



Combined Mammographic and Sonographic Evaluation of Palpable Breast Masses

Authors

**Dr Satyendra Mohapatra¹, Dr Anurag Das², Dr Savitri Bhagat³,
Dr Braja Behari Panda⁴**

^{1,2}PG Resident, Veer Surendra Sai Institute of Medical Sciences & Research (VIMSAR), Burla

³Professor & H.O.D, Department of Radiodiagnosis, Veer Surendra Sai Institute of Medical Sciences & Research (VIMSAR), Burla, Odisha

⁵Associate Professor, Department of Radiodiagnosis, Veer Surendra Sai Institute of Medical Sciences & Research (VIMSAR), Burla, Odisha

Abstract

Aims & Objectives: Evaluation of role of mammogram and ultrasonogram imaging in assessing patients with breast lump.

To help clinician whether go for biopsy or follow up the patients after imaging evaluation of breast lump by the ultrasonogram and mammogram.

Result: 24 patients out of 60 patients of palpable breast lump had benign lesion. 8 patients suspicious assessment on usg and mammogram of which 3 patients were diagnosed malignant on biopsy.

28 patients of 60 palpable lump had negative imaging assessment finding on both usg and mammogram

Conclusion: Combined mammographic & ultrasonographic assessment was shown to be useful in identifying benign as well as malignant breast lesion. 3 malignant lesion diagnosed out of 60 breast lump cases..

Keywords: Biopsy, mammography, sonography, breast lump.

Introduction

Breast cancer is among the most common cause of cancer death today. A breast lump is a mass that develop in breast may vary in size & texture & may cause pain.

In advancement of imaging there is early detection of the lesion & improve treatment have decreased the cancer related mortality.

Mammography is widely accepted technique for screening of breast lump. Sonography also useful modality in adjunctive with mammography. In dense breast some time small focal lesion may be missed in mammography but can be detected in

ultrasonography. so combined mammography & ultrasonography approach is higher sensitive & specific than individual approach.

This thesis titled "Combined Mammographic & Ultrasonographic Evaluation of Palpable Breast Masses" was under taken at VIMSAR Burla between Sep.2017 to Aug 2019.

Material & Method

The study was conducted in VIMSAR Burla, Odisha.

We included women more than or equal to 30 yr referred to department of Radiodiagnosis with clinical diagnosis of Breast Lump.

The study was conducted from Sept 2017 to Aug 2019 for 2yr.

All the patients underwent a combined mammographic & sonographic evaluation.

Palpable abnormalities of the breast included palpable lump, thickened breast, nodularity lesion. The following information was documented at the time of initial visit age of the patients,site of palpable abnormalities & description of palpable abnormalities.

All the patients underwent mammography which included standard craniocaudal, mediolateral & oblique view.later patients subjected to ultrasonography. Mammography was performed by Allenger machine USG done by LOGIQ F 8.

Result

There was 60 patients with palpable abnormalities of the breast who underwent mammography & ultasonography .39 patients have right breast, 19 patients have left, 2 have b/l breast lump.

Out of 60 patients, 24 (40 %) showing benign lesion.14 (58%) patients out of 24 patients both mammography & ultrasonography positive.9 (37.5%) patients mammography occult usg showing benign lesion.1 (4.2%) patients usg occult finding mammogram showing benign lesion.

8 (13.4%) patients out of 60 patients suspicious in mammography & usg.

Out of 8 patients 3 patients were showing biopsy positive, 5 patients were showing biopsy negative.

Table 1 Showing Age Distribution

Age group	Palpable lump(60)
30-39yr	30
40-49yr	20
50-59yr	6
>60yr	4

Table 2 Showing Benign Cause of Palpable Abnormalities

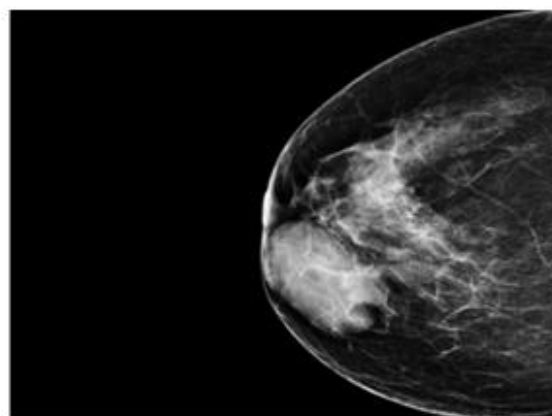
Benign lesion	No of abnormalities
Cyst	14
Fibroadenoma	6
Duct ectasia	2
Fat necrosis	1
Fibrocystic disease	1

Table 3 Showing Final Assessment

Imaging finding	No of palpable Abnormalities.
Negative	28
Benign	24
Suspicious	8

Table 4 Showing Characteristics of Palpable Abnormality

Characteristic	Value (%)
Sensitivity	100%
Specificity	84.8%
NPV	100%
PPV	37.5%



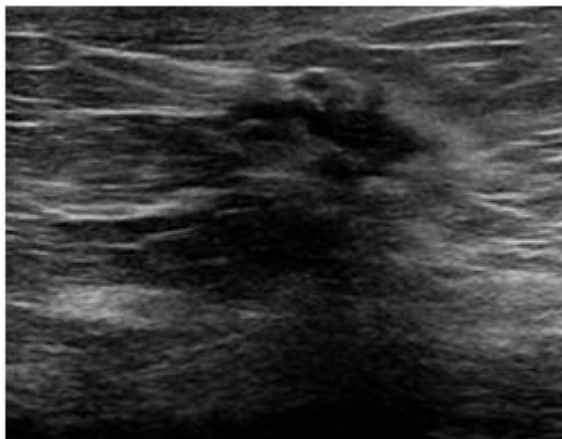
Mammographic Finding of Fibroadenoma



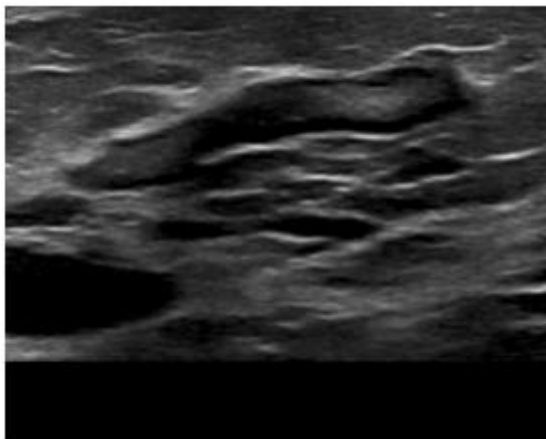
Mammographic Imaging of Galactocele



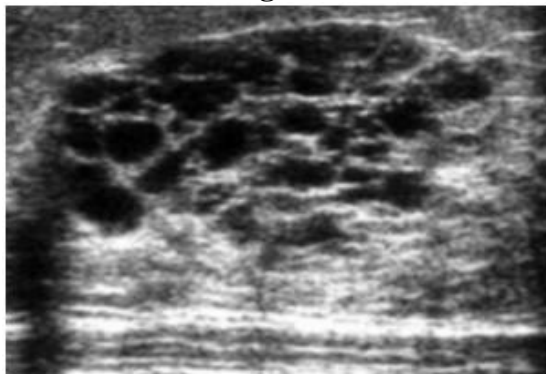
USG Fibroadenoma



USG Imaging Of Ductal Cell Carcinoma



USG Finding Duct Ectasia



Ultrasonographic Image of Fibrocystic Disease

Discussion

Because of low sensitivity of mammogram in younger patients because of dense breast, malignancy less common in age < 30 yr age.

Combined imaging evaluation leads to fewer unnecessary biopsies. Perdue et al reported that only 11.1% of 623 excisional biopsy specimens of palpable breast revealed carcinoma (46). In this study only 8 out of 60 palpable abnormalities underwent biopsy on the basis of imaging finding only 3 (5%) showing malignancy, compared with 5% on a series (123 cases of palpable breast thickening reported by Kaiser et al & 5% in 605 patients younger than 40 yr reported by Marrow et al)

In this study 24(40%) of 60 lesions were categorized as benign by combined sonography & mammography evaluation, clearly showing value of imaging avoiding unnecessary biopsy. Moss et al³ reported that sonography increase the cancer detection by 14% in symptomatic patients, who were evaluated in combined sonographic & mammographic approach.

In a study of 411 palpable abnormalities by Shetty Mk¹ & Shah YP, 66(16%) of palpable abnormalities were mammographically occult but detected by ultrasonography. In our study 9 cases (15%) out of 60 cases are mammographically occult but detected by USG of which 6 cases are benign cyst & 2 cases are duct ectasia.

The value of combined mammographic & sonographic imaging in breast lumps case has been studied previously. Moss et al³ reported sensitivity of 94.2% & specificity 67.9% in 368 patients. Shetty MK¹ & Shah YP reported a sensitivity of 100% & specificity of 84.8%. Their finding is comparable with present finding of our study with sensitivity 100% & specificity 84.8%.

Conclusion

Combined use of mammography & sonography play an important role in the management of palpable breast lesion.

Its application are

1. Characterizes the palpable breast mass.

2. Avoid unnecessary intervention.
3. Negative finding in both mammography & ultrasonography have a high specificity which may help to reassessing the patients.

References

1. Shetty MK, Shah YP, Sharman RS. Prospective evaluation of value of combined mammographic and sonographic assesment in patients with palpable abnormalities of breast. J Ultrasound Med 2003;22:263-268.
2. Barlow WE, Lehman CD, Zheng Y, Ballard-Bardash R, Yankaskas BC , Cutter GR, et al. Performance of diagnostic mammography for women with signs or symptoms of breast cancer . J Natl Cancer Inst 2002; 94:1151-9.
3. Moss HA, Britton PD, Flower CD, Freeman AH, Lomas DJ, Warren RM . How reliable is modern breast imaging in differentiating benign from malignant breast lesions in the symptomatic population? Clin Radiol 1999;54:676-82
4. Berg WA, Campassi Ci, Ioffe OB. Cystic lesions in the breast: sonogrpahic – pathological correlation. Radiology 2003;227:183-91.
5. Lewin JM, Hendrick RE, D’Orsi CJ, Isaacs Pk, Moss LJ, Karellas A, et al. Comparision of full field digital mammography with screen fil mammography for cancer detection: results of 4,945 paired examinations. Radiology 2001;218:873-80
6. Fischer U, Baum F, Obenauer S, Luftner-Nagel S, von Heyden D, Vosschenrich R, et al. Comparitive study in patients with microcalcification: full -field digital mammography vs screen – film mammography. Eur Radiol 2002;12:2679-83.