ORIGINAL RESEARCH PAPER | Medical Science | Volume : 6 | Issue : 10 | October 2016 | ISSN - 2249-555X | IF : 3.919 | IC Value : 74.50

Ultrasonographic Evaluation of Various Breast Lesions

KEYWORDS: Ultrasonogram, Breast lesion, Incidence, Diagnostic accuracy

*** Dr. Padmavathi Mallela**
Assistant Professor, Dept of Anatomy, Osmania medical college, Hyderabad, Telangana

Dr. Sudhakar Babu Dasari
Assistant Professor, Dept of Anatomy, Osmania medical college, Hyderabad, Telangana.

ABSTRACT *The study was done in 200 female patients with various breast lesions ,by using four parameters .In this study, vulnerable age group for the incidence of breast lesions 40-49,50-59 yrs, site of lesion- upper outer quadrant mostly on left side. The diagnostic accuracy of ultrasonography is high percentage,simple technique, economic, widely used when compared to other diagnostic procedures.*

INTRODUCTION:

[1] In mammals, the mammary glands are secondary sexual organs in female and rudimentary in males which develop from ectoderm l mammary ridges. Till menarche, its structure- rudimentary in both sexes. From menarche to menopause-the organ is under constant influence of hormones and the structure varies accordingly. The evaluation of breast lesions in a systemic manner can be done by triple assessment. The steps being symptoms, history, clinical examination, investigations and biopsy etc. The aims of evaluation of breast lesions are to confirm the diagnosis, to see the extent of lesion and to plan for appropriate therapy. Carcinoma of the breast is the second most common cause of death among women. Early diagnosis of the breast lesion can prevent further complications. This is done by self- examination of the breast, clinical evaluation of lesion followed by investigations. Ultasonography is easily accessible, available, economic and can be carried even to remote areas when compared to other imaging techniques.

MATERIALS & METHODS:

The study was conducted with 200 patients in and around Hyderabad who attended MNJ cancer and Research Institute, Indo American Cancer Institute, Elbit diagnostics. All patients had routine clinical examination, histo-pathological evaluation and other imaging techniques in above mentioned institutions.

[16] High quality images of the normal and abnormal breast can be obtained with modern ultrasound equipment. At the minimum a 7.5 MHz linear array probe should be used, though digital broadband width transducers using higher frequency are now widely available and allow higher resolution imaging. The patient is examined in the supine oblique position. In addition to conventional orthogonal scanning directions, scanning in the radial and anti radial planes are of value in demonstrating ductal abnormalities.

OBSERVATIONS & DISSCUSSION:

In this study, diagnostic accuracy of ultrasonography was seen. Parameters taken are

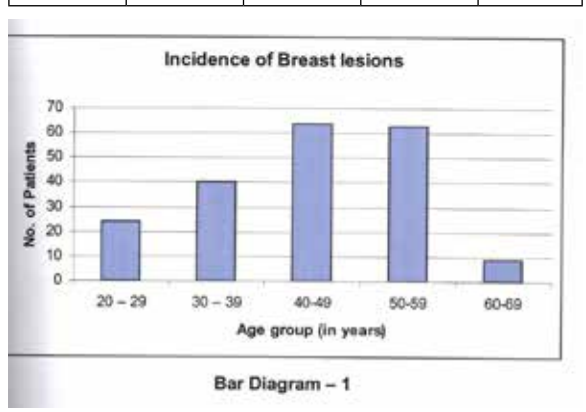
- Incidence of various breast lesions in the age group of 20- 59 yrs.Lesions include Mastitis,Cystic lesions, Beningn tumors,Carcinomas,Calcifications.
- Site of the lesions.
- Side of the lesions
- Diagnostic accuracy of ultrasonogram

Incidence of various breast lesions:

More number of patients i.e. 64/200 are seen between the age group of 40-49 yrs. Next vulnerable group 50-59 yrs, minimum in 60-69 yrs and rare in 20-29 yrs of age group. Present study coincides with the Mahesh[2] k. Shetty and differs with the Sachin Prasad's[3,] and Sandhya's[4,] studies where the cases were more below 30 yrs of age. Results are given in the below table.

Comparative figures of different authors in different breast lesions in various age groups.

Age group	Sandhya[4] et al study (n=500)	Mahesh's[2] study (n=44)	Sachin[3] Prasad's et al study (n=62)	Present study (n=200)
> 20 yrs	99	-	-	-
20-29	192	28	20	24
30-39	137	106	19	40
40-49	72	166	16	64
50-59	-	82	4	63
60-69	-	21	3	9
>70	-	8	-	-



Bar Diagram – 1

Relative Incidence of various breast lesions:

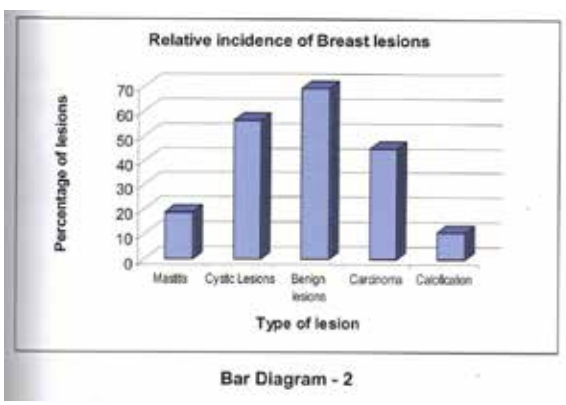
More cases of benign tumors were seen among 200 patients between 40-49, 50-59 yrs of age groups i.e. 23/69, 18/69. Malignant lesions were more in 50- 59 yrs i.e. 21/45, mastitis in 30-39 (10/19) and calcifications 40-59 yrs of age groups. Incidence of malignancies in different age groups, the author's study is coinciding with previous stud-

Volume : 6 | Issue : 10 | October 2016 | ISSN - 2249-555X | IF : 3.919 | IC Value : 74.50

ies. It is predominantly seen in the mean age of 45 yrs. Results are given the below table.

Comparative figures of different authors in various breast lesions.

Various studies	Fibrocystic disease	Benign tumors	Carcinoma
Sandhya[4] eta l	-	20-40 yrs	>40 yrs
Katsaro[5] et al	-	-	>50 yrs
Janardhan[6] et al	-	-	40 yrs
Mona[7] et al	34 yrs	23 yrs	-
Present study	40-49 yrs	40-49 yrs	50-59 yrs

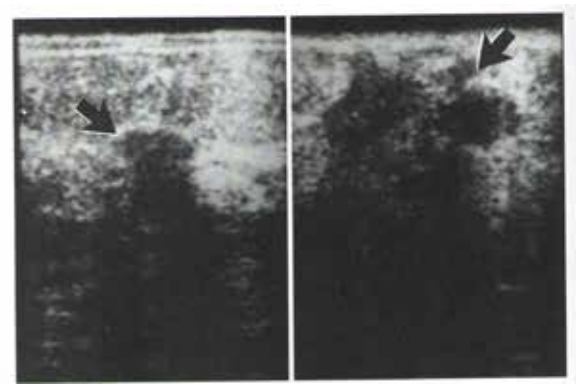


Bar Diagram - 2

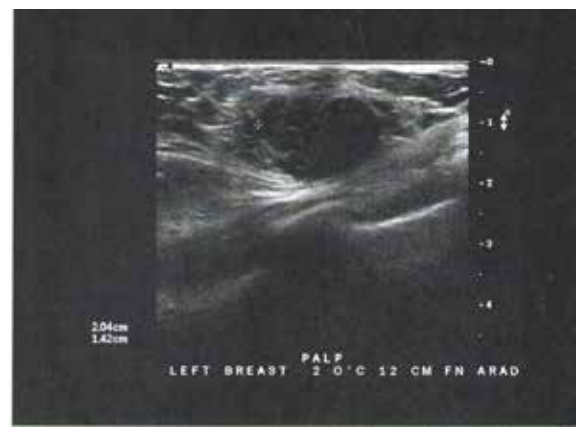
Ultrasonogram of calcification

Inflammatory carcinoma

Ultrasonogram of Inflammatory carcinoma



Ultrasonogram of galactocele



Site of lesion:
Upper and outer quadrant of breast is occupied with maximum number of lesions in all studies that coinciding with author's study. It reflects of greater amount of breast tissue in the upper and outer quadrant when compared to the other quadrants. Results are given the below table.

Comparative figures of different authors of site of the lesion with percentage.

Site	Raafta[8] et al study		Shozo[9] et al study		Sachin Prasad[3] et al study		Present study	
UOQ	26	32.5	30	37.97	28	45.16	109	54.5
LOQ	11	14	5	6.33	27	35.48	20	10
UIQ	12	15	24	30.38	-	-	26	13
LIQ	10	12.5	6	7.59	2	3.23	35	17.5
RA	21	26	-	-	10	16.13	10	5
UO, UI	-	-	4	5.06	-	-	-	-
LO, LI	-	-	4	5.06	-	-	-	-
UO, LO	-	-	5	6.33	-	-	-	-
UI, LI	-	-	1	1.27	-	-	-	-

Side of the lesion:
Maximum Incidence of breast lesions were confined to left side i.e. 96/200 (48%), in Right side 87 cases were reported (43.5%). Minimum incidence in bilateral 17/ 200 (8.5%) coinciding with previous studies. Results were given in the below table.

Study	Right	Left	Bilateral
Mona[7], Nazer	39.5 %	45 %	7 %
Present study	43.5 %	48 %	8.5 %

Volume : 6 | Issue : 10 | October 2016 | ISSN - 2249-555X | IF : 3.919 | IC Value : 74.50

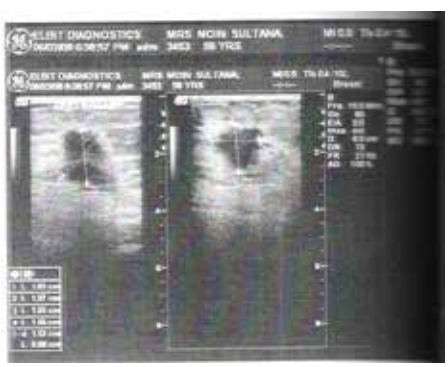
Diagnostic accuracy of Ultrasonography:
In present study 200 female patients with various breast lesions, the author has evaluated the ultrasonographic appearance of various confirmed breast lesions. In total 200 patients, ultrasound could detect 191 cases successfully (95.5 %). The author's study is co-rrelating with previous studies. Results are given below.

Different studies	Ultrasonogram
Noriyuki[10], et al	100%
Nasu[11] et al	88.76%
Sachin Prasad[3], et al	70%
Hiecken[12], et al	75%
Cox, BA Kelly[13], et al	100%
Present study	95.5%

CONCLUSION

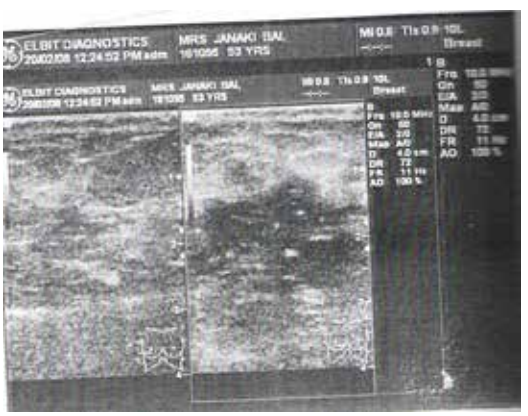
The author tried to evaluate the accuracy of diagnostic procedure of ultrasonography. The Ultrasound given the high percentage of accuracy, simplest technique involved, comparatively economic, non-invasive, most widely used even in remote areas. This procedure is sufficient to diagnose the different types of lesions mainly carcinomas in the early stages even in rural areas.

CASE REPORT 1



CASE REPORT 2

CASE REPORT 3



Ultrasonogram of calcification

REFERENCES

1. Gray's Anatomy – Normal Anatomy 38th edition, Pg No. 418-424.
2. Mahesh K. Shetty, Prospective evaluation of the value of combined MG&USG assessment in patients with palpable abnormalities of the breast. J Ultrasound Med 22: 263-268, 2003.
3. Sachin Prasad N, A comparison of mammography and ultrasonography in the evaluation of breast masses. Biomed papmed Fac unic palacky Olomouc czeh republic. 2007, 151(2): 315-322.
4. Sandhya P Iyer, Epidemiology of benign breast diseases in females of child bearing age group: http://bhj.org/journal/2000-4201.john00/original-141.htm
5. Ktsaro's, Comparision of mammography , ultrasonography and nuclear scintigraphy in the detection of malignant breast lesions. Journal of the American Chiropractic Association December 2002.
6. Janardhan V Bhatt, Pathophysiology of breast lesions: Vision beyond the clinical eye. 2002.
7. Mona A, Outline of breast diseases in Qatif Central Hospital: Kuwait Medical Journal 2004, 36(3): 182-185.
8. Raafta, Sensitivity of scintimammography for diagnosis of breast carcinoma in different breast sites. 99Mtc-Sestemibi scintimammography: Effect of lesion site and size. cancer Inst. Vol. 12, No 3 sep: 183-189, 2000.
9. Shozo Ohsuni, Breast biopsy for mammographically detected non-palpable lesions using a vaccum assisted biopsy device and an upright type stereotactic mammography: Japanese Journal of clinical oncology 2001.
10. Noriyuki Tohnosu, A comparision between USG and MG, CT and digital subtraction angiography for the detection of breast cancers. Surgery today: 0941- 1291; 1436-2813, Vol. 23, No 81 Aug 1993, Pg 704- 710.
11. Nasu S, A study of breast cancer undetectable by USG and MG: Health evaluation and promotion; YO 267 A: 1347- 0086. Vol 30: No 4, pg 436- 438 (2003).
12. Hiecken TJ, Corelating USG, MG and pathology in the assessment of breast cancer size. AMJ Surg 2001; 182: 351- 4.

Volume : 6 | Issue : 10 | October 2016 | ISSN - 2249-555X | IF : 3.919 | IC Value : 74.50

13. Cox BA Kelly, Ultrasound characteristics of breast carcinoma. AM surg 1995 Oct: 64 (10): 934-8.
14. Arikan S, Hydatid disease, in the breast: A case report, Acta Chir Belg, 2004. 104, 473-475.
15. Bhaskar Reddy L, Diseases of breast, Classification of breast lesions. Pg 33-43.
16. David Sutton- imaging modalities 7th edition, Vol. 2, Pg 1451- 1456.
17. Dershaw DD, Inflammatory breast carcinoma: Mammographic findings. Radiology 1994, Mar:19093.
18. Elling D, Priliminary experience ewuth combined ultrasonographic and Roentgen- mammographic diagnosis for cystic mammary tumors. Zentralbl Gynakol 1982; 104: 134-9.