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UTILITY OF ULTRASOUND GUIDED FINE NEEDLE ASPIRATION CYTOLOGY IN ASSESSING AXILLARY LYMPH NODE STATUS IN CARCINOMA BREAST

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ABSTRACT

Assessment of lymphnode status in carcinoma breast is an important factor in staging. Lymphnode status can be evaluated by different methods such as physical examination and sentinel node biopsy. Ultra sonography features such as round, hypo echoic, with loss of central hilum, eccentric cortical hypertrophy of lymphnode indicate the malignant involvement of lymph nodes. This study was conducted to evaluate the ultra sonography features of metastatically involved axillary lymphnodes. Ultrasound guided fine needle aspiration of involved axillary lymph nodes was done to confirm the findings. Ultrasonography of axillary lymphnodes will detect the small lymphnodes which can be missed on physical examination. Ultrasound guided fine needle aspiration will help in removal of metastatically involved lymphnodes in axillary clearance in a single surgery.

Keywords: Ultrasound, FNAC, Axillary lymphnode, Carcinoma breast.

INTRODUCTION

Axillary lymph node status is the most important prognostic factor in breast cancer. The presence of nodal metastases decreases 5-year survival by approximately 40% compared to node-negative patients. Noninvasive imaging techniques have been used to predict the preoperative axillary lymph node status. Ultra Sonography has higher diagnostic accuracy than mammography, computed tomography, magnetic resonance imaging, and positron emission tomography for diagnosing axillary node metastasis^{1,3}. However axillary sonography has been shown to be moderately sensitive (48.8%–87.1%). UltraSonography is reported to be more sensitive in the detection of metastatic axillary lymph nodes than palpation or mammography^{2,6}. Fine needle aspiration cytology (FNAC) of radiologically abnormal axillary lymph nodes in patients with breast cancer can identify patients suitable for primary axillary clearance rather

than sentinel node biopsy, enabling surgical axillary staging by a single operation⁴.

MATERIALS AND METHODS

This study was carried out in Karnataka institute of medical sciences, Hubli, Karnataka a tertiary care centre for one year (2006-2007). Thirty cases of carcinoma breast diagnosed on fine needle aspiration cytology were selected for detection of axillary lymphnode status. Axillary lymphnodes were palpated to know the presence in these 30 cases. Verbal consent was taken by the patients after explaining the procedure. They were subjected to conventional fine needle aspiration cytology first and US guided fine needle aspiration cytology later. Philips HDI Ultrasonography machine along with hand held probe was used to determine the status of axillary lymphnodes. Ultrasonographically axillary nodes that are round, hypo echoic, with loss of central hilum, eccentric cortical

hypertrophy were considered malignant and others were reactive. Lymphnodes either positive or negative on sonography basis were selected for fine needle aspiration cytology. Fine needle aspiration cytology was done using 5ml syringe with 20-22 gauge needle.

Smears stained with H&E stain and Wright's stain were examined. They were categorised as no material, reactive changes and metastatic deposits as depicted in Table 1 and Fig.1.

RESULTS

In the present study, 2 cases did not have any axillary lymphnodes while on physical examination 6 were negative. Ultrasonography assesment of lymphnodes whether they were reactive or metastatically involved were complimented by FNAC. None of the cases on US guided FNAC showed no material while 8 cases yielded no material on conventional FNAC. Reactive features were seen in 10 cases on US guided FNAC and 3 cases on conventional FNAC. Metastatic deposits was seen in 18 cases on US guided FNAC and 13 on conventional FNAC.

Physical examination did yield positive results only when the lymphnodes were of sufficient size (>2cms) but not for the lymphnodes which were smaller. Ultrasonography showed the lymphnodes immaterial of the size (smaller being 0.5cms) along with additional information of metastatic deposits as depicted in Table 2 and Figure 2.

DISCUSSION

Breast cancer is the second most common malignancy in India after carcinoma of cervix⁷. The incidence of breast carcinoma is increasing among the young females. Early diagnosis of carcinoma will have better prognosis and has varied modalities of treatment. Initial assesment of a lump in a breast can be done with mammography, ultrasonography, fine needle aspiration cytology, core biopsy and excision

biopsy. Once the lump has been diagnosed as carcinoma staging becomes the important prognostic factor. Assesment of axillary lymphnode status is an important factor in staging of breast cancer. Many of the times axillary lymphnodes are missed on physical examination of axilla owing to smaller size or deeper location and it will affect the staging. Traditional use of axillary sentinel node biopsy raised issue of false negative results⁸. These false negative cases may be because of massive metastasis in a single lymphnode in the draining area³. The use of ultrasonography in detecting axillary lymphnode status has limited application because of low sensitivity (48.8%–87.1%)². However use of sonography to detect metastatically involved lymphnodes will reduce the sentinel lymphnode biopsies. It will also help in diagnosing metastatically involved lymphnodes which might have been missed on physical examination. Ultrasonography is much more cost effective, can be used in centres where the facility for CT and MRI are not available. US guided FNAC will compliment the diagnostic findings of sonography. With precise assesment of lymphnode status staging can be more accurate. Axillary clearence incase of involved nodes can be done with primary removal of breast tumor in a single operation. Hence it will reduce the two stage surgery or surgery at a later date.

CONCLUSION

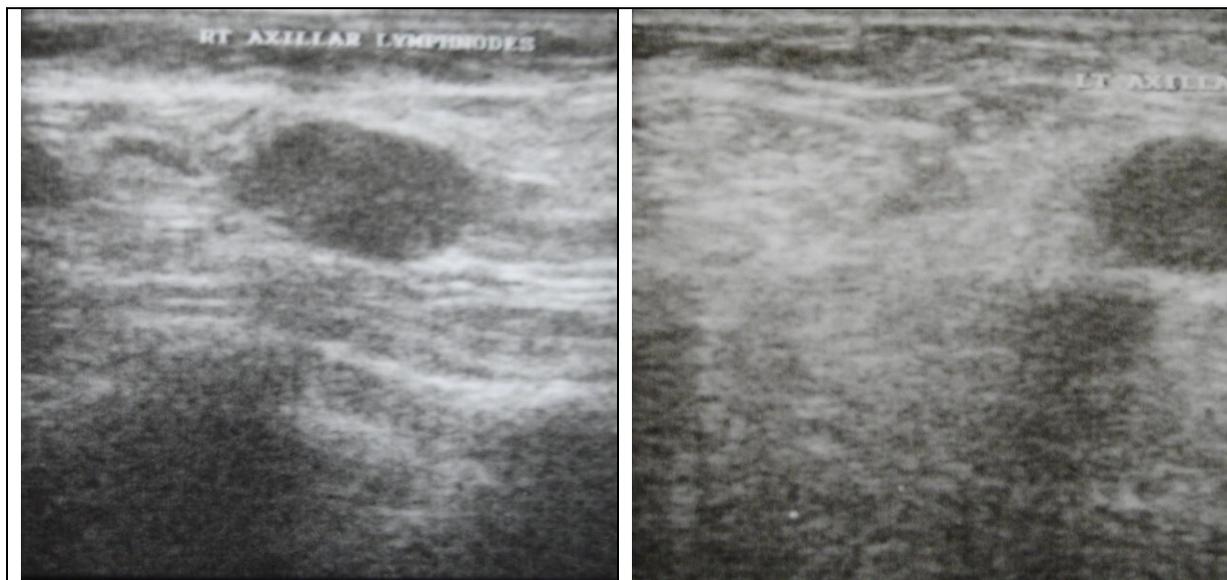
Ultra sonography of axillary lymphnodes will help in identifying the enlarged axillary lymphnodes which can be missed by physical examination. The characteristic features of metastatically involved lymphnodes will help in proper staging of carcinoma breast. Ultra sonography guided fine needle aspiration cytology will compliment the findings and help in removal of metastatically involved lymphnodes in a single surgery.

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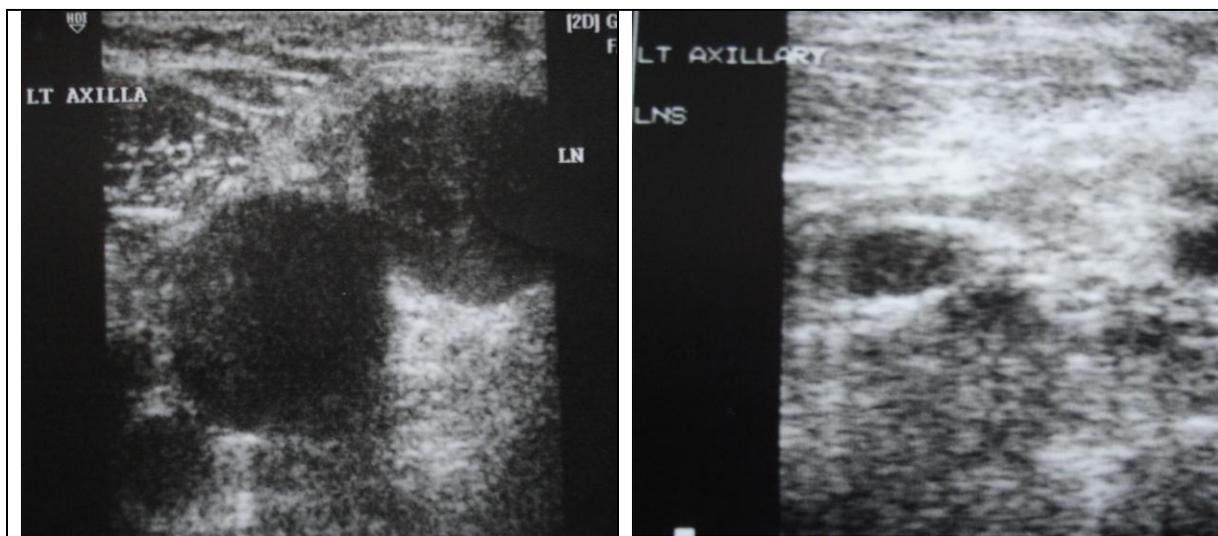


Fig.1. Ultrasonography images showing metastatically involved axillary nodes.

Table 1. Criteria for assesing the FNAC smears

Category	Criteria
No material	Only adipocytes and fibrous fragments
Reactive changes	Polymorphic population of lymphocytes
Metastatic deposits	Singles or groups of atypical epithelial cells in a lymphocytic background

Table 2. Comparison of US guided FNAC and Conventional FNAC

Lymph node status	US guided FNAC		Conventional FNAC	
	No. of cases	Percentage	No. of cases	Percentage
No material	0	0	8	26.7
Reactive	10	33.3	3	10
Metastatic deposits	18	60	13	43.3
Absent	2	6.7	6	20
Total	30	100	30	100

Fig.2. Comparison of material obtained on US guided FNAC and conventional FNAC

