

Axillary Lymph Node Status in Breast Cancer a comparative study

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ABSTRACT

Aim: To compare the two different techniques to ascertain the axillary lymph nodal status in breast cancer.

Study design: Randomized controlled trial

Duration: Two years from July 2010 to December 2012.

Methods: This study includes prospective analysis of the subjects, who were treated in YG & LLGH. data was entered into SPSS version 23.0 and were analyzed accordingly applying descriptive statistics e.g., mean, frequency and analytical e.g. t-test and Chi Square.

Results: 390 subjects were recruited and then divided randomly into two groups, A and B. Group A, included 237 patients (61%) who were treated with Blue dye assisted ALNS technique only while Group B, included remaining 153(39%) patients who were treated with Combined Blue Dye+ Radioisotope(TC99).

Conclusion: Blue dye assisted ALNS is a useful alternative to detect ipsilateral lymph node involvement in breast cancer where Radioisotopes, its safe usage

Keywords: Axillary lymph node, breast cancer, YG & LLGH

INTRODUCTION

In breast cancer, a sentinel node is the first few lymph nodes into which a tumor drains (called the sentinel" node). This helps the doctors to remove only those nodes of the lymphatic system most likely to contain cancer cells. The sentinel nodes are the first place that cancer is likely to spread in breast cancer, the sentinel node is usually located in the axillary nodes, under the arm. In a small percentage of cases, the sentinel node is found somewhere else in the lymphatic system of the breast. If the sentinel node is positive, there may be other positive lymph nodes upstream. If it is negative, it is highly likely that all of the upstream nodes are negative. In this study we think that when ideal gold standard sentinel lymph node biopsy is not available then blue dye assisted axillary lymph node sampling is a standard and acceptable alternative to assess the axilla.

MATERIAL AND METHODS

This randomized controlled trial was conducted at Betsicadwaladr university health board, Northwales, UK. This study includes prospective analysis of patients, who were treated in YG & LLGH. A causal comparative study was conducted over a period of two years from July 2010 to December 2012. A total of 390 subjects were recruited and then divided randomly into two groups, A and Bas follows:

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Group A: 237 Patients (Treated with Blue dye assisted ALNS)

Group B: 153 Patients (Treated with SLNB)

Exclusion Criteria:

- Neoadjuvant chemo/radiotherapy
- Previous breast surgery
- Multifocality diagnosed prior to surgery
- Clinically suspected axillary node metastasis
- Pregnancy
- Known Allergy to blue dye or Isotope used during SNLB

After approval from ethical committee, 390 patients presenting who fulfill the inclusion and exclusion criteria were treated. Informed consent was obtained and patient's demographic information (name, age, sex, height, weight, and contact) were recorded. Patients will be divided randomly into two groups (A: B). Patients in group A were treated with Blue dye assisted ALNS technique while Patients in group B were treated with SLNB Technique. All patients were undergo stoma reversal by researcher himself. 2mls of patent blue dye is being injected around the upper outer quadrant of the tumor at induction or on the table before preparing the patient for surgery. Gama Radioisotope Probe to detect sentinel lymph nodes. Blue axillary nodes detected after patent blue injection for histological assessments.

Data was collected by research proforma after detailed counselling of the patients about the purpose and method of the study; a written consent was also obtained. The collected data was entered into SPSS version 23.0 and analyzed accordingly. The

qualitative data is given in from of frequency and percentages. Mean±S.D was used for quantitative data. Chi-square test was used to see any significance association in neck pain and possible related factors. P-value less than or equal to 0.05 was taken as significant.

RESULTS

Table 1: Descriptive statistics and comparison of age, Sides, and Lymph Nodes

	ALNS(n=237)	SLNB (n=153)
Age (in Years)	35 ---- 93 Years	37 ---- 87 Years
Average (mean) age	63.5	59.9
Side (Right)	111	71
Side (Left)	121	82
Bilateral	2	0
+ve Lymph Nodes	49	37
-ve Lymph Nodes	188	116

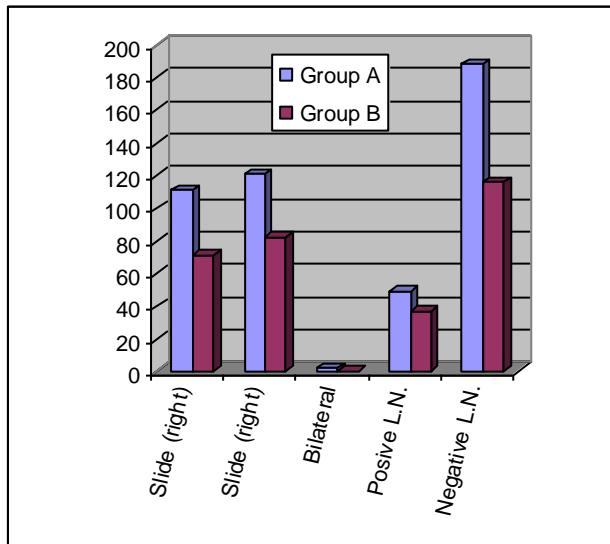


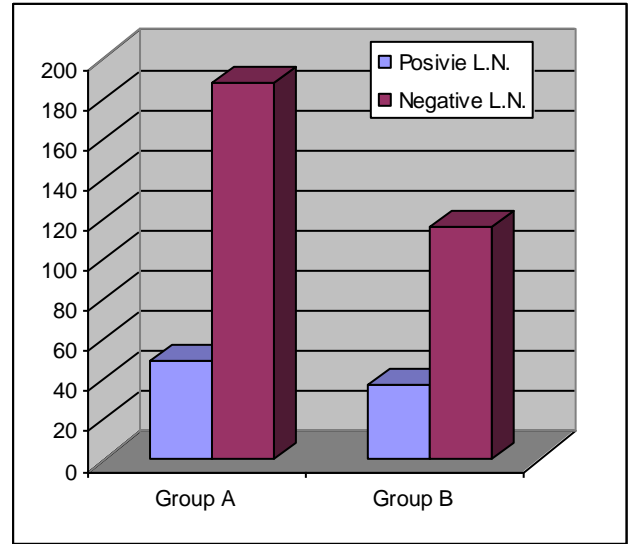
Table 2: Lymph node response in patients of the study groups

Study Groups	Positive Lymph Nodes	Negative Lymph Nodes	Total
ALNS (Group A)	49	188	237
SLNB (Group B)	37	116	153
Total	86	304	390

P value: 0.45(No-Significant)

Hence the difference in detecting the involvement of lymph nodes is statistically not significant.

Fig. 2



DISCUSSION

In breast cancer, a sentinel node is the first few lymph node(s) into which a tumor drains. This helps doctors remove only those nodes of the lymphatic system most likely to contain cancer cells. The sentinel nodes are the first place that cancer is likely to spread.

In breast cancer, the sentinel node is usually located in the axillary nodes, under the arm. In a small percentage of cases, the sentinel node is found somewhere else in the lymphatic system of the breast. If the sentinel node is positive, there may be other positive lymph nodes upstream. If it is negative, it is highly likely that all of the upstream nodes are negative.

In this study we think that when ideal gold standard sentinel lymph node biopsy is not available then blue dye assisted axillary lymph node sampling is a standard and acceptable alternative to assess the axilla.

CONCLUSION

Therefore blue dye assisted ALNS is a useful alternative to detect ipsilateral lymph node involvement in breast cancer where Radioisotopes, its safe usage and disposal along with Gamma camera and the expertise are not available.

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REFERENCES

1. Naik AM, Fey J, Gemignani M, Heerd A, Montgomery L, Petrek J, Port E, Sacchini V, Sclafani L, VanZee K, *et al.*: The risk of axillary relapse after sentinel lymph node biopsy for breast cancer is comparable with that of axillary lymph node dissection: a follow-up study of 4008 procedures.
2. *Ann Surg* 20 Carmon M, Olsha O, Rivkin L, Spira RM, Golomb E: Intraoperative palpation for clinically suspicious axillary sentinel lymph nodes reduces the false-negative rate of sentinel lymph node biopsy in breast cancer. *Breast J* 2006.
3. Varghese P, Mostafa A, Abdel-Rahman AT, Akberali S, Gattuso J, Canizales A, Wells CA, Carpenter R: Methylene blue dye versus combined dye-radioactive tracer technique for sentinel lymph node localisation in early breast cancer. *Eur J Surg Oncol* 2007, 33:147-152. Pub Med.
4. The October 20, 2003 Imaginis report, Study Supports Removal of Fewer Lymph Nodes in Breast Cancer Patients," is available at <http://www.imaginis.com/breasthealth/news/news10.20.03.asp>
5. The August 1, 2001 Imaginis report, "Canadian Report Outlines Benefits and Challenges of Sentinel Lymph Node Biopsy," is available at <http://www.imaginis.com/breasthealth/news/news8.01.01.asp>
6. Brenin DR, Morrow M, Moughan J, et al. Management of axillary lymph nodes in breast cancer: a national patterns of care study of 17,151 patients. *Ann Surg.* 1999;230:686–691 . [PMC free article] [PubMed]
7. Silberman A, McVay C, Cohen JS, et al. Comparative morbidity of axillary lymph node dissection and the sentinel lymph node technique: implications for patients with breast cancer. *Ann Surg.* In press. [PMC free article] [PubMed]
8. Starritt, EC, McKinnon J G, Lo SK, et al. Lymphedema following complete axillary node dissection for melanoma: assessment using a new, objective definition. *Ann Surg.* In press. [PMC free article] [PubMed]
9. The American Cancer Society provides information on sentinel node biopsy at <http://www.cancer.org/>
10. The January 26, 2006 Imaginis report, Another Study Finds Removing Fewer Lymph Nodes Effective At Reducing Side Effects of Breast Cancer Surgery," is available at <http://www.imaginis.com/breasthealth/news/news1.26.06.asp>