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ULTRASOUND MORPHOLOGY AND SENTINEL NODE BIOPSY OF AXILLARY LYMPH NODES AS A PREDICTOR OF METASTASIS IN PATIENTS WITH BREAST CANCER

Breast Surgery

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ABSTRACT

Background: Incidence of 30%. Breast cancer has the ability to spread by three ways: By spread to the lymph nodes in the axilla and then to other structures in the body ,By spread to different parts of the body through blood and by invading into neighbouring tissues and structures. Ultrasonography helps in identifying the axillary status, which is safe and reliable. Axillary USG + SNLB will be an effective method in diagnosing axillary lymph node metastasis in patients with carcinoma breast. **Aim:** To determine the role of ultrasound morphology of axillary lymph nodes and sentinel lymph node sampling as a predictor of metastasis in patients with breast carcinoma. **Materials and Methods:** it is an Interventional Comparative study done in Department of surgery in Chettinad Hospital and Research Institute for 19 breast carcinoma patients for whom Preoperative axillary lymph node classification by sonography and Node-to-node correlation between histopathology of clinically palpable axillary lymph node with histopathology of sentinel node were done to evaluate the efficacy in axillary nodal staging. **Results:** This study concluded that SNLB is better than USG axillary lymph node morphology and is the standard of care for axillary lymph node staging in early breast cancer. The present study were also in line with the earlier reports that, the USG was shown 100 % specificity and 44.44 % sensitivity in the present study

KEYWORDS

Breast cancer, sentinel lymph node biopsy, USG Mammogram.

INTRODUCTION:

Breast Cancer is the most common site-specific cancer in women worldwide with the Incidence of 30%.

Breast cancer has the ability to spread by three ways:

1. By spread to the lymph nodes in the axilla and then to other structures in the body
2. By spread to different parts of the body through blood
3. By invading into neighbouring tissues and structures

Classical surgical treatment for breast cancer - MRM. The axillary lymph node status - significant measurement to plan the adjuvant treatment of breast carcinoma (also most important prognostic factor). For many years ALND was the choice of method for axillary node evaluation. When no nodal involvement - ALND no advantage.

Complications - lymphedema, wound infections, stiffness, shoulder weakness, pain and numbness of the affected arm. ALN status assessed by SNLB - gold standard investigation. SNLB - slow and meticulous process for surgeons in the operating room (requires the administration of methylene blue/radioisotopes to patients, and needs multiple microscopic sections for final histological examination). [1]Ultrasonography helps in identifying the axillary status, which is safe and reliable. Axillary USG + SNLB will be an effective method in diagnosing axillary lymph node metastasis in patients with carcinoma breast.

METHODOLOGY:

This is an Interventional Comparative study. The source of the population was all breast carcinoma patients. The target population was Breast carcinoma patients who admitted in the department of surgery,Chettinad Hospital Research Institute, kelambakkam from Jan 2021 to June 2022. Totally 19 breast cancer patients fulfilled the inclusion criteria. Objectives: 1.Preoperative axillary lymph node classification by sonography. 2.Node-to-node correlation between histopathology of clinically palpable axillary lymph node with histopathology of sentinel node. INCLUSION CRITERIA of this study includes Female patients more than 18 years of age, Proven cases of Carcinoma Breast And Patients undergoing Mastectomy with axillary lymph node dissection EXCLUSION CRITERIA includes Prior surgery of axillary region, Pre-operative chemo-radiotherapy, Known allergy to methylene blue, Obviously metastatic clinically palpable nodes.

RESULTS:

The earlier studies reported that sensitivity and specificity of ultrasonography for detecting metastases in axillary lymph nodes ranges from 35% to 87% and from 55% to 97%, respectively . The present study were also in line with the earlier reports that, the USG was shown 100 % specificity and 44.44 % sensitivity in the present study

Diagnostic accuracy	Pre-operative FNAC	Cortical Thickness	USG	SNLB
Sensitivity	100	55.56	44.44	100
Specificity	84.62	100	100	100
Disease Prevalence	31.58	47.37	47.37	47.37
PPV	75	100	100	100
NPV	100	71.43	66.67	100
Accuracy	89.47	78.95	73.68	100
AUC	0.733	0.722	0.594	1.00
P Value	0.0288	0.0114	0.3173	<0.0001

DISCUSSION:

Axillary lymph node status - most important predictor of survival in breast cancer patients. Axillary lymph node dissection - earlier considered gold standard for predicting the axillary lymph node status. But related with significant morbidity such as post-operative pain in arm, chronic lymphedema of involved arm, neuropathy of arm, seroma formation, restricted shoulder mobility and other complications. The major advantage of [2]SNLB - lower complication rate compared with Axillary lymph node dissection. previous studies reported that sensitivity and specificity of ultrasonography for detecting metastases in axillary lymph nodes ranges from 35% to 87% and from 55% to 97%, respectively. This study in line with the earlier reports that, the USG was shown 100 % specificity and 44.44 % sensitivity in the present study.

CONCLUSION:

This study concluded that SNLB is better than USG axillary lymph node morphology and is the standard of care for axillary lymph node staging in early breast cancer.

As the direct sampling of the tissue gives a holistic information of the lymph node status and gold standard even in cases of occult primary the definitive diagnosis can be achieved

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