Acta Medica Scientia 01 [01] (2014)
www.asdpub.com/index.php/ams
E-ISSN: 2454-3594

Case Report

Mucoepidermoid carcinoma of thyroid gland: A rare case report

C. Bharath* and Priyanka Chadha

Department of Pathology, Medical College, VIMS, Bellary – 583104, Karnataka, India

***Corresponding Author**
Dr. C. Bharath, M.D.,
Professor & Head,
Department of Pathology,
Medical College, VIMS, Bellary – 583 104,
Karnataka, India
E-mail: bhar5anu@yahoo.co.in

Keywords:
Mucoepidermoid Carcinoma,
Thyroid,
Rare tumor,
Primary

Abstract

Introduction: Mucoepidermoid carcinoma is a common neoplasm of the salivary gland but can also occur in other sites like oesophagus, breast, lungs, pancreas, etc .In thyroid gland it is very uncommon or rare and is said to be of low grade indolent neoplasm. In literature few cases have been reported.
Case report: 43 year old female presented with progressive midline swelling since 20 years with alteration in voice since two months. CT revealed heterogeneous enhancing lesion of 35x50x37 mm in left lobe of thyroid. FNAC revealed epithelial malignancy. Total thyroidectomy was done and specimen sent for histopathology.
Result: Microscopically the tumor showed cells arranged in follicular and trabecular pattern. These tumors cells were of columnar and mucin producing type arranged in glandular pattern. Some of the cells show squamous metaplastic changes. These glands or follicles lack colloid. Final diagnosis of mucoepidermoid carcinoma of thyroid was given.
Conclusion: Mucoepidermoid carcinoma of thyroid is low grade neoplasm which extends into adjacent tissue by local infiltration and unlikely to metastasize, hence prognosis is good. It can also have aggressive behaviour and hence a thorough search to be done histologically and also rule out other metastatic lesions.

1. Introduction

Mucoepidermoid carcinoma most commonly arises in the salivary gland but can also occur in other sites like esophagus, breast, lungs, pancreas, etc [1]. In thyroid gland it is very uncommon and is said to be low grade indolent neoplasm [4,5]. Here we present a case of unusual malignancy with review of available literature.

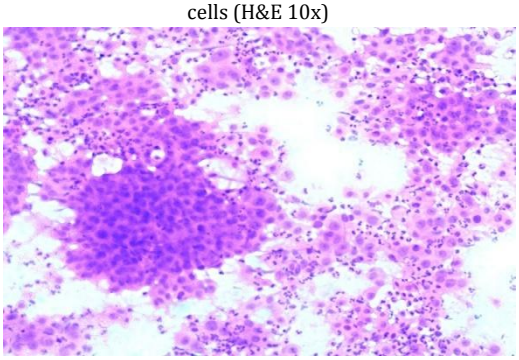
2. Case report

A 43 year old female presented with progressive midline swelling since 20 years with alteration in voice since two months. CT revealed heterogeneous enhancing lesion of 35x50x37 mm in left lobe of thyroid. FNAC was advised and revealed epithelial malignancy. Further the patient was posted for surgery and thyroidectomy with left radical neck dissection was done and sent for histopathology.

3. Result

FNAC revealed epithelial malignancy with pleomorphic epithelial cells with moderate cytoplasm, irregular ovoid nucleus, granular chromatin and distinct nucleoli which were arrangedin dyscohesive clusters, syncytial aggregates, acinar pattern and scattered singly (Fig 1).

Figure1: FNAC of thyroid gland showing cluster of pleomorphic epithelial cells (H&E 10x)



Grossly, the thyroid lobe was enlarged with a nodular surface.Cut section showed greyish white solid appearance with multifocal central softened mucoid area (Fig 2). Five lymph nodes were retrieved from the fibrofatty tissue. Microscopically the tumor showed cells arranged in follicular and trabecular pattern. These tumors cells were of columnar and mucin producing type arranged in glandular type. Many of the cells show squamous differentiation (Fig 3). The mucin produced stained positive for PAS and Alcian Blue (Fig 4 and Fig 5). The lymph nodes showed hyperplasia only. Histologically diagnosed as Mucoepidermoid carcinoma of thyroid.

Figure 2: Thyroidlobe appears greyish white,solid with multifocal softened mucoid areas

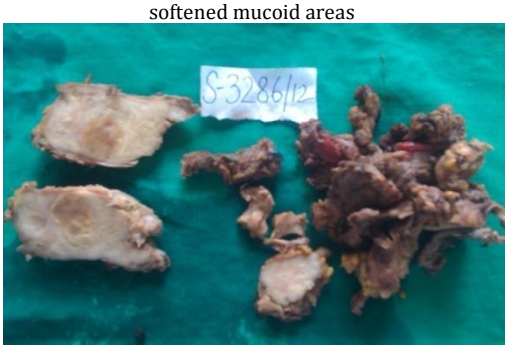


Figure 3: Thyroid follicles with adjacent squamoid differentiation (H&E 10x)

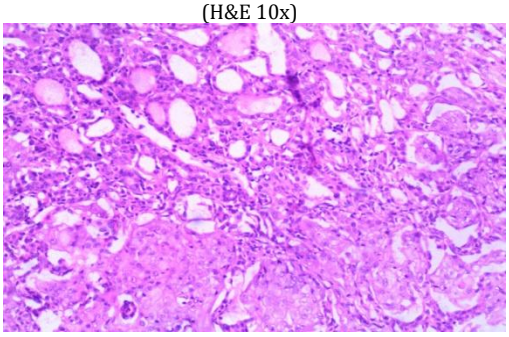


Figure 4: Shows tall clear cells with mucin in the centre and surrounding areas (PAS 10x)

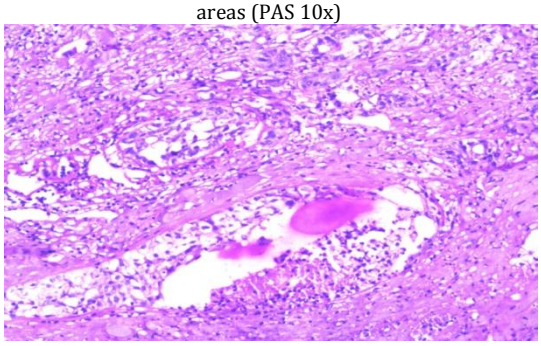
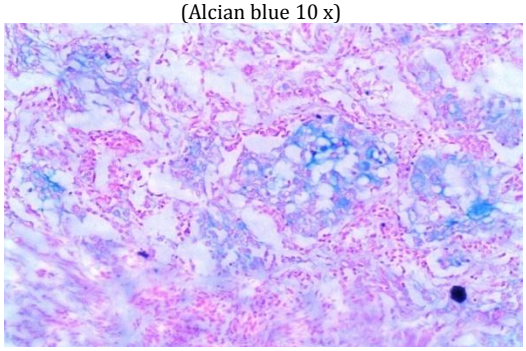


Figure 5: Positive blue staining of the mucinous material (Alcian blue 10 x)



4. Discussion

Primary mucoepidermoid carcinomas of thyroid gland are uncommon tumorsand about 40 cases been described since first report in 1977 by Rhatigan *et al*[1,6]. They originate from thyroid follicular epithelial cells and solid cell nests of the ultimobranchial body[1]. It is seen commonly in females (M:F::1:2) and can occur in any age group with the mean age of 37.9 years. The patients present with a thyroid mass. Lymph node metastasis is common (60%), but distant metastasis is rare (13%).

Histologically it is characterized by the presence of both squamous cells and mucin producing cuboidal cells[2]. These tumors contain three cell types, i.e., mucin-secreting, epidermoid, and intermediate or basal cells[7].

Healy *et al* and Foote and Frazell developed this concept further and separated mucoepidermoid tumors into three grades of malignancy: low grade, high grade, and intermediate. Generally, the low grade carcinomas tend to have many cystic spaces lined by a single layer of mucous secreting epithelium. Epidermoid and intermediate cells are sparse and pleomorphism and mitoses are nearly absent. The intermediate types of tumors form solid nests of cells, are more cellular than low grade tumors, and have a greater preponderance of epidermoid and intermediate cell types with fewer cystic spaces. The cells have slight to moderate pleomorphism and occasional mitoses. High grade tumors tend to have only occasional mucous cells and the epidermoid and intermediate cells have considerable anaplasia and rather numerous mitoses[7].

Wenig *et al* reported six cases of thyroid mucoepidermoid carcinoma, four occurred in women and two in men with an age range of 29 to 57 (median, 46 years)[5]. Ryohei *et al* also described a case of primary mucoepidermoid carcinoma arising in the thyroid[2].

5. Conclusion

Mucoepidermoid carcinoma of thyroid is a low grade neoplasm which extends into adjacent tissue by local infiltration and unlikely to metastasize, hence prognosis is good [2]. A through clinical examination including detailed pathological and radiological information will help us in reaching a final conclusion[6]. Despite its low-grade appearance the morbidity and mortality associated with its ability to recur locally and metastasize justify the need for more aggressive surgical therapy [3].

References

[1] Koji Shindo, Shinichi Aishima, Masayuki Okido, and Akira Ohshima, "A Poor Prognostic Case of Mucoepidermoid Carcinoma of the Thyroid: A Case Report," *Case Reports in Endocrinology*: vol. 2012, Article ID 862545.

[2] Ryohei Katoh, Tamotsu Sugai, Sadahide Ono, Kazuo Takayama, Nobukazu Tomichi, Hideo Kurihara and Masayuki Takamatsu, Mucoepidermoid Carcinoma of the Thyroid Gland: *Cancer*: 1990;65(9):2020-2027.

[3] Steele, Scott R.; Porter, Clifford; Azarow, Kenneth S.; Royer, Michael; Brown, Tommy A, Mucoepidermoid Carcinoma of the Thyroid Gland: A Case Report and Suggested Surgical Approach, *American Surgeon* 2001; 67 (10): 979.

[4] Rosai and Ackerman's Surgical Pathology, Elsevier Inc. 10th edition:2012; 1: 521

[5] Wenig BM, Adair CF, HeffessCS,Primarymucoepidermoid carcinoma of the thyroid gland: a report of six cases and a review of the literature of a follicular epithelial-derived tumor: *Hum Pathol* 1995; 26(10):1099-108.

[6] Das S, Kalyani R, Sclerosingmucoepidermoid carcinoma with eosinophilia of the thyroid: *Indian J Pathol Microbiol* 2008; 51: 34-36.

[7] Ronald M. Rhatigan, Juan L. Roque, And Robert L. Bucher, Mucoepidermoid carcinoma of the thyroid gland: *Cancer* 1977; 39: (1):210-214.