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Targeted four-node sampling of axilla: A simple, reliable and cost-effective approach in the management of breast cancer

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Background: Axillary lymph nodes are surrogate markers for mapping the optimal management of axilla in breast cancer, and their assessment is pivotal to management and outcome. Until now, the assessment of axillary lymph nodes largely relies upon sentinel node biopsy (dual method) or conventional lymph node dissection. The morbidity of axillary lymph node dissection however is well known. Sentinel node biopsy is, thus, considered in a clinically node-negative axilla. However developing economies face the dilemma and challenges of matching up to the high cost of gamma probe, the vagaries of its learning curve, and often, the advanced stage of disease at which the patients present. Also, with the advent of neo-adjuvant chemotherapy, the axilla can be down staged to a node negative status (N_0). In this setting, a targeted four-node sampling (FNS) can offer a simple, reliable and cost-effective approach to the assessment of axilla.

Material & Methods: A total of 160 patients with locally advanced breast cancer who had received neo-adjuvant chemotherapy from the nucleus of this study. In each patient, axillary mapping was done using peri-areolar injection of 3 ml of methylene blue dye immediately before surgery. Four blue nodes from the specified anatomical site at level-I were picked up and subjected to frozen section. The axillary dissection was subsequently completed in a conventional manner in all patients irrespective of the outcome of frozen section and the entire specimen was sent separately for histopathological examination. The outcome of frozen section was compared and correlated with the actual histopathological assessment of entire axilla to find out the sensitivity, specificity, and false negative rates of the technique.

Results: The sensitivity and specificity of FNS were found to be 89.5% and 93.3% respectively. The negative and positive predictive values were found to be 84.6% and 100% respectively.

Conclusion: It was observed that 'targeted' FNS using methylene blue dye can serve as a reliable and inexpensive alternative to other techniques for addressable of axilla even in locally advanced breast cancers. This is particularly relevant in developing economies where majority patients still present as locally advanced; and high end facilities, such as gamma camera and isotope studies, are scarce.

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