

# FOLLICULAR VARIANT OF ACINIC CELL ADENOCARCINOMA: REVIEW OF THE LITERATURE AND REPORT OF A CASE

**SP KHOO\***

BDS, MSc., FFDRCSI

**PI CHELVANAYAGAM\*\***

BDS, FDSRCS

\* Lecturer

Department of Oral Pathology,  
Oral Medicine & Periodontology  
Faculty of Dentistry  
University of Malaya  
50603 Kuala Lumpur  
Malaysia

\*\* Consultant

Specialist Dental Clinic  
Hospital Mentakab  
Pahang Darul Makmur

## ABSTRACT

Acinic cell adenocarcinoma is a salivary gland tumour of low grade malignancy. Various histomorphologic growth patterns have been described. The follicular pattern, which possesses histological features of thyroid follicular tissues, is the least commonly encountered variant. This article reviews the literature on acinic cell adenocarcinoma and reports on a case showing the rare follicular growth pattern. Its striking similarity with thyroid follicular carcinoma which poses a diagnostic problem, is also discussed.

## INTRODUCTION

The acinic cell adenocarcinoma (ACA) is a relatively rare, though recognized, neoplasm of the salivary glands. The parotid gland has been considered to be the predominant site of occurrence<sup>1,2</sup>. However, the involvement of minor salivary glands has been well documented<sup>3-5</sup>.

The characteristic histological description of ACA is a uniform cellular mass composed of polyhedral or rounded cells with small, hyperchromatic eccentric nuclei and basophilic granular cytoplasm. Various histomorphologic patterns have been recognized i.e. a solid pattern, papillary-cystic growth pattern and a

follicular pattern.<sup>1,3,5</sup>

The follicular pattern is the least frequent histomorphologic pattern encountered making up only 10 percent of all ACA and is the dominant pattern in half of those.<sup>1,3,5</sup> This pattern has a striking thyroid-like appearance. It consists of numerous variably sized cystic spaces lined by cuboidal to columnar epithelial cells and contains eosinophilic proteinaceous material that resembles colloid, evident in thyroid follicular tissue.

This paper presents a case of ACA with the rare follicular pattern in the labial mucosa of a female.

## CASE REPORT

A 56 year old female presented with a small painless swelling in the lower left labial mucosa. The swelling had been present for four weeks and she had noticed an increase in the size. However, she did not experience paraesthesia nor anaesthesia over that region. She admits to chewing on the lump occasionally.

Examination of the patient showed a rounded, well circumscribed lesion on the labial mucosa measuring 2 cm in diameter. The swelling was firm and was not attached to either the skin or labial mucosa. There was no cervical lymphadenopathy. The swelling was dissected out under local anaesthesia and sent for histopathological examination.



Fig. 1. A predominant microcystic pattern characterized by numerous variably sized spaces within epithelial cell proliferation. Most of the larger cysts contain an amorphous eosinophilic coagulum resembling thyroid follicles. (H & E, X 150).



Fig. 2. Another field at the periphery of the lesion showing a more solid growth pattern of acinar type cells (H & E, X 100).

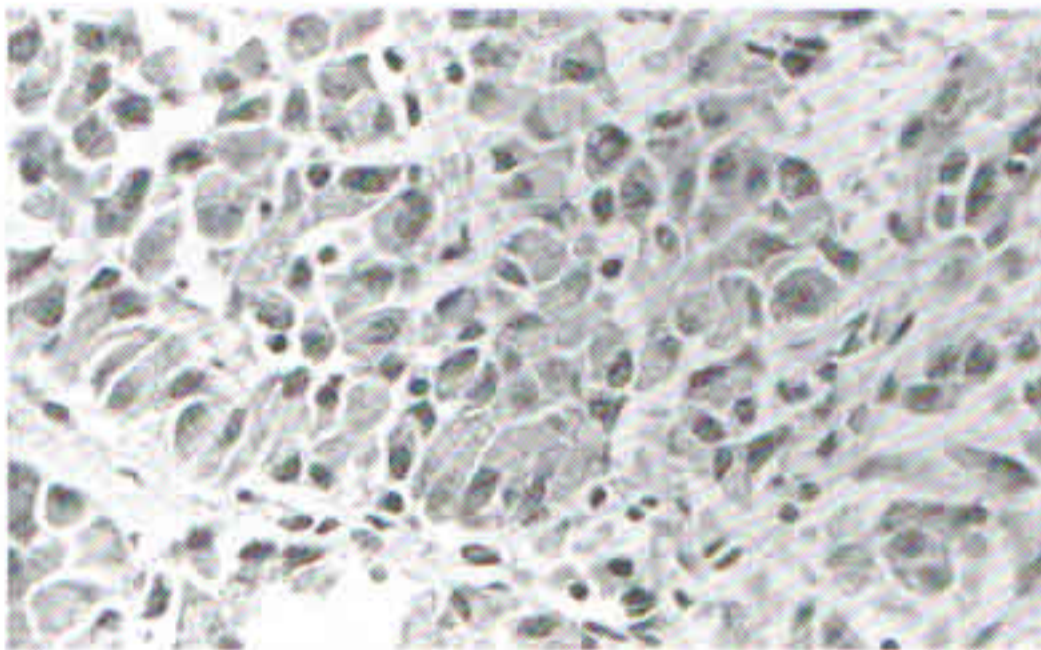


Fig. 3. A higher magnification of area in Fig. 2 showing large, dark, granular acinar type cells. (H & E, x 400)

The gross specimen measured 1.8 x 1.4 x 1.3 cm. Histological sections showed a partially encapsulated lesion. Epithelial cell proliferation, showing numerous variable-sized cysts within it, was present. Most of the epithelial cells were intercalated duct-like whilst others were large, polygonal and slightly basophilic and some containing Periodic acid-Schiff positive cytoplasmic granules (Figs. 1-3). Many of the cystic spaces contain amorphous eosinophilic material. In areas, the tumour had breached the fibrous capsule to infiltrate into the adjacent muscle bundles. Although the predominant pattern was that of a follicular type, areas towards the periphery exhibited a solid growth pattern. There was a tumour at the excisional margins.

Owing to the inadequate excision, another intervention was necessary to completely remove the tumour. The patient is being closely followed-up for any possible recurrences.

## DISCUSSION

The ACA is a distinctive neoplasm of salivary gland origin. It accounts for between 2.0 to 3.2 percent of all benign and malignant salivary gland tumours and 2.7 to 15.8 percent of all malignant salivary gland tumours, with the parotid gland being the most commonly affected site<sup>3,7,8</sup>. The sublingual gland is a rare site of occurrence. The proportion of these tumours that occur

in the minor salivary glands has been found to vary between 0 to 33 percent<sup>7-10</sup>. The buccal mucosa, upper lip and palate, in that order, are the most frequent minor salivary gland sites of occurrence. Other less common sites include lower lip, soft palate and floor of the mouth.

The ACA has been classically described as having well differentiated acinar cells containing cytoplasmic granules which are Periodic acid-Schiff positive. However, these characteristics are variable. Various types of histological growth pattern have been described ie. solid, microcystic, papillary-cystic and follicular, with the solid pattern being the most common<sup>1,2</sup>. In addition, the individual cells can be classified as acinar, intercalated duct-like, vacuolated, clear and nonspecific glandular. Any and all of these morphologic patterns and cell types may be seen in any specific tumour.

The follicular pattern of ACA is uncommon. It consists of numerous microcysts within the epithelial cell proliferation. Some of these cysts contain an amorphous eosinophilic material that is reminiscent of the colloidal contour within the thyroid follicles. Due to its striking thyroid-like appearance it can pose a problem in diagnosis as thyroid metastasis to the oral soft tissue have been reported<sup>11-13</sup>. In this case reported here, the follicular pattern made up almost 75 percent of the total tumour and the prominent follicles containing eosinophilic coagulum together with the inconspicuous well differentiated acinar cells, alerted the pathologist to a possible diagnosis of a thyroid metastasis. Although there were no history indicative of a thyroid malignancy there has been cases of metastasizing thyroid carcinomas to the parotid lymph nodes with the primary tumour still undiagnosed<sup>6</sup>.

An immunocytochemical panel distinguishing salivary gland tumours from other epithelial tumours is not currently available. The specimen was carefully serial sectioned and an immunoperoxidase stain for thyroglobulin proved negative. Further sections showed a consistent histomorphology of the tumour ie. central portion exhibiting a follicular growth pattern with peripheral areas showing a more solid appearance. A dominant follicular growth pattern is extremely uncommon and has been shown to exist in only 5 percent of all ACA<sup>1,2,10</sup>. In the case reported here most of the tumour cells appeared to be intercalated duct-like cells and were the predominant cell type. Other nonspecific glandular cells and the characteristic well differentiated acinar cells were present in the lesser amounts. Intercalated duct cells are the predominant cell type in approximately 32 percent of ACA<sup>1,2,10</sup>.

Acinic cell adenocarcinomas are regarded as low-grade malignancies. Studies have shown a 10-year survival rate of approximately 85 percent<sup>9,4,15</sup>. There is no difference in prognosis in the various histomorphologic growth patterns. The intercalated duct-

like cell type however, has been found to be more frequent in tumours that metastasize<sup>6</sup>. Other studies have shown that the clinical stage of the disease appeared to be as more important prognostic factor than histopathologic features.

## CONCLUSION

The histologic and clinical features of a previously unreported case of ACA showing the rare follicular growth pattern is reported and discussed. Its similarity to follicular thyroid carcinoma poses a diagnostic problem to pathologists.

## REFERENCES

1. Abrams AM, Cornyn J, Scofield HH, et al. Acinic cell adenocarcinoma of the major salivary gland : a clinicopathologic study of 77 cases. *Cancer* 1965; 93:325-340.
2. Ellis GL, Corio RL. Acinic cell adenocarcinoma : A clinicopathologic analysis of 294 cases. *Cancer* 1983; 52:542-549.
3. Abrams AM, Melrose RJ. Acinic cell tumours of minor salivary gland origin. *Oral Surg* 1978;46:220-233.
4. Gardner DG, Bell MEA, Wesley RK, et al. Acinic cell tumours of minor salivary glands. *Oral Surg* 1980; 50:545-548.
5. Chen S-Y, Brannon RB, Miller AS, et al. Acinic cell adenocarcinoma of minor salivary glands. *Cancer* 1978;42:678-685.
6. Ellis GL, Auclair PL, Gnepp DR. *Surgical Pathology of the Salivary Glands*. Philadelphia: WB Saunders, 1991; Chp. 17.
7. Sharkey FE. Systematic evaluation of the World Health Organization classification of salivary gland tumours: A clinicopathologic study of 366 cases. *Am J Clin Pathol* 1977;67:272-278.
8. Eveson JW, Cawson RA. Salivary gland tumours: A review of 2410 cases with particular reference to histological types, site, age and sex distribution. *J Pathol* 1985;146:51-58.
9. Spiro RH. Salivary neoplasms: Overview of a 35-year experience with 2,807 patients. *Head Neck Surg* 1986;8:177-184.
10. Batsakis JG, Chinn EK, Weimert TA, et al. Acinic cell adenocarcinoma: A clinicopathologic study of thirty-five cases. *J Laryngol Otol* 1979;93:325-340.
11. Goodner P. Follicular carcinoma in a lingual thyroid. *J Laryngol Otol* 1980;94:347-349.
12. LiVolsi VA. *Follicular lesions of the thyroid in Surgical Pathology of the thyroid*. Philadelphia: WB Saunders; 1990:173-212.
13. Whitaker B, Robinson K, Hewan-Lowe K, et al. Thyroid metastasis to the oral soft tissue: case report of a diagnostic dilemma. *J Oral Maxillofac Surg* 1993; 51:588-593.
14. Hickman RE, Cawson RA, Duffy SW. The prognosis of specific types of salivary gland tumours. *Cancer* 1984; 54:1620-1624.
15. Perzin KH, LiVolsi VA. Acinic cell adenocarcinoma arising in salivary glands: A clinicopathologic study. *Cancer* 1983; 52:542-549.
16. Levitt SH, McHugh RB, Gomez-Martin O, et al. Clinical staging system for cancer of the salivary gland: a retrospective study. *Cancer* 1981;47:2712-2724.
17. Spiro RH, Huvos AG, Strong EW. Acinic cell carcinoma of salivary origin. A clinicopathologic study of 67 cases. *Cancer* 1978;41:924-935.

Address for Correspondence:

**DR S. P. KHOO**

*Department of Oral Pathology,  
Oral Medicine & Periodontology  
Faculty of Dentistry  
University of Malaya  
50603 Kuala Lumpur  
Malaysia*