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Prognostic Factors in Salivary Gland Cancers for Evolutionary Biology Perspectives

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Introduction

Histopathological examination is used to diagnose salivary gland cancers, which significantly contributes to their progression, including lymph node/distant metastasis or local recurrence. Malignant and benign epithelial tumours are classified into 21 and 15 tumour types, respectively, in the current World Health Organization. All malignant tumours are capable of causing lymph node/distant metastasis or local recurrence. Particularly common are mucoepidermoid carcinoma, adenoid cystic carcinoma, salivary duct carcinoma, salivary carcinoma, not otherwise specified, myoepithelial carcinoma, epithelial-myoepithelial carcinoma, and carcinoma ex pleomorphic adenoma (PA). In SGCs, high-grade transformation is an important aspect of tumour progression. There is a distinct grading system for MEC, AdCC, salivary carcinoma, and NOS; however, a universal histological grading system for SGCs has not yet been recommended [1].

Description

There are three major salivary glands and several minor salivary glands in the salivary gland. Because a healthy salivary gland contains inner luminal/epithelial or acinar/mucous cells and outer basal/myoepithelial cells in the duct or secretory part, SGCs exhibit a variety of tumour types. Histopathological features such as lymph node/distant metastasis or local recurrence are associated with tumour progression. Spiro reported in 1986 that the site of origin, histologic subtype, histologic grading, and clinical stage were significant prognostic factors. However, some carcinomas exhibit mild cytological atypia, making determining tumour invasion difficult. Validated grading systems exist for all malignant tumours, including mucoepidermoid carcinoma, adenoid cystic carcinoma, salivary carcinoma, and those not otherwise specified; however, a universal histological grading system for SGCs has not been recommended [2].

The tumour cells in the high-grade region are anaplastic, with large vesicular pleomorphic nuclei, prominent nucleoli, an increased mitoses/Ki67 labelling index, and necrosis. In malignant soft tissue tumours, such as nondividing liposarcoma or dedifferentiated chondrosarcoma, the term "uncontrolled rectifiers" is occasionally used. In SGCs, however, a malignant tumour is rarely replaced by a completely different histological morphology, and the original morphological features are usually preserved. As a result, this phenomenon is referred to as high-grade transformation. This transformation has been observed not only in low-grade malignant tumours (acinic cell carcinoma, MEC, secretory carcinoma, hyalinizing clear cell carcinoma, myoepithelial carcinoma, epithelial myoepithelial carcinoma, and polymorphous adenocarcinoma), but also in high-grade tumours such as AdCC. Tumors that have this finding have a much worse prognosis [3].

The term adenocarcinoma, NOS, has been renamed salivary carcinoma, NOS, in the current WHO classification, and we have used the same term herein. It includes oncocytic and intestinal-type adenocarcinoma subtypes. The term salivary carcinoma, NOS, should be used for tumours arising in the major/minor salivary glands; however, this category includes a diverse range of carcinomas with ductal and/or glandular differentiation. It is an exclusive diagnosis for previously defined salivary gland carcinoma entities. The percentage or case numbers in previous reports have varied due to differences in this carcinoma's interpretation, and the pure entity adenocarcinoma, NOS, now accounts for approximately 10% of SGCs. NOS adenocarcinoma was thought to be a heterogeneous group of tumours; however, the strictly selected cases were thought to be the pure group.

SDC, epithelial-myoepithelial carcinoma, salivary carcinoma, NOS, and myoepithelial carcinoma are the most common cancers; carcinosarcoma is uncommon. Most carcinosarcomas develop from PA via the intraductal or myoepithelial pathway, which is part of the multistep adenoma-carcinoma-sarcoma sequence. The histological subtype/grade, proportion of carcinoma, and extent of invasion are all relevant observations. From an encapsulated neoplasm to extracapsular invasion, the malignant component progresses, the term "encapsulated" has been replaced by several other terms, including "intracapsular," "*in situ*," "preinvasive," "intramural," and "noninvasive"; however, the term "intracapsular" is preferred. CXPA is classified into three types based on the extent of invasion beyond the PA: intracapsular, minimally invasive, and invasive. However, assessing the fibrous capsule can be difficult at times because the tumour forms the capsule or the capsule outline is hazy, particularly in primary minor salivary glands [4,5].

Conclusion

We discussed prognostic factors for SGCs, with a focus on histopathological findings, and described the current situation and future prospects. Interaction between clinicians and pathologists is critical because pathological reports contain many prognostic factors for patients and should be carefully read. Furthermore, genetics and molecular pathology are always progressing. As a result, new information is constantly emerging, necessitating further investigation.

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Conflict of Interest

There are no conflicts of interest by author.

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