

mammotome

1

$$\begin{array}{ccccccc} & & & & 2 & & 2 \\ \cdot & & \cdot & & \cdot & & \cdot \\ & & & & & & 3 \end{array}$$

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mammotome .

59 67 11G mam -

25 77 44.5 .

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0.5 - 8 cm 1.6 cm . 1.4

cm 7 12 10 가 0.44 gm

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26 , 39 1 , 1 .

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가 5 (8.3%).

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mammotome

(4-5).

. Mammotome

11 G

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mammotome

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- 2
- 3

motome 59 mam - 67
 11gauge directional vacuum
 assisted biopsy (Mammotome, Biopsy/Ethicon endo -
 surgery INC., a Johnson & Johnson Co., Cincinnati, OH,
 U.S.A.) Ultramark 9 -
 HDI (Advanced Technology Laboratory, Bothell, WA,
 U.S.A.) 5 - 10MHz linear - array transducer

mm

(excursion)

(Fig. 1).

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44.5

59

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3

52

0.5 - 8 cm

1.6 cm

1.4 cm

7

digital scale balance

12

55

0.44 gm

12

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: mammotome

3,6,9,12 ,

Mammotome

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(Fig. 2, 3)

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18 ,

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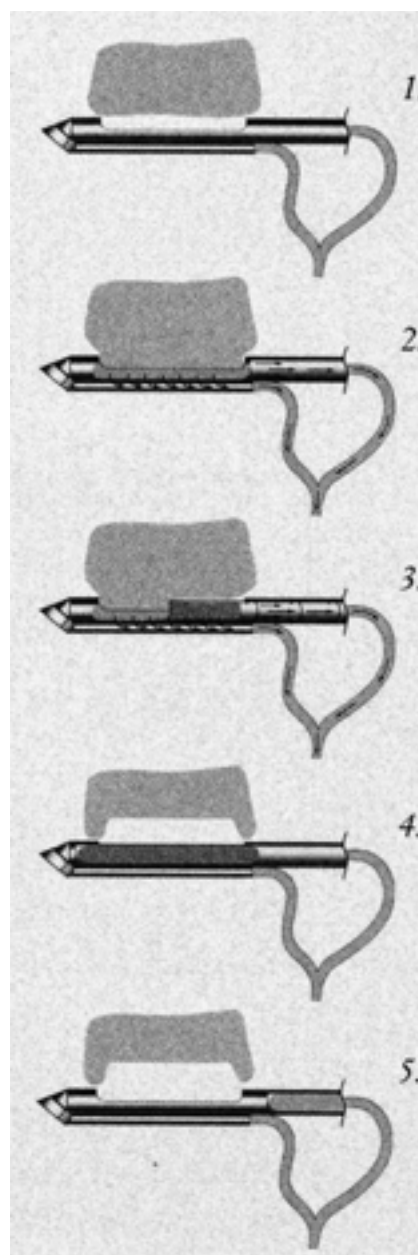


Fig. 1. Mechanism of mammotome. After positioning of the probe below the lesion (1), tissue is vacuum aspirated into the aperture (2) and the rotating cutter is advanced forward, cutting and capturing a specimen (3, 4) and the cutter is withdrawn while the outer probe remains in the breast (5).

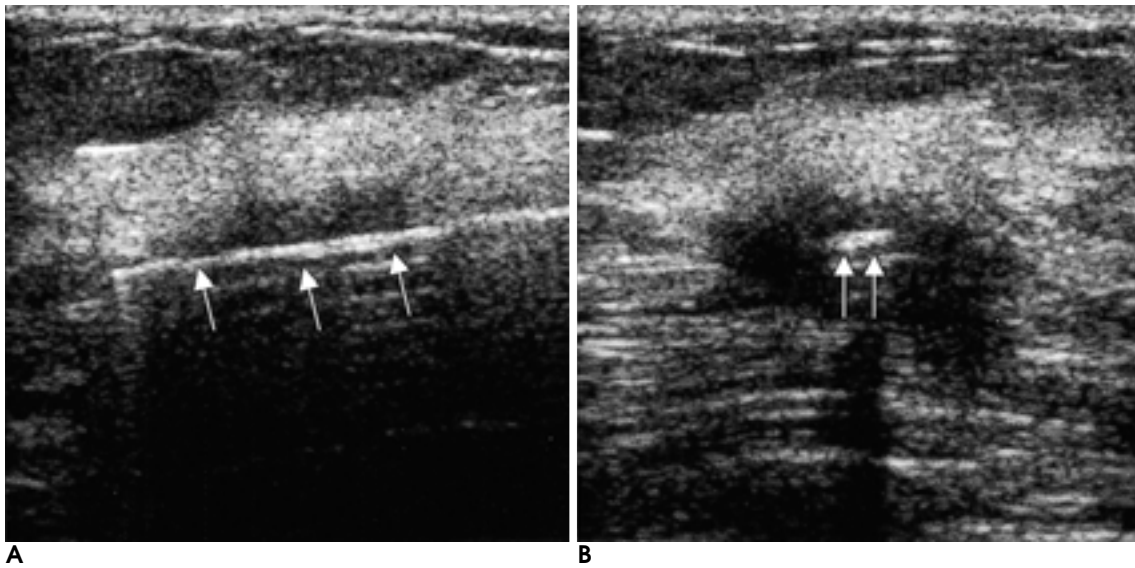


Fig. 2. Post-treatment fibrosis in a 27-year-old woman with previous history of invasive ductal carcinoma. Ultrasonography shows an irregular ill-defined hypoechoic mass in the area of previous operation. Transverse (**A**) and longitudinal (**B**) ultrasonographic scan shows mammotome needle (arrows) in the mass.

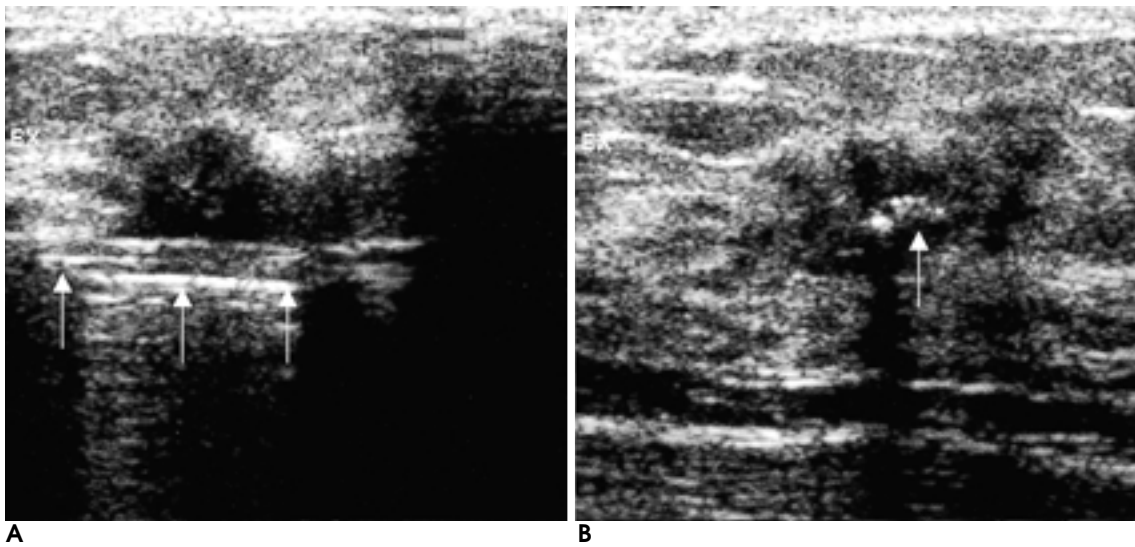


Fig. 3. Invasive ductal carcinoma in a 33-year-old woman with palpable nodule in her left breast. Ultrasonography shows a $1.3 \times 1.1 \times 0.8$ cm irregular ill-defined hypoechoic mass at 11 o'clock area of her left breast. Transverse (**A**) and longitudinal (**B**) ultrasonographic scan shows mammotome needle (arrows) in posterior portion of the mass.

39
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mammotome 5
mammotome
21 1
(91.7%) 1
1
(8.3%).
Mammotome 15
, mammotome
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(Fig. 4).
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가 , (dry tapping), 가 91.7% , 60% (7 - 9) , 가 1 cm 가 0% 60% mammotome 가 (6 - 9). (excursion)가 가 (Fig. 5) 360 가 가 (10 - 13) 가 , (10 (14 - 15). 2) 가 12 가 (Fig. 4). (Fig. 6).

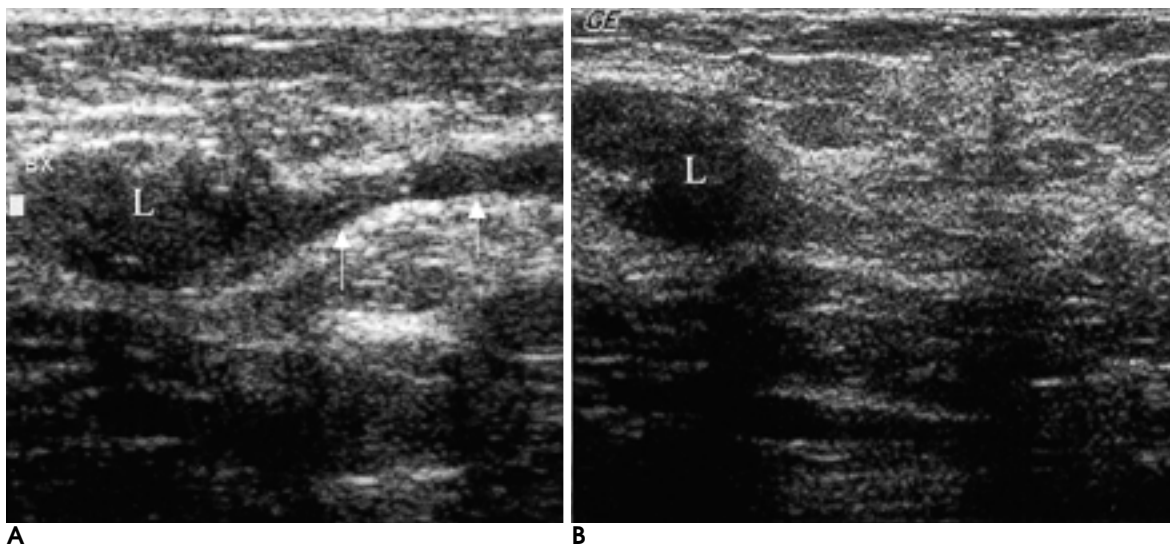
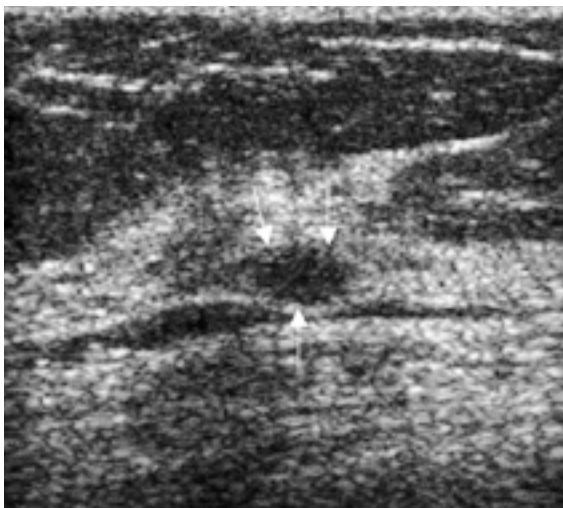
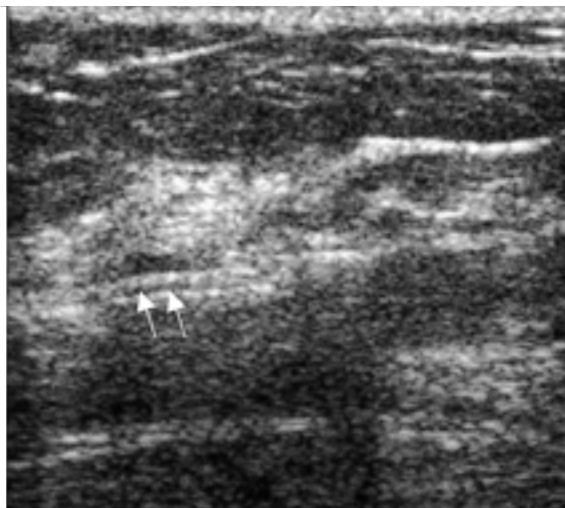


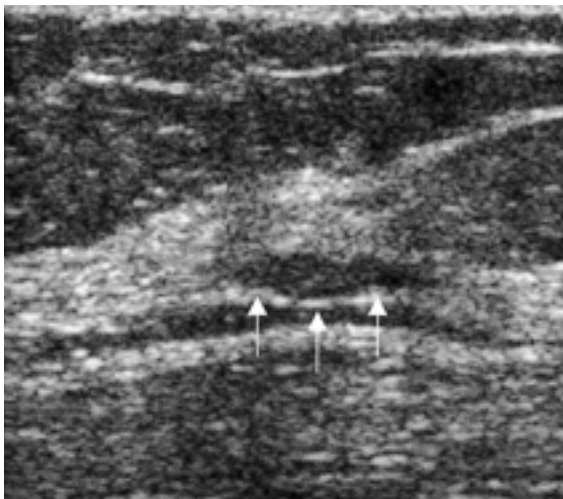
Fig. 4. A 53-year-old woman with fibrosis.
A. A long needle track (arrows) is left from skin to the lesion (L) immediately after the biopsy.
B. Follow-up ultrasonography which is performed 2 months after the previous mammotome shows complete resolution of the post-biopsy track.



A



B



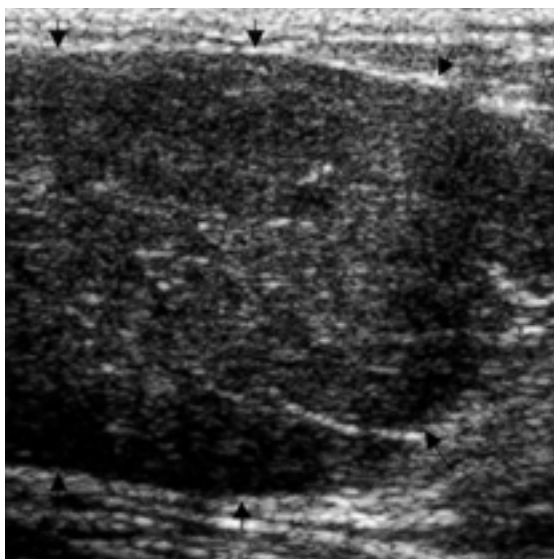
C

Fig. 5. Progressive size reduction of fibrocystic change during the procedure in a 44-year-old woman.

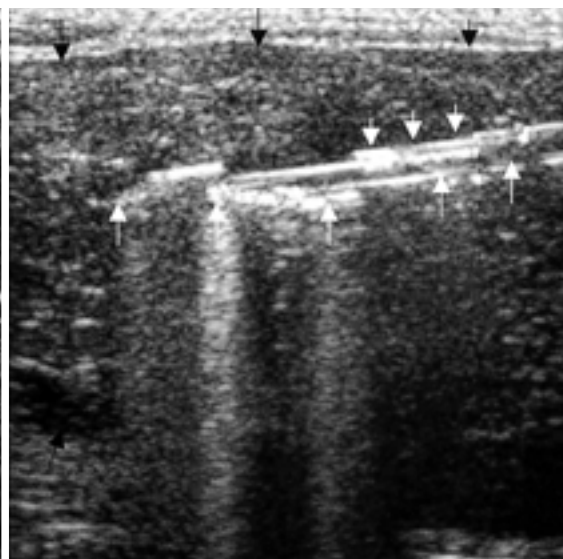
A. A 6 mm hypoechoic lesion (arrows) is noted in 12 o'clock area of the right breast.

B. During mammotome biopsy, the lesion above the needle (arrows) is becoming smaller.

C. After biopsy, the lesion is disappeared leaving a cavity (arrows).



A



B

Fig. 6. Mammotome needle in a fibroadenoma of a 29-year-old woman.

A. Ultrasonography shows a large well-defined hypoechoic mass (black arrows).

B. The rotating needle (short arrows) in the probe (long arrows) within the mass (black arrows) is cutting the tumor through 12 o'clock area.

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mammotome

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Ultrasonography-guided Mammotome Biopsy of Breast Lesions: Early Experience¹

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Purpose: To report some early experiences of ultrasonography-guided mammotome biopsy for solid breast lesions.

Materials and Methods: Sixty seven solid breast lesions in 59 patients aged 25 - 77 (mean, 44.5) years were biopsied under ultrasound-guidance using an 11 gauge mammotome. The size and depth of the lesions, diagnostic accuracy achieved, complications, and merits and demerits of the device were evaluated.

Results: The lesions ranged in size from 0.5 to 8 (mean, 1.6)cm, and at their center the mean depth was 1.4 cm. For every lesion at least seven biopsies were performed, and the mean weight of extracted tissue was 0.44 gm. The lesions were located mainly at the at 12 o'clock area and upper inner quadrant of the left breast (n = 10 for each area); they were also found in other regions for both breasts, including subareolar areas. The histopathologic diagnosis was malignant in 26 lesions and benign in 39, and in one case, atypical ductal hyperplasia was diagnosed. One lesion contained no tumor cells. Twenty-four malignant lesions were surgically excised, and in 21 invasive ductal/lobular carcinomas and one ductal carcinoma *in situ* (DCIS) (91.7%) the initial and subsequent diagnosis correlated. One lesion diagnosed as DCIS and one whose invasiveness could not be initially determined were confirmed as invasive ductal carcinomas (8.3%). Follow-up ultrasonography involved six benign lesions and showed that five of these had become smaller. The complications noted were severe pain in three patients and a moderate amount of bleeding in two, but in all cases good control was achieved by interrupting the procedure or applying compression. The merits of the mammotome biopsy compared with the conventional core biopsy technique are higher diagnostic accuracy due to the larger amount of tissue extracted by suction and the large caliber of the needle, multiple biopsies achieved by one needle insertion, and less possibility of severe complications such as pneumothorax. Dry-tapping was a demerit of the device. Very small lesions could be extracted completely, and this may be a merit for benign lesions and a demerit for malignant lesions. For the latter, clips could be used.

Conclusion: Ultrasonography-guided mammotome biopsy is a very accurate and safe method for the diagnosis of various breast lesions.

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

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