-control toothpastes [8]. Possibly, a small continuous flow of saliva as a result of spontaneous secretion produces a small but permanent increase in luminal pressure which leads to ductal dilatation [6].

Salivary duct cysts of major salivary glands are common in the parotid gland and minimal cases are reported in submandibular and sublingual glands which are in accordance with our case [1, 5, 10]. The past literature states that children to older adults are affected, but most patients are between 30 to 40 years old without any sex predilection [5,9]. The authors of the previous cases report that the salivary duct cysts are unilateral, painless, compressible swelling ranging in size from 0.8 to 10 cm, the majority being 1 to 3 cm [7, 5]. This statement is in coordination with our case with the lesion size of 3 × 4 cm.

Major parotid swellings are challenging, with the differential diagnosis ranging from benign cystic lesions to malignant salivary gland neoplasms. Authors of the previous literature have also postulated that the salivary gland cyst may be an early manifestation of salivary gland tumor [1]. Similar cases were documented in association with salivary gland tumours, out of which muco-epidermoid carcinoma [1, 7] is the commonest associated tumour followed by adnoid cystic carcinoma and adenocarcinoma [10]. Hence, the clinician, radiologist and pathologist all have a key role to arrive to the confirmative diagnosis.

Radiology the preliminary investigatory aid will not reveal the exact pathology since majority of salivary gland tumours (benign and malignant) present with a unilocular cystic radiographic appearance similar to salivary duct cyst [3]. The successive investigatory procedure FNAC – an aspiration biopsy procedure may not disclose the hidden pathology, since the aspirated cystic content can be devoid of tumour cells, when the needle does not reach the representative site [7]. In our case as well, the computer tomography gave a well defined oval cystic appearence without obvious wall calcifications and FNAC also insignificant.

However the macroscopic and microscopic examination of specimen helps to evaluate the abnormal proliferation and nodular appearance from the cystic lining that rules out malignant transformation of the cyst. Finally only the macroscopic and the microscopic examination of the specimen give a clue for final diagnosis.

CONCLUSION

Major salivary gland duct cysts are rare and are uncommonly associated with malignant tumours. The authors would suggest that though salivary duct cysts are not life threatening as such, a proper clinic/radiologic/pathologic correlation with a post-operative periodic review is essential to rule out malignant tumours.

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