Case Report

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Basal Cell Adenoma of Submandibular Salivary Gland Cyto-Histological Correlation: A Rare Tumour with Review of Literature

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Abstract

Basal cell adenoma (BCA) is a rare benign epithelial tumor of salivary gland. Amongst the head and neck tumors, salivary gland tumors constitute about 2- 6.5% and of these, basal cell adenoma accounts for about 1-3%. We present a rare case of BCA of salivary gland with fine needle aspiration cytology (FNAC) findings and its correlation with histopathological observations along with review of literature.

Keywords: Basal Cell Adenoma (BCA); Fine Needle Aspiration Cytology (FNAC) Histopathology; Submandibular Salivary Gland (SSG).

Introduction

Basal cell adenoma (BCA) of the submandibular salivary gland (SSG) is a rare tumor with the parotid gland being dominant site (75%) followed by minor salivary gland from upper lip (6%) and submandibular gland with 5% occurrence. WHO has defined BCA of salivary glands as a benign neoplasm composed chiefly of basaloid cells with a prominent basal cell layer and distinct basement membrane like stroma with no chondromyxoid component [1]. Preoperative diagnosis on FNAC is extremely challenging because; the differential diagnosis includes wide variety benign to malignant lesions. In literature, there is paucity of reports with cyto-histo correlation of this uncommon benign epithelial tumor [2,3]. We encountered a case of BCA in a 60 year old male which has prompted us to document this case.

Case Report

A 60 year man presented with swelling over the left side of the neck since 1½ year. The swelling had increased to attain present size with gradual enlargement. There was no history of fever, weight loss, pain or cough. He gave history of hypertension since 12 years, which was controlled with medications. General clinical examination and systemic examination was non contributory. The swelling was located in the submandibular region. On palpation, it was firm, non tender, well defined and mobile. It measured 4x3 cm and the surface appeared smooth. Imaging studies: Ultrasonography (USG), Contrast Enhanced Computed Tomography (CECT), showed lesion of 36x30mm involving left SSG with peripheral uninvolved part. Based on clinical and radiological findings, FNAC was done. The aspiration revealed moderately cellular smears showing sheets, clusters and singly scattered basaloid cells. In addition patches, ribbons and strands of the hyaline material were noted (Figure 1). The cells had scanty rim of cytoplasm with round to oval blind nuclei having fine chromatin. In addition hyaline material in the form of 'globules surrounded by epithelial cells' were noted on high power (Figure 2). Nuclear pleomorphism, necrosis and mitosis were absent. The cytodiagnosis of benign submandibular epithelial lesion suggestive of Basal cell adenoma was offered. The patient underwent surgery with simple excision of the mass. Intraoperatively, it was well circumscribed and could be easily enucleated .

The specimen received, on gross examination

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revealed, solitary oval tumor mass measuring 4.2 x 3 x 2.5 cm and was well encapsulated .The cut surface was homogenous gray-white. At the periphery, normal appearing lobules of salivary gland were noted (Figure 3).

Fig. 1: Gross photomicrograph of well circumscribed tumor showing grayish white homogenous appearance

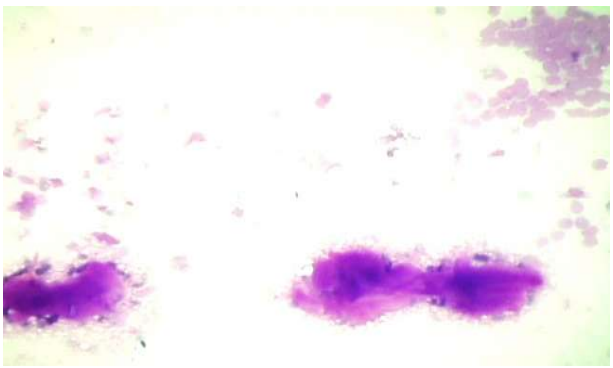

Fig. 2: Photomicrograph low power view FNAC aspirate showing stromal fragments of hyaline basement membrane like material and loosely cohesive monomorphic basaloid cells. (MGG, x 40).

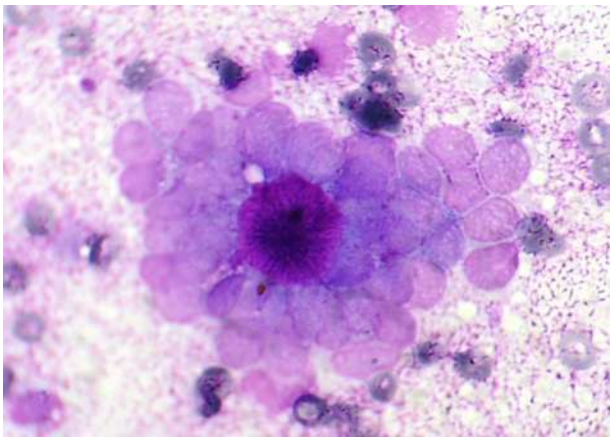

Fig. 3: Photomicrograph showing high power view of basaloid cells with dispersed uniform nuclear chromatin surrounding the stromal hyaline membrane fragments. (MGG, x 400)

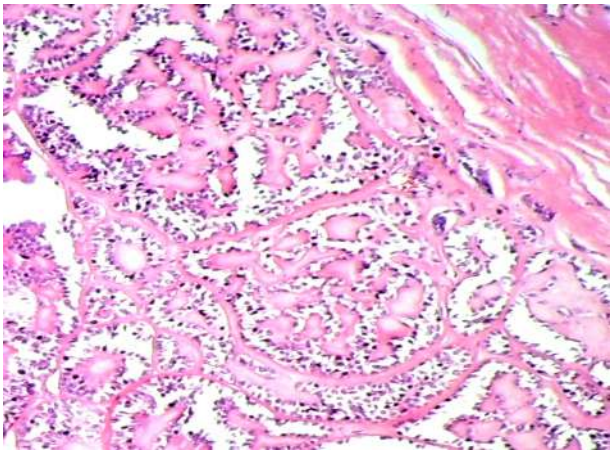

Fig. 4: Photomicrograph showing encapsulated Basal cell adenoma in hyaline stroma lined by monomorphic basal cells with membranous, tubular and trabecular pattern (H&E, x 100).

Microscopy

The tumour was well-encapsulated and was composed of basaloid cells arranged in trabecular, tubular and membranous pattern. Ductal lumina rimmed by basaloid cells were noted. In some fields, characteristic nuclear palisading was seen at the periphery. These cells were clearly separated by non myxochondroid stroma, which was composed of basement membrane like hyaline eosinophilic material (Figure 4). There was no abnormal mitosis, capsular or vascular invasion. The stroma did not reveal necrosis, hemorrhages and chondroid matrix was absent. The final diagnosis of Basal cell adenoma was offered. After six months the recovery was uneventful with no evidence of recurrence.

Discussion

BCA is a rare benign tumor of salivary gland and its occurrence in submandibular gland is seldom documented. It must be noted that, rare occurrence in sites like palate and upper lip has been documented in the literature [5,6].

The cytological and histopathological correlation has been reporteed in very few reports [2,4]. In our case the diagnosis of BCA was suggested on fine needle aspiration cytology. However, it worth mentioning that, the cytological differential diagnosis from pleomorphic adenoma and adenoid cystic carcinoma is of paramount importance [1,4]. In our case finding of the patchy deposits, ribbons and strips of metachromatic material coupled with hyaline globules rimmed by epithelial cells having bland nuclear chromatin favored the diagnosis of BCA. In case of Pleomorphic adenoma presence of

chondromyxoid component in stroma so also; observing myoepithelial cells, plasmacytoid or spindle shaped cells with abundant cytoplasm helps in arriving at the diagnosis [4]. In case of adenoid cystic carcinoma (ADC), cytomorphological features like hyperchromatic nuclei, coarse nuclear chromatin and presence of nucleoli suggest the diagnosis of ADC [4]. Nevertheless, histological confirmation is essential as was thought in our case.

Four histological patterns of BCA are observed i.e. solid (sheets of basaloid cells separated by collagenous stroma), trabecular (nests and cords of basaloid cells separed by cellular stroma) tubular (glandular formations) and membranous (thick band of hyaline material with peripheral basaloid cells [1,4]. In our case membranous and tubular pattern was predominantly observed.

It must mentioned that, the tubular pattern, was evidenced on FNAC smears, with central metachromatic material rimmed by basaloid cells having monomorphic nuclei with bland chromatin.

BCA is usually a non recurrent lesion, except membranous type, which has recurrence rate of approximately 25%, and it should be remembered that malignant transformation is exceedingly rare [1,7].

In the recent past, it has been reported that, Immunohistochemistry (IHC) including Ki-67 labeling index and beta- catenin may help to differentiate between benign and malignant behavior [5]. However, the authors feel that, more data is desirable to substantiate these findings.

Our experience with this case highlights the significance of meticulous diagnosis of BCA on FNAC and its correlation with histopathological confirmation.

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