

**Case Report**



## An Epithelial Myoepithelial Carcinoma in Parotid Gland

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### ABSTRACT

Epithelial myoepithelial carcinoma (EMEC) is a tumor composed of variable proportions of two cell types that typically form duct like structures. It is predominantly tumor of the parotid gland. This rare neoplasm represents 1% of all salivary gland tumors. EMECs are solitary, well-circumscribed, firm masses measuring between 2 cm and 8 cm in greatest dimension. Surgical excision with disease free margins is the treatment of choice. A-67 year-old male patient was presented with a painless mass on the right preauricular region. The mass had a cystic component on the ultrasound. Pathologic examination showed a uniform pattern of ductular epithelium surrounded by clear cells of myoepithelial origin. It was reported as EMEC. There was no recurrence a twenty month follow up. ©2007, Fırat University, Medical Faculty

**Key words:** epithelial myoepithelial carcinoma, parotid gland

### ÖZET

#### Parotis Bezinde Epitelial Miyoepitelial Karsinom

Epitelial miyoepitelial karsinom değişen oranlarda 2 farklı hücre tipinin, tipik olarak duktus benzeri yapılar oluşturduğu bir tümördür. Başlıca parotis bezinde görülür. Tüm tükürük bezi tümörlerinin %1'ini temsil eder. Tekil, iyi sınırlı, sert, çapı 2 cm ve 8 cm arasındadır. Salim cerrahi sınırlarla kitle eksizeyonu seçkin tedavi yöntemidir.

67 yaşında erkek hasta, sağ preauriküler bölgede ağrısız kitle yakınmasıyla başvurdu. Ultrasonografide kitlenin kistik komponenti mevcuttu. Patolojik incelemede miyoepitelial kökenli berrak hücrelerin çevrelediği uniform duktuler epitelial görünüm izlendi. Olgu epitelial miyoepitelial karsinom olarak rapor edilmiş olup 20 aylık takipte rekürrens olmadı. ©2007, Fırat Üniversitesi, Tıp Fakültesi

**Anahtar kelimeler:** epitelial miyoepitelial karsinom, parotis

**E**MEC of the salivary glands is a rare tumor first described by Donath et al in 1972 and recognized as a distinct pathologic entity in the 1991 World Health Organisation (WHO) classification (1,2). It is a tumor composed of variable proportions of two cell types that typically form duct like structures (1). It is characterized by tubular and solid growth pattern with a dual cell population including an inner layer of epithelial cells which are peripherally bounded by a layer of clear myoepithelial cells (3). This rare carcinoma represents 1% of all salivary gland neoplasms (1,4). It is predominantly a tumor of the major salivary glands, especially the parotid. Patient ages range from 31 to 89 years with a mean of 62 years. The tumor is twice as common in women as it is in men. The most common symptom is a painless mass in the parotid region. Pain, facial paralysis or both occur only occasionally (1).

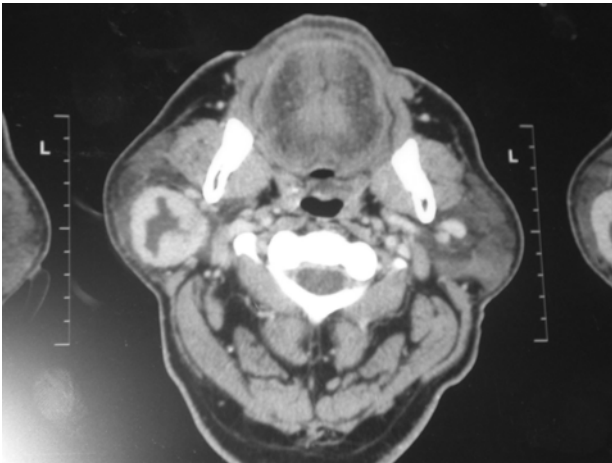
### CASE REPORT

A-67 year old male patient was presented with a painless mass on the right preauricular region which stayed stable for three years but started to grow rapidly within the last three-to four

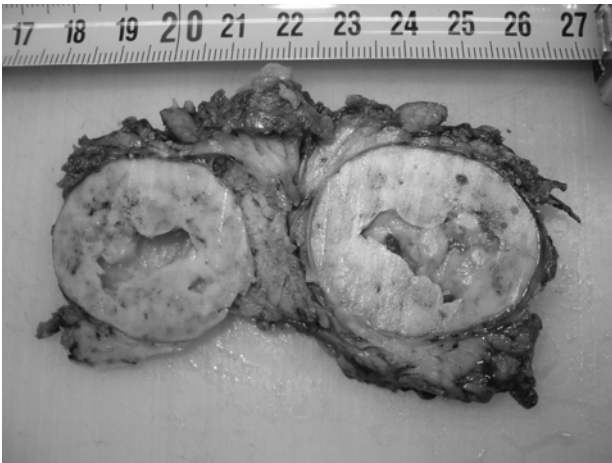
months. On physical examination a 4x3cm semimobile slightly tender mass was palpated on the right parotid region. There was no palpable cervical adenopathy, and facial nerve function was intact. On the ultrasound and computerized tomography images, a 35 mm solid mass was seen with partially irregular margins in the right parotid gland. The mass had a cystic component in the central, and well enhanced solid component peripherally (Figure 1). The patient underwent a superficial parotidectomy and the specimen submitted to pathology contained a gray white, encapsulated nodule that measured 3.8cm (Figure 2). The tumor had a nodular appearance within a dense fibrous capsule (Figure 3). Pathologic examination showed a uniform pattern of ductular epithelium surrounded by clear cells of myoepithelial origin (Figure 4). In some areas solid growth pattern of tumor cells was observed (Figure 5). High-power microscopy showed narrow ducts lined with clear cells and epithelial duct cells. Some limited infiltration into surrounding fibrous capsule was also seen. The capsule of the gland was intact. There was no recurrence during a twenty month follow up.

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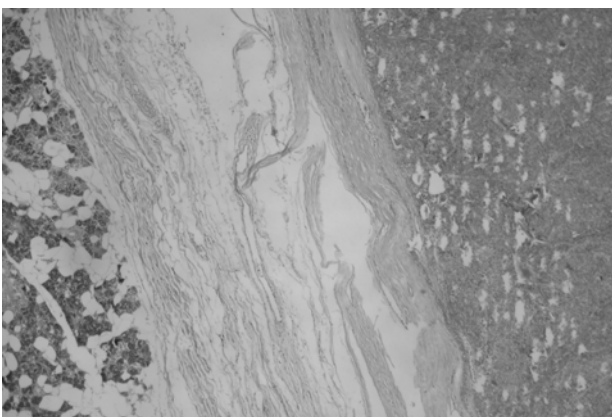
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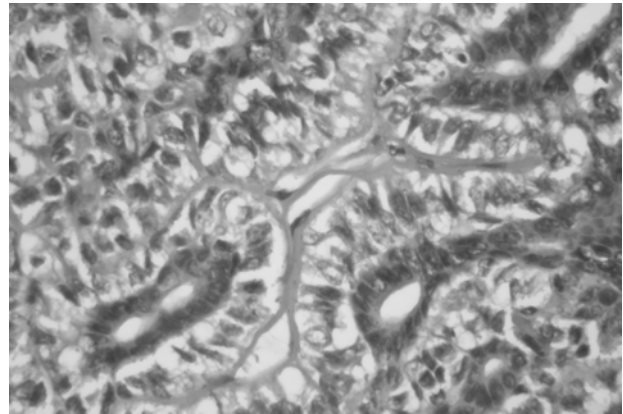
**Figure 1.** The mass with a cystic component in central, in the right parotid gland.



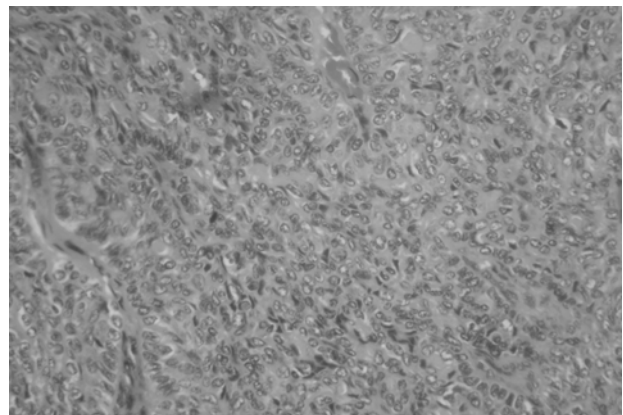
**Figure 2.** The gross sample is an encapsulated mass dissected from the center of the parotid gland. Solitary, gray white in colour, encapsulated tumor in the parotid. The mass has a nodular appearance.



**Figure 3.** The tumor within a dense fibrous capsule. HE X40



**Figure 4.** High power view of ductular structures. HE X200



**Figure 5.** Narrowed ducts in hyaline stroma with a solid growth pattern. HE X100

## DISCUSSION

Epithelial myoepithelial carcinoma represents 1% of all salivary gland tumors. Epithelial myoepithelial carcinoma is a rare salivary gland neoplasm that chiefly localizes in the parotid gland. It predominantly involves females. It is generally seen in the sixth decade (1-6). Our case was a 67 year old male patient and the lesion was on his right parotid gland. Radiologic imaging shows an irregular and heterogeneous mass (4). The radiologic imagings indicated that there were partially cystic and solid components in the tumor. The histologic appearance of epithelial myoepithelial carcinoma varies not only from carcinoma to carcinoma but also within the same neoplasm. Epithelial myoepithelial carcinoma is histologically most significant for its biphasic cellular profile (1,5). In its classic form, this carcinoma demonstrates a nodular growth pattern composed of well defined tubules of varying size lined by two layers of cells. The inner layer is composed of cuboidal to low columnar ductal cells with an eosinophilic cytoplasm. The outer layer consists of ovoid cells with pale, abundant, clear cytoplasm overlying an external well developed basement membrane. The cuboidal cells have a finely granular dense eosinophilic cytoplasm and a central or basal round nucleus. The clear cells are polyhedral with well defined borders and eccentric vesicular nuclei. There is minimal nuclear pleomorphism; necrosis and mitosis can be seen infrequently. The myoepithelial cells may also be arranged in solid sheets or nests without ducts. In some carcinomas the biphasic pattern is less apparent and the appearance is dominated by solid groups

of clear cells separated by fibroconnective tissue or trabeculae of clear cells separated by a thick basal membrane (1). Myoepithelial carcinoma and myoepithelioma have only myoepithelial cell proliferation. We observed a dual cell population in our slides contrary to myoepithelioma or myoepithelial carcinoma. They consisted of epithelial ductal cells which were surrounded by clear cells with eccentric vesicular nuclei. In some sections there were solid sheets of clear cells with separated fibrous tissue. The differential diagnosis includes other clear cell tumors, such as acinic cell carcinoma, mucoepidermoid carcinoma, clear-cell variant of oncocytoma, as well as metastatic renal cell carcinoma. Careful sampling of the salivary lesion is generally useful in demonstrating the biphasic component as in our case. Wang et al. have shown that in a comparative meta-analytic study of the clear-cell salivary gland, neoplasms, including EMEC are present; it had a significantly higher local recurrence rate, but a lower capability of distant metastasis than the others after resection. They also had concluded that there was no specific

immunmarker for diagnosis (7). In a case report of epithelial myoepithelial carcinoma of the base of the tongue, the patient had been treated with neoadjuvant chemotherapy followed by radiotherapy (8). At the present time, the common consensus is that surgery is the treatment of choice. In this case superficial parotidectomy was performed because histologic examination of the parotidectomy specimen showed no perineural or vascular invasion. Surgical margins were also intact. Local recurrence rates range from 17- 60% (1,6,7,9). We did not observe recurrence during a sixteen month follow up.

In conclusion, salivary gland neoplasms sometimes can be difficult to recognize because of their rarity. Not only should pathologists always be alert in the diagnosis of these neoplasms, but also clinicians should closely follow up on those patients diagnosed as EMEC because of the uncertainty of our knowledge about the behaviour of these unusual neoplasms.

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