CASE REPORT

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A Rare Case of Mucoepidermoid Carcinoma of the Nasal ala

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Abstract

Background: Mucoepidermoid carcinoma is a malignant disease of salivary glands that originates from epithelial cells. These tumors are aggressive and have a poor prognosis.

Aim: This study aims to investigate a rare case of nasal mucoepidermoid carcinoma of the nasal ala, and cover the general aspects of the pathogenesis and diagnosis.

Case presentation: We reported a case of nasal ala mucoepidermoid carcinoma of unknown origin in a 73-year-old male patient without any symptoms or signs.

Conclusion: Mucoepidermoid carcinoma usually involves the ethmoid area and its occurrence in the nose is very rare. Therefore, its formation in this area can be challenging and may not be correctly diagnosed. Therefore, in these cases, accurate and timely diagnosis can be vital for the patient and it is necessary to consider the possibility of mucoepidermoid cancer in the differential diagnosis when faced with a tumor in the nasal area.

Conflicts of Interest: The Authors declare no conflicts of interest.
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Introduction

Mucoepidermoid carcinoma (MEC) is a common malignancy related to salivary glands, which usually originates from salivary gland duct cells (1). Although it is possible from any of the small mucous glands along the upper aerodigestive tract, including the mucosa of the nasal cavity and sinuses, nasopharynx, oropharynx, vocal cords, trachea, ethmoid, and larynx (2). MECs are composed of mucinous cells (mucus-secreting squamous cells), epidermoid and intermediate cells, which exist in varying proportions in a composite solid and cystic structure (3). MEC comprises only 6-9% of all salivary gland tumors (4). Its most common form is related to a malignant tumor in the parotid (2) and its rarest form is related to palate tumor (5). Tumors of the nasal region are rare and include only 10% of MEC types, among which cystic adenoid, adenocarcinoma, and mucoepidermoid are the most frequent respectively (6).

According to its severity and type, surgery, radiation therapy, and chemotherapy can be used to treat this disease (3). In cases where combination therapy can be used, better results will be obtained.

Here we present a rare case of a 73-year-old male patient with nasal ala MEC. He was successfully operated on and then referred to the radiotherapy center for further treatment.

Case presentation

A 73-year-old male patient presented to the outpatient department with chief complaint of nasal mass. He noticed a small bump with 3 x 3

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mm dimension, under the skin of the nasal ala area near the tip of the nose about 5 years ago. The mass has gradually increased in size and during this time the patient has been constantly manipulating the mass. During the last 6 months, the size of the tumor has increased significantly, and its deformation has caused the patient to visit our clinic. During these 5 years, the patient has not given any history of pain, inflammation and discharge of pus. The patient's job was a welder and he also worked in a doll factory. The patient had a history of ischemic heart disease (IHD), hypothyroidism and hypertension, in the past. Fifty years ago, he had a history of thyroid surgery and iodine therapy.

Clinical examination

In the initial clinical examination, a 3×3 centimeter spherical mass with a firm consistency and definite boundaries was observed in the right sight, exactly near the tip of the nose (Figure 1). The mass protruded into the nasal vestibule but did not penetrate the nasal skin and did not deform the nasal skin. In the initial observations, it seemed that the mass was attached to the underlying tissue, but it was not attached to the skin. There was no evidence of fistula or pus discharge from the mass.

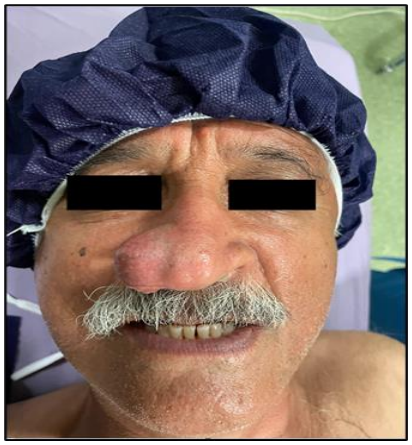

Figure 1. A large mass on the right side of the nose with dimensions of approximately 3 x 3 cm

Therapeutic measures

After general anesthesia, the patient underwent prep and drep. Then, the columella skin flap was raised unilaterally to the lesion. The lesion with a firm consistency, which was attached to the lower lateral cartilage, was resected along with the involved cartilage. Then the cartilage defect was repaired and the operation was terminated after skin suture. The sample was sent to the laboratory for histopathology and immunohistochemistry test (Figure 2).

The appearance of the patient after the operation and removal of the nasal mass is shown in Figure 3.

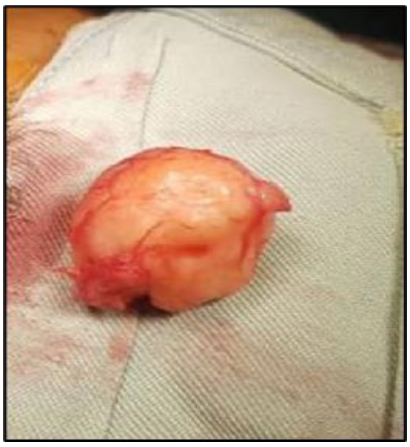

Figure 2. A mass isolated from the patient's nose with 3 × 3 centimeter dimensions.

Figure 3. Appearance of the surgical area after the operation and mass removal

Histopathologic examination showed a well-defined neoplasm with focal invasion to adipomuscular tissue and composed of epithelial nests with epidermoid features mild pleomorphism nuclei, eosinophilic to clear cytoplasm. Few mucinous glands invaded desmoplastic stroma, and lymphovascular invasion was seen but necrosis was absent

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(Figure 4). The tumor cells were negative for CK20, CK7, CD117 and positive for P63, CK5/6, and CEA (Figure 5). The Ki-67 was intermediate (up to 15%). Based on morphology, immunohistochemistry and pathology results the differential diagnosis showed intermediate grade of mucoepidermoid carcinoma.

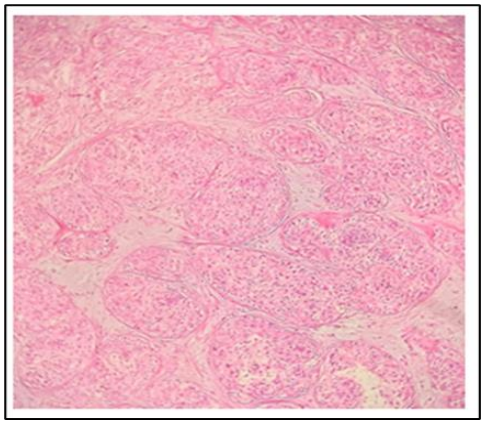

Figure 4. Pathology image. Histopathological examination. Characteristic neoplasm with focal invasion of adipose-muscular tissue and epithelial cells with mild pleomorph nuclei and eosinophilic cytoplasm. Also, invasion of a small number of mucous glands into desmoplastic stroma and invasion of lymphovascular were seen, but there was no necrosis. Hematoxylin and Eosin stain; original magnification ×10

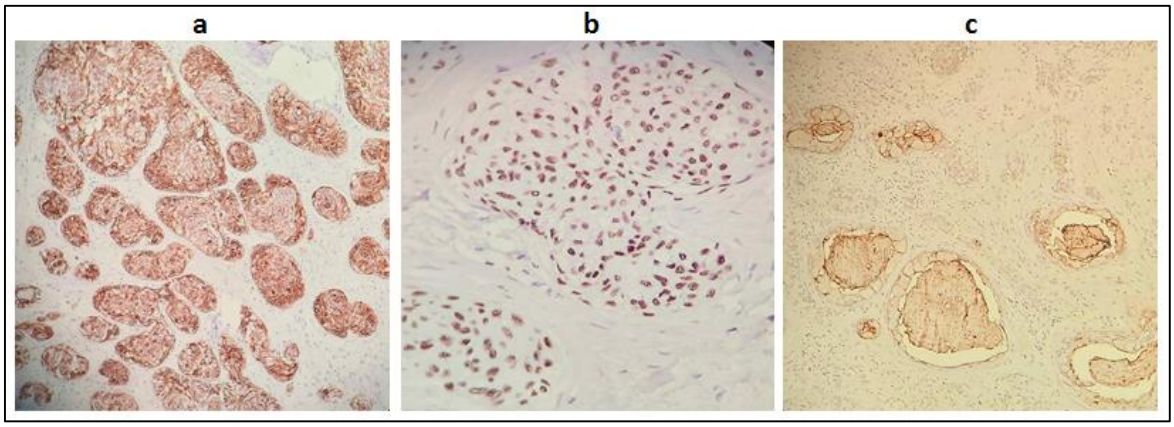

Figure 5. Immunohistochemical test results. Tumoral cells are positive for CK5/6 (a), P63(b), CEA (c); original magnification ×10

Discussion

Mucoepidermoid carcinoma (MEC) is the most common malignant tumor of the salivary gland that is mainly seen in the major and minor salivary glands. Its origin is the epithelium of glandular excretory ducts such as larynx, vocal cords, trachea, lungs, lacrimal glands, nasopharynx, and sinus ducts. About 10% of cases of mucoepidermoid carcinoma occur outside the main salivary glands. The nasal cavity and paranasal sinuses are unusual sites for malignant lesions. In general, nasal cavity tumors are diagnosed earlier than paranasal tumors due to their symptoms. Also, metastasis rarely occurs in these types of tumors. The incidence of MEC is almost equal in both sexes (7). Moreover, some studies have shown that the incidence of this disease is higher in females (4). Mucoepidermoid carcinoma is not common in the first decade of life, and its peak incidence is usually between the fourth and fifth decade (4). So far, no specific risk factors for sinus mucoepidermoid carcinoma have been identified. Although some studies have shown that exposure to ionizing radiation, chemical solvents, formaldehyde, and nickel are risk factors for this disease (8). Histologically, mucoepidermoid carcinoma is characterized by mucinous, squamous, intermediate, columnar, clear, and oncocytic cells with epidermoid metaplasia. Its pattern can be papillary cystic or cystic (9). Based on five parameters: proportion of cystic structures, necrosis, anaplasia, mitotic

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activity, stromal and bone invasion, and neurovascular invasion, they may be classified as low, moderate, or high malignancy. High-grade mucoepidermoid carcinoma consists of solid sheets of epidermoid and clear cells with necrosis, nuclear pleomorphism, increased mitotic activity, and rarely, focal keratinization (10,11). Its most common symptoms are nasal obstruction and epistaxis (12). Radiological examinations such as CT and MRI are useful in diagnosing primary tumors and possible intracranial spread.

Also, immunohistochemistry can be a useful tool for diagnosing salivary gland tumors. In mec, the expression of CK5, CK6, CK7, CK8, CK14, CK18, CK19, EMA, carcinoembryonic antigen (CEA), and p63 is usually positive, and the expression of CK20, SMA, muscle-specific actin (MSA), and S100 is usually negative. Obviously, S100 may be seen in some tumors (13,14). p63 is a useful marker for differentiating acinic cell carcinoma from mucoepidermoid carcinoma (15). CK5/6 profile is also positive in epidermoid cells (16). Ki67 shows higher expression in highly proliferative lesions, indicating a high-grade tumor, and its overexpression indicates a poor prognosis (17). Management of MEC depends on its grade, location, and extent. A low-grade tumor generally has a better prognosis than a high-grade tumor. Low-grade tumors usually require complete surgical resection, while high-grade tumors require radiotherapy combined with chemotherapy or alone. Early detection has a better prognosis. It can be challenging if MEC occurs in areas other than the salivary glands. Because it may be misdiagnosed as adenocarcinoma, adenosquamous carcinoma, or squamous cell carcinoma.

Conclusion

Mucoepidermoid carcinoma of the nasal ala is very rare. According to the studies conducted in this field, this is the first case reported about this disease. Affected patients may show non-specific signs and symptoms. Accurate evaluation including histopathology and differential tests such as immunohistochemistry is necessary for tumor diagnosis and grading of some salivary glands and head and neck tumors and management of these patients. Surgery as a treatment option alone may be appropriate for cases with small tumors and early recurrence detection. In these cases, accurate and timely diagnosis can be vital for the patient. It is also important to choose the best treatment method.

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Conflicts of Interest

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