Letter to the Editor

Canizales AL, Al-Yasi A, Gambhir S, Morris G, Granowska M, Britton KE.
The Sentinel Lymph Concept in Breast Cancer. World J Nucl Med 2004; 3: 4-7.

To the Editor:

The commentary on Sentinel Lymph Node Biopsy in Breast Cancer in the World Journal of Nuclear Medicine (Volume-3, January 2004) by Canizales AL et al made an interesting reading. We would like to offer the following Comments:

1. It was indeed exciting to find that the ratio of radioactivity in involved vs. the uninvolved axillary lymph nodes was 4:1, and the involved sentinel lymph nodes had shown about 25 times more tracer uptake as compared to the uninvolved sentinel lymph nodes ($p<0.009$). This observation throws new light on the subject and further studies into this will be invaluable. That certain nodes have preference for colloid and malignant cells, either by the virtue of anatomical location or larger lymphatics is something to be verified by further studies may be by excision of the lymphatic channels and its studies. Further, it would be interesting to study if any particular histopathology has preferential lodging or if it is true for all variants of breast cancer.
2. There has been a debate going on for the past several years to identify the best method of injection of nannocolloid for imaging sentinel lymph node in breast cancer. The debate may be unwarranted. We feel that peri-tumoral injection would be the most accurate. This is because, what we are interested in is studying the lymphatic drainage of the breast area in which the cancer (tumour) is present. It may be noted that every point in the breast has definite area/areas of drainage. A point source that corresponds to a very small mass will have drainage to either axilla/internal mammary/supraclavicular lymph nodes. A large tumour may drain into more than one lymph node.
   What we are trying to achieve by injecting a radio-colloid around the tumour is to simulate the actual lymphatic drainage of the tumour. A periareolar /subareolar injection will never be able to simulate the actual lymphatic drainage from the tumour site particularly when the existence of subareolar plexus of sappy is itself in question. Various studies have demonstrated that the lymphatic drainage of breast to the nodes is direct and not via the periareolar plexus.
   Further the concept of periareolar plexus does not explain about the drainage to the internal mammary lymph nodes and it may be noted that about 5% sentinel lymph nodes are actually detected in internal mammary chain.
   Nevertheless, since there is no disadvantage of peritumoral injection and no such additional advantage of periareolar injection, there is no real need to add confusion to the situation at this point of time by recommending the periareolar injection technique. In our opinion we should wait until the existence of periareolar plexus is fully understood and established, more so when peritumoral injection is closest and more physiological to simulate the lymphatic drainage from the tumour to the lymph nodes. It may also be noted that if the subareolar plexus concept is true the peritumorally injected tracer should travel to the subareolar plexus and then drain to the sentinel lymph nodes. But this phenomenon has never been demonstrated or reported in literature in dynamic studies during lymphoscintigraphy.
3. The primary aim of sentinel lymph node biopsy technique is to decrease the morbidity of lymphoedema due to level II and level III axillary lymph node clearance. Despite clear advantage of the sentinel lymph node technique there is an incidence of about 5% false positive results. On the other hand, in about 5% of cases, the sentinel lymph node is detected, but it does not harbour metastases. Instead, another node or nodes removed during surgery may show metastases. This may be due to alternate pathways taken by the tumour cells or an inherent problem with the technique itself. In order to overcome this problem, we suggest that apart from the sentinel lymph node, all the lymph nodes in level-I should also be cleared. In patients in whom more than one lymph node is positive, level-II and level-III clearance may be performed and in patients where the lymph nodes are negative, it would not add to the morbidity, because only level-I lymph node clearance would have been done. The problem of false positive results will also be taken care of by this protocol. In our limited series of 15 patients we also have found some interesting results. In four patients the sentinel lymph nodes were located in the posterior (Latissamus dorsi) group of

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lymph nodes. Level-I clearance as suggested, would also take care of such unusually located sentinel lymph nodes.

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