ORIGINAL RESEARCH

Assessment of breast masses in pregnant and lactating women with Fine Needle Aspiration Cytology

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Received: 27 October, 2021 Accepted: 29 November, 2021

ABSTRACT

Background: During pregnancy and nursing, palpable breast lumps are frequent initial signs. Pregnancy-related breast disorders are those identified during pregnancy, within a year after giving birth, or during nursing.The present study assessed breast masses in pregnant and lactating women with Fine Needle Aspiration Cytology (FNAC). **Materials & Methods:** 56 females with breast masses during pregnancy and lactation period were assessed using FNAC. A 20 mL syringe with a Franzen handle and a 23– 24 gauge needle. Multiple passes in the lesion while maintaining negative pressure were used to perform aspirations. After that, the aspirate was applied to at least five slides; four of them were allowed to air dry, and one was fixed in 95% ethanol. **Results:** 15 breast masses arose during pregnancy (16 - 32 weeks) and 41 breast masses arose during post–partum period or lactation. The difference was significant (P< 0.05). Breast lesions were non – neoplastic lesions (40) such as Galactocele in 10, Acute mastitis in 5, Chronic mastitis in 3, Fat necrosis in 6, Benign proliferative breast lesion in 7, Benign breast lesions or lactational changes in 1, and Subareolar abscessin 8 cases. Neoplastic lesions (16) were PABC (Ductal carcinoma)in 3, Lactating adenoma in 3 and Fibroadenoma in 10 cases. The difference was significant (P< 0.05). **Conclusion:** Between benign breast lesions and malignant lesions, FNAC is used in the cytomorphological identification of a variety of breast disease patterns during pregnancy and breastfeeding.

Key words: Breast lesions, Fine Needle Aspiration Cytology, Galactocele

INTRODUCTION

An organ that responds to hormones is the breast gland. Hormonal stimulation during pregnancy and lactation causes physiological changes in the breast, increasing its size and water content.[1] Numerous hormones may cause ductal and lobular development, increased vascularity, and a decrease in stroma, which are all responsible for these alterations.[2]

In these patients, breast examination becomes difficult due to the often markedly increased breast density. During pregnancy and nursing, palpable breast lumps are frequent initial signs. Pregnancy-related breast disorders are those identified during pregnancy, within a year after giving birth, or during nursing.[3]

The most prevalent malignancy among women worldwide is breast cancer. In the United States, invasive breast cancer had an incidence rate of 124.9 and a mortality rate of 25.5 per 100,000 women in 2002.[4] In Europe, it remains the second most frequent type of cancer. About one-third of all malignancies in women are breast cancers. The crude incidence rate is 30.9 and the age standardized incidence rate (ASR) is 53.8 per 100,000. Compared to inflammatory and malignant breast illnesses, benign disorders are more common.[5,6] Patients arrive with advanced sickness as a result of ignorance and lack of education. various countries have various patterns and etiologies for breast illness.[7]Breast neoplasms come in several varieties. Benign tumors are more prevalent than malignant breast lesions. In the second decade of life, benign breast lesions typically appear. Fibroadenoma, phyllodes tumor, lactating adenoma, and tubular adenoma are common benign breast lesions.[8] Fibrocystic disease, inflammatory lesions like breast abscess, and granulomatous mastitis are examples of benign proliferative lesions. The following are

examples of malignant lesions: medullary, ductal, lobular, colloid, and mucinous carcinoma.[9,10]The present study assessed breast masses in pregnant and lactating women with Fine Needle Aspiration Cytology (FNAC).

MATERIALS & METHODS

The present study comprised of 56 females with breast masses during pregnancy and lactation period. Patients' consent was obtained before starting the study.

Data such as name, age, gender etc. was recorded. A 20 mL syringe with a Franzen handle and a 23–24gauge needle was used by a cytopathologist to do the FNAC.

Multiple passes in the lesion while maintaining negative pressure were used to perform aspirations. After that, the aspirate was applied to at least five slides; four of them were allowed to air dry, and one was fixed in 95% ethanol. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of cases based ongestational age

Gestational age (in years)	Number	P value
breast masses that arose during pregnancy (16 - 32 weeks)	15	0.01
reast masses that arose during post–partum period or lactation	41	

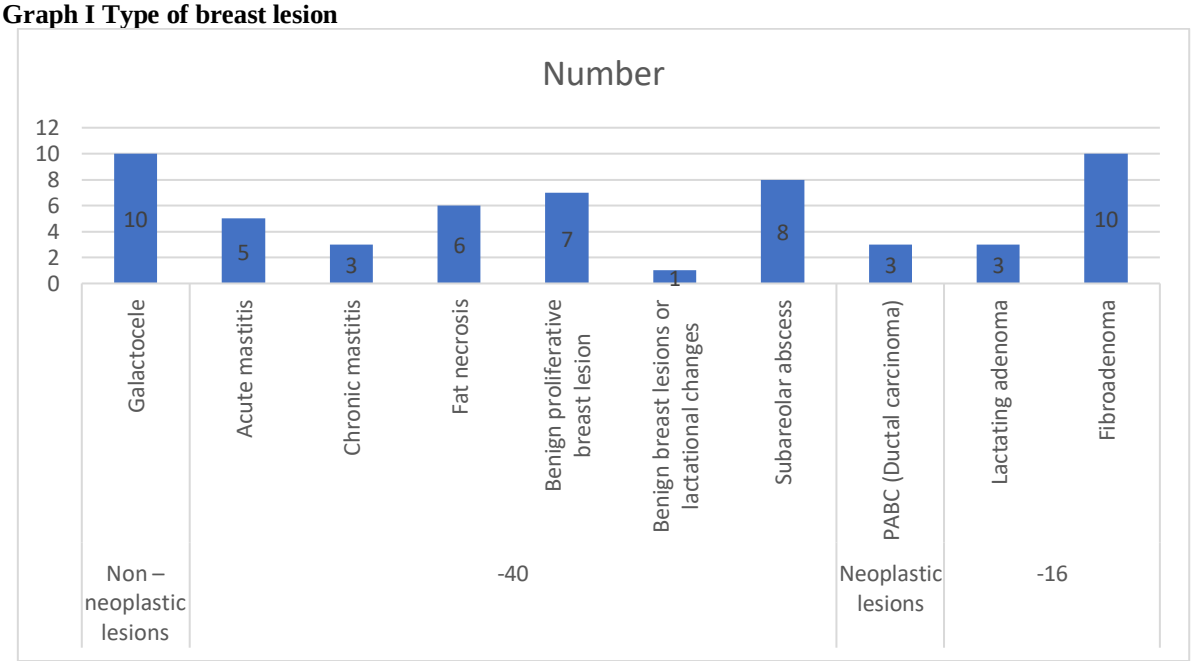
Table I shows that 15 breast masses arose during pregnancy (16 - 32 weeks) and 41 breast masses arose during post–partum period or lactation. The difference was significant (P< 0.05).

Table II Type of breast lesion

Breast lesion	Variables	Number	P value
Non – neoplastic lesions (40)	Galactocele	10	0.05
	Acute mastitis	5	
	Chronic mastitis	3	
	Fat necrosis	6	
	Benign proliferative breast lesion	7	
	Benign breast lesions or lactational changes	1	
	Subareolar abscess	8	
Neoplastic lesions (16)	PABC (Ductal carcinoma)	3	0.64
	Lactating adenoma	3	
	Fibroadenoma	10	

Table II, graph I shows that breast lesions were non – neoplastic lesions(40) such as Galactocele in 10, Acute mastitis in 5, Chronic mastitis in 3, Fat necrosis in 6, Benign proliferative breast lesion in 7, Benign breast lesions or lactational changes in 1, and Subareolar abscess in 8 cases. Neoplastic lesions(16) were PABC (Ductal carcinoma) in 3, Lactating adenoma in 3 and Fibroadenoma in 10 cases. The difference was significant (P< 0.05).

Graph I Type of breast lesion



DISCUSSION

Breast cancer is the second most frequent cancer in India, behind cervical carcinoma, and affects 20 out of every 1,000,000 women.[11,12] Breast lesions are varied and include a number of entities with surprisingly different characteristics, ranging from benign and inflammatory non-neoplastic lesions to invasive carcinomas that can be fatal. Breast lesions are now a leading cause of death for women worldwide.[13] The majority of breast lesions typically manifest as breast swelling or lumps, which is extremely sensitive for female patients and prevents prompt medical presentation for inspection.[14,15]The present study assessed breast masses in pregnant and lactating women with Fine Needle Aspiration Cytology (FNAC).

We found that 15 breast masses arose during pregnancy (16 - 32 weeks) and 41 breast masses arose during post–partum period or lactation. Talal LF et al[16]highlighted breast lesions during pregnancy and showed the importance of fine needle aspiration cytology in the diagnosis of these breast lesions. Fifty eight pregnant ladies presenting with different breast lesions were included, all were subjected to physical breast examination, ultrasonography of the breast and fine needle aspiration with 10 ml disposable syringe (20-22 gauge), spread on glass slides and fixed in 95% alcohol, stained with Pap stain and examined under light microscope. Clinicopathological study of 58 pregnant ladies presented with breast lesions including the age (range between 17-42 years), chief complaint (pain 10(17.2%)cases, mass 30(51.8%) cases, discharge 3(5.2%) cases, painful mass 11(18.9%) cases, axillary mass 3(5.2%) cases and pain and discharge in 1(1.7%) case) , site of the lesion (left side 24(41.4%) cases, right side 27(46.5%) cases and bilateral in 7(12.1%) cases.), the time of presentation during pregnancy (first trimester 19(32.8%) cases, second trimester 26(44.8%) and third trimester 13(22.4%) cases.) Our results show that breast lesions presented during pregnancy were benign in 54 (93.1%) cases, and malignant in 4 (6.9%) cases (all were breast carcinoma), the benign lesions include: fibroadenoma 15(25.9%) cases, inflammatory lesions 13(22.4%) cases, galactocele 8(13.8%) cases, fibrocystic changes 6(10.3%) cases, pregnancy related changes 5(8.6%) cases, lactating adenoma 3(5.2%) cases, 2(3.5%) cases lipoma, and papilloma one (1.7%) case , and one case was diagnosed as accessory axillary breast tissue.

We observed that breast lesions were non – neoplastic lesions (40) such as Galactocele in 10, Acute mastitis in 5, Chronic mastitis in 3, Fat necrosis in 6, Benign proliferative breast lesion in 7, Benign breast lesions or lactational changes in 1, and Subareolar abscess in 8 cases. Neoplastic lesions (16) were PABC (Ductal carcinoma)in 3, Lactating adenoma in 3 and Fibroadenoma in 10 cases. Saha et al[17]compared Fine Needle Aspiration Cytology (FNAC) and Core Needle Biopsy (CNB) in the diagnosis of breast carcinoma with final histological diagnosis from excision specimen. Patients underwent all three procedures (Fine Needle Aspiration Cytology and Core Needle Biopsy). May Grunwald Giemsa (MGG) and Papaniculou (PAP) staining were performed on cytology smears. Haematoxylin and Eosin (H&E) staining was done on both the CNB and tissue specimens obtained from subsequent excision surgeries to see the histological features.FNAC showed sensitivity, specificity, positive predictive value, negative predictive value, and diagnostic accuracy were 69%, 100%, 100%, 38.1%, and 74% respectively in diagnosing carcinoma. CNB had sensitivity, specificity, positive predictive value, negative predictive value, and diagnostic accuracy of 88.3%, 100%, 100%, 53.3% and 86%. Both FNAC and CNB showed statistically significant correlation with confirmatory HPE of excision specimen in the diagnosis of breast carcinoma.

CONCLUSION

Authors found that between benign breast lesions and malignant lesions, FNAC is used in the cytomorphological identification of a variety of breast disease patterns during pregnancy and breastfeeding.

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