



Case Report

# Basal cell adenocarcinoma of the salivary gland - A rare entity

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## Abstract

Dominated by basaloid epithelial cells, basal cell adenocarcinoma is cytologically and histomorphologically similar to basal cell adenoma but is an infiltrative epithelial neoplasm with potential for metastasis. There is no sex predilection. The average age of patients is 60 years. Over 90% of these tumors occur in the parotid gland, and they are rare in the minor salivary glands of the oral cavity. Infiltration of tumor cells into the capsule, salivary gland parenchyma, dermis, skeletal muscle, or periglandular fat distinguishes basal cell adenocarcinoma from basal cell adenoma. We have reported here a case of basal cell adenocarcinoma of the parotid gland in a male patient aged 45 years.

## Key words

Basal cell adenocarcinoma, Parotid, Infiltration.

## Introduction

Basal cell adenocarcinoma, also known as Basaloid salivary carcinoma, carcinoma ex monomorphic adenoma or malignant basal cell adenoma is the malignant counterpart of basal cell adenoma, which can arise in the major and minor salivary glands. They usually occur in the elderly, with average age at presentation being 60 years and with no sex predilection. Rarely, patients complain of pain or tenderness; most

tumours are asymptomatic except for swelling. The duration of tumours before excision ranges from weeks to years.

## Case report

A 45 years old male patient was admitted to our hospital with complaints of swelling in front of right ear since 4 months. Fine needle aspiration cytology had been performed 3 months ago at a different centre but the reports were not

available with the patient. A clinical diagnosis of pleomorphic adenoma was suspected by the surgeon and right superficial parotidectomy was done and the specimen was sent to the pathology department.

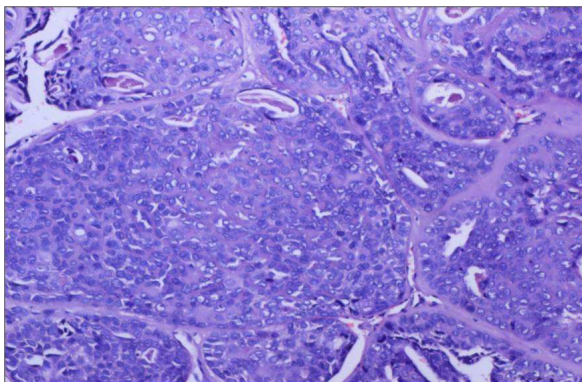
On gross examination, the tumor measured 2x1x1 cm, was grey white, homogenous and appeared well circumscribed with a thin capsule.

On microscopic examination, basaloid cells (small dark cells and large pale cells) were seen arranged in predominantly solid, tubular and membranous patterns. These cells had eosinophilic cytoplasm with round to oval nuclei and showed peripheral palisading. Cytological atypia was minimal. However, mitoses appeared to be increased (5/10 hpf). (**Figure – 1, Figure – 2, Figure – 3, Figure – 4**)

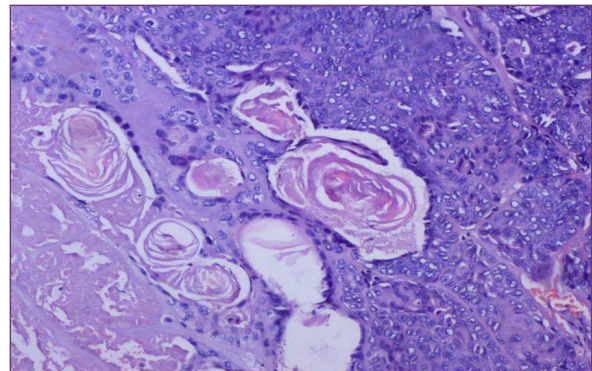
Areas of squamous differentiation in the form of whorls or eddies was noted. At places, capsular invasion was noted. However, no true vascular invasion or perineural invasion was noted.

A diagnosis of basal cell adenocarcinoma was made on the basis of increased mitoses and capsular invasion.

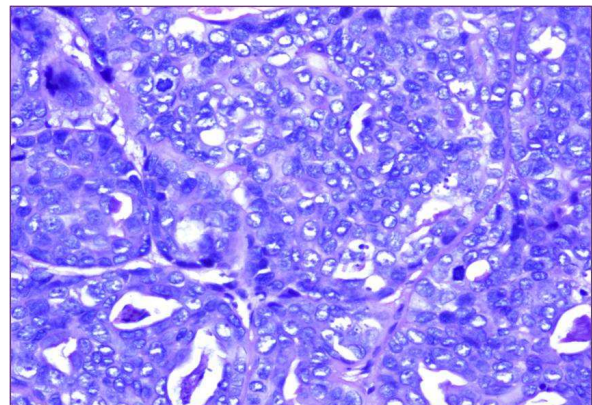
**Figure - 1:** Basal cell adenocarcinoma showing solid and membranous patterns with peripheral palisading of cells (H&E stain, 10X).



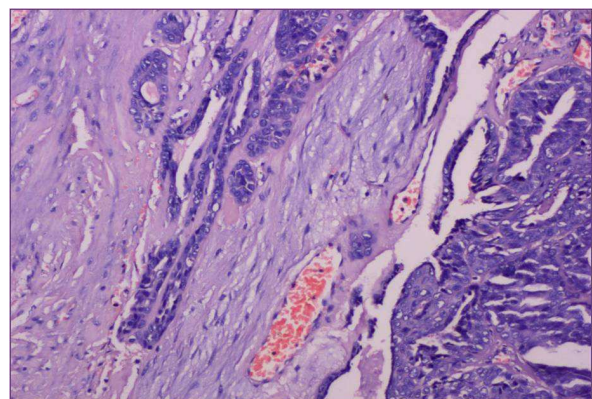
**Figure - 2:** Basal cell adenocarcinoma showing squamous eddies (H&E stain, 10X).



**Figure - 3:** Basal cell adenocarcinoma showing mild cytological atypia and increased mitoses (H&E stain, 40X).



**Figure - 4:** Basal cell adenocarcinoma showing capsular invasion (H&E stain, 10X).



## Discussion

Basal cell adenocarcinoma (BCAC) of salivary gland is considered to be the malignant counterpart of basal cell adenoma. Reports of malignant basaloid salivary gland tumors are extremely rare [1, 2]. In 2005, the WHO classification simply defined BCAC as being an infiltrative epithelial neoplasm that is similar to basal cell adenoma [3].

While BCAC can be distinguished from BCA on the basis of the infiltration of tumor cells into the parotid parenchyma, dermis, skeletal muscle, or periglandular fat, this infiltration is not severe because BCAC is essentially a low-grade malignancy.

BCAC of the salivary gland, a rare neoplasm that occurs mostly in the major salivary glands, particularly in the parotid gland, comprises 1.6% of all salivary gland neoplasms and 2.9% of malignant salivary gland neoplasms. No predilection for occurrence of basal cell adenocarcinoma in either men or women is apparent. Eighty percent of the patients are over 50 years, with the average age of 60 years. The present case has been reported in a male aged 45 years. Swelling is the principal symptom, but pain or tenderness occasionally may be an associated complaint [4].

Histologically, BCAC can be divided into four subtypes: solid, trabecular, tubular and membranous. The solid pattern is characterized by contiguous tumor cells arranged in islands and masses within the fibrous connective tissue stroma. These tumor islands can be round to oval or large irregular masses. The present case has shown the proliferation of basaloid cells in the form of sheets or irregular masses showing similarity with solid pattern of BCAC.

The membranous type is distinguished by thick, eosinophilic, periodic acid schiff positive hyaline

laminae that surround and separate one tumor nest from another and may create a jigsaw puzzle image in portions of tumor [5].

Trabecular type is characterized by anastomosing cords and bands of basaloid epithelial cells which may be likened to the configurations shaped like Chinese characters that are formed by bony trabeculae in fibrous dysplasia of bone. Conspicuous small lumina or pseudolumina characterize the tubular type of BCAC [5].

A solid pattern is predominant in about two-thirds of the tumors. The membranous type is the second most frequent and comprises about 20% of these tumors. The trabecular and tubular types are occasionally the dominant patterns [5].

The growth of tumor in relation to surrounding tissues is the key feature used to distinguish adenoma from carcinoma for basaloid salivary gland neoplasms [5]. Cytological atypia and increased mitotic activity favour a diagnosis of malignancy. Presence of capsular invasion and high mitotic rate (5/10 hpf) prompted the distinction between BCAC and basaloid adenoma in the present case.

Two forms of epithelial cells are observed and are usually intermingled with one another. One form is small, round cell with scanty cytoplasm and a dark basophilic nucleus. The other form is a large, polygonal-to-elongated cell with eosinophilic cytoplasm and a large, pale basophilic nucleus. In both types of cells, the cell-to-cell boundaries are distinct. Frequently, the small dark cells are located peripherally to the larger pale cells and produce palisading of the nuclei of cells along epithelial stromal interface. The amount of supporting collagenous stroma can vary from inconspicuous to extensive [5]. The present case has shown both forms of cells. At places, dark basophilic cells were



located at the periphery of epithelial islands, with pale basophilic cells present towards center.

Most basal cell adenocarcinomas probably develop de novo, but some arise by malignant transformation in basal cell adenomas. While they are locally destructive and often recur, basal cell adenocarcinomas only occasionally metastasize, and death of patients is rare [6].

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