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The Milan System for Reporting Salivary Gland Cytopathology (MSRSGC): an ASC-IAC–sponsored system for reporting salivary gland fine-needle aspiration

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The diagnostic role of salivary gland fine-needle aspiration (SG-FNA) is well established in the preoperative evaluation of patients with salivary gland lesions. At present, most salivary SG-FNA specimens are diagnosed based on conventional diagnostic criteria. Nevertheless, there exists a lack of uniform reporting for these specimens to guide the clinical management of patients. This void motivated a group of experienced cytopathologists to spearhead the development of a uniform reporting system. This international panel, under the sponsorship of the American Society of Cytopathology (ASC) and the International Academy of Cytology (IAC), gathered in September 2015 at the European Congress of Cytology, held in Milan, Italy, to propose "The Milan System for Reporting Salivary Gland Cytopathology. This effort sparked the interest of many and brought forth an agreement to develop an evidence-based tiered classification consisting of 6 diagnostic categories. We hope that this standard reporting system will enhance the overall effectiveness of SG-FNA reporting across institutions, with the ultimate result being better communication and improved patient care.

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Introduction

Currently, there is no uniform classification system available for reporting salivary gland fine-needle aspiration (SG-FNA) samples. The lack of a tiered diagnostic framework for SG-FNA has resulted in limitations for the overall effectiveness of the test.[1-9] To address this need, the American Society of Cytopathology (ASC) and the International Academy of Cytology (IAC) organized a taskforce consisting of an international group (over 40 participants from 15 different countries) of cytopathologists, surgical pathologists, and head and neck surgeons to propose a tiered classification system.[10,11] The system was planned to consist of a limited number of diagnostic categories with clear definitions that most cytopathologists can apply in daily practice. Each diagnostic category is to be associated with an implied risk of malignancy (ROM) based up evidence from the literature and paired with a clinical management algorithm. The Milan System for Reporting Salivary Gland Cytopathology (MSRSGC) is designed to include best practice guidelines pertaining to SG-FNA including: 1) indications for SG-FNA, 2) a standard FNA technique, 3) standardized reporting of results for SG-FNA, and 4) the application of ancillary techniques, including immunochemistry and molecular testing when indicated. Furthermore, the objective of the MSRSGC is to create a user-friendly system that will promote and standardize communication among cytopathologists who diagnose SG-FNA as well as among treating clinicians who manage patients with salivary gland lesions. It is predicted that this will reduce reporting ambiguities and lead to overall better patient care. With the development and implementation of the MSRSGC comes many anticipated questions about its conception, design, and application. The following is meant to help clarify the answers to some of these questions.

Is there a need for a tiered classification system for reporting SG-FNA specimens?

SG-FNA has already been established as an effective tool in the preoperative diagnosis of salivary gland lesions, most of which are discovered by the patient or during a routine physical exam. SG-FNA has gained its popularity because it can be easily applied in an outpatient setting to sample and diagnose a majority of non-neoplastic and neoplastic salivary gland lesions. Moreover, in most cases, SG-FNA can effectively identify many common benign tumors and is usually able to discriminate between low-grade and high-grade malignant tumors.[12-15] Nevertheless, despite the advantages of SG-FNA, there are certain factors that can influence its effectiveness. These include the FNA technique, the use of ultrasound guidance and rapid-on-site evaluation, sample preparation techniques, experience of the cytopathologist, and the general inherent heterogeneity of SG tumors as a group.[1-9,12-15]

The accuracy of SG-FNA is high for the diagnosis of most common salivary gland tumors such as pleomorphic adenoma and Warthin tumor.[1-9,12-15] The accuracy is also high for distinguishing benign and low-grade neoplasms from high-grade carcinomas. The specificity of SG-FNA for subtyping a particular neoplasm shows a range (48%-94%) of diagnostic accuracy, however. This is due in part to cytologic overlap of several of the less-common salivary