Research Paper Medical Science

An Article on Sonomammography

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ABSTRACT

Role of breast ultrasound in diagnosing benign and malignant breast lesions in female and male breast. In this article, the result of the cohort study that has been conducted in our hospital for a period of five months from July to November 2015 has been discussed .

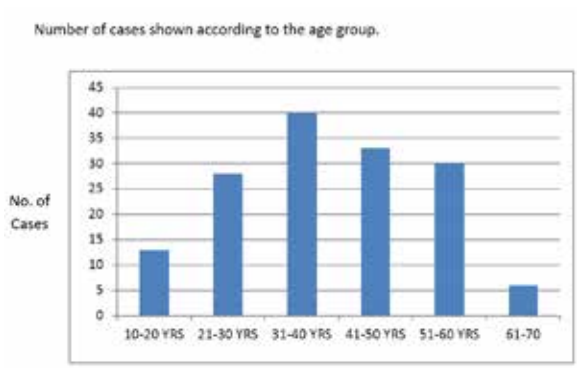
KEYWORDS USG, linear probe, film screen mammography, fibrocystic disease, fibro adenoma, malignancy and fine needle aspiration cytology (FNAC).

INTRODUCTION:

Sonomammography is nothing but the ultrasound of the breast, which requires a linear high frequency probe of 5- 7.5 MHZ. It is a non invasive, painless and cheaper procedure which can be done by a radiologist. It can be repeated any number of time and without any side effects. It has been also used in guiding smaller lesions for FNAC. Meticulous ultrasound including all the four quadrants of breast , nipple, areola complex and axillary area helps in diagnosing all these lesions with 98% sensitivity. Only disadvantage is that early features of breast malignancy i.e microcalcification can't be detected by sonomammography. Film screen mammography is a special soft tissue radiography of the breast , the x-ray tube in this film screen mammography uses molybdenum as the target material and compression technique is devised by the Daulrae and Bens in 1960 made the first dedicated mammography tube. Only advantage of film screen mammography is that detection of micro calcification.

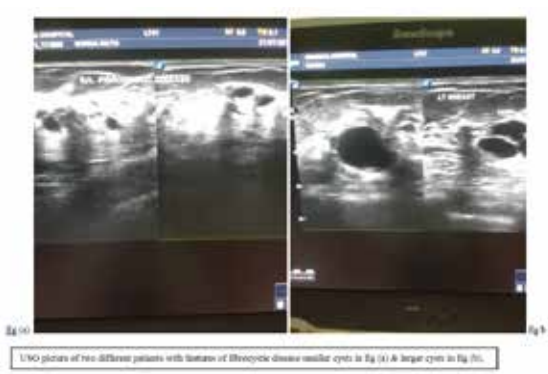
CASE STUDY:

This is a cohort study conducted in the hospital for a period of five months from July to November 2015. All the patients referred from department of surgery and OG with complaints in breast has been included.The total number of breast USG is 150 cases. Of this the normal breast USG were 50 , fibrocystic disease 29 , fibro adenoma 32, of this 26 were unilateral and remaining 6 were multiple, malignant lesions 22. Remaining were abscess 3, axillary lymphadenopathy alone with normal breast ultrasound 6 of this one with necrotic abscess in the axilla, galactocele 1, single large cyst 1, lactating mothers 3. Hypertrophied scar , keloid 2, dilated subareolar ducts1.



FIBROCYSTIC DISEASE:

In this condition the patients presented with pain in both the breast some complaining of continuous pain and some with cyclical pain. Ultrasound revealed abundant fibrous tissue and cysts of varying sizes. Thickened glandular elements and surrounding hypoechoic cuff giving spongy and mottled appearance of the breast was noted in most of the cases. In most of this condition the USG diagnosis and the tissue diagnosis found to be similar. Almost all the cases were confirmed by tissue diagnosis. All these patients were reassured and were treated symptomatically. Most of the patients were young and film screen will not give a definite diagnosis as the breast will be dense due to increased fibro glandular component. The youngest girl in this study presented with fibrocystic disease was 13 years and oldest was 70 years with multiple cyst.



USG picture of two different patients with features of fibrocystic disease-smaller cysts in fig (a) & larger cysts in fig (b).

FIBROADENOMA:

All the patients with fibroadenoma presented with incidental mass and no history of pain in the breast. This is the most common benign tumor of the breast. They are typically well defined smooth walled solid hypoechoic lesions wider than their height. Some are uniformly hyperechoic smallest of the lesion is 8 mm and largest of the mass is around 10 cm occupying whole of the breast (phyllodes tumor) . Posterior acoustic enhancement is seen in most of the lesions. About six of the cases of fibroadenoma are multiple and rest is solitary. Youngest of the patients presented with fibroadenoma is 13 years and is multiple and oldest of this group is 58 years and is a solitary lesion.Two of the patients gave previous history of surgery for the similar problem. One was a pregnant mother. All the cases were confirmed by tissue diagnosis.

Fig (a) Fig (b)

USG picture of two different patients with features of fibro adenoma with posterior acoustic enhancement & predominantly hyper echoic in fig (a) & hypo echoic in fig (b).

ABSCESS: Of the three abscesses in this study two in the perimenopausal age group in the fourth decade and other is a 67 year old male post renal transplant recipient. Abscess usually occurs in the reproductive age group mainly during lactation and in this short duration study only three cases and all in peri and postmenopausal age group.USG revealed missed echoic complex irregular mass with cystic and solid areas. Mammography is seldom performed in acute mastitis. Acute abscess is a painful condition and film screen mammography could not be done because the breast need to be compressed between two plates. USG plays major role in localizing the lesion and for diagnostic and therapeutic aspiration. The above diagnosis was confirmed by FNAC.

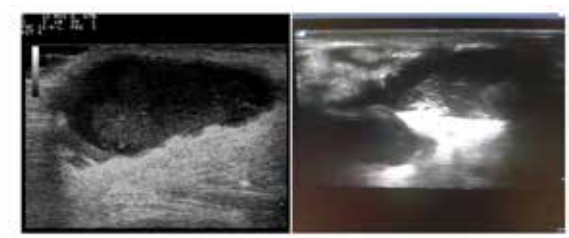
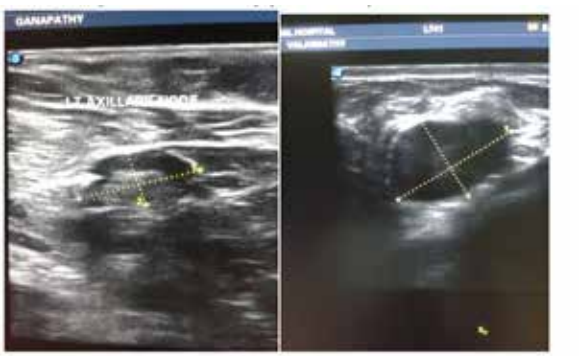


Fig (a) Fig (b)

USG picture of two different patients with features of breast abscess with posterior acoustic enhancement & mulitrandy hypo echoic in fig (a) & mixed echoic in fig (b).

AXILLARY LYMPHADENOPATHY : Normal breast USG with enlarged axillary lymph nodes alone is an incidental finding. USG may some extent differentiate benign and metastatic lymph nodes. Benign nodes have a fatty hilum while in metastatic lymph nodes the fatty hilum will be absent.



Fig(a) Fig(b)

USG picture of two different patients with enlarged axillary lymphadenopathy with fatty hilum in fig (a) & without fatty hilum in fig (b).

MALIGNANT :

Of all the 22 malignant cases 12 of them were post operative cases who came for follow up, screening of other breast and to assess the chest wall thickness in the post operative breast for future radiotherapy planning. Youngest in this was a 33 year old female and oldest was a 65 year female.In USG the margins of rest of the breast lesions were irregular and spiculated. The echogenicity was not uniform and inhomogenous. The depth of the lesion is more than the breadth. Associated regional lymphadenopathy is found in all most all the cases. The lymph nodes appear to be metastatic because the fatty hilum of the enlarged lymph nodes was lost. There was no quadrant preponderance and the mass was found in any of the quadrants. Nipple retraction was found in the subareolar mass lesions.

Fig(a) Fig(b)

USG picture of two different patients with features of malignant mass with irregular hypo echoic mass in fig (a) & in fig

CONCLUSION:

The most common benign breast disease is fibroadenoma and fibrocystic disease.In case of abscesses USG not only helps in diagnosis but also guides in aspiration of the abscess. Early malignant lesions with features of micro calcification cannot be diagnosed by USG .While after the formation of mass lesion USG easily picks up the lesion and plays a major role in diagnosing the involvement of the quadrant and assessing the regional lymphadenopathy. It also plays a major role in post op patients in assessing the chest wall thickness before going for radiotherapy.USG plays a major role in younger patients with dense breast where interpretation in film screen mammography will be difficult in picking up lesions.

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