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Diagnostic accuracy in thyroid FNA: Comparative evaluation of cytolyt versus formalin smear techniques

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Introduction: Thyroid nodules are common in the general population with a 3 %–7 % prevalence by palpation, few of those are malignant (About 5 %). Incidence of thyroid cancer is found on a constant rise in the last ten years. In the last decade, the US guided fine needle aspiration cytology (FNAC) diagnostic method has become the gold standard for cytopathology differentiation between benign and malignant nodules. FNA results are classified by Bethesda System as diagnostic or nondiagnostic (10%). Non-diagnostic results lead to many drawbacks, such as an increase in costs. Indeed, the physician has to perform the biopsy another time in order to obtain a satisfactory cytopathology result. Moreover, it increases patient stress and prolongs time to diagnosis. Most importantly, initial non-diagnostic samples can harbor a malignancy in 1–4 % of cases. The accuracy of FNA is significantly influenced by the technique employed for preparing and examining the aspirated cells.

Objective: This study compares two techniques for cell smearing - the Cytolyt and formalin smear methods - and their impact on diagnostic accuracy.

Methods: A retrospective study examined the diagnostic concordance rates between cytology and histology in thyroid FNA of 413 samples using Thin Prep Cytolyt and 283 samples diagnosed by conventional smear techniques. All the FNAs were performed at the Ziv Medical Center by the same surgeon between 2019 and 2023.

Results: The Cytolyt Thin Prep technique resulted in a significantly lower percentage of nondiagnostic samples (Bethesda 1) compared to the conventional smear technique (2.2% and 14.1% respectively, $p < 0.001$).

Conclusion: The findings of this study provide valuable insights for otolaryngologists, suggesting that the Cytolyt Thin Prep technique is more effective in reducing nondiagnostic samples and enhancing diagnostic accuracy in thyroid FNA processing. results can guide clinical decision-making and improve patient outcomes in the evaluation of thyroid nodules.

Biography

Haia Darawshe is a dedicated Otolaryngology resident at ZIV Medical Center, Israel, with a strong focus on advancing diagnostic techniques in her field. Her clinical and research interests include enhancing the precision of diagnostic tools for thyroid conditions. Haia's recent work, "Diagnostic Accuracy in Thyroid FNA: Comparative Evaluation of Cytolyt Versus Formalin Smear Techniques," highlights her commitment to improving diagnostic outcomes. She aims to contribute to more accurate and effective patient care through her research and practice. Her expertise continues to impact the field of otolaryngology positively.

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