KBB-Forum
2006;5(4)
www.KBB-Forum.net

CASE REPORT

MALIGNANT MYOEPITHELIAL CARCINOMA ARISING IN A PLEOMORPHIC ADENOMA OF THE SUBMANDIBULAR GLAND

Şenol CIVELEK, MD[1]; İbrahim ERCAN, MD[1]; Burak Ömür ÇAKIR, MD[1]; Tülay BAŞAK, MD[2]; Suat TURGUT, MD[1]

[1]*Şişli Etfal Training and Research Hospital, 1st Otorhinolaryngology – Head and Neck Clinic, İstanbul, Türkiye*
[2]*Şişli Etfal Training and Research Hospital, Clinic of Patology, İstanbul, Turkey*

SUMMARY

Primary neoplasia of myoepithelial cells in the glands of the head and neck is rare. The parotid gland is the most common site. However, rare cases of myoepithelial tumors have been reported in other locations, such as the submandibular gland, lacrimal glands, tongue base, and even the skin. We have reported an unusual case of malignant myoepithelioma of submandibular gland arising in pleomorphic adenoma in a middle aged woman. The diagnosis of malign epithelial tumor was preoperatively made by fine needle aspiration cytology (FNAC). The surgery comprised of a tumor excision with neck dissection. The final histological diagnosis was malignant myoepithelial carcinoma of the submandibular gland. Immunohistochemically putative myoepithelial markers were highly expressed.

Keywords: Myoepithelial carcinoma, submandibular gland, pleomorphic adenoma

SUBMANDİBULAR BEZ PLEOMORFİK ADENOMASINDAN GELİŞEN MALİN MİYOEPİTELYAL KARSİNOMA

ÖZET

Baş-boyun yerleşimli bezlerdeki miyoepitelyal hücrelerden köken alan birincil neoplaziler enderdir. Parotis bezi en sık tutulan yerdir, fakat submandibular bez, lakrimal bez, dil kökü ve hatta cilt gibi diğer bölgelerde de ender olarak bildirilmiştir. Bu çalışmada orta yaşlı bir bayanda, pleomorfik adenoma zemininde gelişen, submandibular bezden kaynaklanan ender görülen bir malin miyoepitelyoma olgusu sunuldu. Malin epitelyal tümör tanısı ameliyat öncesi dönemde ince iğne aspirasyon sitolojisi ile yapıldı. Cerrahi tedavi olarak boyun diseksiyonu ile birlikte tümör çıkarılması uygulandı. Kesin histopatolojik tanı submandibular bezin malin epitelyal karsinomu olarak bildirildi. İmmünohistokimyasal olarak varsayılan miyoepitelyal belirteçler belirgin olarak saptandı.

Anahtar Sözcükler: Miyoepitelyal karsinoma, submandibular bez, pleomorfik adenoma

INTRODUCTION

Malign myoepithelioma is an extremely rare tumor, which represents less than 1% of salivary gland tumours.[1] It usually occurs in the parotid region, but unusual localization have been reported previously such as the submandibular gland, palate, gum, larynx, lateral wall of the nasopharynx, tongue base and maxillary sinus.[2]

In 1943, Sheldon[3] was the first investigator to report a myoepithelioma of the major salivary gland. Its malignant counterpart (myoepithelial carcinoma) was first described later by Stromayer et al. in 1975.[4] Malign myoepithelioma may arise either "de novo" or develop in a pre-existing pleomorphic adenoma.

A case of malignant myoepithelioma, progressed from pleomorphic adenoma, was presented in this report with special emphasis on the histological features.

Corresponding Author: İbrahim Ercan MD; Şişli Etfal Eğitim ve Araştırma Hastanesi, 1. KBB ve BBC Kliniği, İstanbul, Türkiye, Telephone: +90 212 2312209 Faks: +90 212 2341121 E-mail: i_ercan@yahoo.com

Received: 23 November 2005, revised for: 3 February 2006, accepted for publication: 6 February 2006

CASE REPORT

A 43 year old woman was referred to our clinic with a 2x2 cm mass located in the left submandibular region. One year ago she had undergone radical mastectomy and this tumor was diagnosed as invasive ductal carcinoma. After the surgery, she had also received radiation therapy and chemotherapy. In her routine oncologic follow up at the oncology clinic, she was noticed to have a mass in left submandibular region and referred at our clinic. According to the patient the tumor in left submandibular region had been present for approximately 10 years and during this period the tumor size did not change. On physical examination, a 2x2 cm firm painless mass was palpated in the left submandibular region. The mass was indistinguishable from the submandibular gland on bimanual examination. There was no evidence of other neck masses or lymphadenopathy. The oral cavity and pharynx were normal on inspection and endoscopic examination. Ultrasonografic examination showed non homogeneous hypoechoic 2x2 cm mass with well defined borders. FNAC was performed. The cytological findings led to a diagnosis of carcinoma and the left submandibular

gland was excised with modified radical neck dissection type III. Intraoperative frozen section was used and it was suggestive of malignancy. The patient did not receive additional therapy (radiationtherapy and/or chemotherapy) after surgery. There has been no evidence of recurrence for 21 months since the surgery.

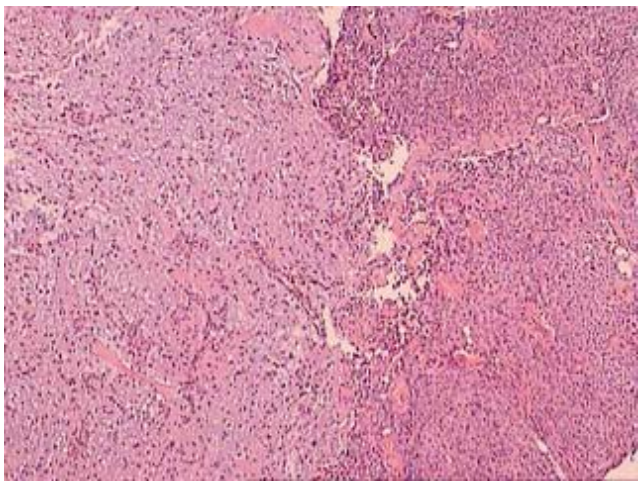

Figure 1. Fields of pleomorphic adenoma with myxoid stroma, epithelium and islands of myoepithelial

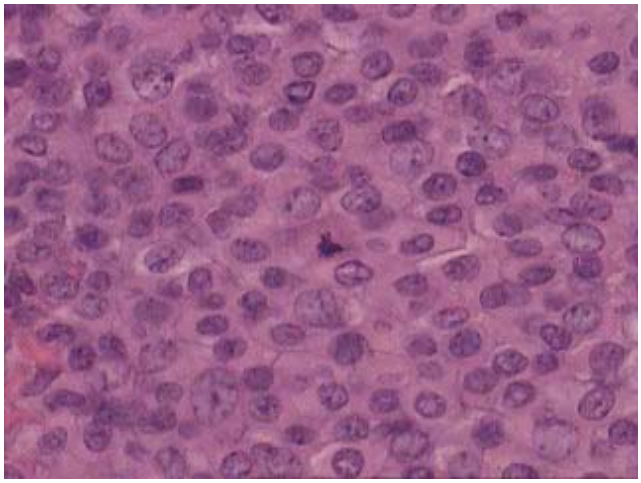

Figure 2. Atypical mitosis within myoepithelial carcinoma

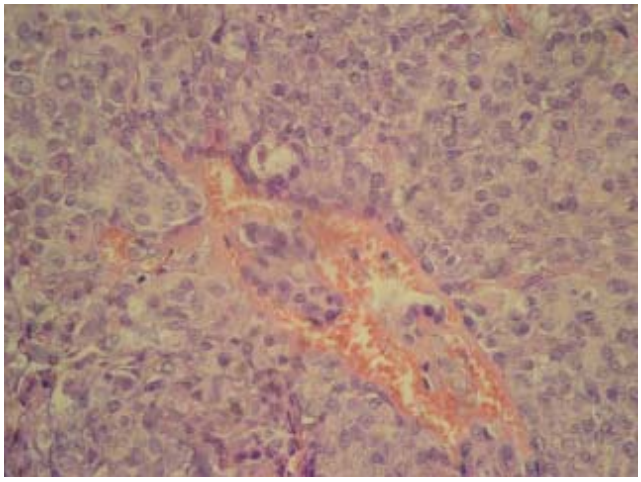

Figure 3. Vascular invasion

Pathological Findings

The macroscopic examination revealed a white-cream colored mass measuring 4x3x2.5 cm with irregular margins. The margins of the submandibular gland were not visible clearly. However, invasion to neighboring structures was not noted.

Microscopic examination showed a pleomorphic adenoma consisting of myoepithelial cells in myxoid stroma and epithelial cells lining the ductal and tubular structures (Fig 1). There were malignant myoepithelial fields with clear cytoplasmic cells, malign large solitary islands. There were minimal necrotic regions and presence of 6-8 mitosis on high per field (Fig 2). Margins of tumor were irregular and there was vascular invasion (Fig 3). Immunohistochemical staining carried out with cytokeratin, vimentine, S-100, GFAP (glial fibrillary acidic protein) demonstrated positive staining in tumor cells. Due to the histopathological findings suggestive of malignancy, it was diagnosed as myoepithelial carcinoma arising from pleomorphic adenoma. These findings were focal small islands of tissue areas suggestive of pleomorphic adenoma, presence of intensive and atypical mitosis, no resemblance of cellular nuclei and cytoplasmic structures neither to pleomorphic adenoma nor to myoepithelial cells. Breast carcinoma was ruled out upon testing negative with immunohistochemical studies for progesterone, androgen and estrogen.

Histopathological evaluation of a total of 20 lymph nodes at level 2-5 obtained during neck dissection was reported as reactive hyperplasia.

DISCUSSION

Myoepithelial cells are thought to be responsible for the coordinate propulsion of secretions from glandular acini into secretory ducts in the lacrimal or salivary glands and in the breast and prostate. These cells combine features of the both smooth muscle and epithelial cells and typically line the basement membranes around glandular acini and ducts. Primary neoplasia of the myoepithelial cells in the glands of the head and neck is rare. Transformation of myoepithelial cells usually occurs in the parotid gland or in the minor salivary glands of the hard palate. However, rare cases of myoepithelial tumors have been reported in other locations, such as the submandibular gland, lacrimal glands, tongue base, and even the skin. Herein, we report a case of a myoepithelioma arising in the submandibular gland.

Two different ways of histogenesis of malignant myoepitheliomas have been considered; a de novo formation in normal salivary gland and

development from a pre-existing pleomorphic adenoma. Based on the clinical data and the histological features, the present tumor may be regarded to represent the latter form. The reason is that there were noticeable areas of pleomorphic adenoma along with solid regions of malignant myoepithelioma consisting of clear cytoplasmic cells. The prognostic implication of the histogenesis of malign myoepitheliomas is controversial. Nagao et al.[5] reported that there was no difference in prognosis in terms of the presence or absence of pre-existing pleomorphic adenoma, while Di Palma and Guzzo[2] suggested more aggressive behavior of de novo malignant myoepithelioma than those arising from pleomorphic adenoma.

As the pathological subclass of malignant myoepithelioma, spindle, plasmacytoid, epithelioid and clear cells are known. Our patient had a submandibular malign myoepithelioma with clear cells type. This is a rare variant of this tumor occurring in submandibular gland. The histopathological variants are not generally thought to be prognostically significant. Immunohistochemistry is also a key point for confirming the diagnosis of myoepithelioma in that keratin and/or vimentin proteins are prominent in neoplastic myoepithelial cells.

More recently, Seifert and Sobin[1] reported that the most useful immunhistochemical marker for the diagnosis of salivary myoepithelioma was the S-100 protein. In our case, immunohistochemical examination revealed that tumor cells were positive for cytokeratin, vimentin, smooth muscle actin, S-100 protein and glial fibrillary acidic protein. Altogether, the pathological findings indicated that the tumor was a myoepithelial carcinoma in the submandibular gland.

Surgery is the first choice of treatment for myoepithelial carcinomas. The high recurrence rate, as indicated in the study of Guangyan et al.[6], suggests the initial surgery should be radical with sufficient normal tissue margins. In general, elective neck dissection is unnecessary because of the low frequency of occult lymph node metastasis. Elective neck dissection might be considered when the tumor is large in size, especially when it occurs in the parotid or submandibular gland FNAC performed before surgery was reported to be a malignant epithelial tumor and frozen section performed during surgery correlated with this result as the specimen was reported to be malignant. We were inclined to undertake neck dissection during the same operation due to the fact that neither of these results was able to confirm the exact pathologic diagnosis. Histopathological evaluation of the specimen showed that total of 20 lymph nodes at level 2-5 obtained during neck dissection were reactive hyperplasia and surgical margins were free from the tumor. Because of this, radiationtherapy or chemotherapy was not applied in our case. The efficacy of radiation therapy alone or in combination with chemotherapy is not well established owing to the rarity of this tumor. The patients should undergo regular follow-up examinations to rule out local recurrence and distant metastasis because the prognosis for malign myoepithelioma is poor.

Myoepithelial carcinoma, an extremely rare tumor, is even more uncommon in the submandibular gland. Therefore, there is insufficient data for an appropriate treatment protocol or an accurate prognosis prediction for the disease. Larger clinical series and longer follow up periods are needed in order to establish the best therapy option for these patients.

REFERENCES

1. Seifert G, Sobin LH. The world health organization's histological classification of salivary tumors. Cancer 1992;70:379-385 PMID: 1617588.
2. Di Palma S, Guzzo M. Malignant myoepithelioma of salivary glands: Clinicopathological features of ten cases. Virchows Arch A Pathol Anat Histopathol 1993;423:389-396 PMID: 8116228.
3. Sheldon WH. So-called mixed tumors of salivary glands. Arch Pathol 1943;35:1-20.
4. Stromeyer FW, Haggitt RC, Nelson JF, Hardman JM. Myoepithelioma of minor salivary gland origin. Light and electron microscopical study. Arch Pathol 1975;99:242-245 PMID: 48374.
5. Nagao T, Sugano I, Ishida Y, Tajima Y, Matsuzaki O, Konno A, Kondo Y. Nagao K. Salivary gland malignant myoepithelioma: clinicopathologic and immunhistochemical study of ten cases. Cancer 1998;83:1292-9 PMID: 9762928.
6. Guangyan YU, Daquan MA, Kaihua SUN, Tiejun LI, Zhang YE. Myoepihelial carcinoma of the salivary glands: behavior and management. Chinese Medical Journal 2003;116(2):163-165 PMID: 12775221.