

Ductal Carcinoma in Situ (DCIS) and Ductal Carcinoma in Situ with Microinvasion (DCIS-MI) of the Breast

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Purpose: The use of mammographic screening has led to the early detection of breast cancers as well as the increasing incidence of ductal carcinoma in situ (DCIS) and DCIS with microinvasion (MI). The biologic behaviors and management of DCIS and DCIS with MI remain uncertain and controversial. We designed this study to investigate the differences in clinical behavior and association with pathological parameter of both DCIS and DCIS with MI.

Methods: DCIS with MI was defined as DCIS with an invasive area of 1 mm or less in greatest dimension. We analyzed and compared the clinico-pathological features and treatment outcomes of 155 DCIS patients and 73 DCIS with MI patients. Chi-square test, student t-test and Kaplan-Meier method using SPSS 9.0 for MS-windows were used to verify the statistical significance.

Results: Both DCIS with MI and DCIS were most prevalent in women in the fifth decade, and the mean ages of the two groups were 45.0 and 46.8 years old, respectively. The primary tumors of DCIS with MI were more palpable (72.6% vs. 56.8%, P=0.032) upon physical examination and larger (3.1±0.21 cm vs. 2.6±0.12 cm, P=0.037) than those of the DCIS group. The rate of axillary lymph node metastasis was higher in the DCIS with MI group (8.3% vs. 0.7%, P=0.003). The DCIS with MI group was more commonly associated with high nuclear grade (50% vs. 28%, P=0.028).

The DCIS with MI group was also linked with comedo type, although not to a statistically significant degree (67.6% vs. 52.6%, P=0.095). In terms of hormone receptor, there was no significant difference between the groups. There were three systemic metastases in DCIS patients and two DCIS with MI patients (P>0.05). There were no local-regional recurrences in either groups. The 8-year disease-free survival rates of the DCIS and DCIS with MI groups were 98.1% and 95.8% respectively (P>0.05).

Conclusion: DCIS with MI has several clinical-pathological characteristics: more palpable on physical examination, larger in size, higher incidence of lesions with comedo necrosis and high nuclear grade. Examination of the axillary lymph node with less invasive techniques may be necessary in cases with suspicious invasion. Since DCIS with MI is thought to be a transitional disease entity between DCIS and invasive ductal carcinoma and has a metastatic potential, a careful histologic evaluation is necessary for the diagnosis of DCIS. (J Korean Surg Soc 2002;63:193-200)

Key Words: Breast cancer, Ductal carcinoma in situ, Microinvasion

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가	가	DCIS-MI	53	가	86 (55.5%)	가	33
(72.6%)	, DCIS	88 (56.8%)	DCIS-MI	(21.3%)	level I	가	33
Table 1).		가	(P=0.032,	31 (19.5%)	.		
(3)	:				15 (9.7%)		
	DCIS-MI	52	DCIS	114	(DCIS-MI	17.8%, DCIS	19.5%)
	가	가	(DCIS-MI	40.3%, DCIS	, DCIS-MI		
34.2%),			가	DCIS-MI	(69.9% vs 55.5%)		
32.7%, DCIS	29.8%				level I		
가 DCIS-MI	19.2%, DCIS		20.2%	DCIS	(31.0% vs 13.7%)		
				(Table 3).			
	DCIS-MI	4%, DCIS	15.8%	DCIS-MI		가	
	(P=0.373)(Table 2).			가 2	DCIS		
(4)	: DCIS-MI	(51 , 69.9%)		(19.4%)가	가	31	6
(17.8%)			13	DCIS-MI	12	11 (91.7%)	
			level I	, DCIS	31	24 (77.4%)	
	가 9 (12.3%)	1	72	가			
			DCIS				
	DCIS-MI	가					

Table 1. Chief complaint & physical examination

	DCIS	DCIS with MI*	P value
Chief complaint			
Mammo. abnormality	34 (21.9%)	13 (17.8%)	
Palpable mass	34 (21.9%)	49 (69.9%)	
Nipple discharge	31 (20.0%)	9 (12.3%)	
Paget's disease	1 (0.7%)	2 (2.7%)	
Breast pain	2 (1.3%)	0 (0%)	0.176
Physical examination			
Palpable lesion	88 (56.8%)	53 (72.6%)	
Non-palpable lesion	67 (43.2%)	20 (27.4%)	0.032

*MI = microinvasion.

Table 2. Mammographic findings

	DCIS	DCIS with MI	P value
Mass	23 (20.2%)	10 (19.2%)	
Calcification	39 (34.2%)	21 (40.3%)	
Mass and calcification	34 (29.8%)	17 (32.7%)	
No abnormality	18 (15.8%)	4 (7.7%)	0.373

Table 3. Surgical treatment

	DCIS	DCIS with MI	P value
Partial mastectomy	10 (6.5%)	1 (1.4%)	
PM with ALND*	21 (13.5%)	12 (16.4%)	
Simple mastectomy	5 (3.2%)	0 (0%)	
SM with low ALND	33 (21.3%)	9 (12.3%)	
MRM [†]	86 (55.5%)	51 (69.9%)	0.057

*ALND = axillary lymph node dissection; [†]MRM = modified radical mastectomy.

Table 4. Tumor size and axillary lymph node status

	DCIS	DCIS with MI	P value
Tumor size			
≥3.0 cm	47 (30.3%)	37 (50.7%)	
<3.0 cm	108 (69.7%)	36 (49.3%)	0.005
Average	2.60±0.12 cm	3.10±0.21 cm	0.037
Axillary nodal status			
Positive	1 (0.7%)	6 (8.3%)	
Negative	139 (99.3%)	66 (91.7%)	
Unknown	15	1	0.003

2) DCIS 5
가 .
(1) : DCIS- (2) ,
MI 가 3.0 cm 37 :
(50.7%), 3.0 cm 36 (49.3%) , DCIS 3.0
cm 47 (30.3%), 3.0 cm 108 (69.7%)
DCIS-MI 3 cm (P=0.005). DCIS-MI DCIS-MI
2.6±0.12 cm 3.1±0.21 cm DCIS 67.6%
(Table 4). (25/37) DCIS 52.6% (51/97)
, DCIS-MI 1 (P=0.095, Table 5).
72 6 , DCIS-MI
(8.3%) 가 , DCIS 68.1% ,
139 1 (0.7%) 65.2% , DCIS 67.5% 67.1%
(Table 5).
가 가
(P=0.003, Table 4).
DCIS-MI 가 6 3)
3 1 가 3 DCIS-MI 63.4 (5.4~ 198.4)
5 가 가 . DCIS 54.7 (3.4~ 195.1) ,
가 가 1 . DCIS DCIS-MI 2 가 ,
DCIS 3 가 (Table 6).
DCIS-MI 33
23
가 , 33 가
18 가 DCIS-MI 5
DCIS 48
8 ,
, , 가 , 37

Table 5. Histopathological features of the tumors

	DCIS	DCIS with MI	P value
Nuclear grade			
NG I	20/50 (40.0%)	3/26 (11.5%)	
NG II	16/50 (32.0%)	10/26 (38.5%)	
NG III	14/50 (28.0%)	13/26 (50.0%)	0.028
ER positivity	52/77 (67.5%)	32/47 (68.1%)	0.949
PR positivity	51/76 (67.1%)	30/46 (65.2%)	0.831
DCIS type			
Comedo type	51/97 (52.6%)	25/37 (67.6%)	
Non-comedo	40/97 (41.2%)	8/37 (21.6%)	
Mixed	6/97 (6.2%)	4/37 (10.8%)	0.095

Table 6. Summary of recurrent cases

No	Age	Tumor size	LN	Op	Histology	Recurrence
1	33	4 cm	0/12	MRM	DCIS c MI	Systemic (liver)
2	33	1.2 cm	0/12	PM+ALND*	DCIS c MI	Regional (Lt. SCN [†]) → systemic (lung & brain)
3	48	7 cm	0/13	MRM	DCIS	Regional (Lt. SCN [†])
4	37	1.5 cm	0/11	MRM	DCIS	Systemic (lung → liver)
5	70	1 cm	0/7	SM+LALND [‡]	DCIS	Systemic (brain, bone)

*PM+ALND = partial mastectomy with axillary lymph node dissection; [†] SM+LALND = simple mastectomy with low axillary lymph node dissection; [‡] SCN = supraclavicular lymph node.

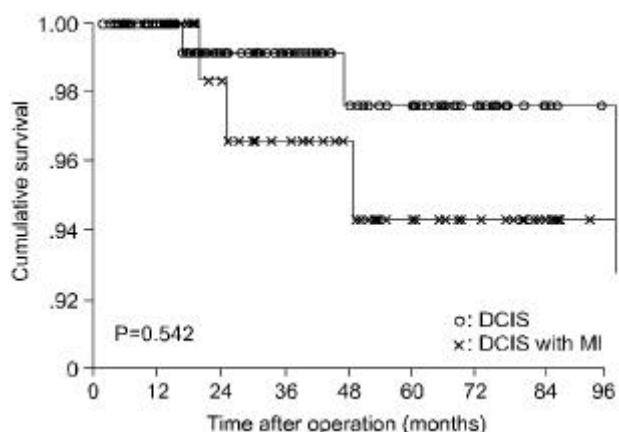


Fig. 2. Disease-free survival probability according to group.

4
1
18
DCIS-MI 3, DCIS 3
DCIS-MI 2
5
2
8
95.8%, DCIS 98.1%
MI 98.6%
DCIS 96.4%, DCIS-MI

1 mm
(9) T1
AJCC staging
가
가
가
가

가 (5,8)
(8,11,12)

가
가
10 2 가
DCIS-MI
50 가 (10,12)
22,25) (13,14), 40
가 DCIS 가
가
(15)

DCIS-MI DCIS
가 72.6% 56.8%
(P=0.032).

Liberman (17) (16)

20 25% (3)
2~7%
1 15.3%
가 (2)
가 가

DCIS 64% DCIS-MI 73.0%
DCIS-MI 32.7%, DCIS 29.8%
가 (P=0.373).

가 (4)
1997 AJCC

가
 가
 가 (metastatic potential)
 가
 가
 가
 가

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