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## Significance of marginal vacuoles in fine needle aspiration cytology of diffuse thyroid swelling

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Evaluation of thyroid swelling by Fine needle aspiration cytology (FNAC) is an established first-line diagnostic test. Marginal vacuoles (MVs) or fire-flare appearance in fine needle aspiration (FNA) smears stained by Leishman's stain have been described as a distinctive feature of thyrotoxic goiter, but was also found in various nontoxic thyroid lesions. Although these MVs have been characterized as dilated endoplasmic reticulum, and manifestation of active pinocytosis/vacuoles containing colloid, their exact nature is not so far resolved. The aim of the study was to assess the presence of MVs in diffuse thyroid swelling and evaluate the strength of association between MVs, thyroid hormonal and biochemical tests and cytological diagnosis. Seventy six cases of diffuse thyroid swelling (goiter) were studied. Cytomorphological features were examined with special reference to MVs. Grading for MVs was adopted as grade I (scant), grade II (moderate) and grade III (abundant). The strength of association was studied by applying the Chi-square test; a  $P \leq 0.05$  was considered significant. Abundant MVs were not associated with hypothyroidism in this study; 73.3% of these cases were hyperthyroid. Further, abundant MVs in thyroid FNACs were seen in cases of primary hyperplasia and Hashimoto's thyroiditis and colloid goiter. There was a significant correlation between the presence of abundant/moderate MVs and primary hyperplasia and their absence in colloid goiter. Scant MVs in diffuse goiters were not found to correlate with thyroid function. Thus, all diffuse goiters with prominent MVs warrant hormonal evaluation to rule out hyper functioning goiter.

### Biography

Sunita Bamanikar is Professor of Pathology at Dr. D. Y. Patil Medical College, Hospital and Research Centre, Pune, India. She obtained her medical graduation from Seth G.S. Medical College and KEM hospital, Mumbai University in 1981. After getting her doctorate (MD) in Pathology in 1987 from B.J. Medical College & Sassoon General hospitals, Pune University, she held faculty assignments in medical colleges in India and abroad with over 12 years at the Sultan Qaboos University, Oman and Universiti Brunei Darussalam. She has published over 30 papers in reputed journals and is currently Associate Editor for the Journal of Medical Research.

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