Case report
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Mucoepidermoid carcinoma of the external auditory canal - case report

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A very rare case of a mucoepidermoid carcinoma of the external auditory canal in an 80-years- old man is presented. Two years ago the tumor of the left external auditory canal appeared, involving facial nerve. Metastatic lesions, composed of squamous cells only, appeared in the ipsilateral cervical lymph nodes. One year after surgical treatment the patient is alive and well.

KEY WORDS: *Carcinoma, Mucoepidermoid; Ear Canal*

INTRODUCTION

Lesions of the external ear and the external auditory canal (external acoustic meatus) are significant and common. On the other hand, carcinomas of the external auditory canal are rare neoplasms (< 1% of all head and neck malignant neoplasms) (1, 2) and only half of the patients have squamous cell carcinoma (3). The symptoms and microscopic findings in carcinoma of the external auditory meatus are often unspecific and misinterpreted as recurrent otitis externa. A definite diagnosis is therefore often delayed, frequently resulting in advanced tumor stages with unfavorable prognosis at the time of diagnosis.

CASE REPORT

The 80-year-old farmer was admitted to the Clinic of Otorhinolaryngology, University of Niš, with a hearing loss and painless hemorrhagic discharge from the left ear. He said that the last few years he had had repeated "blocking" of the ear, and that it had been washed out on several occasions. According to the patient, the disease had begun with a discreet alteration of the auditory canal and the fore edge of the tragus. Two years ago he noted painless hardening beneath the alteration, which kept growing. He was treated on several occasions in ambulatory care center but the alteration did not lessen. The crusts appearing after more lavage began bleeding spontaneously on the surface, and the oval hardening kept growing. The alteration was still painless.

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On palpation, the preauricular region was slightly painful, as well as few lymph nodes (approximately 1cm to 1.5 cm in diameter) on anterior border of sternocleidomastoid muscle. A couple of weeks after admission to the clinic, minor infiltration of the sternocleidomastoid muscle median fore edge appeared and slight impediment of neck movement to the right, probably because of secondary tumor's infection. X ray and CT scan showed a large mass in the left external auditory canal (Figures 1-3).

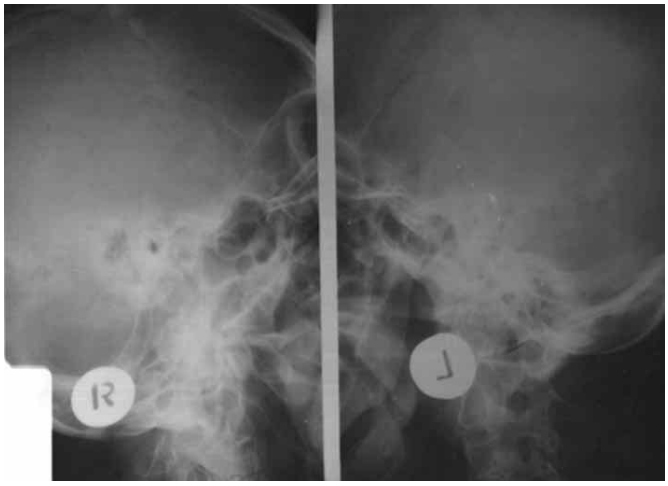

Figure 1. Radiographic views by Schiller. Pneumatisation of left mastoid is diminished

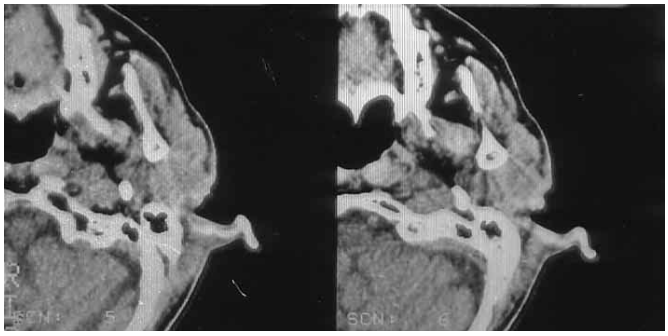

Figure 2. CT scan. Soft tissue mass in left external auditory canal and preauricular region

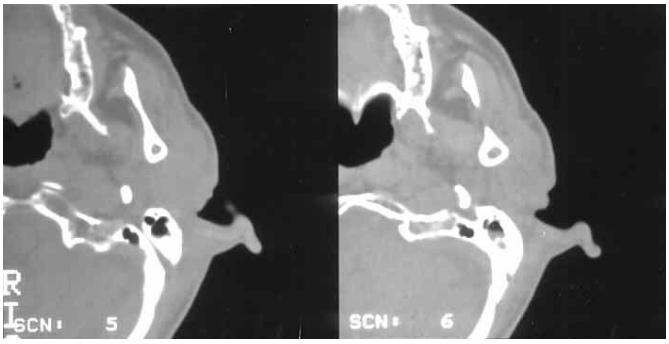

Figure 3. CT scan. No bone destruction at the same level

Large vessels, sinuses and middle ear were not involved. During the preoperative period, cardiologic preparation was undertaken and an antibiotic therapy administered intramuscularly (IM). The skin of the outer auditory canal was excised, and semi-amputation of the left auricula (with a 3 cm incision radius from the meatus) was done, with penetration into the parotid gland, requiring identification of the facial nerve truncus and parotidectomy. The parotid gland was removed and the lower branch of the facial nerve sacrificed because it could not be prepared. Selective neck dissection was performed. The tissue removed intraoperatively was sent for histopathological verification. The $T_1N_{2b}M_0$ stage was found.

Histologically, a mucoepidermoid carcinoma was found in the external ear, with a dual population of cells, the mucous cells and the squamous cells (Figures 4a,b) with mucus-filled cystic spaces, comprising less than 20% of tumor tissue. The mucus was confirmed by alcian-blue periodic-acid-Schiff (AB-PAS) method at pH 2.5.

The wound healed per primam. The oncology consultants decided that a radiation therapy was not to be conducted because of the age of the patient. Three months after the first operation a surface lymph node appeared on the fore edge of the sternocleidomastoid muscle of the same side. A lung X ray revealed no metastases. In the fourth month after the first operation a functional dissection of the left side of the neck was performed (under neuroleptanalogesic sedation). Cervical lymph nodes metastases were composed from squamous cells only (Figure 4c), forming solid nests or cords. One year after treatment the patient is alive and well.

DISCUSSION

Mucoepidermoid carcinoma is a tumor characterized by the presence of squamous, mucus-producing cells and cells of intermediate type (4). Electron microscopic studies indicate that both mucous and squamous cells may differentiate from intermediate cells and that these cells are also a feature of the tumors; myoepithelial cells are not found (5).

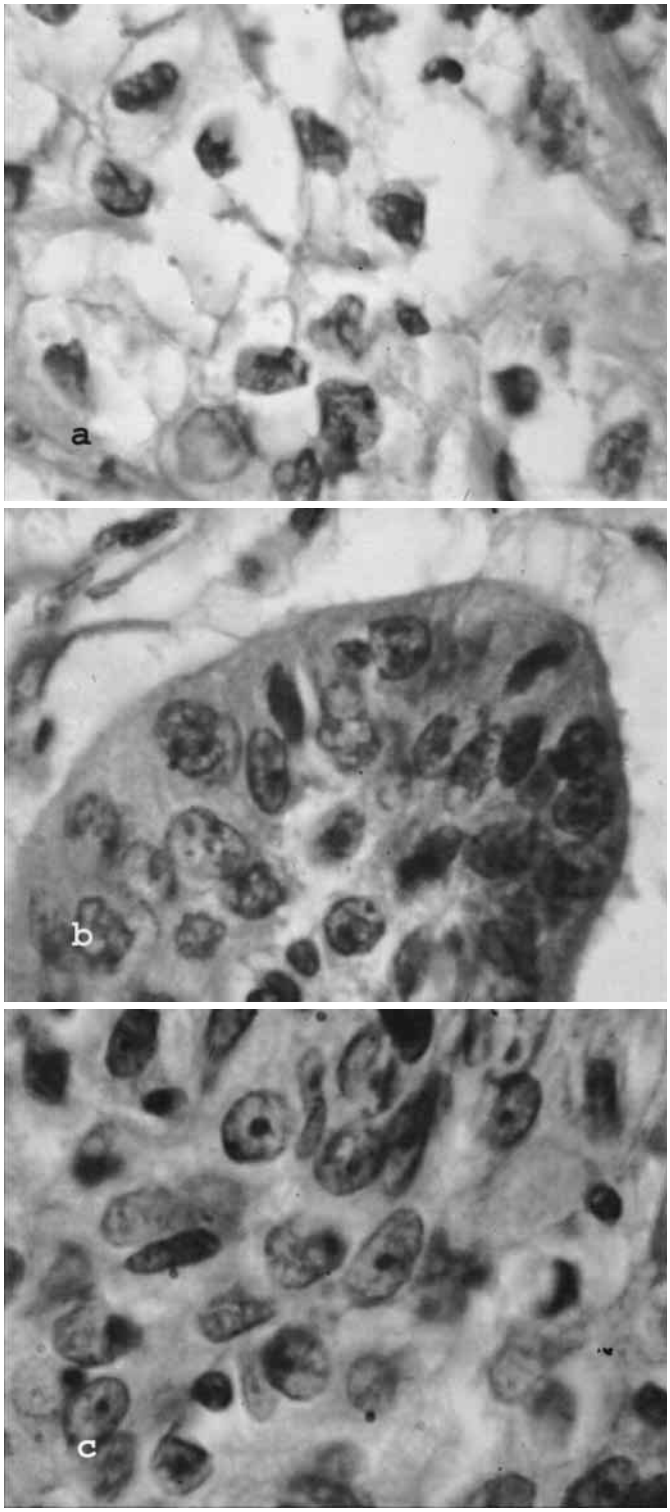

Figure 4. Mucous cell (a) and squamous cells (b) of the external auditory canal mucoepidermoid carcinoma. Metastases were composed from squamous cells only (c). HE, obj. x 63

Microscopically, it is common practice to divide mucoepidermoid carcinomas into low-, intermediate-, and high-grade types (5). Most low-grade mucoepidermoid carcinomas consist of multiple well-developed cystic or microcystic structures lined by mucus-producing, intermediate, or epidermoid cells. As mucoepidermoid carcinoma become less differentiated and higher grade, the nests

of tumor cells become larger, more irregular, and more solid, and fewer cystic spaces containing mucous secretion are apparent. The high-grade carcinomas tend to form solid nests or cords composed of intermediate and epidermoid cells, with a few mucin-producing cells. Perineural invasion and lymph node metastases are frequently associated. Our case belongs to the high-grade carcinomas.

Early diagnosis is of vital importance for the prognosis of external auditory meatus carcinoma. Especially older patients (aged 50 to 80 years) who previously have had no history of ear disease should undergo early computer tomographic examination and biopsy in cases of recurrent external otitis. The prognosis of mucoepidermoid carcinoma depends on the adequacy of treatment, clinical stage, tumor grade, and tumor location. A quantitative histological grading system was devised by Auclair et al. (1992) (6). They analyzed the histological features most useful in predicting high-grade aggressive behavior: a cystic component of less than 20%, 4 or more mitotic figures per 10 high power fields (HPFs), neural invasion, necrosis and anaplasia. Each of these histological features was given a fixed score. A total score of 0 to 4 was considered low grade, 5 to 6, intermediate grade, and 7 or more, high grade. Using this point system, the mortality rates were 3.3%, 9.7%, and 46.3% for low, intermediate, and high grade, respectively (7).

Complete excision with normal tissue margins is the ideal treatment. Radiotherapy is indicated for high-grade carcinomas, for tumors with extensive perineural or vascular invasion, and for incompletely excised tumors (5).

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