



:
 : 1995 2001 5
 2,460
 , 가 , ROC , 가 T
 N , 가
 : 238(9.7%) 가 , 3.2%(78/2460) ,
 가 0.98%(24/2460) 가
 2.3 가 24 17 ,
 0.69% . Stage 3A ,
 ($p = 0.0001$). 가
 : , 가 (0.69%).
 Stage 3A
 가

가 가 1
 , / 1 6
 가 가 (1). 5 가
 (1-3).

, 가
 (aspartate aminotransferase; 1995 2001 5
 AST) (lactic dehydrogenase; LDH)가 (5 ~12) 2,460
 (2, 4). 17 78 44.8
 가

x-ray(CT), Bone scan, (AST, ALT(alanine amino - transferase))

1-2 6

6

T N , (AST, ALT) 가

가 가 가

T N 가 (cut - off point) 가

Fisher's exact test with permutation method for multiple testing

6 8 2.3

가 78 AST

ALT 15 (19.2%)

가 63 (80.7%)

15 14

가 가 24

가 78 22

56 T stage T1=7, T2=13, T3=2, T4=0, N stage N0=6, N1=4, N2=5, N3=7

가 가 T stage T1=8, T2=32, T3=13, T4=2, =1, N stage N0=9, N1= 18, N2=12, N3= 12, =5

14 , 1 , 15

(cut - off point) , 가 63

42 , 21

가 T N

(Table 2, 3) T N 가 (, p < 0.0001).

가 ROC Stage 3A

2,460 238 (9.7%) (Table 1).

가 238 (100%) 가 141 (59.2%) 가 113 (47.5%)

(, , ,) (32.8%), (18.5%), 117

가 가 가

가 238 (49.2%)

가 78 2,460

3.2%, 가 32.8%

, 54 가

24 2,460 1%

Table 1. Patients with Metastasis in Other Organs After Breast Cancer Surgery (238/2460 = 9.7%)

Organs	No. of patients with metastasis	No. of patients with single metastatic organ
Bone	141	46 (19.3%)
Lung	113	35 (14.7%)
Liver	78	24 (10.1%)
Brain	44	8 (3.4%)
Others*	18	8 (3.4%)
Multiple organs		117 (49.2%)
Total		238

*Ovary, adrenal gland, thyroid gland, spleen, peritoneal seeding, diaphragm

Table 2. T and N Stage of Patients without Metastasis

	T0	T1	T2	T3	T4	Unknown
N0	21	773	505	52	1	1
N1	0	186	227	28	0	1
N2	0	49	108	17	0	0
N3	0	14	66	26	2	0
Unknown	8	54	17	7	0	59
Total	29	1076	923	130	3	61

Numbers in gray cells present patients with equal or more than Stage 3A.

Table 3. T and N Stage of Patients with Metastasis

	T0	T1	T2	T3	T4	Unknown
N0	0	11	38	7	1	0
N1	0	16	34	6	1	0
N2	0	13	20	14	1	0
N3	0	6	35	14	0	0
Unknown	0	3	3	1	1	13
Total	0	49	130	42	4	13

Numbers in gray cells present patients with equal or more than Stage 3A.

가 100%, 85.1%

가 23 CT 가

17

0.69%

(Table 4). 13 (76.5%) Stage 3A 가

가 , Stage 2A,

2B, stage .

1.5% 20%

6% (2, 4-6)

3.2%

(4).

가 Stewart (7)

가 (9, 10).

가 1

가 Kamby (4) 15% 6

가 Hoe (6) 가

70%

가 19% 가 (1, 2, 8, 11).

4.2% 가

가 Clark (8) T N Stage 3A

가 가

가

100% , 0% 가 가

Table 4. Patient with Liver Metastasis Alone (n = 24)

Method of detection	No. of patients with liver metastasis
Abnormal AST/ALT	1
Other imaging modalities (CT/PET)	6
Screening abdominal ultrasonography	17

Stage 3A

53.8%,

88.5%가
82%

가
가

가
CT

가

2,460

17

15 13

Stage 3A

가
가

가

가
, iv)

, ii)

, iii)

가 Stage 3A

i)

가

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The Role and Difficulties of the Use of Routine Screening Abdomen Ultrasound for the Detection of a Liver Metastasis in Postoperative Breast Cancer Patients¹

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Purpose: To evaluate the role and difficulties of the use of routine abdomen ultrasound (US) in postoperative breast cancer patients.

Materials and Methods: We reviewed the clinical records of 2460 patients who received breast cancer surgeries and underwent routine follow-up abdomen US for more than five years. We evaluated the number and clinical conditions of patients with a liver metastasis. We also evaluated the cut-off point of the breast cancer stage where a metastasis was likely to occur using the chi-squared test and receiver operator characteristic (ROC) analysis.

Results: A metastasis developed in 238 patients (9.7%), and the liver was the third most common organ site. However, just 24 (0.98%) patients presented only with a liver metastasis. Among these 24 patients, a metastasis was detected in 17 patients with the use of routine abdomen US. The cut-off point for a metastasis was Stage 3A.

Conclusion: The use of routine screening abdomen ultrasound for the detection of a liver metastasis in postoperative breast cancer patients is not recommended. However, US can be used selectively in patients with clinical symptom or that present with a high stage equal or greater than Stage 3A.

Index words : Breast neoplasms
Neoplasms metastasis
Follow-Up studies
Ultrasonography
Neoplasms recurrent, local

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