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Modified partial superficial parotidectomy versus conventional superficial parotidectomy in the treatment of pleomorphic adenoma of the parotid gland

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Editorial

Surgical treatment of pleomorphic adenoma of the parotid gland remains a subject of major debate. The investigators compared postoperative complications and surgical parameters between modified partial superficial parotidectomy and conventional superficial parotidectomy. Methods: Clinical records of 129 patients were reviewed and analyzed for clinical characteristic. Results: Compared with the conventional superficial parotidectomy group, the modified partial superficial parotidectomy group had significantly lower rates of auricular numbness, Frey's syndrome, and obvious facial asymmetry all P values. Salivary gland tumors are neoplasms affecting the major and minor salivary glands of the oral cavity. Their complex pathological appearance and overlapping morphological features between subtypes, pose major challenges in the identification, classification, and staging of the tumor. Recently developed techniques of three-dimensional culture and organotypic modelling provide useful platforms for the clinical and biological characterization of these malignancies. Additionally, new advances in genetic and molecular screenings allow precise diagnosis and monitoring of tumor progression. Finally, novel therapeutic tools with increased efficiency and accuracy are emerging. In this review, we summarize the most common salivary gland neoplasms and provide an overview of the state-of-the-art tools to model, diagnose, and treat salivary gland tumors. Schematic representation of hallmarks in malignant salivary gland tumors: (a) Mucoepidermoid carcinoma might contain three different types of cells depending on its grade: (i) Squamous (epidermoid) cells, (ii) mucocytes, and (iii) intermediate cells. High grade tumors also show necrosis and invasiveness to neighboring tissues (neural and bones); (b) adenoid cystic carcinoma has three different forms: Solid, cribriform, and tubular. Basaloid, tubular, and myoepithelial cells are commonly found. It has an important neurotropism, and cancerous cells can form distal metastases in the lung, bones, and liver; (c) the acinic cell carcinoma is characterized by a homogeneous mass of differentiated acinar cells rich in granuli. In primary tumors, the mass is encapsulated while the capsule might disappear in recurrent tumors. Although seldom, upon recurrence the tumor might contain areas of necrosis and it can acquire invasiveness to local lymph nodes and the facial nerve; (d) the polymorphous adenocarcinoma consists of a confined mass, although not encapsulated. Epithelial cells form the core of the tumor mass. High-grade tumors can digest the basal lamina and invade the gland parenchyma. Invasiveness to cervical lymph nodes and the facial nerve has also been reported; (e) squamous cell carcinoma is mainly formed by squamous cells and contains keratin pearls derived from epithelial differentiation and accumulation of keratin; (f) salivary duct carcinoma is characterized by a comedo-necrotic core surrounded by ductal cells. Subforms (not depicted) include mucin-rich, papillary, micropapillary, sarcomatoid, and oncocytic.Squamous cell carcinoma (SCC) is one of the most common cancers of the oral cavity, but the salivary glands are rarely affected by this malignancy. The exact frequency of primary tumors in salivary glands remains unknown, as cancer cells from skin squamous cell carcinoma might use glandular tissue as a secondary site for metastasis. The tumor is of epithelial origin arising mainly in the parotid gland and it is seldom encountered in the submandibular gland tissue . Ductal or cuboidal epithelium undergoes a metaplasia transformation and progress into a carcinoma infiltrating the gland parenchyma. Previous exposure to irradiation is accounted to be the major risk factor for the development of glandular SCC, followed by viral infections. Infection of HPV of the oral cavity might extend preferentially to the parotid via the Stensen duct, where cellular transformation has been linked to the alteration of the PTEN/Pi3K pathway .The most efficient therapeutic approach is the resection of the tumor mass; in case SCC is found in the submandibular gland, also the cervical lymph nodes are resected to diminish the probability of metastases.