Welcome

"CYTOMORPHOLOGICAL SPECTRUM OF BREAST LESION IN ELDERLY FEMALE"

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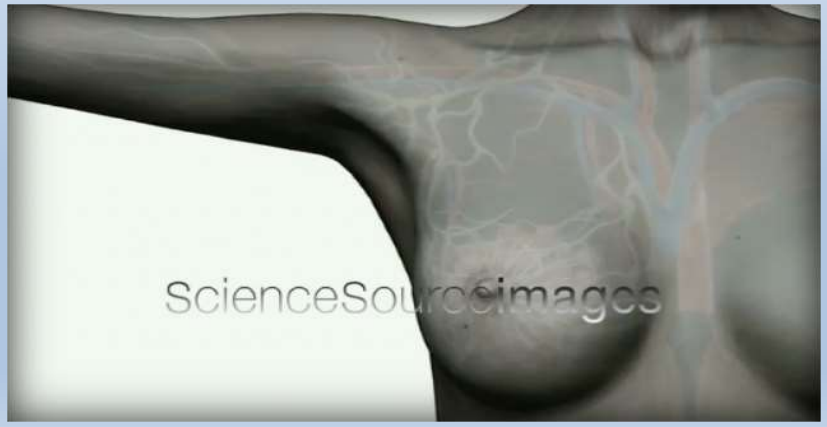


"CYTOMORPHOLOGICAL SPECTRUM OF BREAST LESION IN ELDERLY FEMALE"

BACKGROUND

- Breast lumps are common complaints of women .
- Breast cancer is leading cause of morbidity and mortality in women.
- The global protocol for diagnosis of breast lump is the “triple assessment.
- (mammography and or ultrasound) , fine needle aspiration cytology (FNAC) and Clinical Examination.
- FNAC is a diagnostic tool of surgical procedures.

BACKGROUND

- The role of FNAC in assessment of breast Lump
- 1.The diagnosis of simple cyst.
- 2.The investigation of suspected recurrence or metastasis in cases of previously diagnosed cancer.
- 3.The confirmation of inoperable , locally advanced cancer.
- 4.The preoperative confirmation of clinically suspected cancer.
- 5.The ability to obtain tumor cells for special analysis and research e.g. Hormone receptor studies, DNA analysis ,immunohistochemistry, cell kinetics and molecular studies.
- Main goal of FNAC of breast:(1)To confirm a radiological and clinical benign lesion and avoid unnecessary surgery.
- (2)To confirm a malignant diagnosis and allow definite treatment planning.

BACKGROUND

Interpretation of FNAC Breast:The most common causes of false positive FNAC diagnosis in breast pathology are –Fibroadenomas, complex sclerosing lesions,Fat necrosis

1.Fibroadenoma-Epithelial atypia in presence of single benign bare bipolar nuclei and sheets of benign epithelium.

2.Complex Sclerosing Lesion-Groups of atypical epithelial cells with presence of benign epithelial cells and single bare bipolar nuclei.

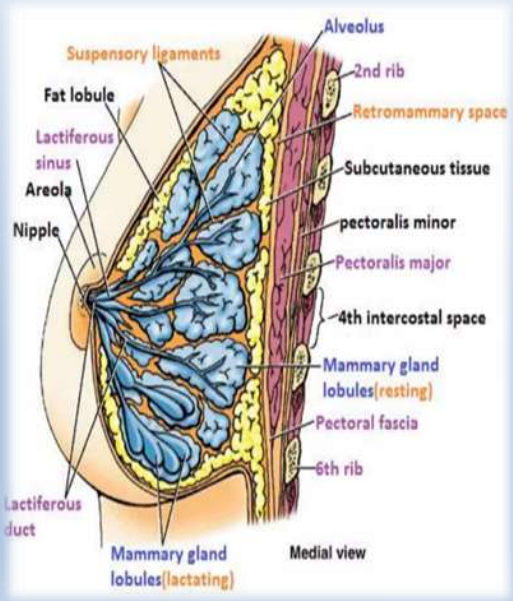
3.Fat Necrosis-Macrophages that may be mistaken for atypical and malignant epithelial cells and multinucleated giant cells with background of fat globules and fatty tissue.

The most common causes of False Negative of FNAC Breast Pathology-

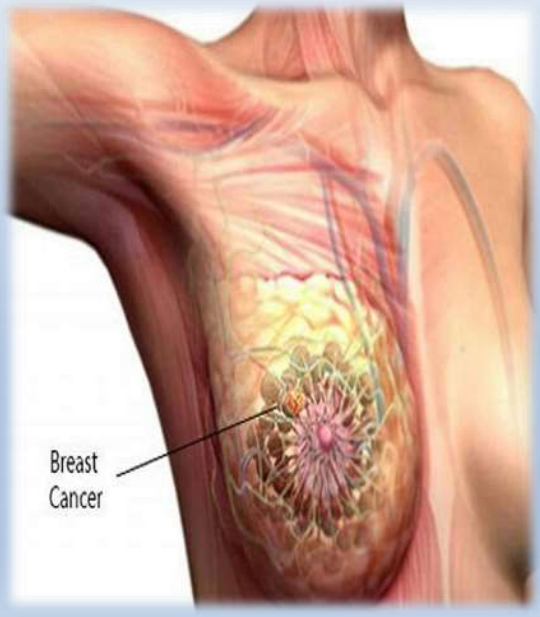
a. Low grade ductal carcinoma-Single bare stromal nuclei of benign type with features of duct carcinoma.

b. Lobular Carcinoma-Single files or clusters with nuclear moulding and absence of single,bare bipolar nuclei.

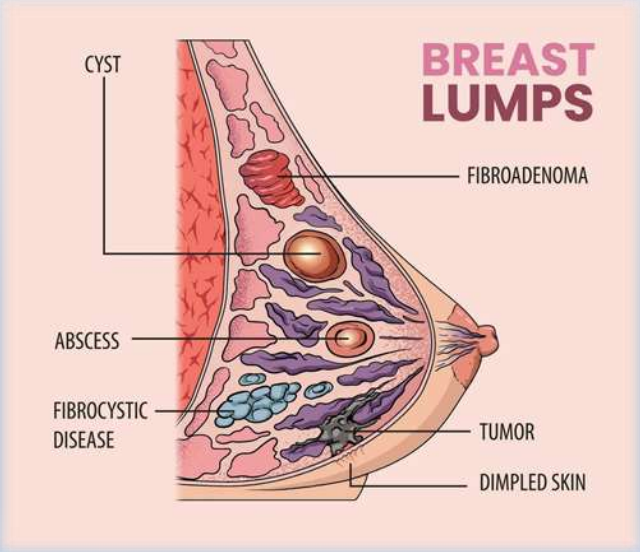
NORMAL FEMALE BREAST

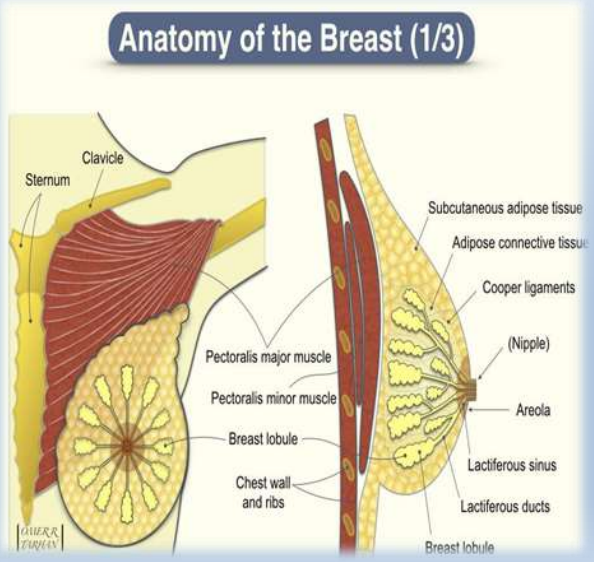


FEMALE BREAST CANCER



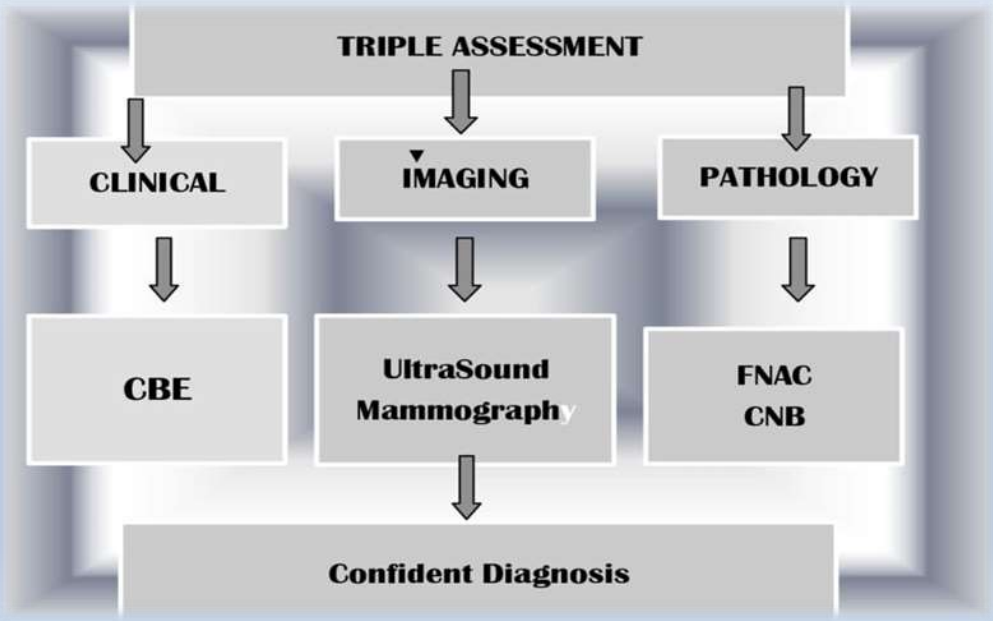
CYTOMORPHOLOGICAL SPECTRUM OF BREAST LESION IN ELDERLY FEMALE



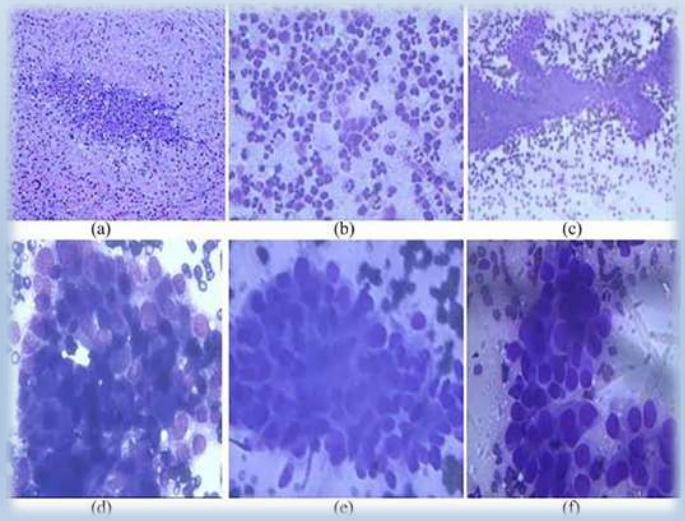


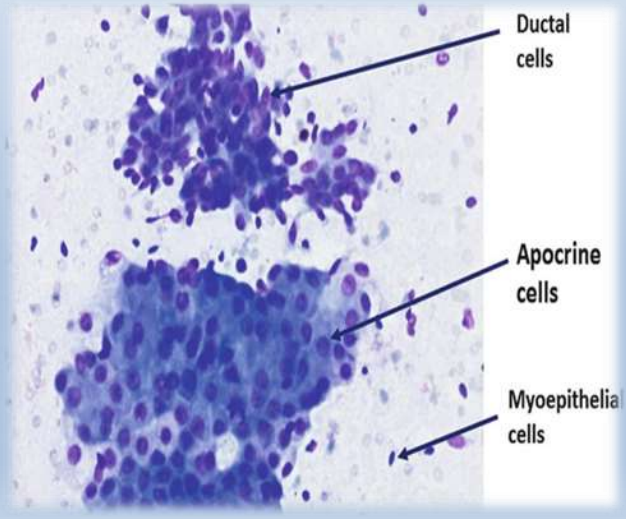
CYTOMORPHOLOGICAL SPECTRUM OF BREAST LESION IN ELDERLY FEMALE

PROTOCOL FOR DIAGNOSIS OF BREAST LESION IN THE TRIPLE ASSESSMENT



Normal Cytology of Breast





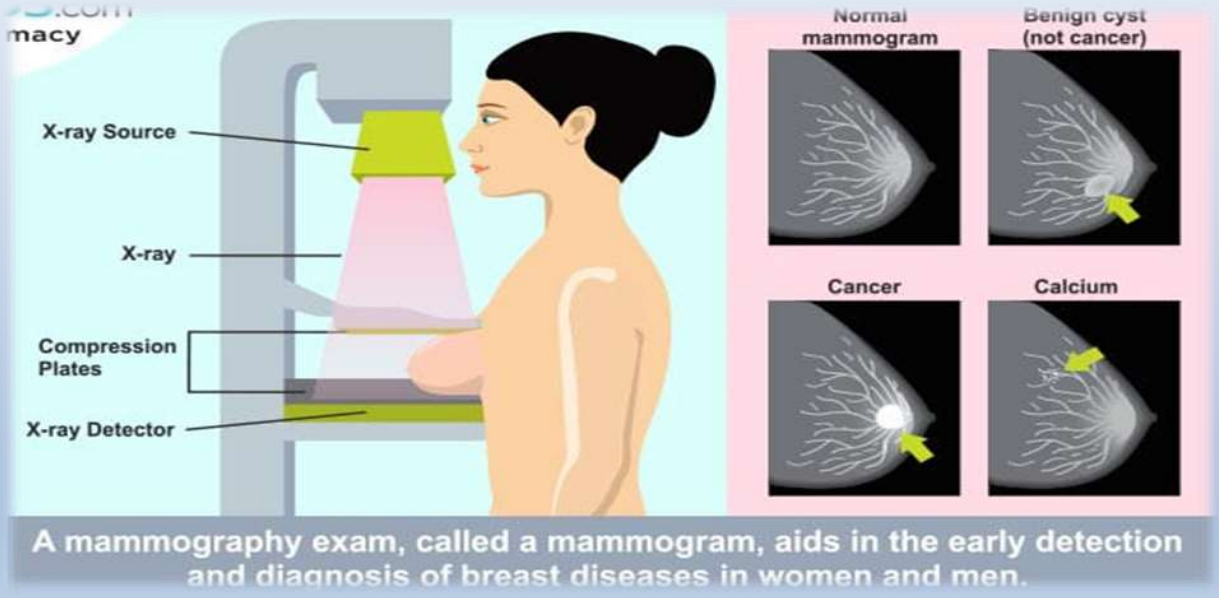
BACKGROUND

Ductal cell-Small round cells with monomorphic nuclei, regular nuclear margin with homogeneous chromatin and inconspicuous nucleoli arranged as honeycomb like flat cluster.

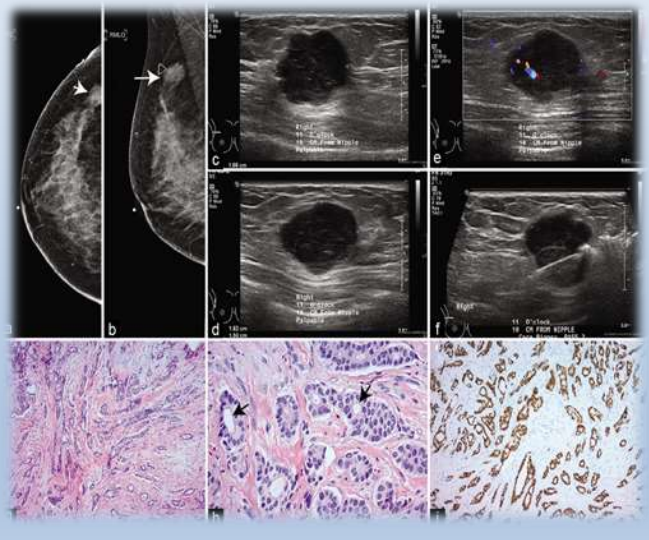
Apocrine Cell-Large cells with abundant granular eosinophilic cytoplasm.

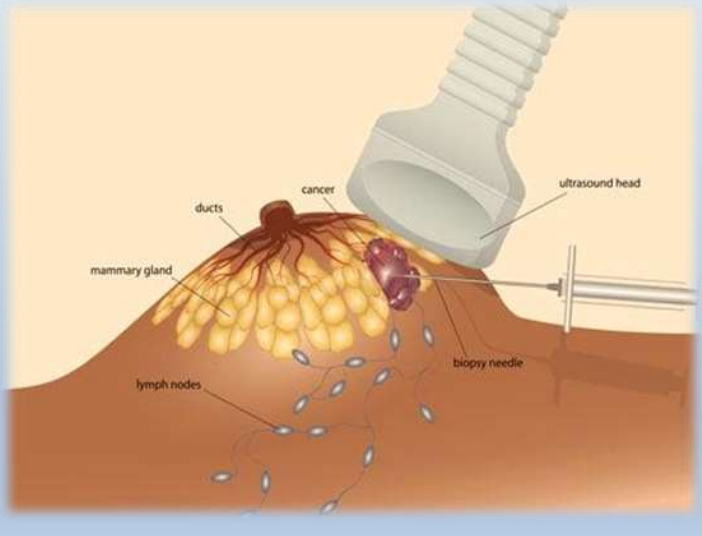
Myoepithelial Cell-Bipolar naked cells with scanty preserved cytoplasm.

MAMMOGRAPHY

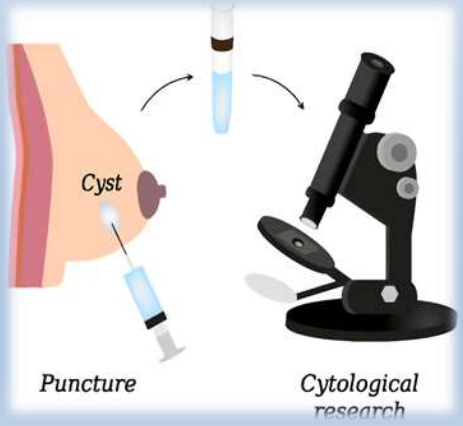


ULTRASOUND




ultrasound head
cancer
ducts
mammary gland
biopsy needle
lymph nodes

AIMS AND OBJECTIVES



To study the Cytomorphological spectrum of all breast lesions in elderly females >60 Years and To determine the clinical characteristics of palpable breast Lumps.

Review of literature

Review of literature

- Smita Balwantrao Sankaye, Suyrakant Dattatreya Dongre,et al did a Cytological study of palpable breast lumps presenting in an Indian rural setup.The study was carried out with aims of studying the frequency of various breast lesions on FNAC in a rural area in India and its histopathological correlation.n. Results: Of the 225 cases, 131 were in the benign category and 65 belonged to the malignant category, while the cytology study of 13 cases was unsatisfactory. Seventy-six cases were available for histological correlation. Of 29 cytological benign cases, 26 were confirmed as benign, but 3 turned out to be malignant.

Review of literature

- Amritha Malini. G1 , Mary Nandini Singh2,*, K.A. Aisabi3 studied Spectrum of breast lesions and cyto- histopathological correlation - A retrospective study in a teaching institution in North Malabar.The study was carried out among 350 patients who presented to a tertiary care hospital in North Malabar during a 4 year period from June 2013- June 2017.Results: Statistical analysis showed that sensitivity of FNAC was 99.46% in benign lesions and 96.2 % in malignant lesions. The specificity and positive predictive value of malignant lesions were 99.46% and 98.07% respectively and that of benign lesions were 96.2% and 98.93% respectively.

Review of literature

- Ajay Kumar Kochhar*, Umesh Jindal, Karandeep Singh ,et al studied Spectrum of Cytological Findings in Fine Needle Aspiration Cytology of Breast Lumps with Histopathology Correlation: Experience in a Tertiary Care Rural Hospital in India. Out of total 370 cases undergoing fine needle aspiration, benign cases were 316 (85.4%), malignant and suspicious were 54 (14.6%) and 10 (2.70%) respectively. Out of total 22 histological confirmed malignant lesions 19 were interpreted as malignant cytologically while two as suspicious and one as benign. All thirty histologically confirmed benign cases were diagnosed as benign cytologically. The sensitivity, specificity, positive and negative predictive values were 98%, 100%, 100% and 96.4% respectively. FNA cytology is highly accurate for diagnosis of breast masses.

Review of literature

- Puja B. Jarwani*, Daxita C. Patel*, Shantibhai M. Patel***, Anupama Dayal** et al studied Fine Needle Aspiration Cytology in A Palpable Breast Lump.. Benign breast lesions were common in the age group of 31-40 years and malignant breast lesions in 41-50 years. In our study fibrocystic change and simple cyst was most common benign lesion and ductal carcinoma was the most common malignant lesion. The sensitivity and specificity of FNAC for malignancy were found to be 87.1% and 87.5% respectively. FNA cytology is highly accurate for diagnosis of breast lumps. However, the clinician should correlate FNA cytological results with physical examination and imaging findings to prevent false negative and false positive events and to obtain optimal management for their patients.

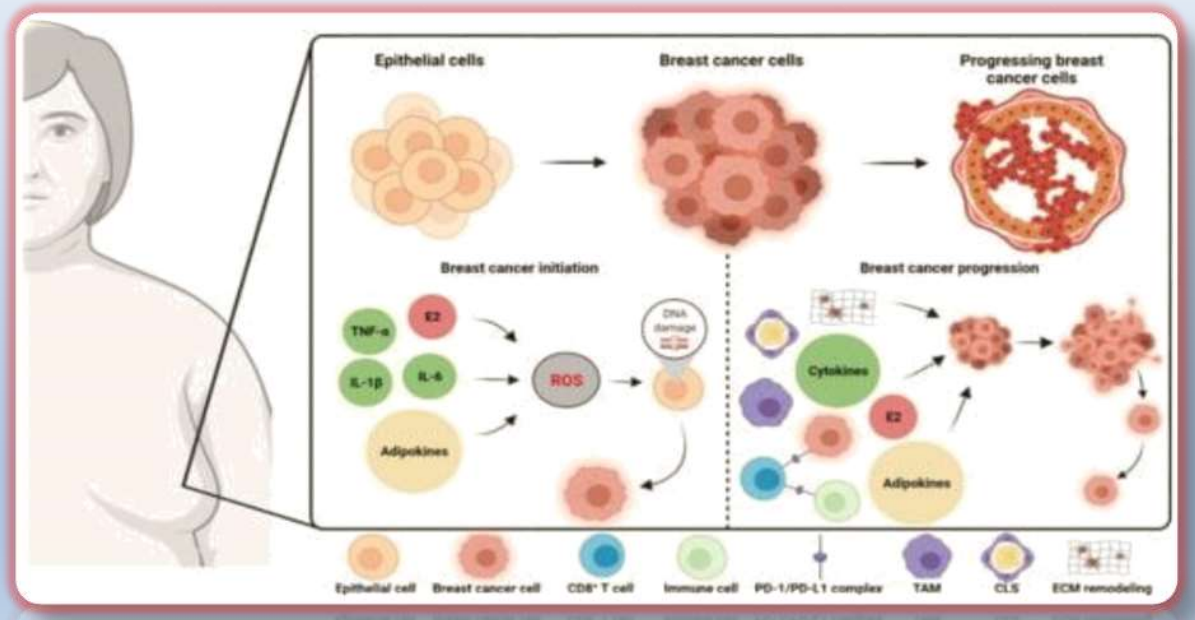
Review of literature

- Ranjan Agrawal1,*, Nitesh Mohan2 , Jagdamba Sharan3 , Garima Gupta4 , Parbodh Kumar5,et al studied Spectrum of breast diseases with Cyto-Histopathological correlation in a tertiary care hospital of Western Uttar Pradesh. This present study was carried out to evaluate the efficacy of fine needle aspiration cytology (FNAC) in different diseases and its correlation with the histopathological findings.Results: This present study was carried out a total of 220 patients during a 1 year period from January 2015 to December 2015. All patients presenting with lump in the breast and all those who had FNAC of these lumps were included in this study. The age of the patients ranged from 14 to 80 years

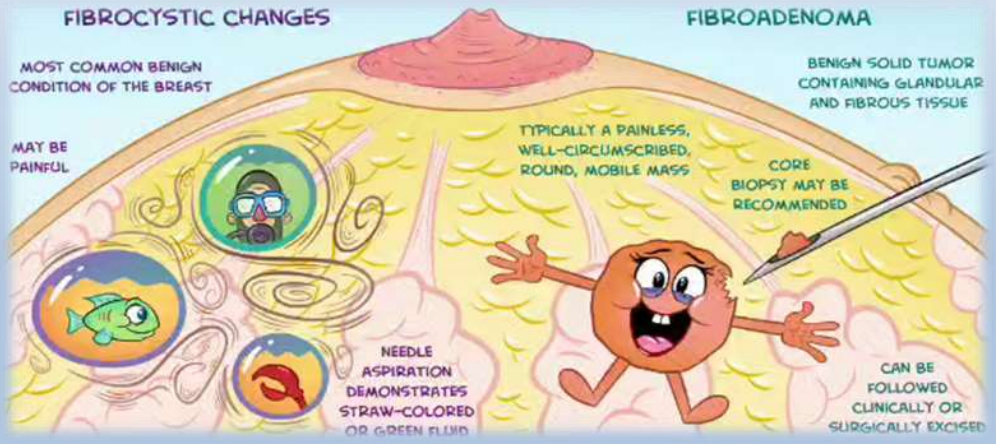
Review of literature

- Sunita Kulhari1 , Vijayta Modi2 , Nikita Manoj3 , Shailee Chhabra4 , Guman Singh* Cytological Spectrum of Breast Lesions on Fine Needle Aspiration Cytology at a Tertiary Care Center in Western Rajasthan,Results: We received a total of 1750 FNAC smears out of which, breast FNAC's accounted for 216 cases. 200 (10.95%) cases were included. Youngest patient was 16 years and oldest being 77 years old accounting for range of 61. Mean 42.22, median 39.50 and standard deviation being 15.55. Maximum number of patients were in the age group 21-30 years, followed by age group 31-40 years. Least number of patients were seen in both extremes of ages with 12 (6%) cases in 11 – 20 years age group and only 10 (5%) patients in age beyond 70 years.

METHODOLOGY

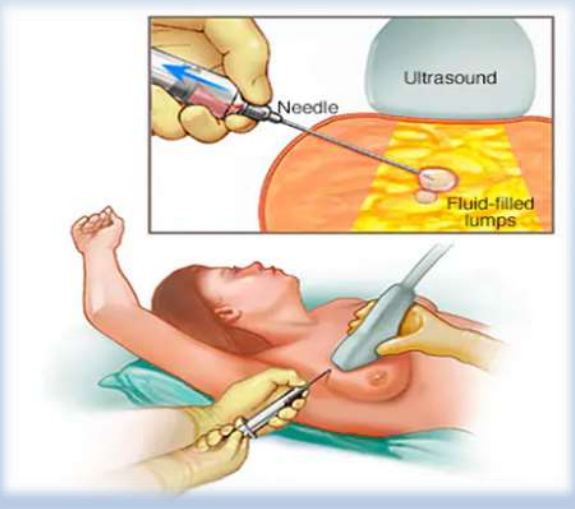


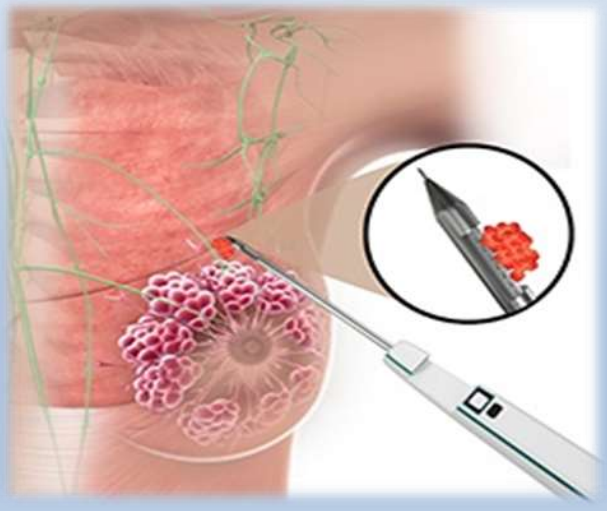
Methodology



Material & Methods

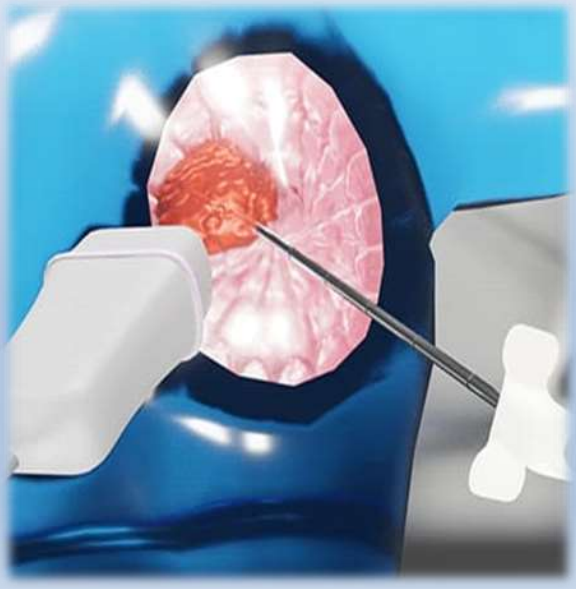
The role of FNA in the assessment of a breast lump





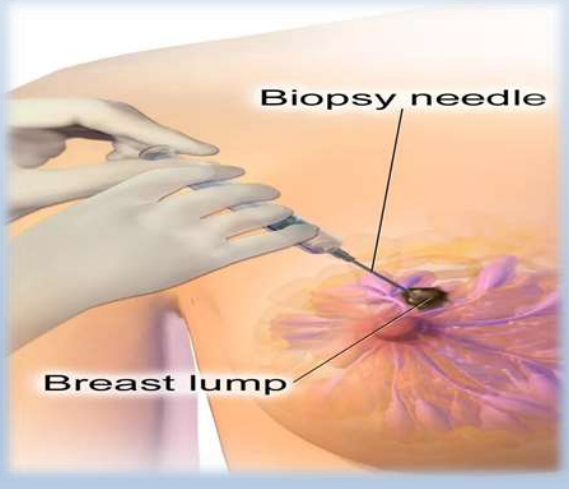
Material & Methods

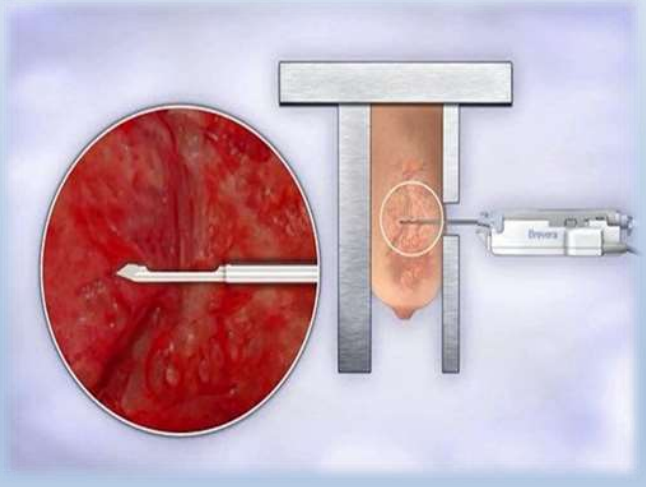
The role of FNB in the assessment of a Breast



Material & Methods

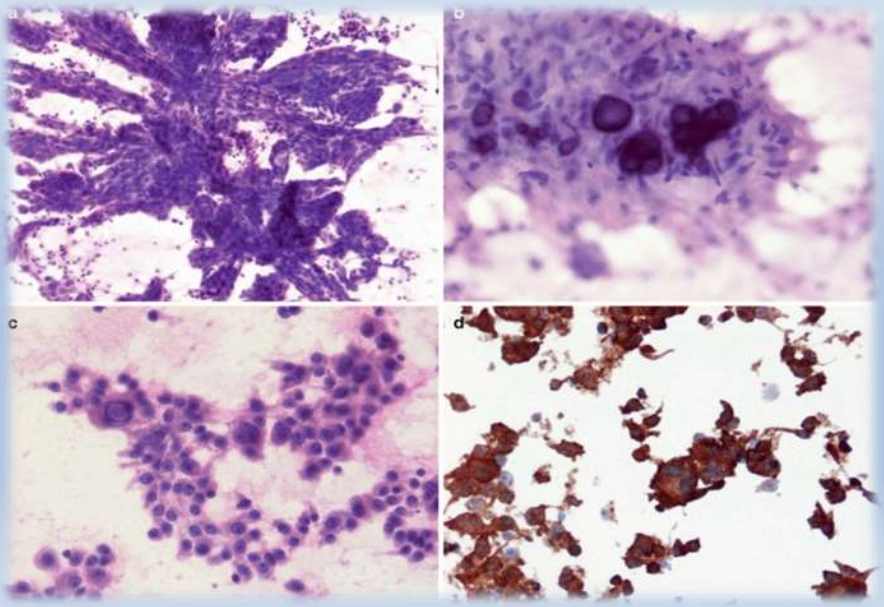
The role of FNB in the assessment of a Breast





Material & Methods

The role of FNAC in the assessment of a breast lump



MATERIALS AND METHODS

Technique:

(1) The lesion is held firmly in between the fingers of the examiner and the skin is stretched and made taut ,the area is properly sterilized and wiped clear.

(2) The needle in syringe, with the plunger in fully closed position ,is inserted as to feel the anterior edge of the lump and after entering it ,firm negative pressure is applied to the piston using thumb.

(3) Several passes are made through the lesion in different angles and rotation of the syringe without withdrawing it fully until a small amount of fluid is seen in the hub of the syringe.

(4) Negative pressure is then released and needle withdrawn.

After this slides are smeared with aspirate , fixed with 95% ethanol and stained with respective stain.

MATERIALS AND METHODS

Smear preparation:

(1) The material is pushed on the clean glass slide , a little away from the corner.The direction of the needle should be along the long axis of the slide to avoid the spillage of the material sideways.

(2) Now ,the smear is made by gently pressing a clean glass slide over it and moving the upper slide over the lower one to spread the material.

(3) Multiple smears are made. Both air dried and alcohol fixed smears should be kept for staining.

MATERIALS AND METHODS

Fixation :

(1) For routine Papanicolaou staining-95% ethanol ,methanol or isopropyl alcohol is used for fixation.

(2) The smears should be fixed at least 30 minutes.

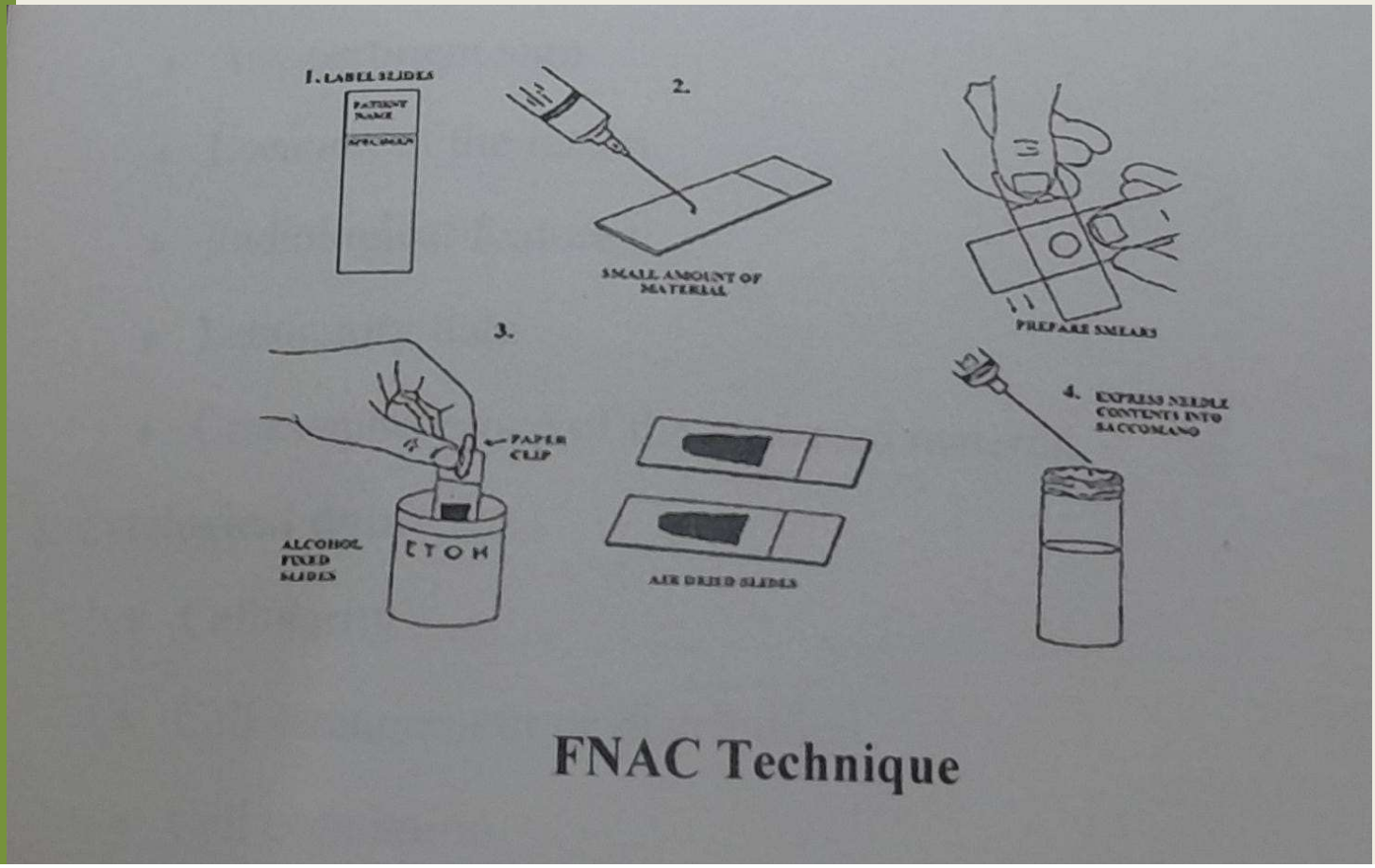
(3) Air dried smears are used for MGG(May-Grunwald Giemsa) staining.

Adequacy of Breast FNAC: According to NCI conference, the cytopathologist should always mention about the quantity of the epithelial cells on the smear as:

(a)Scanty cellularity-Only occasional epithelial cell clusters are present.

(b)Moderate cellularity-Readily identifiable clusters on the smear.

(c)Abundant Cellularity-Multiple clusters of epithelial cells in every field.



FNAC Technique

Results

Table no 1
Cytomorphological spectrum (including distribution and incidence) of benign breast lesions >60 years elderly female

	Lesion	Frequency	Incidence
Benign lesions	Acute inflammatory lesion	0	0.0%
	Simple cyst	0	0.0%
	Fat necrosis	0	0.0%
	Granulomatous lesions	3	30%
	Fibrocystic disease	1	10%
	Benign proliferative breast lesion	2	20%
	Inspissated cyst	0	0%
	Papilloma	0	0%
	Duct Ectasia	1	10%
	Fibroadenoma	1	10%
	Benign phyllodes tumor	0	0.0%
	Benign lipomatous lesion	1	10%
	Benign breast disease	1	10%
	Total	10	100%

Chart no. 1 Distribution of different benign breast lesions

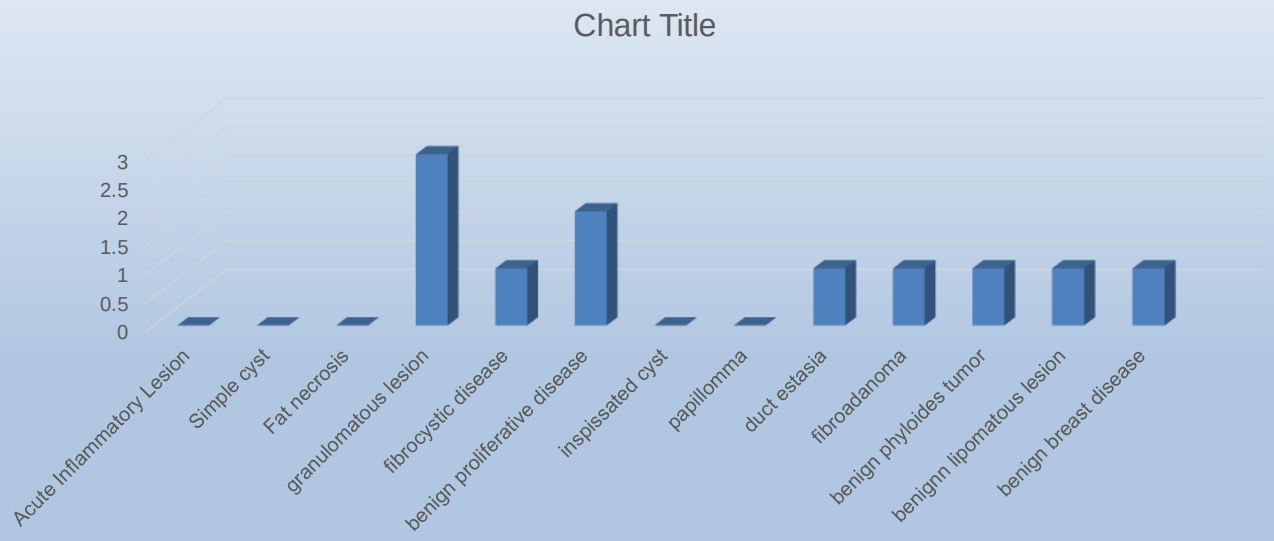


Chart no. 2 incidence of different benign breast lesions

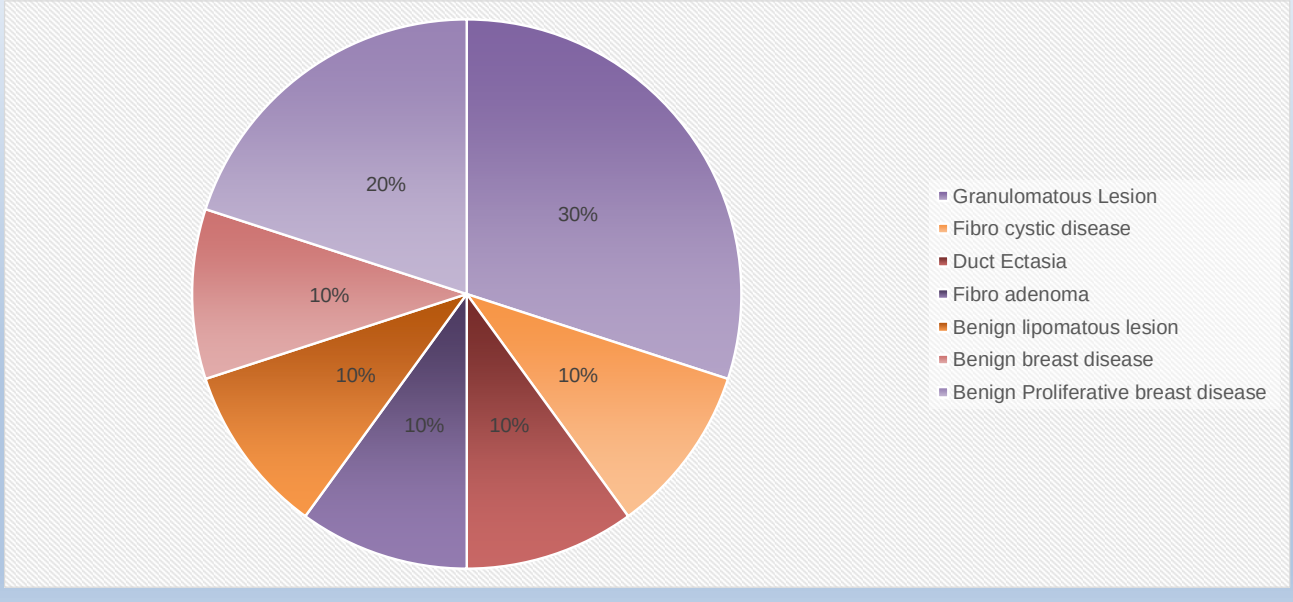


Table no 2
Cytomorphological spectrum (including distribution and incidence) of Malignant breast lesions

Lesion		Frequency	Incidence
Malignant lesions	Suspicious for malignancy	1	4.55%
	Proliferative breast disease with atypia	0	0.00%
	Malignant lesion	1	4.55%
	Medullary carcinoma	0	0.00%
	Papillary carcinoma	0	0.00%
	Duct Carcinoma	20	90.90%
	Lobular carcinoma	0	0.00%
	Total	22	100%

Chart no. 3 Distribution of different malignant breast lesions

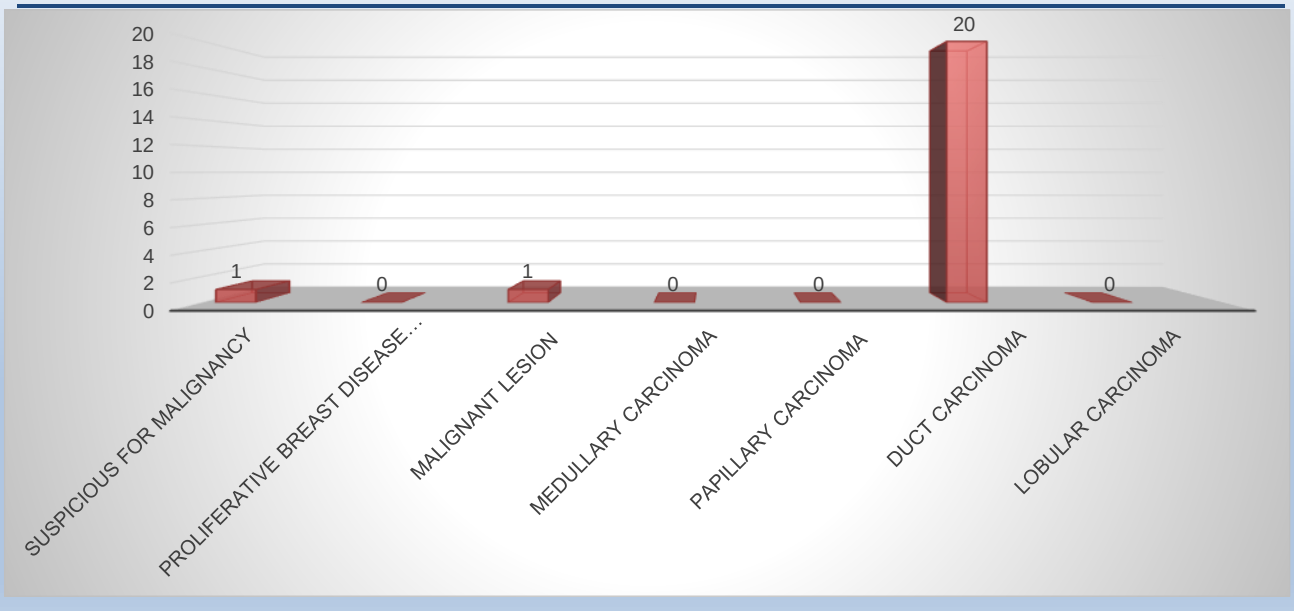


Chart no 4: incidence of different malignant breast lesions

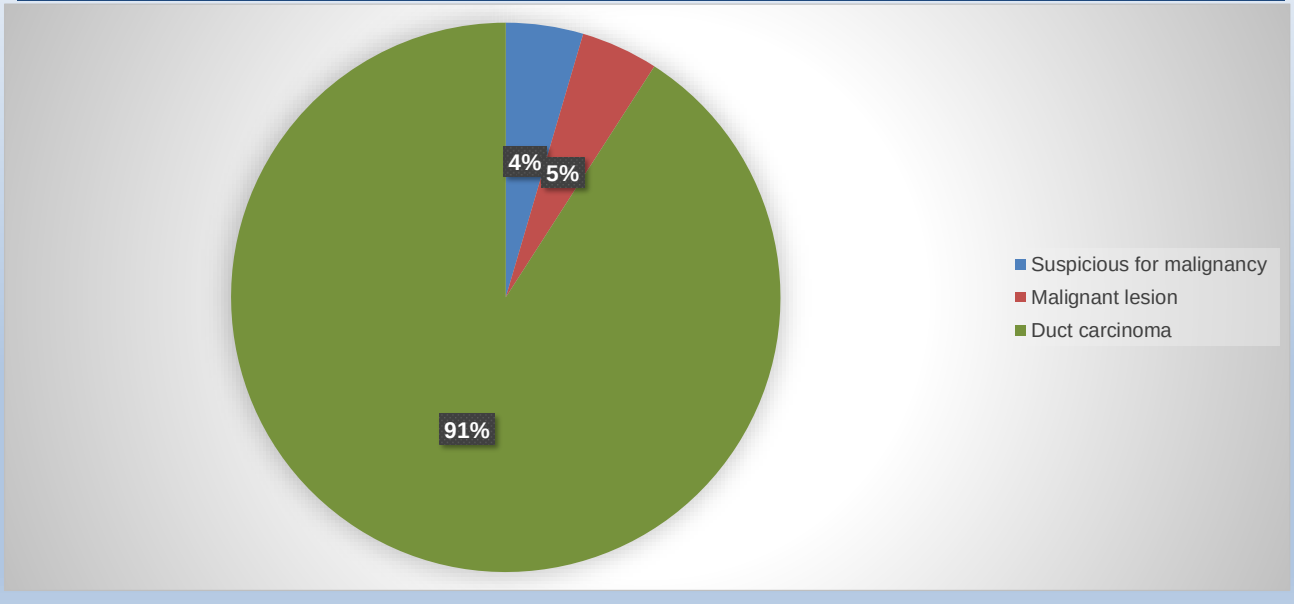


Table no 3
Presenting complaints of pts in benign breast lesions diagnosed cytologically

Presenting complaints		Frequency	Incidence
	Right sided lump	3	30.00%
	Left sided lump	7	70.00%
	Both sided lump	0%	0%
Quadrant	UOQ	2	20%
	LOQ	2	20%
	UIQ	1	10%
	UQ	0%	0%
	LQ	1	10%
	IQ	0%	0%
	OQ	0%	0%
	Sub Areolar	1	10%
	Whole breast	0%	0%
Duration	0-15 days	4	40%
	15-30 days	1	10%
	1-2 months	2	20%
	3-6 months	2	20%
	7-12 months	0%	0%
	>12 months	1	10%
	PAIN	4	40%
	Nipple discharge	0%	0%

Table no 4
Presenting complaints of pts in malignant breast lesions diagnosed cytologically

Presenting complaints		Frequency	Incidence
	Right sided lump	5	22.72%
	Left sided lump	17	77.27%
	Both sided lump	0%	0.00%
Quadrant	UOQ	10	45.45%
	LOQ	6	27.27%
	UIQ	0%	0.00%
	UQ	0%	0.00%
	LQ	0%	0.00%
	IQ	0%	0.00%
	OQ	0%	0.00%
	Sub Areolar	1	4.54%
	Whole breast	4	18.18%
Duration	0-15 days	8	36.36%
	15-30 days	2	9.09%
	1-2 months	4	18.18%
	3-6 months	9	40.90%
	7-12 months	0%	0.00%
	>12 months	5	22.72%
	PAIN	9	40.90%
	Nipple discharge	5	22.72%

Chart no. 5 Laterality of lesions in benign and malignant breast disease

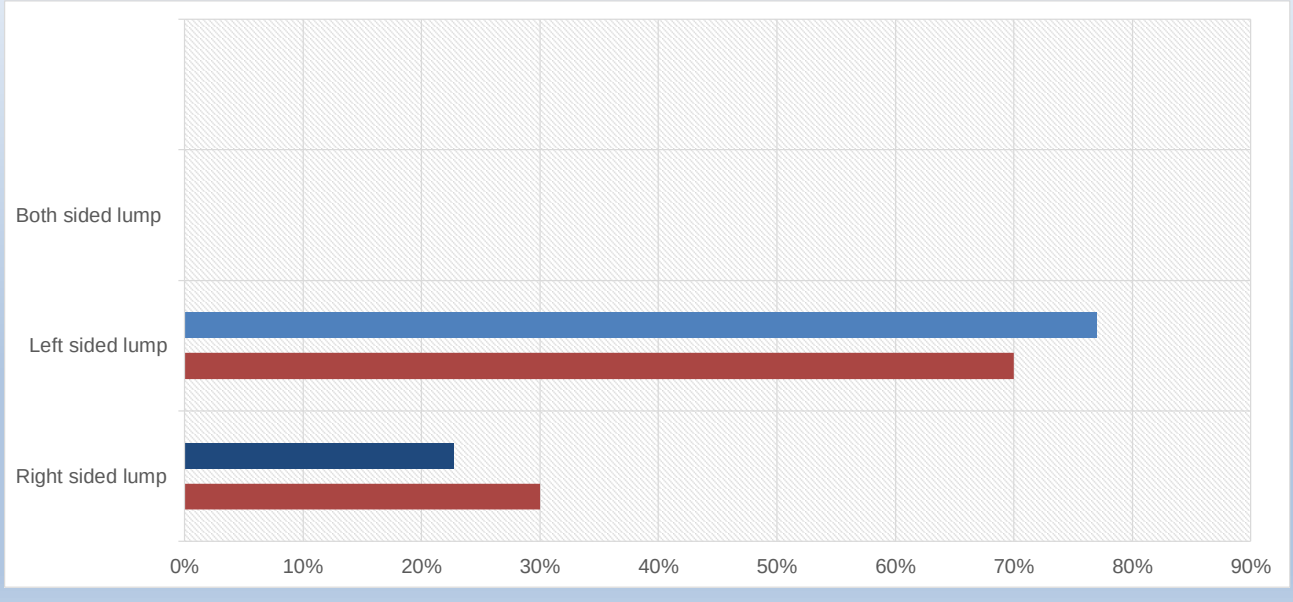


Chart no. 6 Anatomical Location of lesions in benign and malignant breast disease

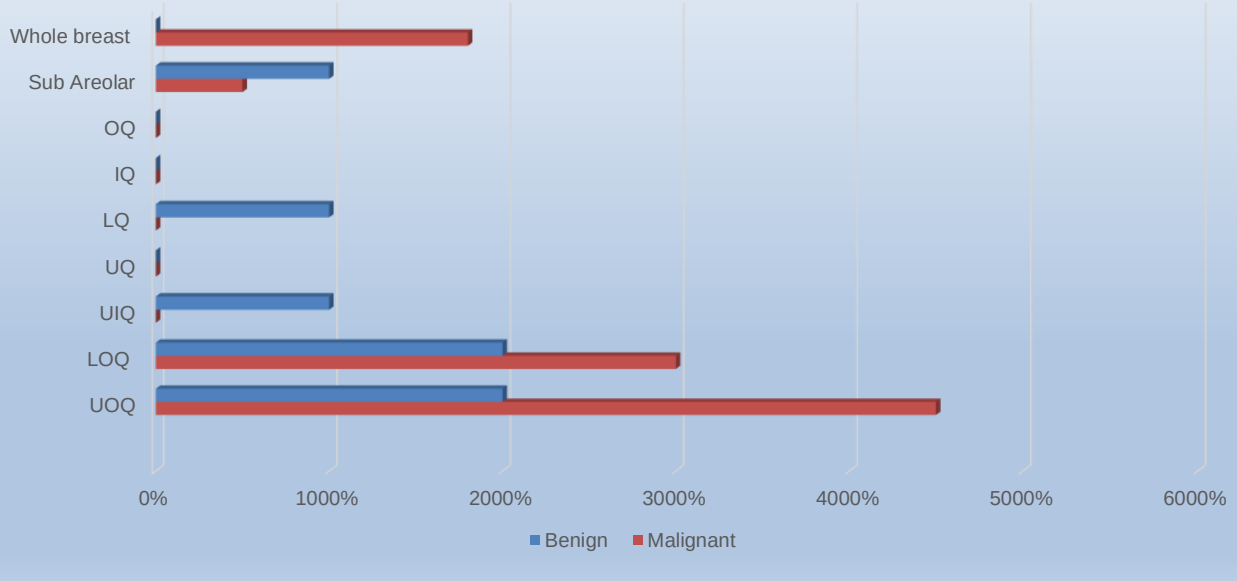


Chart no. 7 Duration of lesions in benign and malignant breast diseases

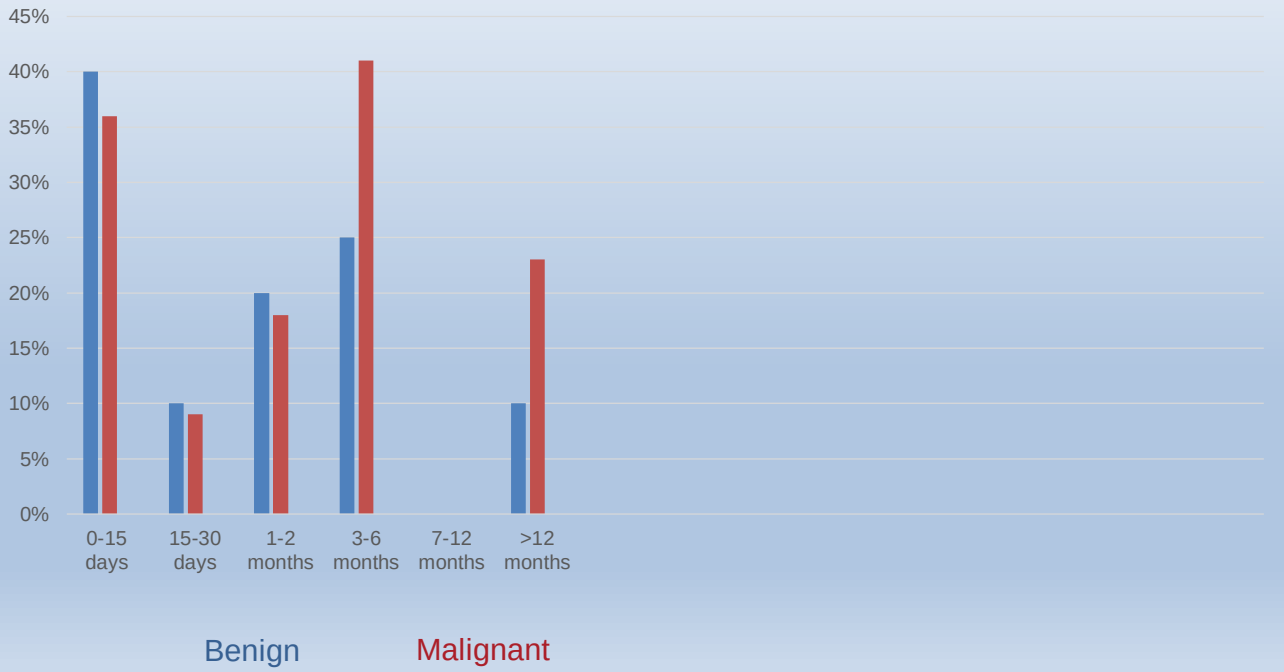


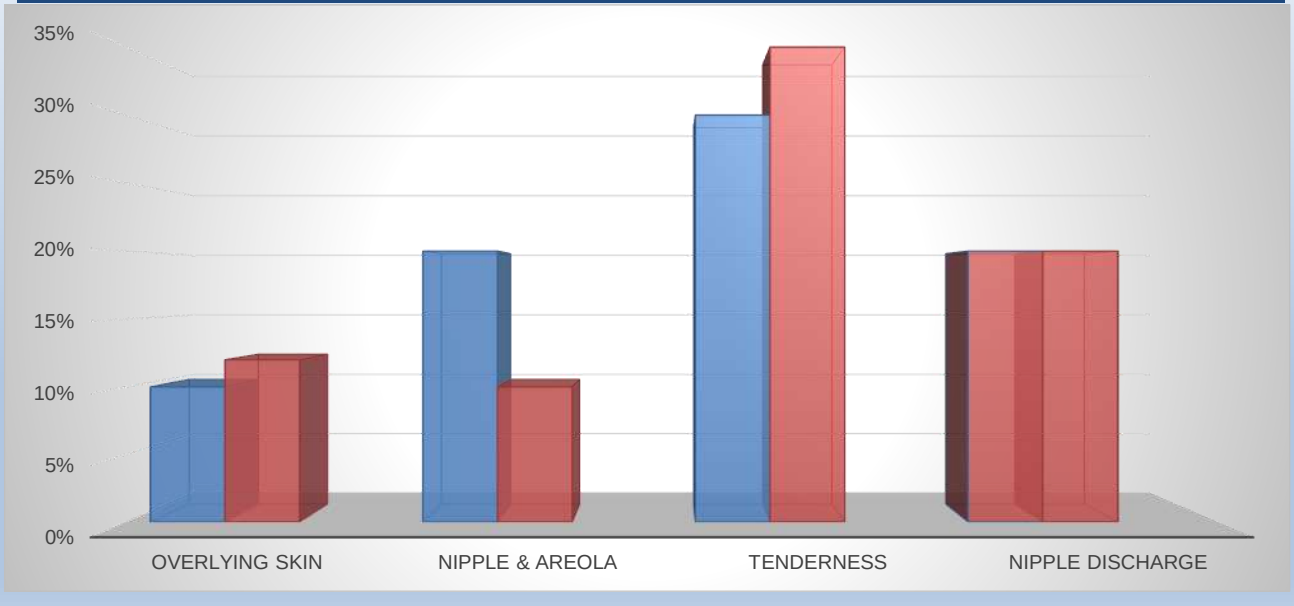
Table NO. 5 : Clinical signs on examination of pts having benign breast lesions diagnosed cytologically

Lump findings		Frequency	Incidence
Laterality	Unilateral	10	100%
	Bilateral	0	0.00%
Overlying Skin		1	10%
Nipple & Arcola		1	10%
Tenderness		4	40%
Consistency	Soft	6	60%
	Firm	3	30%
	Hard	1	10%
Mobility	Mobile	9	90%
	Fixed	1	10%
Nipple Discharge		0	0.00%

Table NO. 6 : Clinical signs on examination of pts having malignant breast lesions diagnosed cytologically

Lump findings		Frequency	Incidence
Laterality	Unilateral	22	100%
	Bilateral	0	0.00%
Overlying Skin		3	13.63%
Nipple & Areola		1	4.64%
Tenderness		9	40.90%
Consistency	Soft	1	4.54%
	Firm	9	40.90%
	Hard	12	54.54%
Mobility	Mobile	3	13.63%
	Fixed	19	86.36%
Nipple Discharge		5	22.72%

Chart no. 8: clinical signs on examination of patients having benign and malignant breast lesions diagnosed cytologically



Benign Malignant

Chart no. 9 Consistency of breast lump in patients having benign and malignant breast lesions diagnosed cytologically

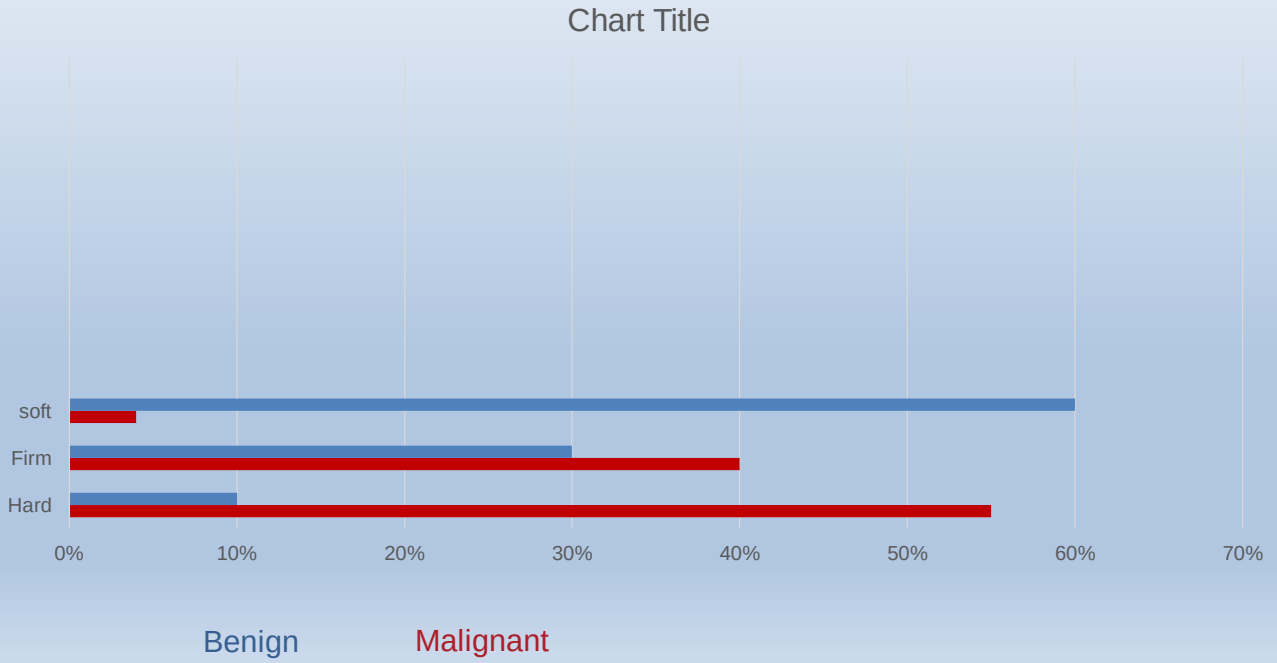


Chart no. 10 Mobility of breast lump in patients having benign ang malignant breast lesions diagnosed cytologically

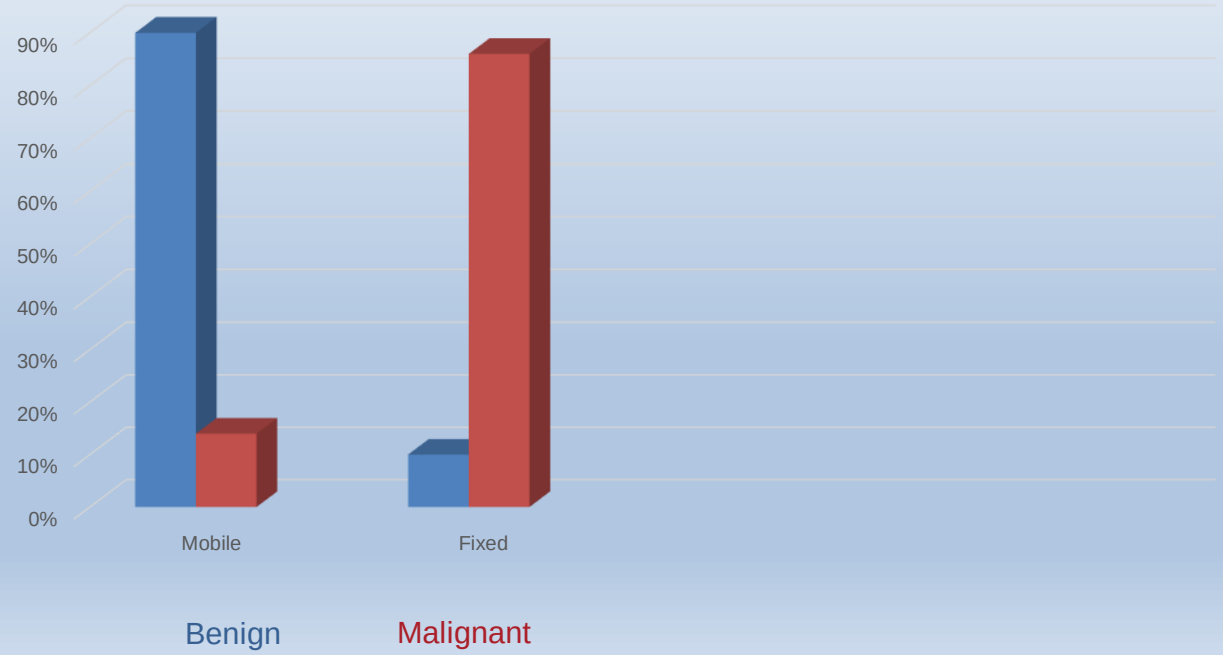


Table NO. 7 : BIRADS Grading upon SonoMammography in different benign breast lesions diagnosed cytologically

	Lesions	Somo- mammography BIRADS Grade					
		Grade I	Grade II	Grade III	Grade IV	Grade V	Grade VI
Benign Lesions	Acute Inflammatory Lesion	0	0	0	0	0	0
	Simple cyst	0	0	0	0	0	0
	Fat Necrosis	0	0	0	0	0	0
	Granulomatous Lesion	1	2	0	0	0	0
	Fibrocystic Disease	0	1	0	0	0	0
	Benign Proliferative Breast disease	0	2	0	0	0	0
	Inspissated cyst	0	0	0	0	0	0
	Papilloma	0	0	0	0	0	0
	Duct Ectasia	0	0	1	0	0	0
	Fibroadenoma	0	1	0	0	0	0
	Benign Phyllodes tumor	0	0	0	0	0	0
	Benign Lipomatous Lesion	0	1	0	0	0	0

Table NO. 8 : BIRADS Grading upon Sono-Mammography in different malignant breast lesions diagnosed cytologically

	Lesions	Somo- mammography BIRADS Grade					
		Grade I	Grade II	Grade III	Grade IV	Grade V	Grade VI
Malignant Lesion	Suspicious for malignancy	0	0	0	1	0	0
	Proliferative breast disease with atypia	0	0	0	0	0	0
	Malignant lesion	0	0	0	0	1	0
	Medullary carcinoma	0	0	0	0	0	0
	Papillary carcinoma	0	0	0	0	0	0
	Duct Carcinoma	0	0	0	0	20	0
	Lobular Carcinoma	0	0	0	0	0	0
	Total	0	0	0	1	21	0

Chart no. 11 Distribution of different benign breast lesions according to BIRADS Grading upon Sono-mammography

Grade I Grade II Grade III

Chart no. 12 Distribution of different Malignant breast lesions according to BIRADS Grading upon Sono-mammography

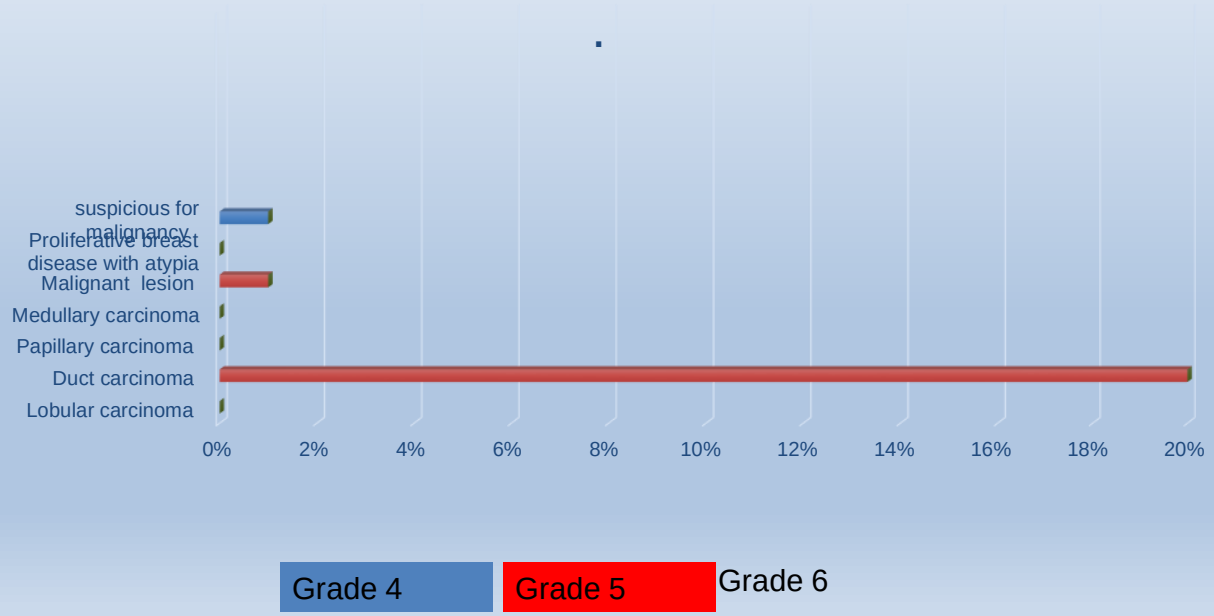


Table NO. 9 : Overall incidence of different BIRADS grades in benign and malignant breast lesions

Lesion	Benign lesion		Malignant lesion	
	N=10		N=22	
Grade	Frequency	Incidence	Frequency	Incidence
Grade I	1	10%	0	0%
Grade *II*	8	80%	0	0%
Grade III	1	10%	0	0%
Grade IV	0	0%	1	4.55%
Grade V	0	0%	21	95.45%
Grade VI	0	0%	0	0%

Chart no. 13 Incidence of different BIRADS grades in benign breast lesions upon Sono - mammography

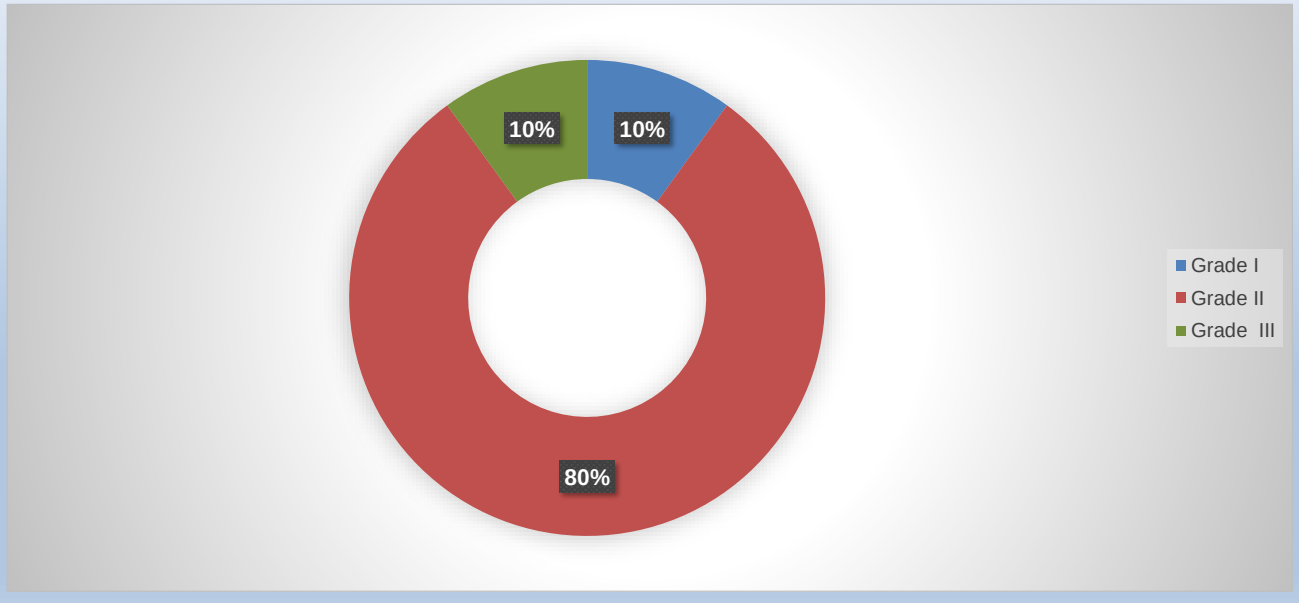


Chart no. 14 Incidence of different BIRADS grades in malignant breast lesions upon Sono - mammography

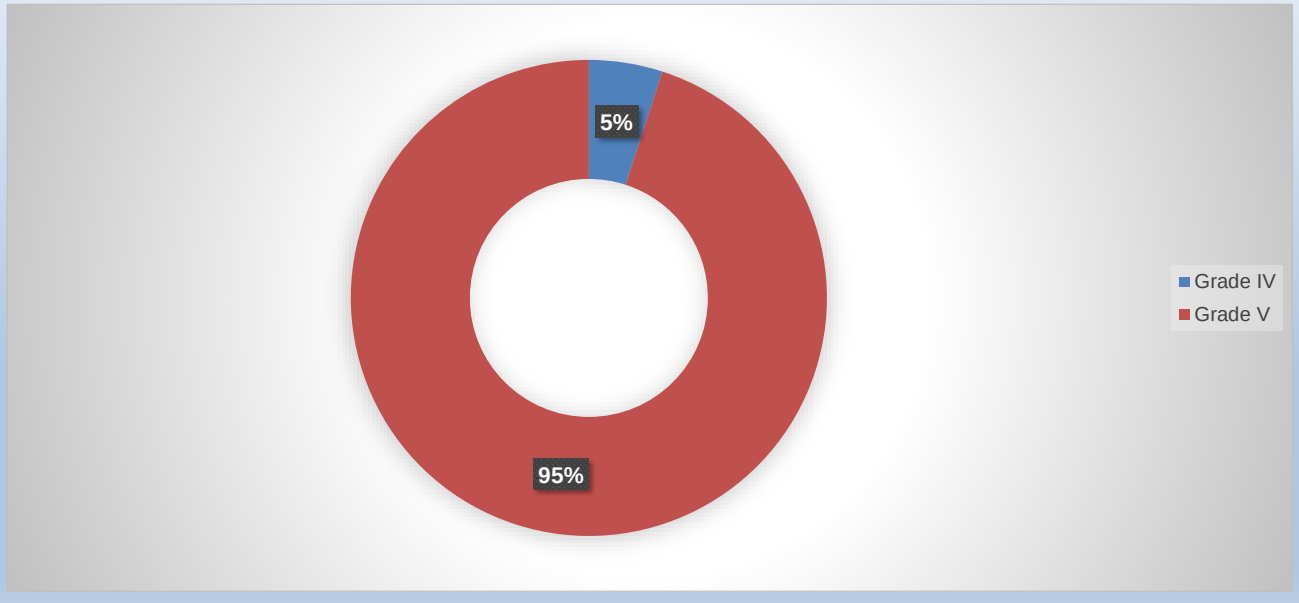


Table NO. 10 : Lymph node metastatic status in different malignant breast lesions

Lesions	Number of cases with lymph metastasis	Incidence
Suspicious for malignancy	0	0%
Proliferative breast disease with atypia	0	0%
Malignant lesion	1	33.33%
Medullary carcinoma	0	0%
Duct carcinoma	2	66.67%
Lobular carcinoma	0	0%
Total	3	100%

Chart no. 15 Incidence of lymph node metastatic status in different malignant breast lesions

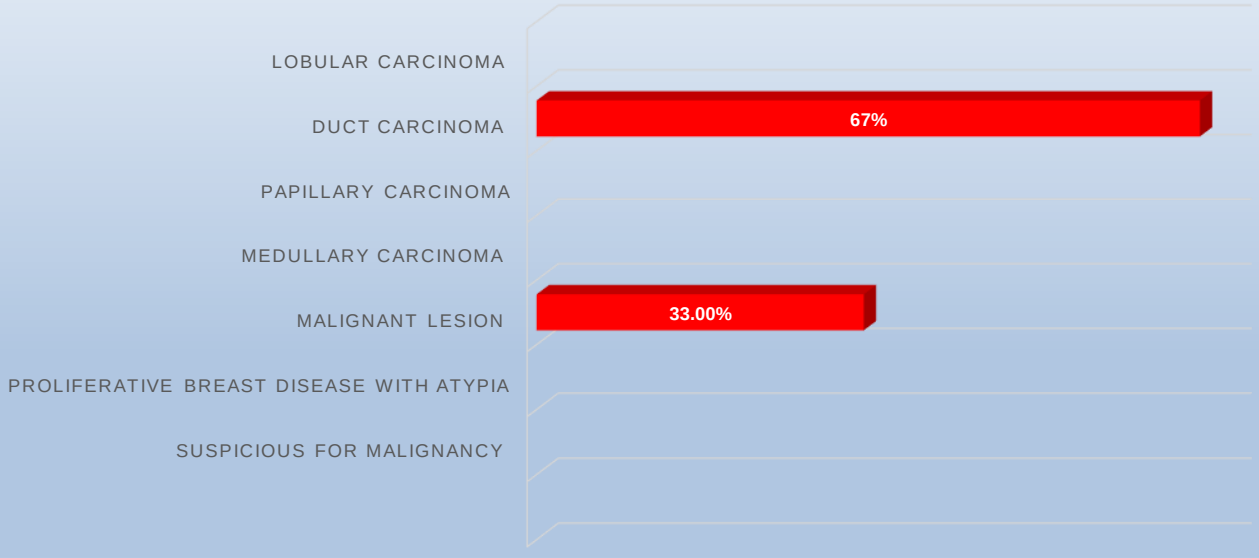


Table NO. 7 : BIRADS Grading upon Sono-Mammography in different benign breast lesions diagnosed cytologically

BIRADS:
0- Inconclusive
1- Negative
2- Benign
3- Probably benign(short follow up)
4- Suspicious for malignancy - A (2-10%)
- B(10-50%) [Need biopsy (Excision, Lumpectomy)]
- C (50-95%)
5 – Highly suspicious for malignancy – 95% risk of cancer.
6 - Known cancer

CONCLUSION

The present study titled as “CYTOMORPHOLOGICAL SPECTRUM OF BREAST LESION IN ELDERLY FEMALES IN JHALAWAR MEDICAL COLLEGE – A PROSPECTIVE STUDY” was conducted at the department of pathology, Jhalawar Medical college, Jhalawar, India.

The Present study was conducted from October 2023 to July 2024 with total of 32 female patients of age group > 60 years presented with palpable breast lump in cytology section having Sono-mammography report was enrolled.

The study was carried out post permission from institutional ethical committee.

An informed and written consent was obtained from all the patients.

The various conclusive findings are as follows:

CONCLUSION

1.Total pts(>60 years) for study period-32

Malignant breast Lesion-22 pts(68.75%)

Benign breast lesion-10 pts(31.25%)

2. M.C Malignant Breast Lesion-Duct Carcinoma(90.90%)

3. M.C. Benign Breast Lesion-Granulomatous Lesion(30%) followed by Benign Proliferative Breast Disease(20%)

4. In present study,

Right sided lump – 25%

Left sided lump – 75%

Bilateral lump – 0%

CONCLUSION

5. On clinical examination of breast lump,

painful lump – 40.45%

Nipple discharge – 22.72%

6. In view of duration of breast lump:

0-15 days : 38.18% (Maximum cases) followed by

3-6 months : 30.45%

7. In aspect of location of lump in breast :

MC. Location : UOQ (32.72%) followed by

LOQ -23.63%

CONCLUSION

Among total cases studied:

8. Overlying skin of breast involvement – 12.5%

Nipple & Areola involvement -6.25%

Tenderness of breast Lump – 40.62

9. In view of consistency of breast lump-

soft – 21.87%

Firm – 37.5%

Hard – 40.62%(Maximum case)

10. In terms of mobility:

Mobile breast lump – 37.5%

Fixed/immobile breast lump – 62.5%(Maximum case)

CONCLUSION

11. Among lymph node metastasis:

Maximum lymph node metastasis : Duct Carcinoma – 6.25%

12. On report of Sono - mammography ,

BIRADS grade I – 3.125%

BIRADS grade II – 25%

BIRADS grade III – 3.125%

BIRADS grade IV – 3.125%

BIRADS grade V – 65.62%

BIRADS grade VI – 0%

CONCLUSION

- When their particular cytologic features are clear, benign breast tumors are typically easy to recognize. It is customary to discover hypocellularity, necrosis, damaged apocrine cells, and epithelial hyperplasia when examining difficult smear that mimic malignant or atypical lesions. Despite FNAC's high degree of accuracy, it has a number of shortcomings that could cause confusion and inaccurate breast lesion identification. As a result, the accuracy of the diagnosis increases when radiological testing and clinical correlation are implemented to enhance it. In order to make an early and accurate diagnosis, the study lead to the conclusion that FNAC should be regularly used in conjunction with radiographic analysis and complete clinical examination.

DR. SUMANTA RAUTH

- **"Cytomorphological spectrum of breast lesions in elderly female"**

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Thank you