
CARCINOMA OF THE BREASTS: THE IMPORTANCE OF BREAST-PALPATION AND THE DETECTION OF THE CANCER LESIONS BY X-RAY AND ULTRASONOGRAPHIC MAMMOGRAPHY.

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ABSTRACT

A retrospective study of 26 breast cancer-cases in Samitivej hospital was performed to determine the importance of breast palpation and the detection of the cancer lesions by x-ray and ultrasonographic mammography. The patient's age was 30-76 years old. The main presenting symptom was palpable mass. Twenty-nine percents of the lesions could be detected by every modality, 14% could be detected only by palpation and more lesions could be detected by ultrasonography compared with x-ray mammography. Microcalcification was the only finding that x-ray mammography was more superior than the palpation and ultrasonography by this study. Biopsy was suggested in every palpated lesion though the lesion could not be visualized by x-ray and ultrasonographic mammography. Needle guided biopsy was useful for the lesions containing microcalcification.

Key words: Breast carcinoma, x-ray mammography

INTRODUCTION

Until mammography becomes an integral part of the medical evaluation of every woman, history and physical examination remain the key elements in providing care for breast problems (1). Physical examination of the breast includes inspection and palpation conducted with the patient in both the erect and the recumbent positions. Despite its usefulness, mammography is not infallible, and the radiologist is at times chagrined to learn that a carcinoma proved by biopsy was not apparent on the film.

A retrospective study of 26 patients with breast cancer was performed to evaluate the importance of the breast palpation and mammography in the non palpated cases.

PATIENTS AND METHODS

A retrospective study was performed in 26 breast-cancer patients during January 1988 and May 1990, in Samitivej Hospital. Data concerning clinical information, x-ray and ultrasonographic, mammographic findings and the results of the pathology were recorded. X-ray mammography of each patient was routinely performed in mediolateral view (M-L view) and craniocaudal view (C-C view) and magnification view of the suspected lesion. Ultrasonography was performed in also suspected cases. The films were reviewed to evaluate the area of malignancy. Mammographic unit was Hospitech 600, T-C GR. The sonographic unit was Aloka 650, real time machine, using 7.5 Mhz transducer.

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RESULTS

The 26 patients consisted of all female patients, the age range was 30-76 years old. The mean age was 40 years old. The presenting symptoms were mainly palpable mass, as shown in Table 1. There were only 2 check-up cases. The detailed information, mammographic findings and the results of the pathology were presented in table 2.

From the data in table 3, twenty-nine percents of the palpated lesions were also positive by x-ray and ultrasonographic studies. Considerable number of lesions (14%) that were palpated and not shown by imaging techniques of mammography. In cases of palpable lesions, ultrasonography could detect more lesions (18%) than x-ray mammography (3.5%). X-ray mammography helped to detect lesion in the non-palpated cases only via the demonstration of microcalcification. There were no cases of positive ultrasonographic study only. Illustration of cases No.1, 26, 20, and 25 were shown in figure 1,2,3 and 4 respectively.

DISCUSSION

Breast cancer is a major cause of morbidity and mortality, and many methods have been advocated for early detection of breast cancer(2). Mammography is probably the best imaging technique for the early detection and diagnosis of breast cancer. The technique is not without shortcomings that limit its sensitivity and specificity(3). The sources of diagnostic error using x-ray mammography were stated by Egan(1) as followings 1) improper radiographic technique 2) the density of the breast as related to that of the lesion 3) interpretative error. Some benign processes such as infected cysts, abscess, fibrosis, fat necrosis, extra-abdominal desmoids, chronic inflammatory process, sclerosing adenosis,

indurative process or mastopathies could be interpreted as carcinoma. False negative diagnosis could occur in 1) a lesion that is too small to produce a recognizable density or that is the same density as the surrounding tissues 2) a carcinoma that is discounted as part of a benign process 3) a carcinoma that is partially or completely obscured by a benign process 4) a carcinoma usually in the extreme periphery of the breast, medially or just below the clavicle, that is not projected onto the mammogram.(7). The degree of reliability of the procedure depends on the relative amount of fat and fibroglandular tissue in the breast.

The lesions were detected only in mediolateral projection in our case No. 4,7, and 24. This observation was different from that of Helvie which stated that craniocaudal view was more superior due to thickness difference of the compressed breast. This leads to the conclusion that the lesion seen in any projection only should not be ignored.

For palpable masses, reported accuracies of the breast cancer ranged from 72 to 92% by ultrasonography (5-8) and 72% (13/18 cases) in our serie. Kobayashi (7) reported 85% breast cancer detection rate with ultrasonography for lesions of all sizes and 83% detection rate with x-ray mammography; this was shown to be 68% (15/22 cases) for ultrasonography and 57% for x-ray mammography in our cases.

There were four breast cancer cases that the mass could not be palpated and x-ray mammography was most helpful in detecting microcalcification and led to needle-localized biopsy.

Panjapiyakul (9) reviewed 838 mammograms in Samitivej Hospital, microcalcification was seen in 6.5% (55/838) and 28.5% of these were malignant lesion.

Table 1. Presenting symptoms in 26 patients with Ca breast

Presenting symptoms	No. of patients
Palpable mass	23
Ulceration of the nipple	1
Discharge per nipple	1*
Check up	2**

* the patient also had palpable mass

**one patient had tumorectomy in the breast 5 years ago

From our results, most of the malignant breast lesions were palpated (82% 23/28 cases); all of the nonpalpated lesions contained microcalcification detected by x-ray mammography. Slightly more lesions could be shown by ultrasonography (68%) as com-

pared to the x-ray mammography (57%). These lead to an observation that there must be a number of cases that escape detection if they are non-palpated and contain no microcalcification.

Table 2. Information about the 26 patients with CA breast

No.	Age(yrs)	Clinical finding	X-ray mammography	Ultrasonography	Pathological findings
1	33	Palpable mass	Negative	Multiple iso and low echoic Nodes	Infiltrative ductal Ca
2	62	Palpable mass	Mass	Not done	Infiltrative intraductal Ca
3	42	Palpable mass	Normal	Not done	Infiltrative intraductal Ca
4	49	Palpable mass	Ill defined border increased density only in M-L view	Echogenic mass	Infiltrative intraductal Ca
5	61	Palpable mass	Lobulated mass	Low echoic mass	Papillary Ca
6	48	Check up post tumorectomy 5 yrs.	Localized micro calcification at tumor bed	Negative	Intraductal Ca
7	43	Palpable mass + nipple discharge	Mass only in M-L view	Low echoic mass	Invasive lobular Ca
8	34	Palpable mass	Negative	Cystic lesion	Infiltrative intraductal Ca
9	34	Palpable mass	Negative	Negative	Intraductal Ca
10	38	Palpable mass	Negative	Echoic mass	Intraductal Ca
11	60	Palpable mass	Irregular border mass	Not done	Medullary Ca
12	45	Palpable mass	Microcalcification	Low echoic mass	Infiltrative medullary Ca
13	60	Palpable mass Rt. breast	Negative Rt breast Microcalc. Lt. breast	Not done	Medullary CA Rt. breast Infiltrative intraductal Ca Lt. breast
14	45	Palpable mass	Dense subareolar lesion	Low echoic mass	Adenocystic Ca
15	45	Palpable mass	Negative	Negative	Intraductal Ca at subareolar area
16	64	Palpable mass	Microcalcification	Negative	Invasive ductal Ca
17	66	Ulceration at Lt nipple 7 yrs	Microcalcification	Negative	Infiltrative ductal Ca
18	30	Palpable mass	Negative	Negative	Cystosarcoma Phylloides
19	35	Palpable mass	Negative	Negative	Cystosarcoma Phylloides
20	52	Check up	Mass Rt breast Microcalc. Lt.	cystic mass Rt	Infiltrative colloid Ca Rt. breast Normal Lt breast
21	40	Palpable mass	Positive for mass	Echogenic mass	Infiltrative ductal Ca
22	36	Check up	Bilat. Microcalc.	Fibrocystic ds both breasts	Ca left breast
23	76	Mass	Not clear	Not done	Infiltrative ductal Ca subareolar area
24	40	Palpable mass	Mass is seen only in M-L view	Ill defined low echoic mass	Intraductal Ca
25	30	Palpable mass	Negative	Low echogenic mass	Infiltrative ductal Ca
26	50	Palpable mass	dense breast	Low echoic mass	Infiltrative intraductal Ca

Table 3. Correlation between palpable lesion, x-ray and ultrasonography mammography in cancer lesion of the breast

Type of lesions	No. of lesions (%)
+ palpation, + x-ray, + U/S	8 (29)
+ palpation, - x-ray, - U/S	4 (14)
+ palpation, + x-ray, - U/S	1 (3.5)
+ palpation, - x-ray, + U/S	5 (18)
- palpation, - x-ray, - U/S	0 (0)
- palpation, + x-ray, + U/S	2 (7)
- palpation, - x-ray, + U/S	0 (0)
- palpation, + x-ray, - U/S	2 (7)
+ palpation, + x-ray, U/S-not performed	2 (7)
+ palpation, - x-ray, U/S-not performed	2 (7)
- palpation, + x-ray, U/S not performed	3 (11)
Total	1 (3.5)
	28 (100)



Fig.1A.
Normal mediolateral view
x-ray mammography of the
patient No. 1, the case of
infiltrative intraductal Ca.

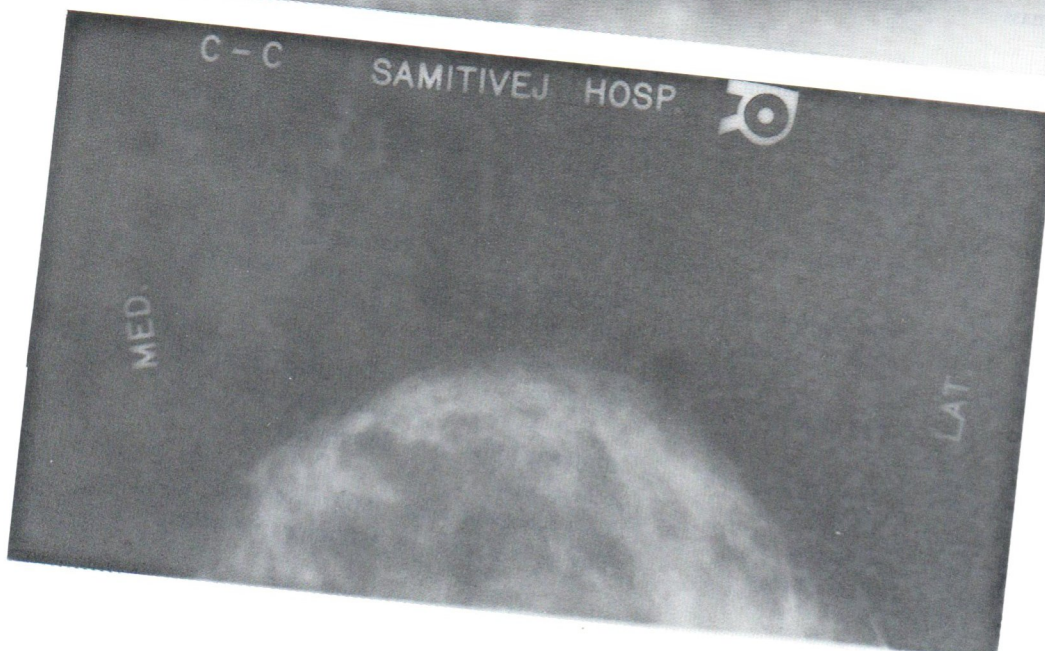


Fig.1B.
Normal craniocaudal view
x-ray mammography of the
patient No.1.

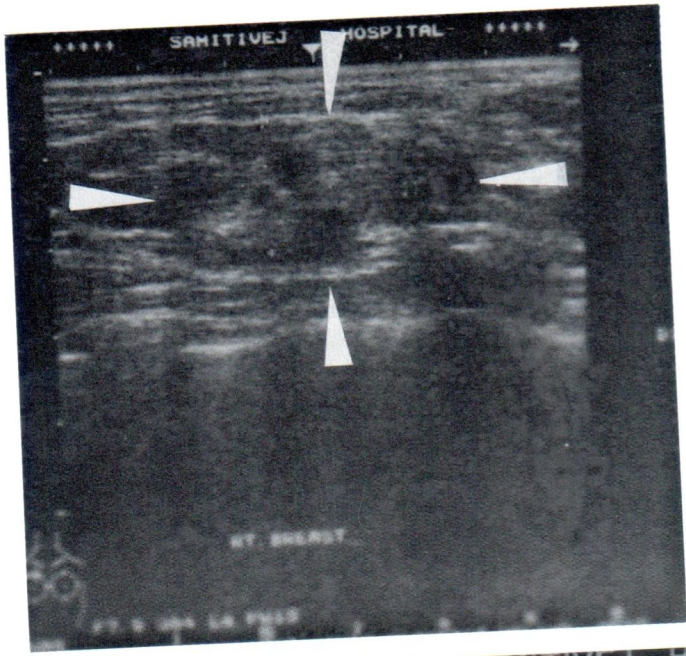


Fig.1C. Ultrasonography of the palpable lesion in the breast of the patient No.1 showed multiple iso and low echoic nodules.



Fig.2A. Medio-lateral x-ray mammography of the patient No. 26 showed dense breast tissue at inferior part of the breast. The case of infiltrative intraductal Ca.

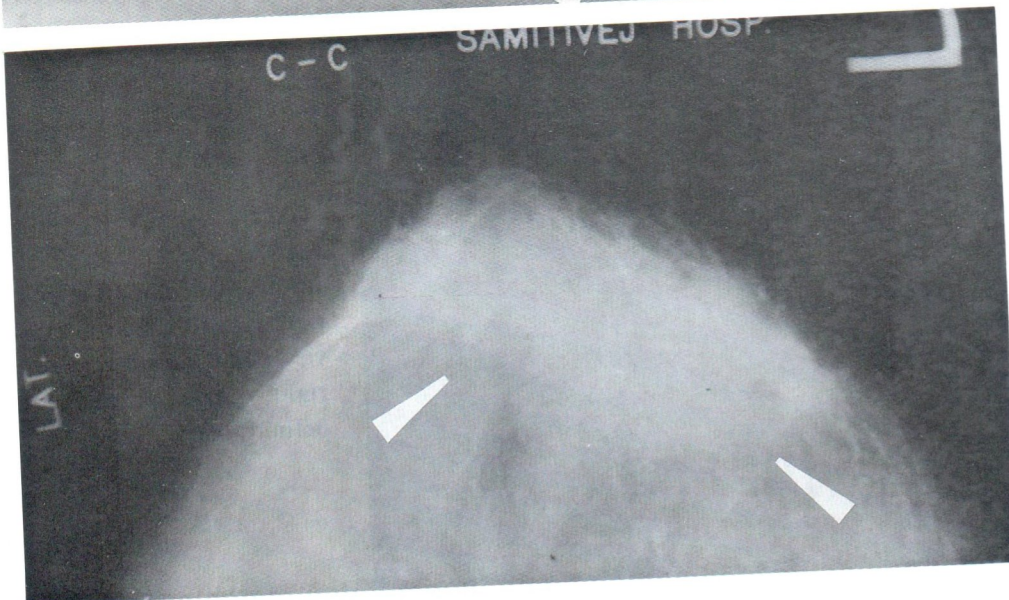


Fig.2B. Cranio-caudal projection showed dense breast tissue at medial aspect of the breast

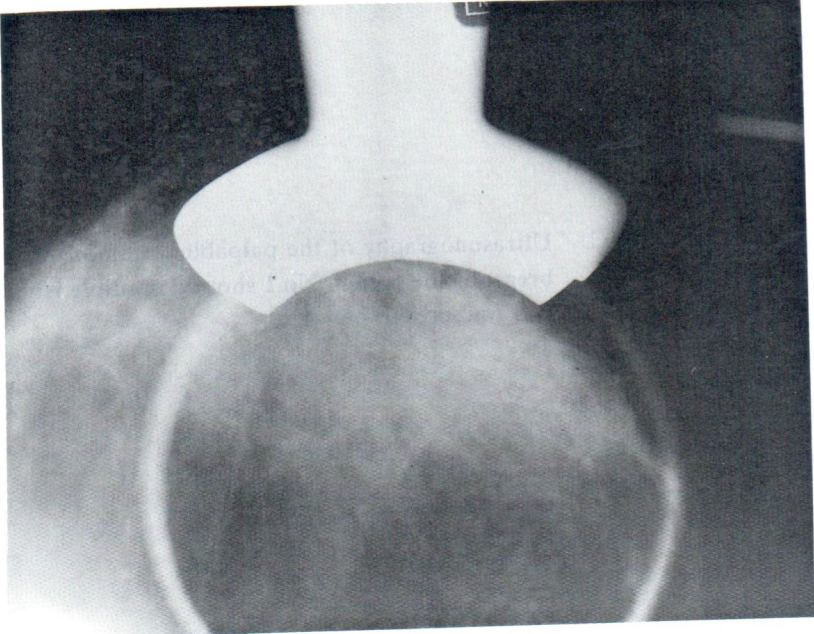


Fig.2C.
Magnified view at the medial part of left breast, showed no definite mass

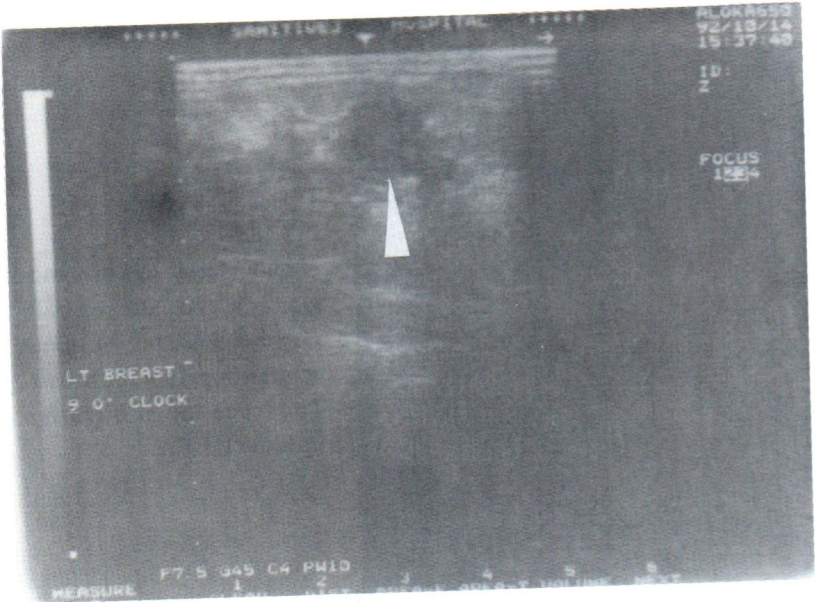


Fig.2D.
Ultrasonography at 9 o'clock showed irregular low echoic nodule



Fig.3A.
Infiltrative colloid Ca, patient No. 20 medio lateral view x-ray mammography of right breast showed no definite mass.

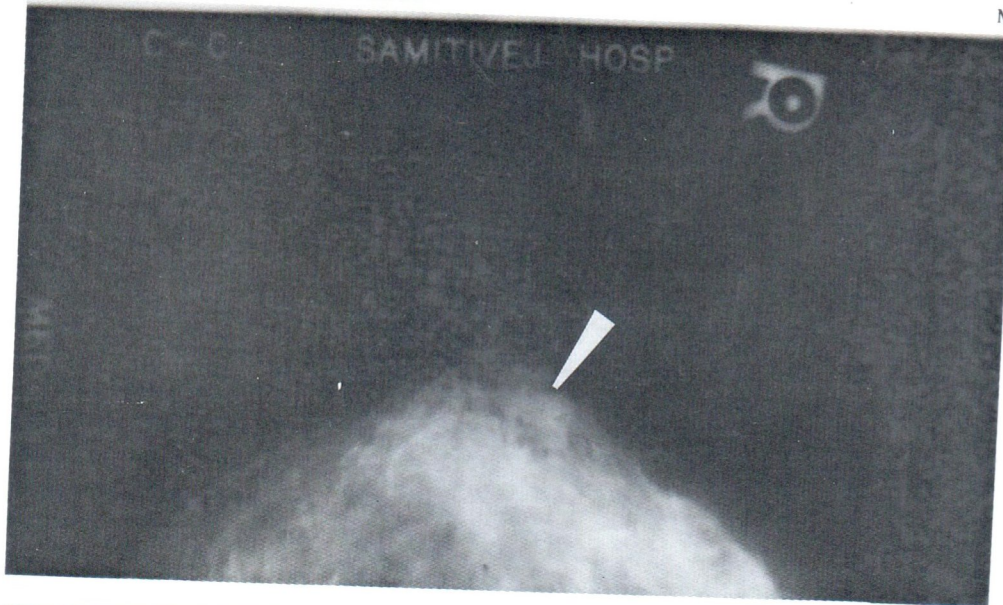


Fig. 3B.
Craniocaudal view x-ray
mammography of right breast
showed iso dense nodule at
lateral aspect of subareolar
region.

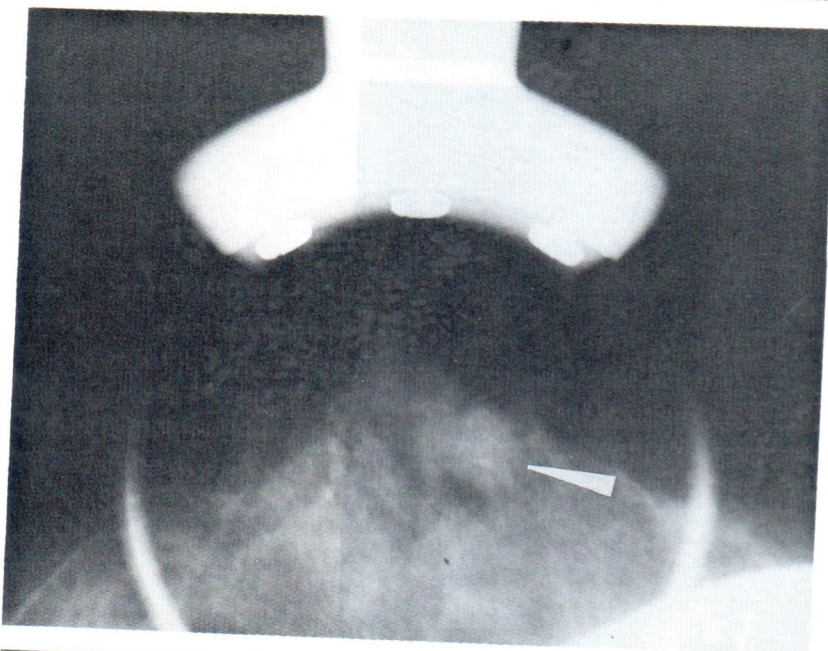


Fig.3C.
Magnified view at the lesion showed cal-
cified area in the iso dense nodule, at the
lateral subareolar region.

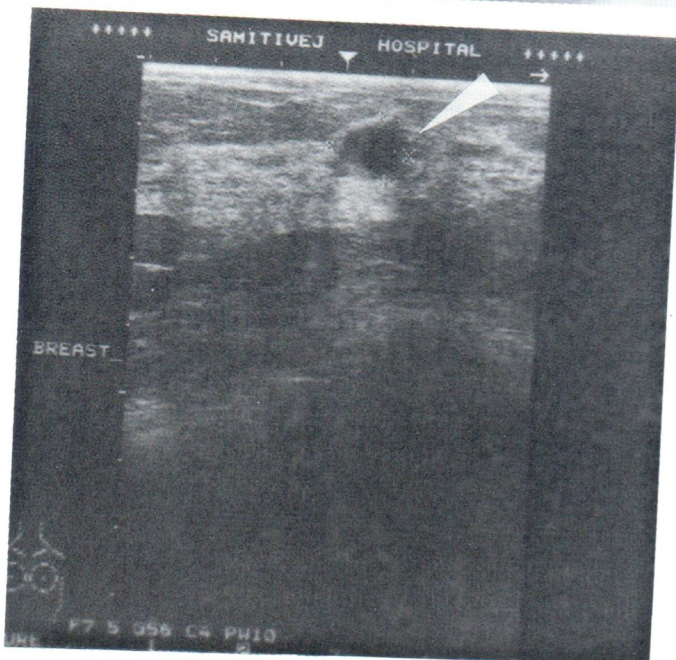


Fig.3D.
Ultrasonography showed low echoic and cystic
nodule with posterior enhancement. Aspiration yielded
bloody fluid.

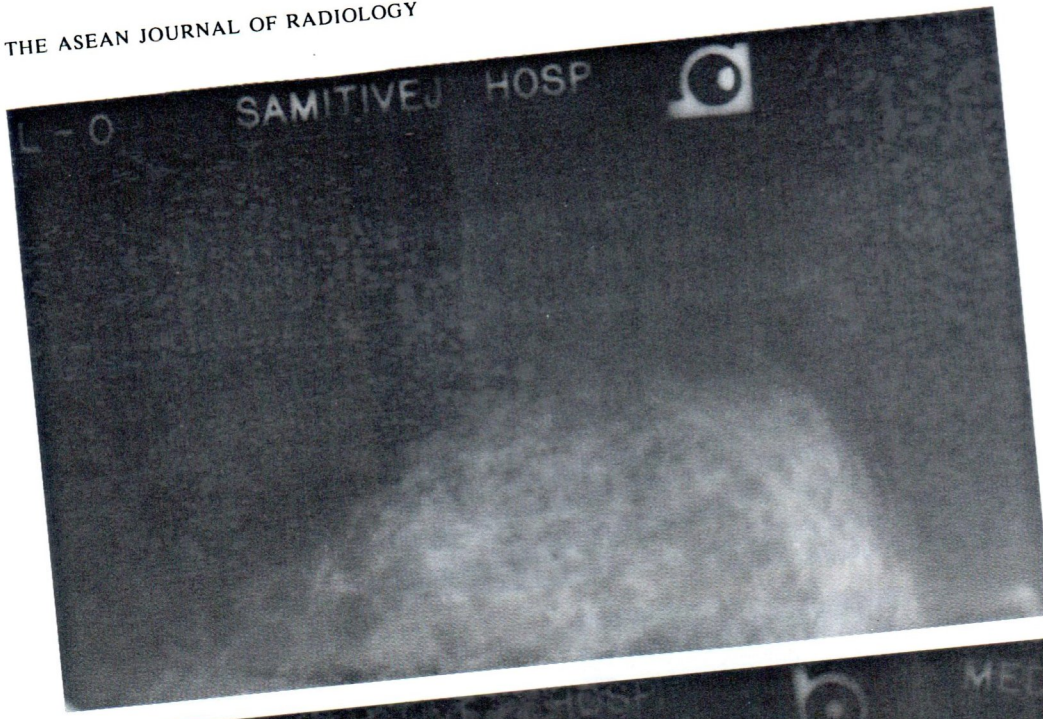


Fig.4A.
Infiltrative intraductal Ca,
patient No. 25. Medio lat-
eral view x-ray mammo-
graphy showed no abnormal-
ity.

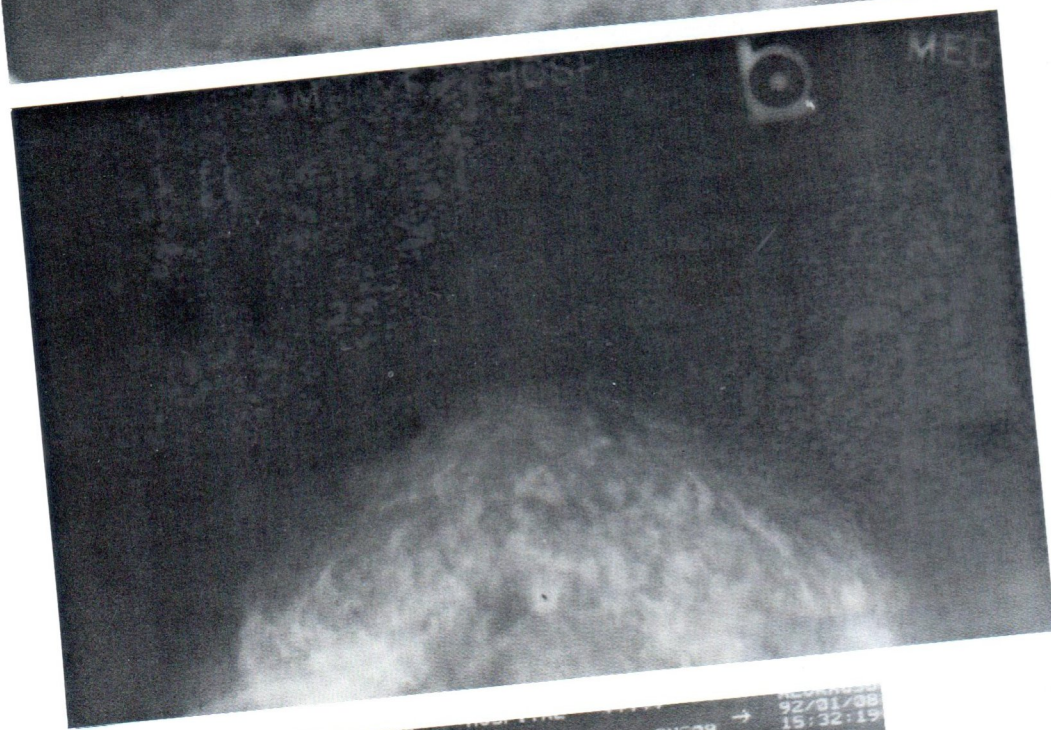


Fig.4B.
Craniocaudal view x-ray
mammography showed no
mass lesion.

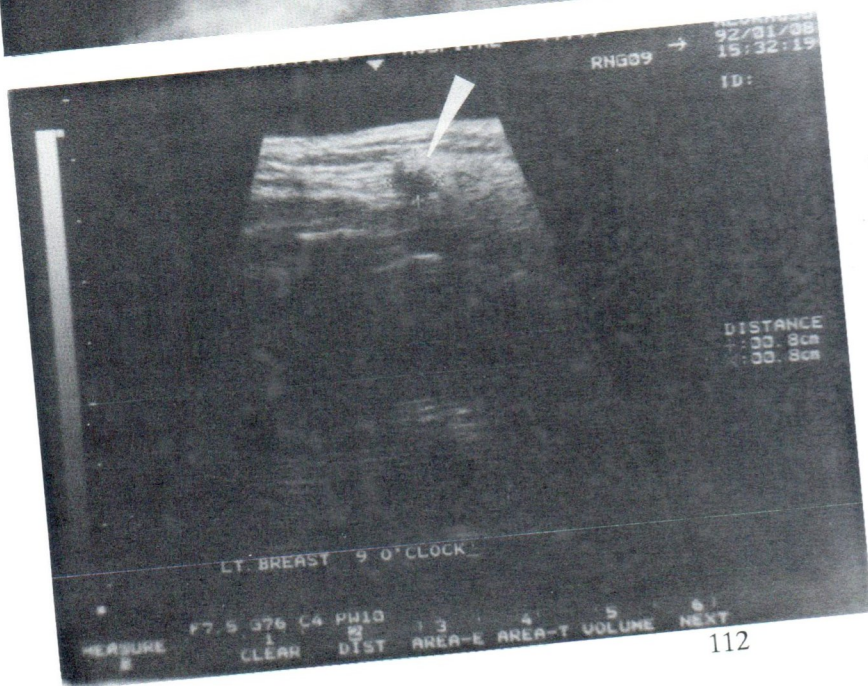


Fig.4C.
Ultrasonography showed an irregular low
echoic nodule at 9 o'clock.

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