



가

133 136

가 6 1, 6 4

2, 3 “ ”

1, 2, 3 48.8%, 29.4% 45.5% (lobular) (61.5% 33.7%)

50%, $p=0.0121$),

(4 - 6).

(7 - 9).

3 mm

1993 Parker (10)

(1),

(2, 3).

(Mammotome Biopsy/Ethicon endosurgery In., Johnson & Johnson Co., Cincinnati, OH, U.S.A.)

가

(9, 11 - 14).

가,

가

Steri - strip (3M Surgical Products, S. Paul, Minnesota)

가

2 - 3

“ ”
“ ”

chi - square

test

2003 3

2004 3

160

173

37

133

136

가

136

111

(fibro -

adenoma)

(papilloma)

8

(sclerosing adenosis)

4

(ductectasia)

3

(invasive ductal carcinoma)

2

(ductal hyperplasia)

2

(DCIS)

1

(intraductal adenoma)

1

(atypical papilloma)

1

(inflam - mation)

1

(focal fibrosis)가

1

가

1

133

133

1

12

80

,

2

34

,

3

22

3

(American College of Radiology)

494

1

270

,

2

(Breast Imaging Report - ing

101

,

3

123

1

2

and Data System; BI - RADS)

2 (benign finding),

가

4

3

3 (probably benign finding),

4A (suspicious

4

abnormality - low)

(16),

8

1

가 320 (80 × 4)

<1 cm, 1 - 2 cm, >2 cm

270/320 (84.4%)

2

1.4 cm (0.37 - 6.09 cm)

136 (34 × 4)

100/136

HDI 5000 (ATL, Bothell WA, U.S.A)

7 -

(73.5%)

3

176 (22 × 4 ×

12MHz

2)

123/176 (69.9%)

(Mammotome Biopsy/Ethicon endosurgery In.,

1 48.8% (80 39),

Johnson & Johnson Co., Cincinnati, OH, U.S.A.) 8G

2 29.4% (34 10) , 3 ,

45.5% (22 10)

1

2 3

가

(p=0.16),

2 3

(p=0.26).

70%

1 - 3 cm

2%

1

4

2 ml

. 0.3 cm

가 3

가

(p=0.037),

2

3

가

10 1

10 - 20 ml

(2 p=0.47, 3 p=0.78).

3

13.8

4 ,

2 ,

4

가

21 10 48% 3 2 (66.7%)

49%

<1 cm, 1 - 2 cm, >2 cm

136 82 (60%)가 1 - 2 cm , 1 cm 37
(27%), 2 cm 17 (13%) 가
>2 cm (17 10 , 59%) 가가 가 (17 - 21).
($p=0.12$).

89 , BI - RADS 3 가 가

39 , 8 가 가

89 30 (33.7%), 39 24 (61.5%), 8 4
(50%)
($p = 0.012$) (Fig. 1).

1 28.8% (23/80), 가
2 26.5% (9/34), 3 31.8% (7/22) (9, 11 - 14). 11 G

1 52.1% (23 12 가
) , 2 44.4% (9 4) , 3 71.4% (7 38%,
5) , 60% (14). 8 G 11 G
86%

($p=0.34$).

133 3 가 가 6 81.5%
(26.9%) 35 10.1% (12).
4 1 8 G
31 , 4 1 11 G 8 G (22)
가 가 가
2 , 1 Liberman (23) 23
1 8 (35%), 15 4 (27%)가
2 , Fine (11)
1 5 1 (20%)가

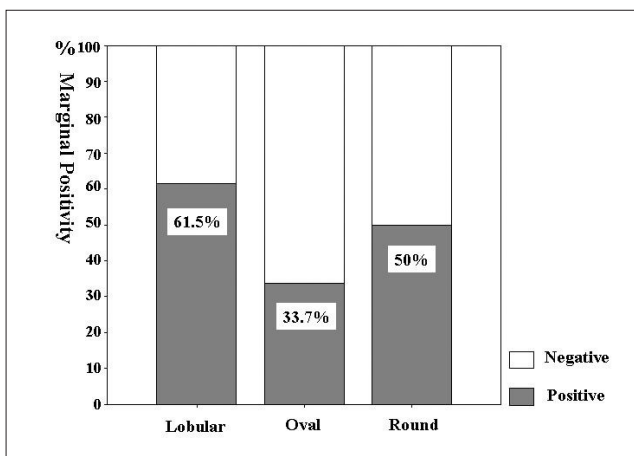
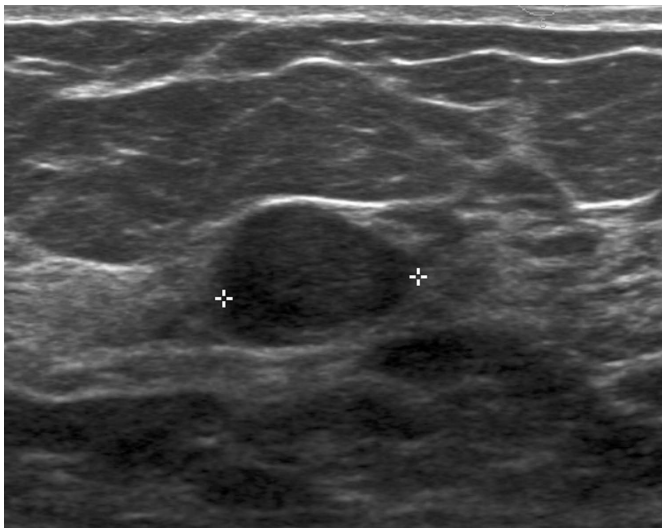
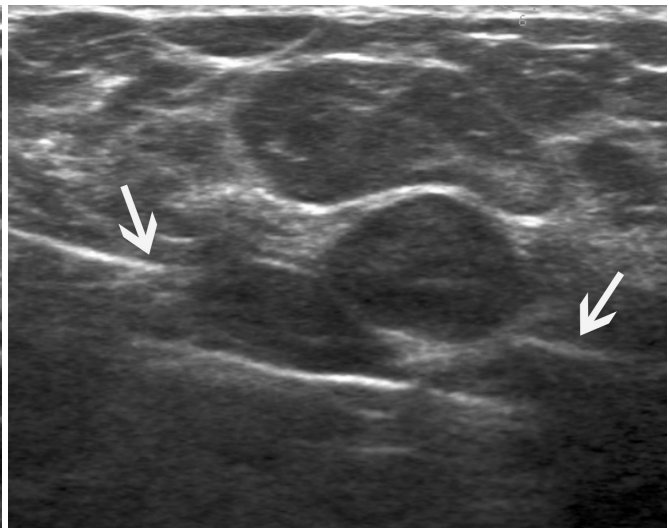


Fig. 1. Bar graph shows the percentage of positivity on marginal sampling after complete removal of mass with US-guided mammotome biopsy according to the shape of the mass on US. *The marginal positivity of lobular shaped mass is significantly high ($p=0.021$).

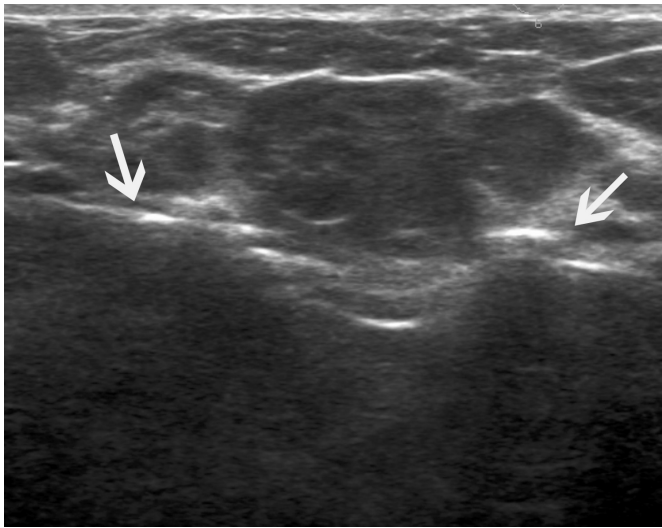
1 84.4%, 2 73.5%, 3 69.9%
 가 3 (p=0.037) 2 3 가 4
 가 가 가
 (2 p=0.47, 3 p=0.78).
 3 45.5% 2 29.4 3 31.8%
 69.9% 3 가 ,
 4 가 가
 가 가
 가 가
 3 , 가 4 가



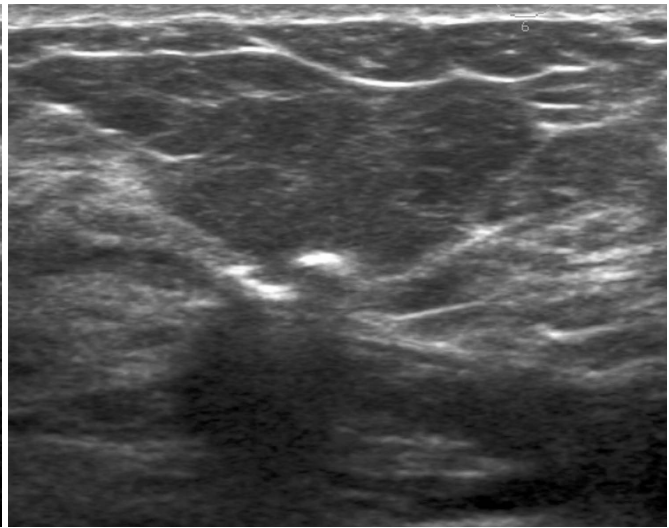
A



B



C



D

Fig. 2. A 51-year-old woman with a right breast mass.

A. US image obtained before mammotome biopsy shows a 1.2 cm-sized, circumscribed hypoechoic mass.

B. A mass was subsequently removed with the 8-gauge biopsy probe (arrow).

C. US image shows no visible portion of the mass with the device (arrow) still inserted. However, first marginal sampling contained residual fibroadenoma.

D. There is only posterior shadowing owing to air on post-procedure US image.

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Complete Removal of a Breast Mass by US-guided Mammotome Biopsy: Histologic Assessment by Marginal Sampling¹

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Purpose: The aim of this study was to assess whether the complete removal of a breast mass using ultrasound (US) guided mammotome biopsy was successful using a marginal biopsy after insuring the total visual excision of the breast mass on US images. The relationship of complete breast mass removal, and the hematoma, mass size and shape were also evaluated.

Materials and Methods: A US guided mammotome biopsy was performed in a total of 136 cases in 133 patients, with marginal biopsies also added when the complete removal of breast mass had been identified by sonography. The results of the marginal biopsies were serially dividing into three groups, as follows: group I were the cases in the initial 6 months, group II after the initial 6 months and group III having undergone two marginal biopsies. The marginal biopsies were performed in four directions around the probe, with "marginal positivity" defined as the same histopathological findings to that of the main mass in at least one direction. A statistical analysis was also used to evaluate between the marginal positivity and the hematoma, mass size and shape.

Results: The marginal positivities of groups I, II and III were 48.8, 29.4 and 45.5%, respectively. The marginal positivity of those with a lobular shaped mass was significantly higher ($p=0.0121$) than those with round or oval shaped masses (61.5 vs. 33.7 vs. 50%), but showed no statistical relationship with hematoma size of the lesions

Conclusion: Although the lesions were removed by US using a US-guided mammotome biopsy, many residual lesions were still histologically present in the marginal samplings, especially in the lobular shaped masse

Index words : Breast, diseases
Biopsy, needle
Ultrasound (US)

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