

:
 : 1996 4 2000 12 932
 440 (428)
 ,
 ,
 43.9
 0.3 - 3 cm 0.9 cm . 440 197 16
 243 14
 : 53 , 7 , 4
 , 4 (2 , 2) 372 (84.5%)
 . 53 45 가 44
 1
 11 4 2 가
 372 49
 1 5 (8.3%) 6
 . 6 16
 가 4 12%, 14 가 2 5.1%
 ($p=0.26$).
 :

가 (underestimation) 가 (9 - 11)
 가
 (medical audit)
 (1 - 4). 가 18
 (localization) 가
 가 70% (7, 8).
 , 1996
 (1, 2, 5, 6).
 가
 (7, 8).

(428) . 43.9
 (21 - 74), 0.3 cm 3 cm (0.9 cm)
 . (automated biopsy gun. Promac 2.2,
 Manan, U.S.A.) 2.2 cm long through needle
 2000 2 197 16 , 2000
 3 243 14 가 가
 5 3 - 4 ,
 7 - 8 .
 HDI 3000(ATL, Bothell, U.S.A.) Diasonic spec -
 tra(GE medical systems, Wisconsin, U.S.A.)
 4
 . 428 311
 8 5 4 21
 440
 14 16 ,
 가
 Fisher 's exact test
 440
 1 .
 53 45
 가 1
 8
 4 가 4
 가
 가 7 4

:
 , 3 43%(3/7) 가
 (DCIS underestimation)가
 가 4 2
 2
 50%
 가(ADH underestimation)
 2 , 2 가
 372 (Fig.1),
 49
 (29), (16),
 (4) 49
 43

Table 1. Comparison of Core Biopsy Result and Operation Result

Core Biopsy		Operation	
Result	No. of Case(%)	Result	No. of Case(%)
Benign	372(84.5%)	Benign	43
		DCIS	1 49
		IDC	5
ADH	4(0.9%)	ADH	2 4
		IDC	2
DCIS	7(1.6%)	DCIS	4 7
		IDC 3	
IDC	53(12%)	IDC	44 45
		NR	1
Other malignancy	4(0.9%)		
Total	440		105

ADH: atypical ductal hyperplasia
 DCIS: ductal carcinoma in situ
 IDC: invasive ductal carcinoma
 NR: no residual tumor
 Other malignancy: lymphoma(n = 2), metastasis(n = 2)

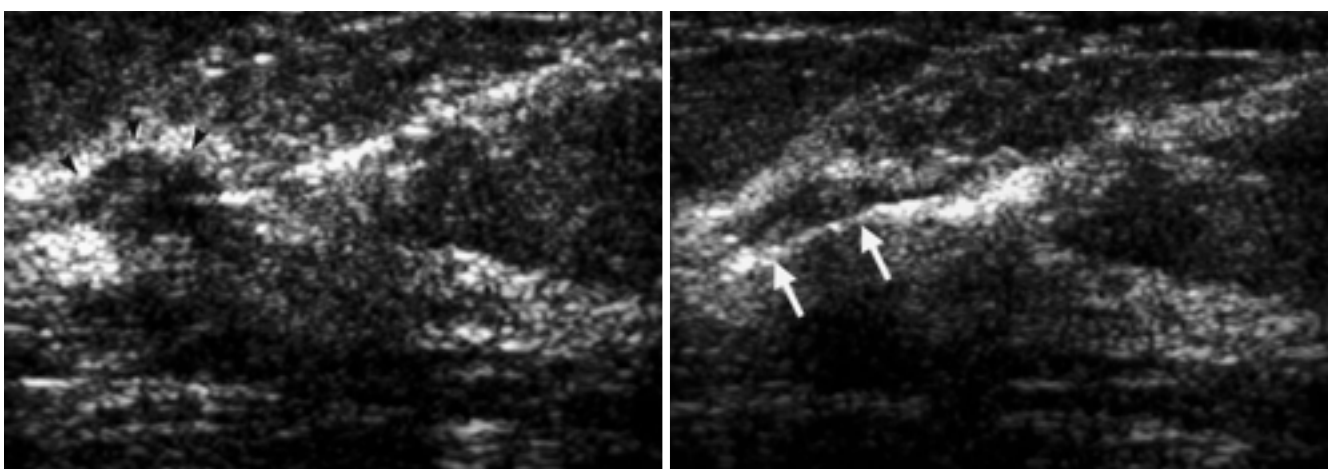


Fig. 1. 41-year-old woman without clinical symptom. US shows slightly hypoechoic, microlobulated, ovoid shaped nodule (arrows heads). US-guided core biopsy before (A) and after (B) firing shows that echogenic needle(arrows) was passed within nodule and diagnosed as fibrosis, which was considered as concordant result. On US after six-month(not shown), the nodule decreased in size.

6 8.3% (6/72) 가 4 (12%)
 (stromal fibrosis) 3 , (ductal epithelial hyper - (Fisher's exact test, p - value=0.26).
 plasia) 2 , (adenomatous hyperplasia) 1 21 (8 - 5 4) 323
 category 4 1.2 cm
 0.9 cm
 (Fig. 2) 6 4
 가 2 6 가 (Fig. 3).
 6 14 가 2 (5.1%), 16 (1 - 4).

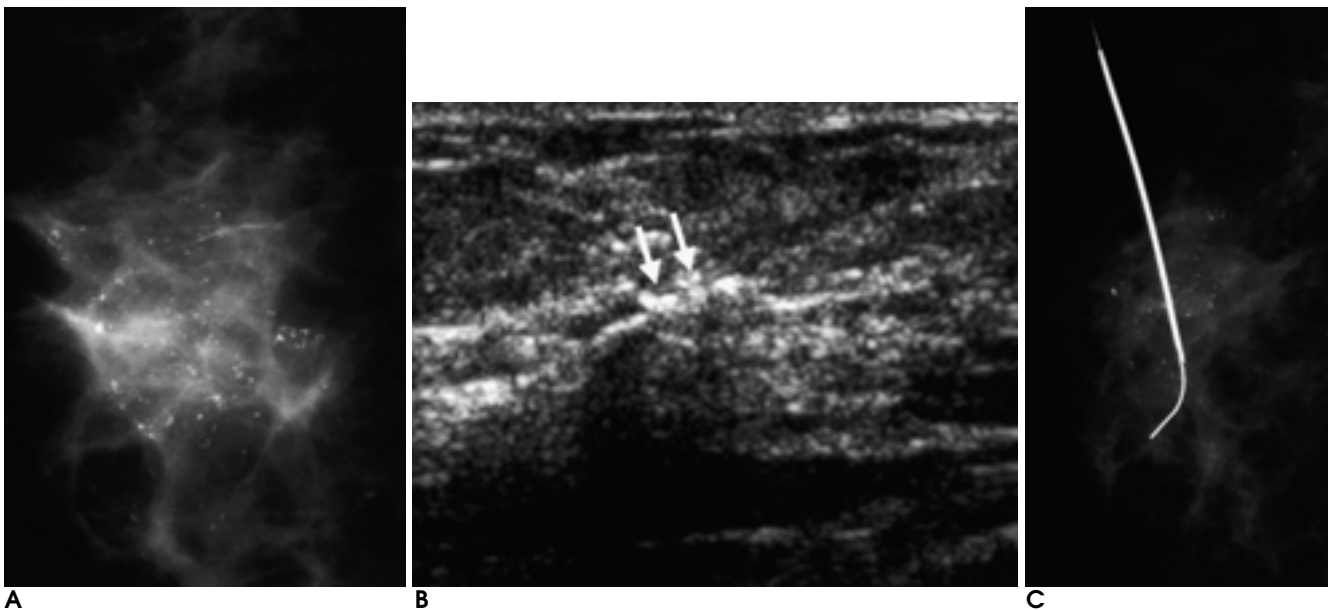


Fig. 2. 50-year-old woman was found to have suspicious microcalcification on screening mammogram (A). On sonogram, only spotty calcifications (arrows) were visible without definite mass and core biopsy was done targeting on calcification up to 8 times (B). Ductal epithelial hyperplasia was diagnosed on pathology. So mammogram-guided localization biopsy was done and it proved to be ductal carcinoma in situ (C).

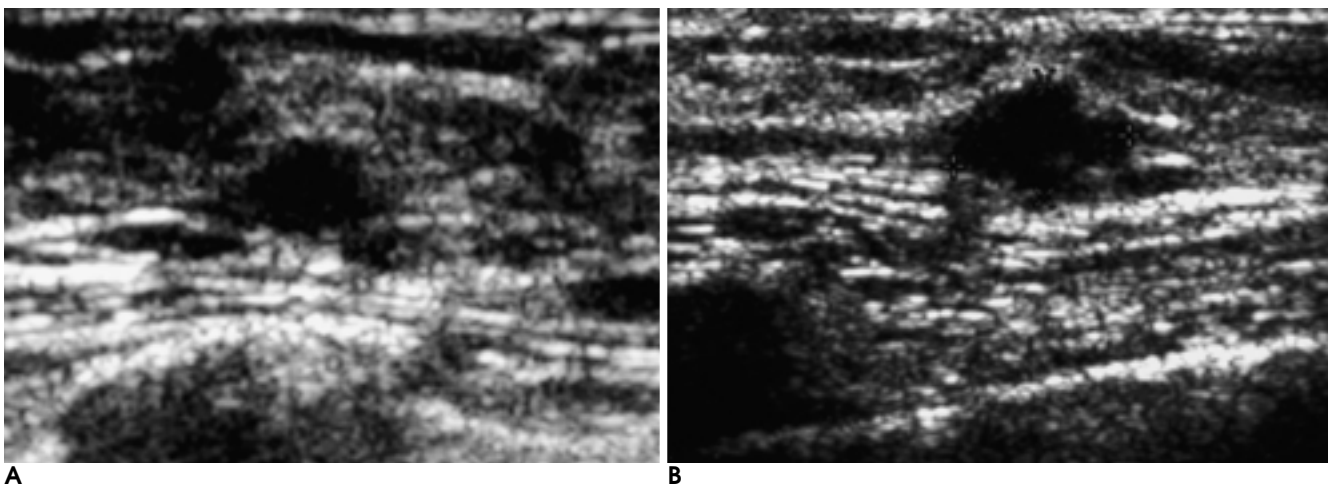


Fig. 3. 53-year-old woman with incidentally found breast nodule was diagnosed as fibrosis on core biopsy (A) and it was regarded as concordant result. But after 6 months, the nodule increased in size (B) and repeated biopsy revealed invasive ductal carcinoma.

13) (stereotactic) (12, 14) 가가 16 - 35%(5,25 - 28) 가가 20 - 56% (7, 8). (5,11,25, 29 - 32). 16 가 (12, 14, 15) 11 가가 3 (43%) . 14 가가 2 (50%), (vacuum assisted biopsy) 0 - 38% 가(25, 30 - 33) 16 - 35% 가가 (13, 25, 27, 28, 34) (Fig. 2). (specimen mammo - gram) (16). 14 16 가 (17). 14 16 가 . 20). (18). (19, 가(under - estimation) . 14 2.8%(0.3 - 8.2%) 30% 가 70% (21, 22). 14 5%(2) 16 2 (33.3%) 6 6 가 (23). 가 가 (16) 가 가 가 (24)

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The Usefulness of Ultrasound-Guided Core Needle Biopsy for Non-Palpable Breast Lesion¹

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Purpose: To determine the usefulness of ultrasound-guided core biopsy for the diagnosis of non-palpable breast lesions.

Materials and Methods: Between April 1996 and December 2000, 932 lesions in 901 patients were the object of ultrasound-guided core biopsy. Of these, 440 non-palpable lesions ranging in size from 0.3 to 3.0 (average, 0.9)cm, and found in 428 patients (all women aged, on average, 43.9 years), were included in this study. The pathologic results of core biopsy were compared with the available surgical data, and clinical and radiologic follow-up data were also reviewed. A 16-gauge needle was used in 197 lesions, and a 14-gauge needle in the other 243.

Results: At core biopsy, 53 lesions were diagnosed as invasive carcinoma, and 45 of these were excised. Forty-four were confirmed as invasive carcinoma, and in one case there was no residual tumor. Seven lesions, diagnosed as ductal carcinoma in situ at core biopsy, were surgically removed, and the final diagnosis was ductal carcinoma in four cases and invasive carcinoma in two. Two of four cases initially diagnosed as atypical ductal hyperplasia were finally diagnosed as invasive carcinoma after surgery. Six lesions diagnosed at core biopsy as benign were later found to be malignant (false-negative rate, 8.3%). Radiologic imaging suggested that all six lesions-for two of which, a 14-gauge needle was used, and for four, a 16-gauge needle-were malignant. The false-negative rate was 5.1% and 12%, respectively, without statistical significance ($p=0.26$).

Conclusion: Ultrasound-guided core needle biopsy for non-palpable breast lesions is useful and can replace surgical excision. To avoid false-negative assessment, however, strict radiologic-histopathologic correlation is required.

Index words : Breast, biopsy
Breast neoplasms, diagnosis
Breast, US
Breast, diseases

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