

**Sentimag® Technique for Sentinel Lymph Node Biopsy in Breast Cancer Patients:
Evaluation of Effectiveness, Feasibility and Challenges**

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Abstract

Aim: The gold standard technique of Sentinel Lymph Node Biopsy (SLNB) is the dual technique of radioactive tracer with blue dye. The aim of this study was to assess the node identification rate and feasibility in terms of ease of use of this technique for SLNB in breast cancer patients.

Methods: Retrospectively collected data of 143 breast cancer patients with clinically and radiologically negative axilla were analysed. SLNB procedures were performed using the superparamagnetic iron oxide (SPIO) nanoparticles. Sentinel lymph nodes were identified using the Sentimag® magnetometer and visual aid.

Results: A total of 146 SLNB procedures were undertaken on 143 patients. Lymph node identification rate (IR) was 97.9%. Thirty seven patients (25.3%) were detected with cancer in their lymph nodes, 19% had at least one macrometastasis, 6% at least one micrometastasis and 1% had ITCs. The mean average lymph node retrieval was 2.2 nodes per procedure. Mild brownish discolouration was noted around the injection site. No allergic reaction or side effect of Sienna+® tracer / Magtrace® was reported.

Conclusion: The new magnetic detection method of sentinel lymph nodes (Sentimag®) is effective, feasible and comparable to the gold standard technique of sentinel lymph node biopsy in patients with breast cancer.

Key words: breast cancer, sentinel lymph node biopsy, Sentimag® technique, superparamagnetic iron oxide nano particles, Magtrace®