Introduction

The accessory parotid gland is usually located anterior to the main parotid gland and on the masseter muscle. Histologically it is the same as the main parotid gland. Neoplastic changes can be found in the accessory parotid gland as well as the major salivary glands, however, the accessory parotid tumor is extremely rare. The incidence of this tumor arising in the auxiliary parotid gland ranges from 1 to 7.7% of all parotid gland tumors (13,14). In previous literature, the frequency of malignant tumors is relatively high as compared with that of main parotid tumors and the reported cases were adults (6,7,13,14,15). In this report, we present a case of a 11-year-old female with mucoepidermoid carcinoma arising in the accessory parotid gland. Computed tomography (CT) sialography and fine-needle aspiration were useful for differential diagnosis of the tumor.

Case report

A 11-year-old female was sent to our department from another hospital because of a painless and round mass of the right cheek for a duration of 12 months. An ultrasonography showed a well-defined hypoechoic mass on the masseter muscle. A CT scan showed that the tumor was slightly enhanced and located at the anterior aspect of the parotid gland. The preoperative diagnosis was an accessory parotid gland tumor. The tumor was removed without facial nerve injury via standard parotidectomy incision. The tumor was composed of mucous, intermediate and epidermoid cells. The pathological diagnosis was low-grade mucoepidermoid carcinoma. Conclusions: Accessory parotid gland neoplasms are rare and may present as innocuous extraparotid mid-cheek masses. A high index of suspicion, prudent diagnostic skills (including fine-needle aspiration [FNA] biopsy followed by computed tomography [CT] imaging), and scrupulous surgical approach (extended parotidectomy-style incision and limited peripheral nerve dissection when possible) are the keys to successful management of these lesions.
appearance, round nuclei, small nucleoli and occasional irregular nuclear membranes. There was also another population consisting of cells resembling macrophages (Fig. 1) or having a ductal appearance (intermediate cells) (Fig. 2). A standard parotidectomy incision with superior and inferior extension was performed under general anesthesia and a dissection was performed. The zygomatic and buccal branches of the facial nerve overlying the tumor and Stensen’s duct were identified. Adhesion between the nerve branches and the tumor was not seen. The tumor and the remaining accessory gland were removed from the main duct. After surgery, neither facial nerve palsy, nor salivary fistula were found and recurrence has not been seen to the present. The excised tumor was firm and well encapsulated. The cut surface was yellow-grayish. The tissues were fixed in 10 % formalin for light microscopic examinations: the tumor was composed of large mucous cells forming various sized cystic structures, epidermoid cells and cells with an intermediate differentiation between these two cell types (Fig. 3, 4). Nuclear atypia, mitotic activity, and an infiltrative growth pattern were absent. The mucous cells stained positively for periodic acid-Schiff (PAS) (Fig. 5). These features were consistent with a low grade mucoepidermoid carcinoma.

Discussion

Accessory parotid gland tumor is often noticed as a painless and firm mass in the mid-portion of the cheek. The most common tumor arising in the accessory parotid gland is benign pleomorphic adenoma, followed by mucoepidermoid carcinoma (6,7,13,14,15). These previous data are quite different from the frequency of mucoepidermoid carcinoma in the main parotid glands. There have been rare reports of mucoepidermoid carcinoma arising in the accessory parotid tissues in children as far as we have reviewed (22). The ages at diagnosis in the previous 23 were over 20 years (6,7,13,14,15). The sex difference was described in seven cases; five males and two females and the remaining 16 cases unknown. It is known that mucoepidermoid carcinoma is the most common malignant tumor of the salivary gland before 20 years of age, however, the occurrence in the first decade is extremely rare (1,2,9,11,17,18). Schuller and McCabe (16) described that 57.1 % of the salivary gland tumors in children are malignant and 48.9 % of the malignant tumors are mucoepidermoid carcinoma. Owing to the difference in their prognosis, it is important to cytologically differentiate low-grade mucoepidermoid carcinoma (MEC) from high grade MEC (90 % and 40 % 5 year survival, res-
Fig 2: Low-grade MEC: Clustered intermediate cells with some cytoplasmic vacuolation and mild nuclear atypia. FNA. Papanicolaou X400.

Fig 3: Low-grade MEC: Epidermoid cells, mucus-secreting cells, and cells with an intermediate differentiation between these two cell types. Tissue section H&E X200.
Fig 4: Low-grade MEC: Large mucous cells forming various sized cystic structures. Tissue section H-E X100.

Fig 5: Low-grade MEC: Large mucous cells forming various sized cystic structures. Tissue section PAS X100.
pective). Low-grade MEC may be misinterpreted as a benignant neoplasm in FNA biopsies because of its bland cytology. Accuracy in the FNA diagnosis of MEC reportedly ranges from 33 to 75%, which is much lower than the overall accuracy of FNA of salivary glands (73–90%). Low-grade MEC is characterized cytologically by admixture of glandular, intermediate, and metaplastic squamous cells. The background may demonstrate mucinous material and tissue debris. Keratinized epidermoid cells are not usually seen. The predominance of the mucin-producing or intermedium cells, with their bland cytology, may be mistaken for the epithelial component of pleomorphic adenoma. The occasional presence of degenerated epithelial cells of ductal origin (cuboidal cells or squamous metaplastic cells) may raise the suspicion of low-grade MEC in such instances (10,12). Polymorphous low-grade adenocarcinoma (terminal duct carcinoma) is difficult to differentiate cytologically from low-grade MEC. This is a low-grade adenocarcinoma arising almost exclusively in the minor salivary glands, particularly those in the palate (5). According to histological features, this tumor is classified into three grades: low-, intermediate- and high-grade malignancy (4). Histologically, the present case was characterized by cystic structures, predominance of mucous cells and abundant extracellular mucin, which indicate a low-grade type. Ultrastructurally, Dardick et al. (3) showed two basic types of cells, luminal and intermediate (nonluminal) cells and the luminal cells evolving to mucus producing cells. In our case, both goblet-like mucous granules and serous granules were found in the luminal cells, which may show that luminal constituent cells possess the potential for bidirectional differentiation.

In the case of accessory parotid tumor, Stensen’s duct tumor, intramasseter hemangiomia, the anterior extension of the main parotid gland tumor, sialolithiasis and heterotopic salivary tumor (20) should be taken into consideration as of main parotid gland tumor, sialolithiasis and heterotopic tumor, intramasseter hemangioma, the anterior extension of the major salivary glands in children. Cancer 1972;29:312–7.


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