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An Update on Salivary Gland Pathology

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Over the past few decades, salivary gland tumor pathology has evolved. This includes recognition of newly defined entities as well as reclassification of other salivary gland tumors [1]. The development of genetic tests have shown that some salivary gland tumors have genetic abnormalities which are specific to a histologic type such as *MECT1–MAML2* gene fusion in mucoepidermoid carcinoma and *PLAG1* or *HMGA2* gene translocation in pleomorphic adenoma. Immunohistochemical studies have aided in both the diagnosis and prognosis of salivary gland tumors. High Ki67 is correlated with poor overall survival in mucoepidermoid carcinoma, acinic cell carcinoma and adenoid cystic carcinoma. High MUC1 in mucoepidermoid carcinoma is associated with higher grade and high recurrence while MUC4 is associated with a lower grade tumor and longer disease free survival. The finding of androgen receptors in salivary duct carcinoma has led to new therapies as these tumors are shown to be responsive to androgen deprivation therapy. Newly described salivary gland entities in the past 20 years include both benign (sclerosing polycystic adenosis, sialolipoma) and malignant (cribriform adenocarcinoma of the tongue, mammary analogue secretory carcinoma) tumors [2]. Newly recognized histologic variants of well-known salivary gland tumors have been reported, to include salivary-duct carcinoma, acinic cell carcinoma and epi-myoepithelial carcinoma [1, 2].

In view of these dramatic changes, the *Head and Neck Pathology* journal leadership are particularly pleased to bring together an international panel of experts in salivary gland pathology as contributors to this special issue. Guest editors, Michal Michal, M.D, Ph.D and Alena Skalova, M.D, Ph.D have developed a special issue on salivary gland pathology that encompasses the advances in classification, genetics and other emerging concepts in the field. This update on salivary gland pathology is divided into four groups: tumors associated with molecular genetics; high grade and low grade salivary gland carcinomas; histologic variants of benign and malignant salivary gland tumors; and non-neoplastic lesions.

Dr. Michal and colleagues first reported on cribriform adenocarcinoma of the tongue in 1999 and since then other pathologists have recognized this rare entity not only in the tongue but also in other minor salivary gland locations. Dr. Michal describes the characterization of this tumor including immunohistochemical and molecular studies. Dr. Göran discusses the salivary gland neoplasms that have fusion oncogenes and the clinical impact of these findings. Dr. Weinreb focuses on hylanizing clear cell carcinoma and in particular the *EWSR1-ATF1* fusion set within a discussion of the differential diagnosis. Dr. Skalova rounds out the section on molecular-defined tumors with the features of mammary analogue secretory carcinoma, originally described by Dr. Skalova in 2010.

Dr. Nagao discusses high grade transformation and dedifferentiation in both adenoid cystic carcinoma and acinic cell carcinoma. Newly recognized histologic variants of the high grade salivary duct carcinoma such as mucin-rich variant and sarcomatoid variant are described by Dr. Simpson. In contrast to this high grade salivary

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gland malignancy, Dr. Perez-Ördoñez discusses low-grade salivary duct carcinoma and other intraductal carcinomas.

Dr. DiPalma provides a review of carcinoma ex pleomorphic adenoma with special emphasis on the evolution of this neoplasm with distinction of the in situ category from minimally invasive and frankly invasive tumors. Recent studies have broadened the histologic range of epithelial-myoepithelial carcinoma and Dr. Seethala describes some of the new variants of this tumor. Dr. Gnepp reviews unusual mucinous tumors of salivary glands and Dr. Agaimy focuses on fat-containing salivary gland neoplasms. Dr. Petersson discusses a rare salivary gland entity: sclerosing polycystic adenosis, first characterized in 1996.

We hope these stimulating discussions on common and rare salivary gland lesions will provide our readership with new tools to enable improved diagnosis.

References

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