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UPDATE MOLECULAR DIAGNOSIS AND TREATMENT ON SALIVARY GLAND TUMORS – MAMMARY ANALOG SECRETORY CARCINOMA

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Background: Mammary analog secretory carcinoma (MASC) was first described in 2010 as a rare salivary glands malignancy characterized by similarities to breast secretory carcinoma (BSC) in histology, immunohistochemistry and genetics. It accounts for less than 1% of salivary tumors, with a mean age of 46 years. The majority cases occur in the parotid gland, and the mean size of the tumors is 2.1 cm, with almost no gender predilection. Morphologically, it usually is a low grade malignancy, with low-grade nuclei and moderate eosinophilic granular cytoplasm.

Differential Diagnosis: Immunohistochemistry shows MASC to be positive for cytokeratins AE1/3, CK7, CK8, CK18, Mammaglobin, S100, Vimentin and STAT5a, but negative for Dog1, ER, PR and Her-2. GCDFP-15, p63, SMA and Calponin are also positive in some MASC tumors. The major differential diagnoses of MASC are acinic cell carcinomas, mucoepidermoid carcinomas, adenocarcinomas not otherwise specified (NOS) and cystadenocarcinomas.

Molecular Testing: FISH analysis *ETV6-NTRK3* fusion gene t(12;15)(p13;q25) product is a constitutively active chimeric tyrosine kinase and has the transformation capacity in the mammary epithelial and myoepithelial cells. It has been reported that the *ETV6-NTRK3* fusion is unique to MASC.

Molecular Treatment: The prognosis of low grade MASC is very good, although local recurrence may occur, and rarely there is distant metastasis. Recent studies of targeting receptor Kinases-2 on Entrectinib clinical trial STARTRK-2 show patients with NTRK1/2/3 gene rearrangements may potentially benefit from treatment with *Entrectinib*. *Entrectinib* (formerly RXDX-101) is a potent inhibitor of kinases encoded by the gene *NTRK3 of MASC*.

Biography

Dr. Beverly Wang is a professor of UC School of Medicine at Irvine. She received her training at Mount Sinai Medical Center, also completied cyto-pathology fellowship. She is a general surgical pathologist, specializing in head and neck. She is vice chair of pathology and laboratory medicine and chief of anatomic pathology, overseeing anatomic pathology services. Her clinical interests include translational research, correlating head and neck diseases, and tumors. Dr. Wang has published extensively. She has been awarded a number of prestigious honors and has consistently been named one of "America's Top Doctors.".

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