

1

2 3

(Add-on Stereotactic Core Biopsy: ASCB) 134

125 134 ASCB  
38, 18, 가 78  
23, 39

134 127 (95%)  
47% (18/38), 5% (4/78)가 (ASCB)

78.3% (18/23), 5 2 ASCB .5  
3, 2, 4 가  
17.3

13 (10.4%)

가 ASCB

가 가 가 가 가

(add-on stereotactic core biopsy:

ASCB) 134

(1-5),

(1, 4, 6).

(add-on unit)

1996 2 1999 6

(prone table unit)

가

ASCB

125

134

가

.5

2

,1

3

,2

6

1

24

2

24

70

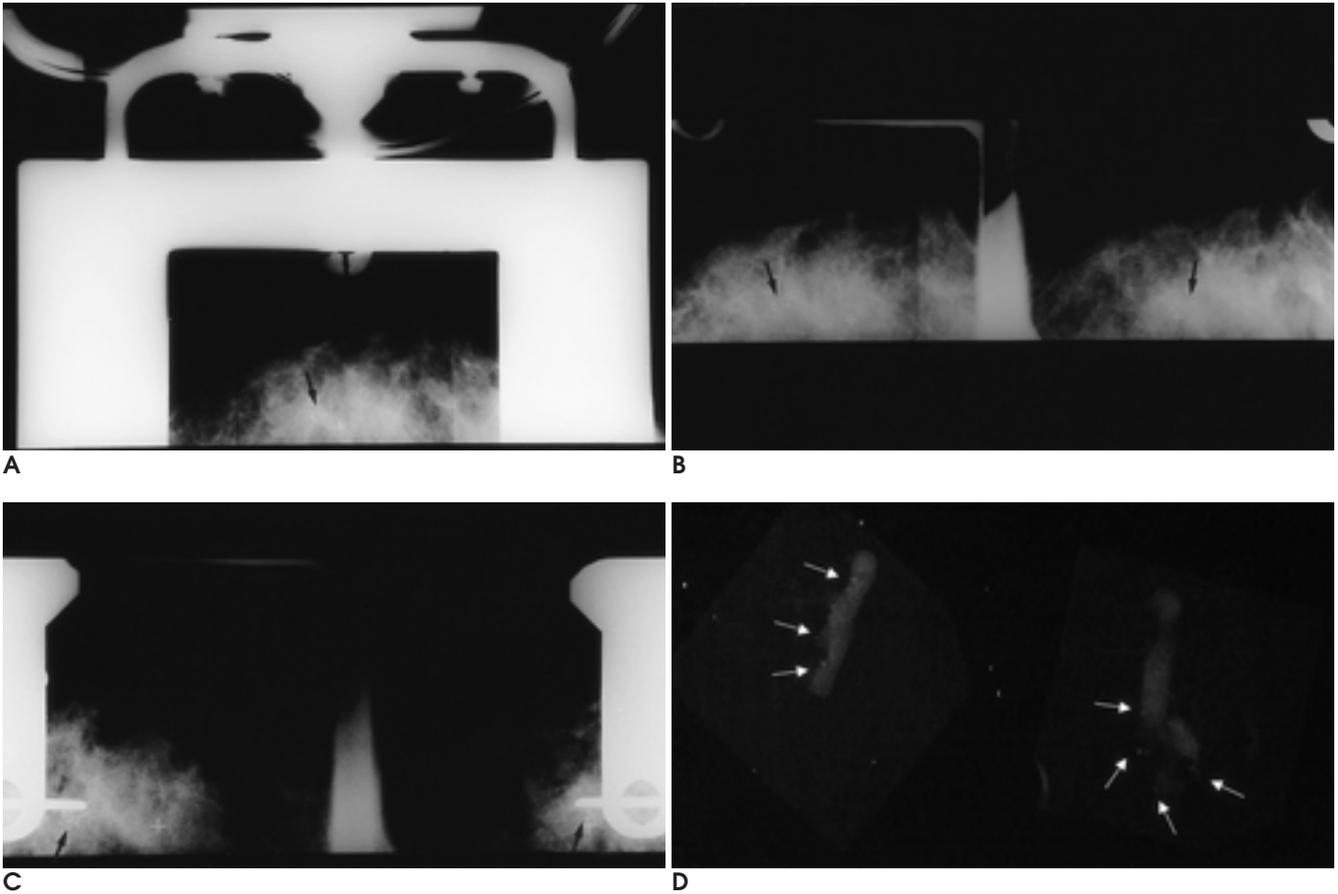
46.7

2000 1 3

2000 6 21

Giotto Hi-Tech Mammography

(IMS, Bologna, Italy) , (Manan (23  
 Medical Products, Northbrook, Ill, U.S.A.) 18, kVp, 4 mA) (Fig. 1D).  
 16, 14 1- , , 가  
 14 5.4 가 , , 가  
 (Fig. 1A), +24. -24.  
 (stereo - scout film) 23  
 3 (Fig. 1B). ASCB (18 )  
 2% (lidocaine) 8 - 10 cc , (2 ), ASCB 가  
 +24. -24. (3 ) 39  
 (Fig. 1C). ( , , )  
 가 mm 가  
 가 가



**Fig. 1.** Localization of the lesion with Add-on Stereotactic Core Biopsy (ACSB) system.  
**A.** Craniocaudal mammogram with add-on stereotaxic core biopsy system confirms the location of the lesion in the center of the small rectangular window of the compression paddle (arrow).  
**B.** After confirming the location of the lesion in the window, two stereoscopic views are obtained to calculate the 3-dimensional location of the lesion (arrows).  
**C.** Postfire stereoscopic images shows the needle tip passed through the center of the clustered microcalcifications (arrows).  
**D.** Specimen radiography shows a few microcalcifications in the core specimen (arrows).

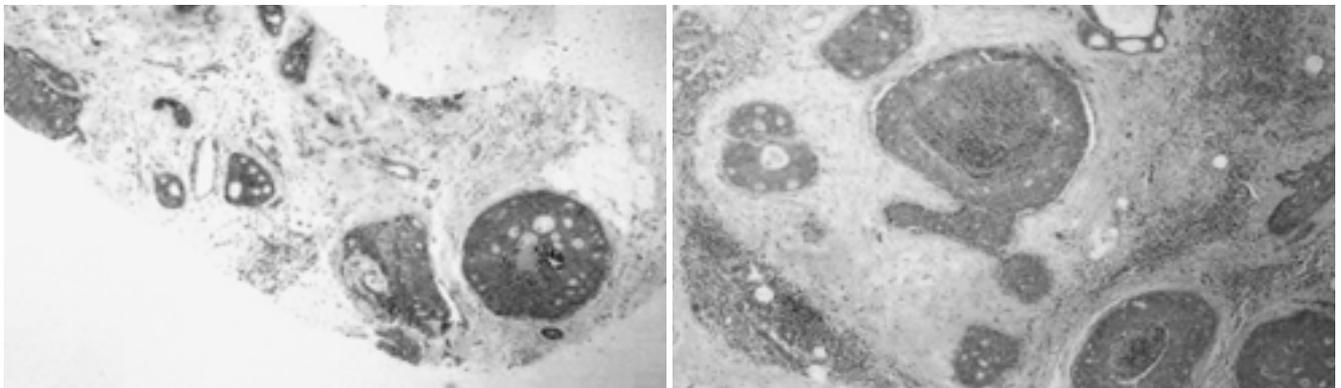
2, 6), 12. 1. 38 18 (47%) 78 4 (5%) 가 (Table 2). 가 119 1 (specimen radi-ography) , 64 가 9 가 7 3.4 (1-17% (3/18), 16 5% (3/66), 2% (1/50) 가 3, 가 9, 가 11. 134 가 16, 가 7, 가 4, 가 99, 가 4, 가 38, 가 18, 가 78, 134 127 (95%), , 7 (5%) 1-14 5.4 5 ) 96 2 9 18 18 17% (3/18), 16 5% (3/66), (18 ), 96 10 98 5 16 (66 14 2% (1/50) ), 98 6 99 6 14 (50 ) 11, 11, 93 ( 23 58, 20, 5, 2, 가 3, 가 9, 가 11.

**Table 1.** Mammographic Findings vs. Results of Add-on Stereotactic Core Biopsy (ASCB)

Mammographic Findings	Results of ASCB				Total
	Malignant	Benign	Normal	Inadequate	
Microcalcification	13	73(4)*	10	3	99
Increased density with calcification	5	7	1	3	16
Nodular density	0	6	1	0	7
Spiculated density	3	0	0	1	4
Architectural distortion	0	4	0	0	4
Architectural distortion with calcification	1	3(1)*	0	0	4
Total	22	93	12	7	134

Note. -numbers are numbers of lesions.

\*Numbers in parenthesis are numbers of atypical ductal hyperplasia



**Fig. 2.** Comparison of core biopsy and surgical histopathologic specimens of the breast cancer.  
**A.** Photomicrography of pathologic specimen from ASCB shows intraductal carcinoma.  
**B.** Photomicrography of histologic specimen from surgical excisional biopsy shows same intraductal carcinoma.

**Table 2.** Mammographic Classification vs. Results of Add-on Stereotactic Core Biopsy (ASCB)

Mammographic Classification	Results of ASCB				Total
	Malignant	Benign	Normal	Inadequate	
Malignant	18	17(3)*	2	1	38
Indeterminate	4	62(2)*	6	6	78
Benign	0	14	4	0	18

\* Numbers in parenthesis are numbers of surgically proven malignant lesion.

**Table 3.** Results of Add-on Stereotactic Core Biopsy (ASCB) vs. Results of Surgical Biopsy (n = 23)

Results of ASCB	Results of Surgical Biopsy			Total
	Benign	DCIS	Invasive carcinoma	
Invasive cancer	0	1	9*	10
DCIS	0	5	2	7
Fragment of cancer cell	0	0	1	1
ADH	0	1	1	2
Benign lesion	0	3	0	3
Total	0	10	13	23

Note. -numbers are numbers of lesions.

DCIS = ductal carcinoma in situ.

ADH = atypical ductal hyperplasia.

\*The 9 invasive carcinomas consisted of 8 ductal carcinomas and one lobular carcinoma.



**Fig. 3.** False negative case. Mediolateral oblique mammogram shows regionally distributed fine microcalcifications in upper portion of the right breast (arrows). Mammographic interpretation was indeterminate microcalcifications. ASCB result of this lesion was atypical ductal hyperplasia, however, pathologic result of excisional biopsy was invasive ductal carcinoma.

**Table 4.** Mammographic and Pathologic Features of Malignant Lesions Missed with Stereotactic Core Biopsy (n = 5)

Lesion No.	Mammographic Findings	Mammographic Classification	ASCB Results	Surgical biopsy Results
1	Microcalcification	Malignant	FCC	DCIS
2	Microcalcification	Indeterminate	FCC	DCIS
3	Microcalcification	Indeterminate	Fibrosis	DCIS
4	Microcalcification	Malignant	ADH	DCIS
5	Microcalcification	Malignant	ADH	IDC

IDC = invasive ductal carcinoma

FCC = fibrocystic change

ADH = atypical ductal hyperplasia

DCIS = ductal carcinoma in situ

12 , 1 가 , 20% (6), (stere-  
otactic fine needle aspiration) (7).  
5 (18/23) 가 5 , ASCB  
1 4

가 . ASCB 5 2  
(atypical ductal hyperplasia), 2  
, 1 ,  
3 , 2 (Table 4)(Fig. 3). 5  
5.6 , 4  
가 .  
38 , 39  
17.3 ( : 5 - 32 ) .  
가 가 .  
13 (10.4%) (1 ) , (3 ) ,  
(2 ) , (1 ) , 5  
가  
가 1 .  
가

가 , 97 - 100%  
 (8 - 10).  
 가 , , 가  
 , , , 가  
 , , , 가  
 .

가 , ,  
 ASCB 가  
 ,  
 가 6 1  
 가 (1, 3, 13). 가  
 가 ,  
 가 ,  
 가

ABBI(advanced breast biopsy instrumentation)

가 (11, 12),  
 Leibman 54  
 7 1 가 54  
 (11).  
 94 - 100%  
 (1 - 4), 95%  
 (2 - 6), 78.3% (18/23)  
 가  
 (1 - 6). 18  
 (2), 14  
 가 가  
 가 (1, 6), 가  
 가 2 75 - 80% 5 가  
 가 (1). 86 - 100%  
 (1, 4, 6).

가  
 (3 - 4, 14 - 15). Elvecrog (3)  
 100  
 1  
 (16). Helvie (14)  
 370  
 (vasovagal reaction)  
 가 27 , 5 3 ,  
 2 . 5.6%  
 (1 ), (3 ),  
 (2 ), (1 )  
 ASCB  
 가

가 ,  
 가  
 가 Brenner (1) 5  
 가 1 4 , Elvecrog  
 (3) 100 36 34  
 , 1 , 1  
 가 .  
 5 1  
 4 가 1  
 , 2 , 2  
 , 1 3 ,  
 2 . Liberman (13)  
 가

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## Results with Add-on Stereotactic Core Biopsy (ASCB) of the Breast Lesions<sup>1</sup>

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**Purpose:** To report the results of 134 cases in which add-on stereotactic core biopsy (ASCB) was performed in patients with mammographically detected breast lesions, and to evaluate the usefulness of this procedure.

**Materials and Methods:** We analyzed the results of ASCB of 134 breast lesions in 125 patients, performed during a 41-month period. The mammographic findings were suspicious malignant lesion in 38 cases, benign lesion in 18, and indeterminate lesion in 78. Surgical excision was performed in 23 cases, and follow-up mammography in 39. We analyzed the pathologic results according to each mammographic finding and correlated the results of core biopsy with those of surgical excision. We also evaluated the mammographic changes seen during follow-up, and associated complications and procedural difficulties.

**Results:** Samples were adequate for pathologic diagnosis in 95% of cases (127/134). ASCB revealed malignancy in 47% of cases (18/38) in which this was suspected on the basis of mammographic findings, and in 5% of cases (4/78) in which these findings were indeterminate. The pathologic results of core biopsy and of surgical excision agreed in 78% of cases (18/23). In two of five false-negative cases, ASCB revealed the presence of atypical ductal hyperplasia. The mammographic findings in these five cases were suspicious malignancy in three, and indeterminate in two. Specimen radiography showed calcifications in four cases. The size or extent of mammographic lesions did not change during the mean follow-up period of 17.3 months. In 13/125 patients (10%), the complications and procedural difficulties noted included arterial bleeding, dizziness, syncope, patient movement, and instrument failure.

**Conclusion:** ASCB is accurate, safe and useful, but surgical excision should be considered when the ASCB result is either atypical ductal hyperplasia or benign but with mammographic diagnosis of suspicious malignant or indeterminate lesions.

**Index words :** Breast, biopsy  
Breast neoplasms, diagnosis

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