

가¹

.²

: 가

: 47
 . 47 36 가 11 23 68 46
 38 , 37
 , , ,
 : 46 가 29 (63%),
 가 가 13 (28%) , 가 8 (17%) ,
 2 (4%), 1 (2%), 가 9 (20%)
 38 가 25 (66%), 가 9 (24%) ,
 가 8 (21%) , 2 (5%), 3 (8%) ,
 가 7 (18%) 37
 가 25 (68%), 가 20 (54%) , 2 (5%),
 3 (8%), 1 (3%) ,
 가 1 (3%) . 20%, 18%
 , 3% .
 가
 : 가

, 가

가

가 40 10
 가 Silverberg E. (1) (2).

가

15
 40

, 4 4

가 70

가 가

가 가 .

가

,

, 가
 가

¹
²

(false negative rate)

가

1993 2000

47

가

value가 0.05

1 cm

36 가 (ductal carcinoma in situ) 11

(invasive ductal carcinoma)

23 68 46 , 47

47 46 , 38 11 36 1 cm

37

Lorad (New York, U.S.A.) (Table 1).

(mediolateral oblique view: MLO view) 가 36

(craniocaudal view: CC view) 23 (64%) 가 ,

(spot compression and magnification view) 가 18 (50%), 가 2 (6%),

가 Acuson

128XP/10 (Mountain - view, California, U.S.A.) 7 MHz 가 1 (3%) 가

가 3 (8%),

가 1 (3%) ,

가

가 11 10 (91%) 가

Table 1. Mammographic and Ultrasonographic Findings of Ductal Carcinoma In Situ(DCIS) and Invasive Ductal Carcinoma(IDC) of the Early Breast Cancer

Mammographic Findings	US Findings	DCIS	IDC
Mass	Mass	4(4)	1(1)
Microcalcification	Mass	0(0)	0(0)
	Microcalcification	1(0)	0(0)
	Mass with microcalcification	6(6)	1(1)
	Duct dilatation	1(0)	0(0)
	Negative	5(5)	0(0)
Mass with microcalcification	-	6(0)	1(0)
	Mass	2(2)	2(2)
	Mass with microcalcification	0(0)	1(1)
	Negative	1(1)	0(0)
Multiple nodules	Multiple nodules	1(1)	1(1)
Architectural distortion	Mass	2(2)	0(0)
Negative	Mass	1(1)	4(3)
	Duct dilatation	2(2)	0(0)
	Negative	1(1)	0(0)
-	Mass	1(1)	0(0)
Total number of cases		36(28)	11(9)

- : Case in which no mammography or ultrasonography was performed.

() : Total number of cases having symptom such as palpable mass, breast pain and nipple discharge.

가 6 (55%)

가 29 (63%) 가 (Fig. 1),

가 13 (28%) ,

가 8 (17%) .

가 2 (4%), 가 1 (2%)

()가 9 20% .

38

가 25 (66%) 가 (Fig. 2),

가 9 (24%) ,

가 8 (21%) .

가 2 (5%), 가 3 (8%)

()가 7

18% .

가 63%

24%

($p < 0.05$).

28%

66%

가

($p < 0.05$).

37

가 25 (68%),

가 20 (54%) (Fig. 3),

가 2 (5%) (Fig. 4), 가 3

(8%), 가 1 (3%) .

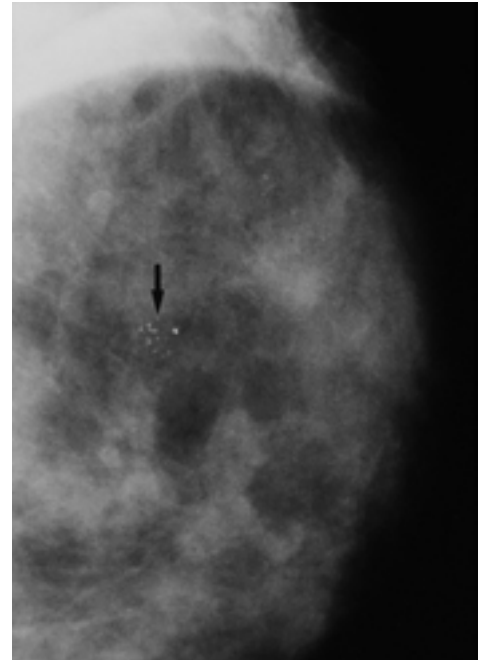
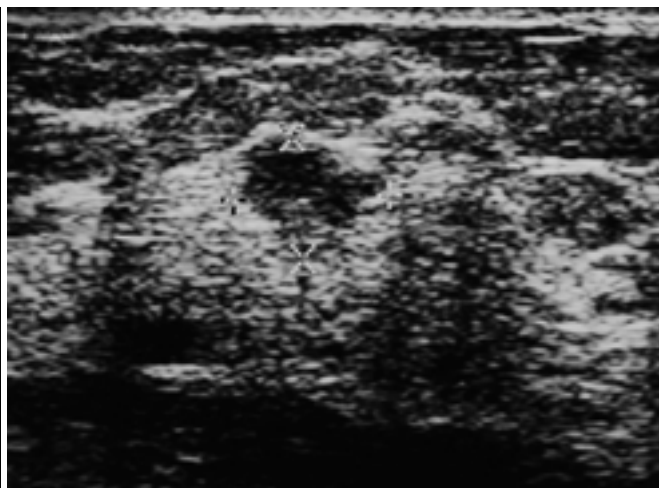


Fig. 1. Ductal carcinoma in situ in 46-year-old female. Compression and magnification view of mammogram shows clustered microcalcifications with amorphous and linear patterns (arrows). But ultrasonogram shows no abnormal findings (not shown).



A



B

Fig. 2. Invasive ductal carcinoma in 46-year-old female presenting with palpable mass.

A. Mediolateral oblique view of mammogram shows dense fibroglandular tissue with no definite abnormal mass and microcalcification.

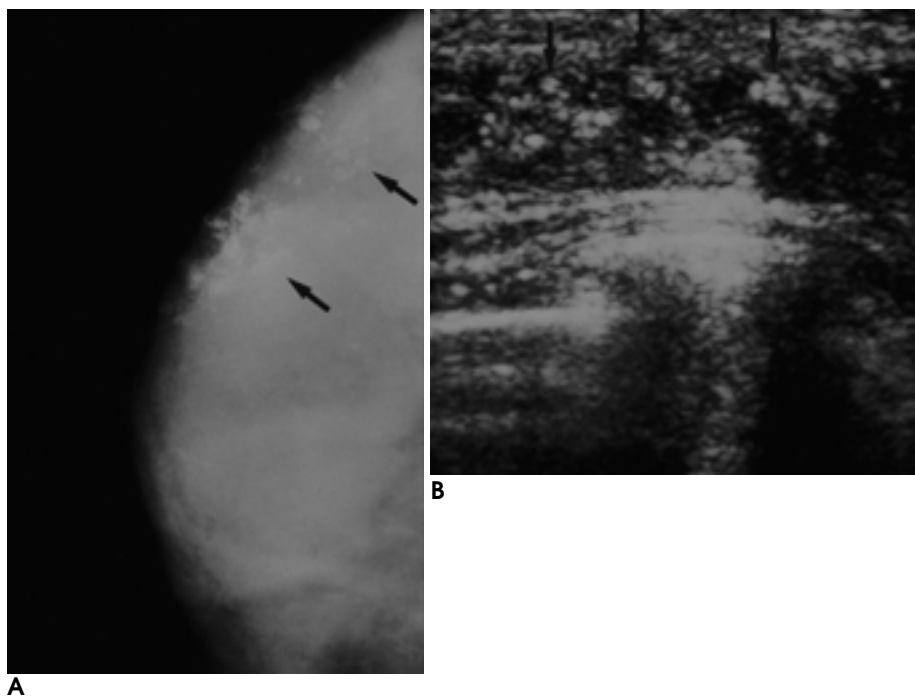
B. Ultrasonogram shows ill-defined hypoechoic mass which is measured about 0.9 × 0.7 cm in size at upper outer quadrant of the right breast (cursors).

()가 1 (3%) . (14.7%) (1999) (16.2%) 가 20%, 18% , 3% . 가 (Table 2). 가 9 5 , , 3 , (dense breast) 1 . 6 가 , 2 가 가 , 1 1 (5), 2 1 가 가 6 5 가 , 1 가 (Table 1).

Table 2. Diagnostic Rate of the Early Breast Cancer on Mammography, Ultrasonography, and Combined Study of Mammography and Ultrasonography

Mammography (n = 46)	US (n = 38)	Mammography and US (n = 37)

	Mammography (<i>n</i> = 46)	US (<i>n</i> = 38)	Mammography and US (<i>n</i> = 37)
DR	37 (80%)	31 (82%)	36 (97%)
FNR	9 (20%)	7 (18%)	1 (3%)*



3/4 가 1 cm

가

(suspicious malignancy)

가 가 ,
가 가 ,
($p < 0.05$).

가 20%, 18%

가 3%

가 가

20 , 1995 Strathfield Breast Centre Chew
(24)
9% 1977 Dodd 1988 Cregan
(25, 26) 12% 11%
Chew (24)

49 가 ,
7

20% ,
18% 가
Chew Dodd, Cregan

3% 68%
가 , 54%
9 (20%)

5 (fatty
breast), 가 (scattered
fibroglandular parenchyma)

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Diagnostic Accuracy of Mammography and Ultrasonography in Detection of Early Breast Cancer¹

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Purpose: To determine the value of mammography and ultrasonography in the detection of early breast cancer, and the usefulness of combining the two modalities for the diagnostic study of this condition.

Materials and Methods: The mammographic and ultrasonographic features of 47 female patients aged 23 - 68 (average, 46) years with pathologically proven early breast cancer were analyzed retrospectively. Mammography was performed in 46 patients and ultrasonography in 38, and 37 underwent both mammography and ultrasonography. Analysis of the mammographic and/or ultrasonographic features focused on mass, microcalcification, mass with microcalcification, multiple nodules, duct dilatation, and architectural distortion.

Results: Mammography revealed microcalcification in 29 (63%) patients, mass in 13 (28%) patients, mass with microcalcification in 8 (17%) patients, multiple nodules in 2 (4%) patients, architectural distortions in 1 (2%) patient, and negative finding in 9 (20%) patients. Ultrasonography revealed mass in 25 (66%) patients, microcalcification in 9 (24%) patients, mass with microcalcification in 8 (21%) patients, multiple nodules in 2 (5%) patients, duct dilatation in 3 (8%) patients, and negative finding in 7 (18%) patients. On combined study of mammography and ultrasonography of the 37 patients, mammography or ultrasonography revealed mass in 25 (68%) patients, microcalcification in 20 (54%) patients, multiple nodules in 2 (5%) patients, duct dilatation in 3 (8%) patients, and architectural distortion in 1 (3%) patient. In one (3%) patient among them, both mammography and ultrasonography revealed negative findings. The false negative rate of mammography, ultrasonography or both was 20%, 18%, and 3%, respectively, which was statistically significant difference ($p < 0.05$).

Conclusion: Combined study of mammography and ultrasonography is the most useful as a diagnostic study for early breast cancer. So, ultrasonography seems to be the important additional method for detection of early breast cancer.

Index words : Breast neoplasms

Breast neoplasms, radiography

Breast neoplasms, US

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