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BASAL CELL ADENOMA OF MAJOR SALIVARY GLAND WITH REVIEW OF LITERATURE

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Abstract: Basal cell adenoma is a rare benign epithelial tumor of the salivary gland that derives its name from the basaloid appearance of the tumor cells, accounting for 1–2% of all salivary gland epithelial tumors. We report a case of elderly female with a gradually progressive swelling in the pre auricular region for 1 year. Fine needle aspiration cytology of the lesion was inconclusive but its classical histopathological features made a confirmed diagnosis of basal cell adenoma.

Key words: Basal cell adenoma, parotid, salivary gland.

Introduction

Salivary gland tumors constitute about 3–4% of all head and neck neoplasm [1]. Basal cell adenoma (BCA) accounts for only 1% to 3% of all Salivary gland tumors and demonstrates a female predominance of 2:1 [2]. Age group most commonly affected are between sixth to seventh decades [3].

The basal cell adenoma was once considered to be a type of “monomorphic adenoma”. However, since 1991, it was recognised as an independent entity in the Second Edition of the “Salivary Gland Tumors Histological Classification” of the World Health Organization (WHO) [4]. The most frequent location is the parotid gland (80%), although other sites are possible, such as the upper lip, buccal mucosa, lower lip, palate and nasal septum [5].

Basal cell adenoma is a benign salivary gland tumor comprised of uniform appearing basaloid cells arranged in solid, trabecular, tubular, and membranous patterns, but lacking the myxoid and chondroid mesenchymal-like component as

seen in pleomorphic adenoma. However, basal cells are found in several primary salivary gland tumors either as a major component present in a mixture of cells types or as pure basal cell neoplasms [2]. In this regard, the distinction between the true neoplasm and other primary tumors with basal cell features pose diagnostic difficulties.

We report here a case of a 72 year old woman with basal cell adenoma of parotid gland with such classical histopathological features that helped us to make a confident diagnosis without aid of any ancillary investigations.

Case Report

A 72 year old woman reported to our E.N.T. outdoor with a complaint of painless mass in her right pre auricular region since 6 months, which was measuring nearly 4x4 cm.

On physical examination the swelling was moderately firm, non-tender without any evidence of facial nerve involvement. No other lymph nodes or masses were palpable in the head and neck region. A conventional radiograph revealed no bone destruction. Ultrasonography showed a hypoechoic space occupying lesion measuring 36x20x25mm in posterior aspect of parotid and Contrast computed tomography revealed contrast enhancing lesion with cystic/necrotic areas.

A conservative parotidectomy was done under general anesthesia and sent for histopathological examination. The biopsy specimen obtained was of 3.5x2x2.5cm, globular, well encapsulated mass. Cut surface was solid, homogenous with focal dark brownish areas. It was routinely processed and stained with Hematoxylin and Eosin stain. Microscopically, there was a well-defined fibrous capsule enclosing multiple jigsaw-puzzle like anastomosing islands and trabeculae of tumor cells sharply demarcated from the stroma by basement membrane. The basaloid cells making up the bulk of the tumor were found to be monomorphic. The peripheral cells were palisaded with a cuboidal-to-columnar shape, while the central cells were relatively rounded. These peripheral cells were hyperchromatic, while the central cells had pale staining nuclei. There was no cartilage formation, mucous stroma or necrosis in the tumor. Nuclear atypia and mitotic figures were not prominent.

With these classical histopathological findings, tumor was diagnosed as trabecular variant of basal cell adenoma of parotid gland.

Discussion

Salivary gland neoplasms represent less than 3% of all tumors in the general population. Approximately 88% of salivary gland neoplasms are of epithelial origin, and benign adenomas account for 65.5% of salivary tumors. Basal cell adenoma accounts for only 1–2% of all salivary gland epithelial tumors, and more than 80% of them arise in the major salivary glands, mostly the parotid gland, as in the case presented here^[6].

The common clinical feature of basal cell adenoma is a slow-growing, asymptomatic, freely movable parotid mass, usually <3cm in size, which is often observed in women above 50 years of age. In the present patient, the site of occurrence, past history, age and sex were compatible with those written in previous reports^[6].

The adenomas of salivary gland was divided into pleomorphic adenomas and monomorphic adenomas. Basal cell adenoma was classified as part of the category of monomorphic adenomas, which was first described and adequately documented as a distinct clinical and pathologic entity by Kleinsasser and Klein in 1967^[7]. Batsakis is credited with reporting the first case in the American literature in 1972 and suggested that the intercalated duct or reserve cell is the histogenic source of basal cell adenoma^[8]. Finally in 1991, World Health Organization (WHO) separately classified basal cell adenoma and its malignant counterpart, basal cell adenocarcinoma, as well as canalicular adenoma^[4]. The concept of monomorphic adenoma as the opposite of pleomorphic adenoma was established^[6].

Histologically, BCA is characterized by the presence of uniform and regular basaloid cells. These cells have two differentiated morphologies and are intermingled. One group consists of small cells with little cytoplasm and intensive basaloid rounded nuclei that are usually located in the periphery of the tumoral nests or islands. The other group is formed by large cells with abundant cytoplasm and pale nuclei that are located in the centre of the tumoral nests. A basal membrane-like structure rounds these tumoral nests, separating them from the surrounding connective tissue. Globally, as it has been referred as an ameloblastoma-like pattern^[9]. Individual tumors commonly display a combination of several growth patterns. The basaloid cells can be arranged in solid, trabecular, tubular, and membranous pattern^[10].

Solid basal cell adenomas are formed by small cells organized in a compact manner. In the trabecular and tubular subtypes, important groups of cells

exist. They are disposed in narrow bands and ductal structures or in a combination of both. Membranous subtype is constituted by external cells in a stockade pattern and by an intense hyalinised basal membrane [5]. Differential diagnosis must be established with cellular pleomorphic adenoma and also with some unfavourable entities such as basal cell adenocarcinoma, adenoid cystic carcinoma. The monomorphic appearance and the absence of chondroid tissue and myxoid stroma differentiate basal cell adenoma from pleomorphic adenoma. The basal cell adenocarcinoma the malignant counterpart of basal cell adenoma, needs to be excluded that shares similar histologic features. Both exhibit myoepithelial differentiation, reactivity patterns indicative of ductal epithelium, and has similar immunohistochemical profiles. Basal cell adenocarcinoma is distinguished from basal cell adenoma by the histologic features of invasion, mitotic activity, and neural or vascular involvement [11].

The basal cell adenomas sometimes mistaken for adenoid cystic carcinoma. There are two features that help to distinguish these lesions. One is the circumscription of the basal cell adenoma, which contrasts with the invasive pattern of adenoid cystic carcinoma and the other is the lack of vascularity in the microcystic areas of adenoid cystic carcinoma, in contrast with the numerous endothelial-lined channels in basal cell adenoma [6]. It is interesting that BCA have microscopic features that may help in the differential diagnosis. Tumoral nests are clearly differentiated from inter-epithelial stroma because of an intact basal-cell membrane. This delimitation is observed neither in the

pleomorphic adenoma nor in the adenoid cystic carcinoma [10].

Basal cell adenoma may rarely transform (4%) to malignant conditions like basal cell adenocarcinoma, adenoid cystic carcinoma, salivary duct carcinoma, or adenocarcinoma NOS. This transformation rate is higher in membranous subtype, being up to 28% [12].

Basal cell adenomas are amenable to conservative resection such as local excision or superficial removal of the gland, whereas the membranous subtype requires complete resection of the entire gland. The recurrence rate for the solid and trabecular-tubular variants is almost nonexistent. In contrast with the high recurrence rate (24%) of the membranous type, which is perhaps as a result of the multicentricity of this lesion [6].

The treatment used in this case was the same proposed in the literature [13], consisting of complete surgical removal of tumor with an extracapsular limit and preservation of facial nerve. The patient had a satisfactory postoperative period, with complete healing of the operated area, and presents no signs of local recurrence 9 months after surgery.

Conclusion

In any suspected neoplastic salivary gland lesion, due to prognostic implications, differential diagnosis with malignant counterparts is mandatory. Since imaging features of this pathological entity are not well described, careful histopathological analysis must be done to establish the diagnosis and exclude the closely related malignant conditions.

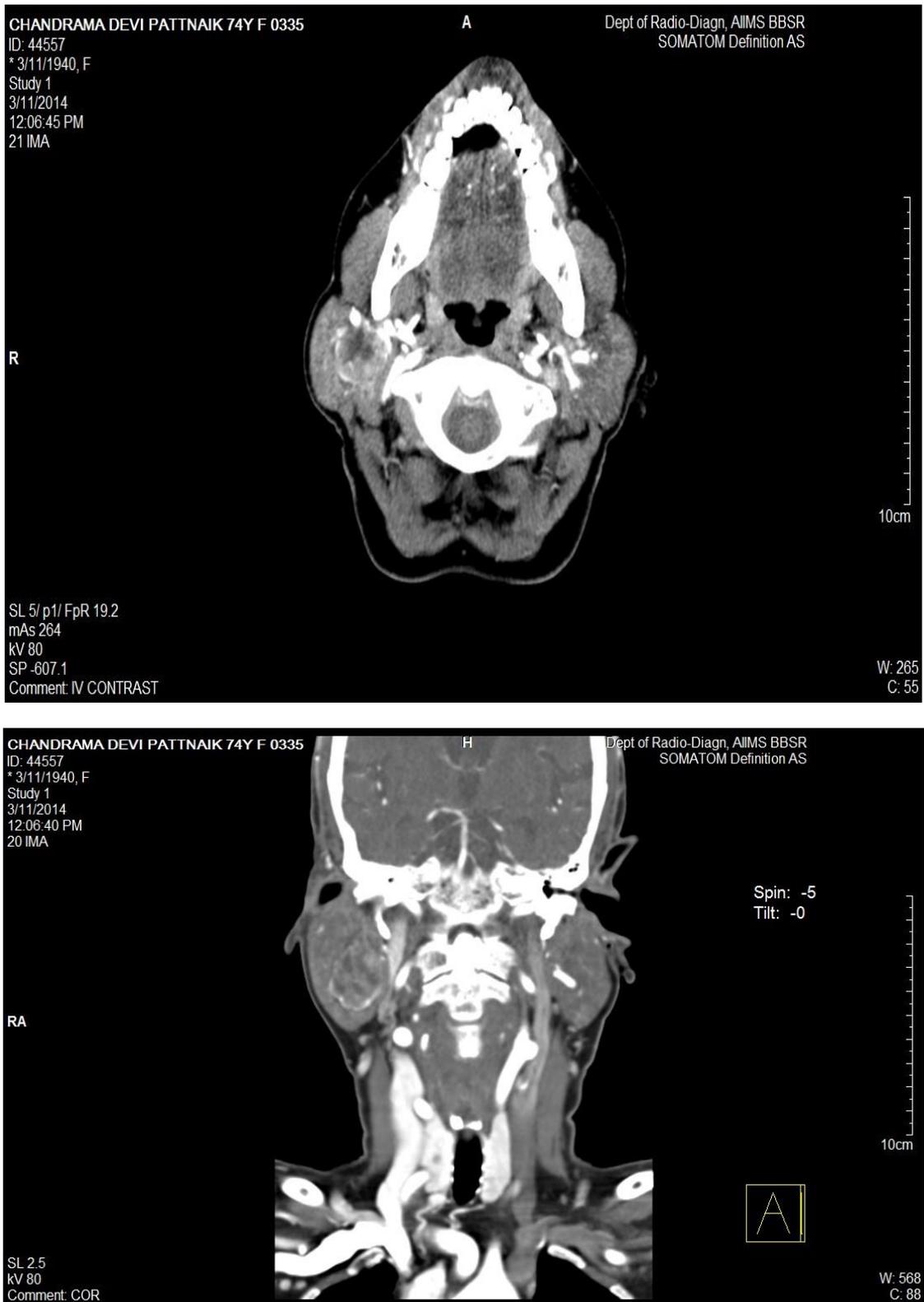
Figures and legends:

Figure 1a & b: Contrast computed tomography (axial & coronal view) showing contrast enhancing lesion with cystic/necrotic areas.



Figure 2: Gross specimen of parotid gland showing well encapsulated tumor with solid grey white cut surface.

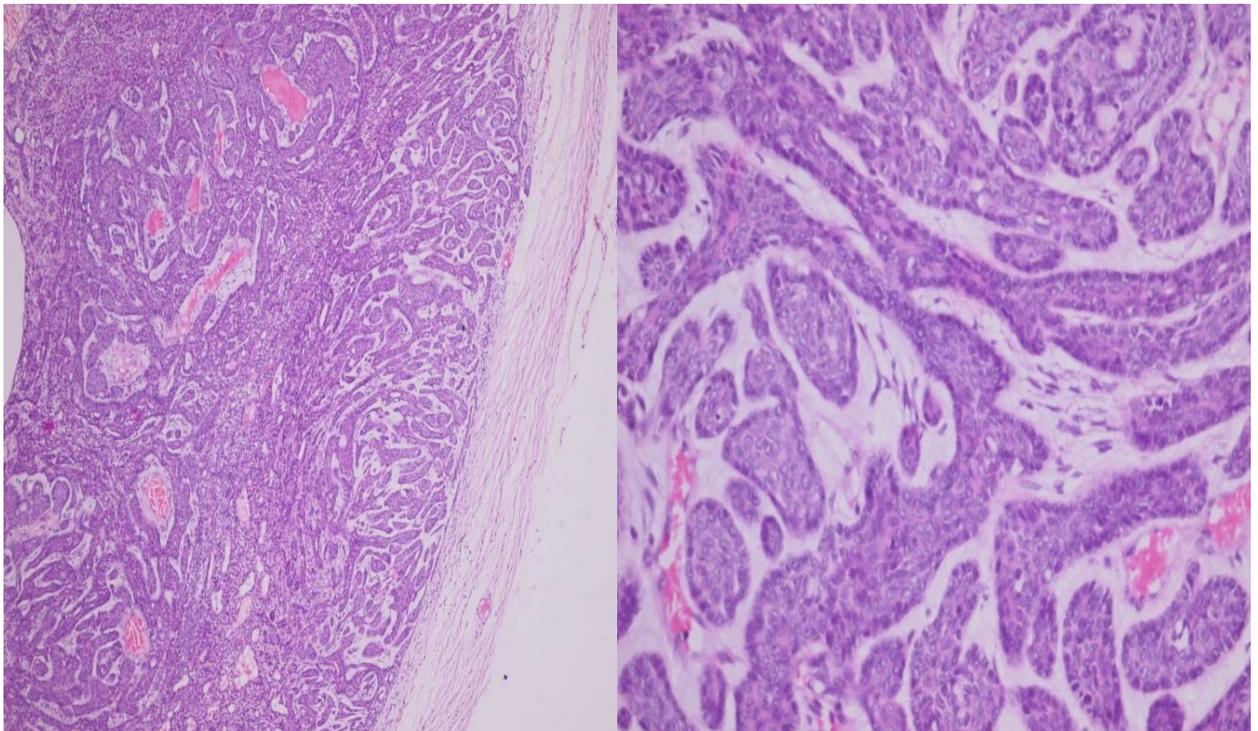


Figure 3a & b: (H&E 4X & 40X) showing defined fibrous capsule enclosing multiple jigsaw-puzzle like anastomosing islands and trabeculae of tumor cells sharply demarcated from the stroma by basement membrane.

References

1. M. Veeresh, Radhika M. Bavle, Kashi N. Vinay .H. Nandakumar,.Basal Cell Adenoma of the Submandibular Gland. *J. Maxillofac. Oral Surg.* 2010; 9(3):289–291
2. Motoki N, Kohei S, Shuichi K, Tatsushi S, Kanae N, Hisao Ito .: Tubular-Trabecular Type Basal Cell Adenoma of the Parotid Gland: A Patient Report. *Yonago Acta medica* 2010; 53:65–69
3. Fletcher C D.M. Diagnostic histopathology of Tumors. 4th edition 2013; 270-378.
4. Seifert G, Sobin LH. The World Health Organization's Histological Classification of Salivary Gland Tumors. *Cancer* 1992; 70:379-85.
5. Gonzalez-Garcia R, Nam-Cha SH, Munoz-Guerra MF, Gamallo-Amat C : Basal cell adenoma of the parotid gland. Casereport and review of the literature. *Med Oral Patol Oral Cir Bucal* 2006; 11:206–209.
6. Jang M, Park D, Lee SR, Hahm CK, Kim Y, Kim Y, Park CK, Tae K, Park MH, Park YW. Basal cell adenoma in the parotid gland: CT and MR findings. *AJNR Am J Neuroradiol* 2004; 25:631–635.
7. Kleinsasser O, Klein HJ. Basalzelladenome der Speicheldriisen. *ArchKlinExpOhren- Nasen- Kehlkopfheilk* 1967; 189:302-316.
8. Batsakis JG. Basal cell adenoma of the parotid gland. *Cancer* 1972; 29:226-230.
9. Nagao K, Matsuzaki O, Saiga H, Sugano I, Shigematsu H, Kaneko T, et al. Histopathologic studies of basal cell adenoma of the parotid gland. *Cancer* 1982; 50:736–745.
10. Barnes L, Eveson JW, Reichart P, Sidransky D. Salivary glands. In: *Pathology and Genetics of Head and Neck tumours. WHO Classification of Tumours. Vol 9. Lyons: IARC 2005. p. 261.*
11. Rosa A, Luciano L, Carvalho V: Basal Cell Adenoma: A Case Report. *J Oral Maxillofac Surg* 1997; 55:1323-1325
12. Fletcher C D.M. Diagnostic histopathology of Tumors. Elsevier Saunders 4th edition 2013; 270-378.
13. Mintz GA, Abrams AM, Melrose RJ: Monomorphic adenomas of major and minor salivary glands. *Oral Surg Oral Med Oral Pathol* 1982; 53:375.