



## Diagnostic accuracy for pleomorphic adenoma diagnosis on FNA by employing the Milan System Classification

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### Objectives

The Milan System for Reporting Salivary Gland Cytopathology (MSRSGC) aims to standardize reporting terminology of salivary glands FNAs. Pleomorphic adenoma (PA) is the most common salivary gland tumour comprising 45%–74% of all salivary gland tumours<sup>1</sup>. The aim of our study is to verify potential cytomorphological pitfalls and evaluate the diagnostic accuracy of FNA diagnosis of PA.

### Methods

Since 2018, n=68 FNA classified by the MSRSGC with histological diagnoses of PA were retrieved from our archives. Moreover, we evaluated six microscopic features observed in FNA of PA: cellularity (hyper/ hypo/ acellular/ mild), cytomorphology (plasmacytoid/ basaloid/ epithelioid/ spindle), nuclear atypia (yes/no), grade of atypia (mild/ moderate/ severe), presence/ absence of matrix and its quantity (abundant/ scant).

### Results

The majority of cases was correctly classified as IVA (n=48, 70.59%). Conversely, n=16 (23.53%) were classified as SUMP, n=2 (2.94%) as AUS, n=1 as Nondiagnostic (1.47%) and n=1 as Malignant (1.47%). The predominant cytomorphology observed in FNA correctly classified as Neoplasm-Benign featured plasmacytoid myoepithelial cells (26/48, 54.17%) and abundant extracellular matrix (47/48, 97.92%). Conversely, scant matrix was frequently observed in PAs classified as SUMP (11/16, 68.75%), such as the presence of basaloid cells (5/16, 31.25%). The single FNA categorized as Nondiagnostic cyst-fluid was acellular, while the FNA categorized as Malignant was hypercellular, with plasmacytoid cells featuring marked nuclear atypia and without extracellular matrix. The two smears categorized as AUS were acellular with abundant matrix and with basaloid cells with scant matrix, respectively.

### Conclusions

PA diagnosis accuracy on FNA was 70.59%. Furthermore, we have highlighted important diagnostic pitfalls such as hypercellularity, scant matrix and basaloid features that may lead to incorrect MSRSGC classification.

### References

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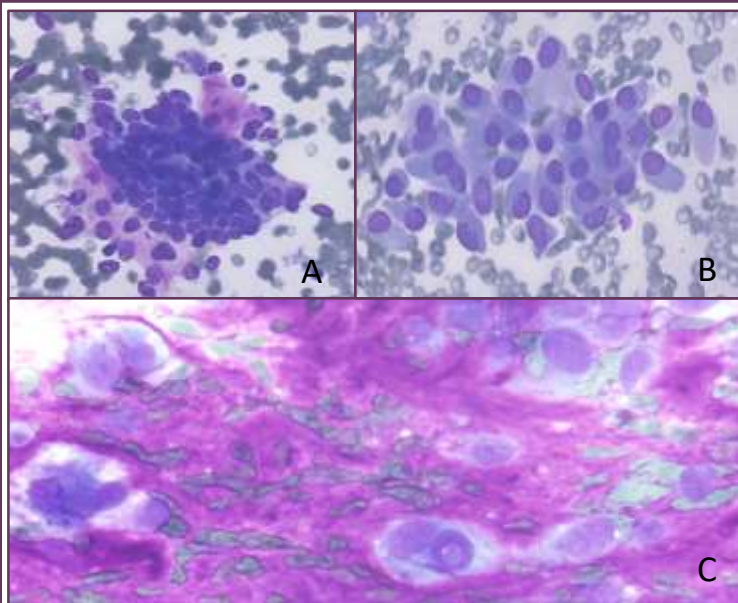


Figure 1: Examples of Pas categorized as SUMP. All smears are stained with Diff-Quick; A) PA with basaloid features without fibrillar matrix in the background (20x); B) PA with myoepithelial features (20x); C) PA with pleomorphism and nuclear atypia (40x).