



CYTOLOGICALLY DIAGNOSED AND HISTOLOGICALLY CONFIRMED HIGH GRADE MUCOEPIDERMOID CARCINOMA: CASE REPORT

Yelda Dere^{1*}, Serkan Yaşar Çelik¹, Özgür İlhan Çelik¹, Serhan Derin², Murat Şahan²

¹Department of Pathology, Muğla Sıtkı Koçman University Faculty of Medicine, Muğla, Turkey.

²Department of Otorhinolaryngology, Muğla Sıtkı Koçman University Faculty of Medicine, Muğla, Turkey.

Corresponding Author: - Yelda Dere

E-mail: yeldamorgul@gmail.com

<p>Article Info Received 15/06/2015 Revised 27/06/2015 Accepted 02/07/2015</p> <p>Key words: Mucoepidermoid carcinoma, high grade, parotid gland</p>	<p>ABSTRACT Fine needle aspiration biopsy (FNAB) is considered as one of the most useful diagnostic procedure on palpable and nonpalpable lesions guided with radiologic methods. Mucoepidermoid carcinoma (MEC), a rare but the most common primary malignant tumor of salivary glands. Low grade MEC needs to be distinguished from benign lesions of the salivary gland and may cause false negative results. High grade MEC may resemble squamous cell carcinoma especially in cases with dense cystic component. Herein, we report a case of cytologically diagnosed and histologically confirmed MEC; in order to impress the importance and the effect of FNAB in the differential diagnosis of salivary gland lesions.</p>
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INTRODUCTION

Fine needle aspiration biopsy (FNAB), is a widely used diagnostic method which can be performed on deeply located nonpalpable lesions when associated with radiological techniques in addition to palpable lesions alone [1,2]. The diagnosis of mucoepidermoid carcinoma which is the most common primary malign tumor of salivary glands can be challenging especially in cystic predominant cases similar to squamous cell carcinoma [3]. In order to impress the difficulties in differential diagnosis of salivary gland tumors we herein report a case of high grade mucoepidermoid carcinoma diagnosed cytologically by FNAB and histologically confirmed.

CASE REPORT

A 60 year old male patient applied to our Otorhinolaryngology Clinic with right facial paralysis, pain around right ear and a growing mass under the right ear for 3 months. In the physical examination, a firm mass of 2x1 cm fistulated to the skin was determined in addition to right peripheral facial paralysis (House Brackhman, grade 6). The MRI showed a slightly cystic, 1.3x0.8 cm sized mass, located in the deep lobe of the parotid gland with

multipl lymphadenopathies around measured as 1 cm in diameter. FNAB performed to the lesion and the palpable lymphadenopathies, and 4 slides and one cell block from 1 cc fluid of the mass and 12 slides from palpable lymph nodes were obtained. In the microscopic evaluation of cytological smears from the mass, mostly single, atypic *tad-pole* cells with large and hyperchromatic nuclei, scant cytoplasm and irregular nuclear borders surrounded by abundant inflammatory infiltration in a necrotic and mucoid background. (Figure 1a, 1b) The mass was diagnosed as malign cytology compatible with mucoepidermoid carcinoma and all smears from lymph nodes were reactive. After the cytological diagnosis total parotidectomy and right neck lymph node dissection was performed.

After the operation, the main material was 5x4x3 cm sized parotidectomy with 3x2 cm elliptic skin excision. The cut surface showed a tumor of 3 cm with irregular borders and necrotic and haemorrhagic areas, extending the subcutaneous tissue of 0.5 cm (Figure 2) Two cut surfaces of the mass was handled and blocked for microscopic examination. In addition to this, a skin biopsy of 2.5x1.0.5



cm, a facial nerve root biopsy with 0.3 cm diameter, mastoid bone curettage of 5 cc and 4x2x1.5 cm right neck dissection from which 12 lymph nodes were dissected were sent to our laboratory.

The microscopic evaluation of the mass revealed a tumor in parotid gland invading surrounding soft tissues and subcutaneous tissue characterized by glandular structures with comedonecrosis and diffuse sheets of cells (Figure 3a). In larger view, tumor cells tend to form cribriform glandular structures with large, hyperchromatic nuclei, scant cytoplasm, similar to the cytology, in addition to conspicuous nucleoli and mitotic figures. Tumor consisted of extensive perineural invasion and necrosis with mild lymphoplasmacytic host reaction (Figure 3b, 3c). The facial nerve root biopsy also showed tumoral infiltration of the facial nerve.

Extracellular mucin was detected by PAS-Alcian blue and immunohistochemically the tumor showed pan-cytokeratin and p63 positivity in addition to CD117 and calponin negativity (Figure 3d) All of the surgical margins and mastoid bone curettage was tumor negative as well as the lymph nodes dissected from right neck dissection.

The case was graded according to Modified AFIP system and reported as high grade mucoepidermoid carcinoma depending on the following criteria: intracystic component <20%, the presence of neural invasion and necrosis, the mitotic index as 28/10 HPF with a total score of 10. The tumor was staged as T4a according to TNM because of the invasion of the subcutaneous tissue and the facial nerve. The postoperative treatment given to the patient was 37 cures of radiotherapy. The patient was disease free in the postoperative 3rd and 6th months follow up.

Figure 1: 1a. Scattered atypic cells with large nuclei and scant cytoplasm mixed with lymphocytes in a mucoid background. X200, Giemsa; 2a: Large, tad-pole like atypic squamoid cells with scant cytoplasm. X400, PAP

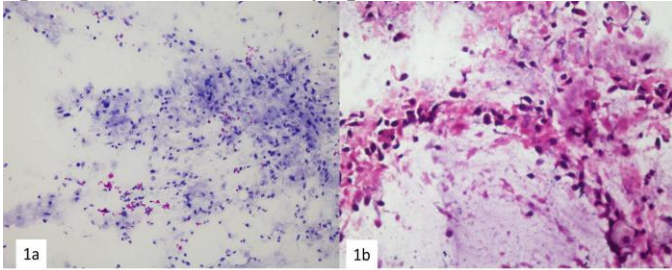
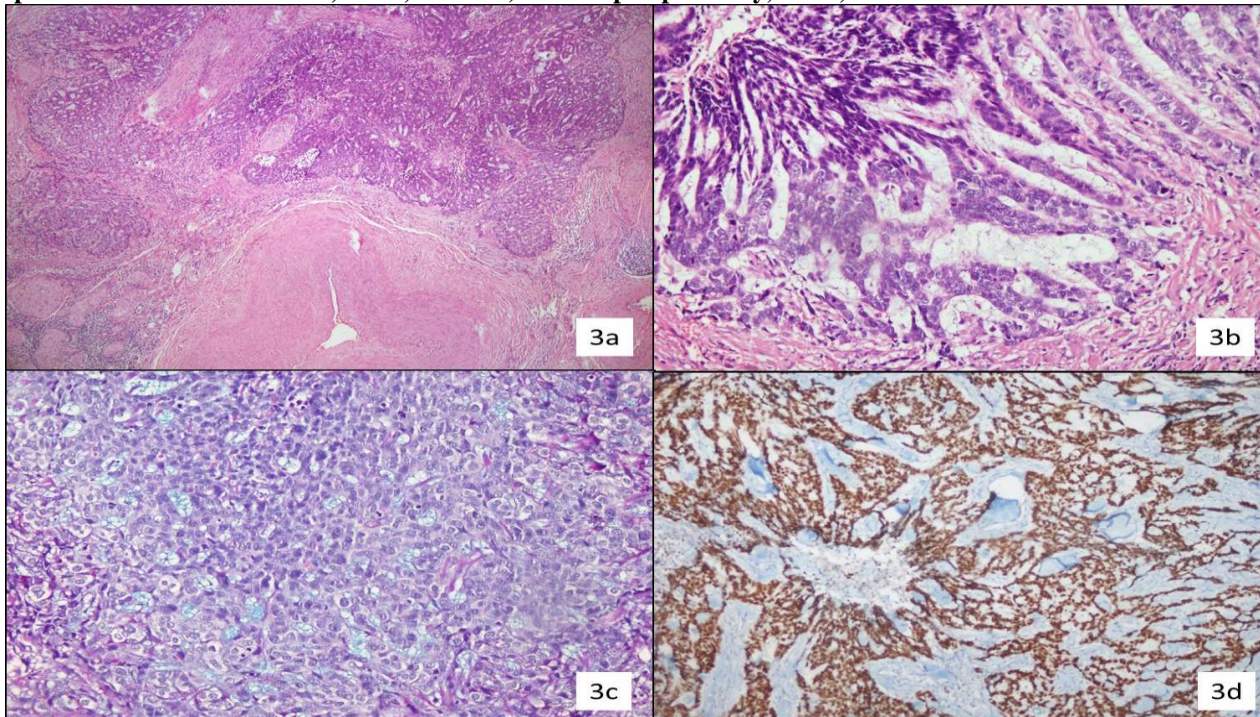


Figure 2. Macroscopic appearance of tumor



Figure 3 : 3a) Low power view of tumor composed of gland-like structures and sheets of cells, X40, H&E. 3b) Infiltrative gland like structures of the tumor lined by atypic large cells, X200, H&E. 3c) Sheets of tumor cells with PAS positive extracellular mucin, X400, PAS. 3d) Diffuse p63 positivity, X100, DAB.



DISCUSSION

Fine needle aspiration biopsy is a widely used method which can be very helpful in the diagnostic approach. Generally FNAB is preferred to be performed on palpable lesions, however deeply located lesions can be sampled with the help of radiological techniques such as ultrasonography guided FNAB. Because of the wide range of usage and increase of experience, the evaluation of FNAB helps the specific diagnosis of head and neck lesions in order to determine the optimal treatment [3].

Mucoepidermoid carcinoma (MEC) which is the most common primary malign tumor of the salivary glands is one of the approachable lesions because of the general location of parotid gland [4] However the cytological evaluation in salivary glands can be problematic due to the heterogeneity of the lesions located in this region and the common features seen in benign and malign lesions[3,4].

The major problems in the cytological diagnosis of MEC depend on the grade of the tumor [5]. Low grade MEC, because of the similarities with benign lesions, may lead to false negative results ending up with insufficient or delay of treatment. Despite that, the distinct malignant features of high grade MEC can usually be recognizable but the subtyping of this malignant lesion may be problematic [6]. Especially, cases with abundant cystic component take part in the differential diagnosis of another common head and neck lesion, squamous cell carcinoma [7,8] The problems can occur due to sampling in cytological smears. Only acellular mucinous material obtained by FNAB may cause omitting diagnosis of MEC [9]. However, in cellular smears, the presence of nuclear atypia, three types of tumor cells, lymphocytic infiltration

and extracellular mucin are the most useful criteria in cytological diagnosis of MEC [5]. In our case, atypical cells with distinct malignant features and extracellular mucinous material was detected in addition to inflammatory cells led us to the diagnosis of MEC.

Many researches in the literature suggest cryostatic evaluation at the time of surgery should take place in standard methods for accurate determination of treatment options in salivary gland lesions as the next step after the FNAB [10] However, because of the absence of cryostatic equipment in our centre this method could not be used in this case.

Histopathologically, MEC is a tumor with complex histological patterns which consists of variable proportions of epidermoid (squamous), intermediate and mucous cells and graded as low, intermediate or high [11]. Detailed pathological evaluation and accurate clinical approach remains gold standard because the grade of the tumor is the most important prognostic factor. According to the Modified AFIP system, in which the percentage of intracystic component, mitotic count and the presence of neural, vascular and invasion, necrosis, and anaplastic cells are analyzed, our case was defined as high grade MEC.

In conclusion FNAB is an important diagnostic technique in head and neck lesion. But the diagnosis of FNAB can be problematic due to sampling or the heterogenic structure of salivary gland tumors by pathologists. Cryostatic evaluation associated surgical procedures may be more helpful to enlighten the nature of these lesions especially in cases of which FNAB could not help.

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