

## **Abstract**

Introduction: Thyroid lesions are common clinical problem. Fine needle aspiration cytology of thyroid gland is useful minimally invasive preliminary investigation . Laboratories use different staining techniques to improve preoperative diagnostic accuracy.

Aims of the study : To analyse the cytomorphologic features of thyroid lesions using various cytological staining techniques.

Materials and methods : FNAC of thyroid lesions performed using 23 G needles and multiple smears prepared. Two to three smears were wet fixed and stained with H&E and Pap stain. One to two smears were dry fixed and stained with Wright- Giemsa. The cytomorphologic features of thyroid lesions using various cytological staining techniques were analysed.

### Observation and results :

The study comprised of 65 cases. 21 cases of Hashimotos thyroiditis , 4 cases of lymphocytic thyroiditis, 24 cases of nodular colloid goiter, 8 cases of nodular colloid goiter with cystic degeneration, 4 cases of follicular neoplasm and 4 cases of Papillary carcinoma of thyroid. In the present study , the cytoplasmic features such as cytoplasmic granularity, paravacuolar granules and thin colloid are very well demonstrated using Wright Giemsa stain. Cell borders and crisp nuclear features such as chromatin pattern, intranuclear

inclusions are best appreciated using wet fixed smears stained with H&E and Pap stains.

Conclusion : Use of different methods of fixation and multiple stains will complement each other and aid in improving diagnostic accuracy of thyroid lesions. Hence if sufficient material is available different cytological staining techniques can be used to decrease false positive and false negative reports in fine aspiration cytology of thyroid lesions.

Key Words : Fine needle aspiration cytology,thyroid, cytomorphologic features, Wright Giemsa stain, Papanicolou stain, Hematoxylin and Eosin stain.