



7  
34  
5  
( , , , , )  
Mammo Diagnost U-M(Philips, Nether-lands)  
(mediolateral oblique view)  
(craniocaudal view)  
(magnification view) 15  
18 가  
가

28 72 48.7  
52 (38-72 ) 45 (28-65 )  
34 26 76%  
88%(7/8) 73%(19/26)  
8 5  
가 3  
26 10  
가 2  
6 , 8 (Table 1).  
8 가 가 6  
가 2 (Fig. 1).  
12 가 4  
가 8 (Fig. 2). 가  
8 4 12  
(Table 2).

1934

Bloodgood(6)

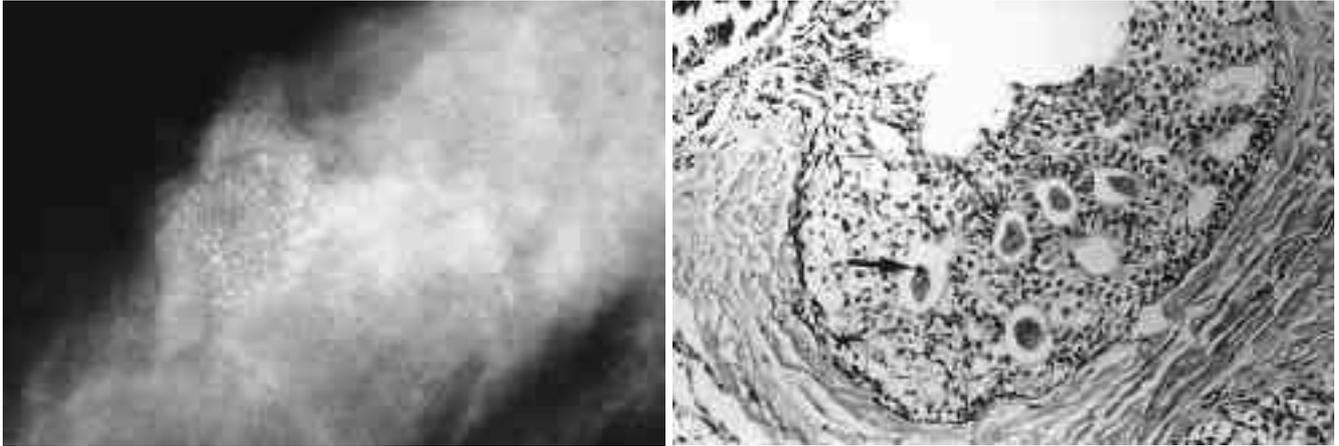
5가 10 ,  
5 , 4 , 4 , 2 , 가  
가 9 가  
가 3  
26 8

Table 1. Mammographic Findings of Ductal Carcinoma in Situ

Mammographic findings	Comedo (n= 8)	Non-comedo (n= 26)	Total (n= 34)
Microcalcifications only	5	10	15
Mass with microcalcifications	3	2	5
Mass or asymmetrical density only	0	6	6
No abnormal finding	0	8	8



Fig. 1. Comedo ductal carcinoma in situ.  
A. Mammogram shows extensive casting shaped calcifications in a ductal distribution.  
B. Microscopically, intraductal carcinoma shows solid growth pattern with central necrosis and calcifications (arrow). (HE stain, × 40)



**A**  
**B**  
 Fig. 2. Noncomedo Ductal Carcinoma in Situ.  
 A. Mammogram shows a cluster of predominantly granular calcifications.  
 B. Microscopically, intraductal carcinoma shows cribriform growth pattern with inspissated secretory materials and calcifications (arrow) within duct-like lumina. (HE stain, × 100)

Table 2. Characteristics of Microcalcification of Ductal Carcinoma in Situ on Mammograms

Mammographic findings	Comedo (n= 8)	Non-comedo (n= 12)	Total (n= 20)
Shape			
Predominantly casting	6	4	10
Predominantly granular	2	8	10
Multifocality	4	0	4

22-32% (7-9).  
 90% (10),

(4).  
 5가

가 가 . 가

가

(fibrovascular cores)

(1, 2).  
 2가

가

가 (3).  
 (aneuploidy),  
 , c-erb B2  
 , P53  
 (12, 13).  
 , (14-16).  
 (calcium hydroxyapatite)  
 (tricalcium phosphate)  
 (crystalline material)  
 (4). 가  
 가  
 , 가  
 가  
 가  
 가  
 가  
 가  
 가  
 (11).  
 Stomper Connolly(17) 66



## **Mammographic Findings Corresponding to Histologic Subtypes of Ductal Carcinoma in Situ<sup>1</sup>**

Jay Hong Ahn, M.D., Won Kyu Park, M.D., Mi Soo Hwang, M.D., Sang Kwon Lee, M.D.<sup>2</sup>,  
Bok Hwan Park, M.D., Dong Sug Kim, M.D.<sup>3</sup>

<sup>1</sup>*Department of Diagnostic Radiology, School of Medicine, Yeungnam University*

<sup>2</sup>*Department of Diagnostic Radiology, School of Medicine, Kyungpook National University*

<sup>3</sup>*Departement of Pathologic anatomy, School of Medicine, Yeungnam University*

**Purpose :** To compare the mammographic features and histologic subtypes of ductal carcinoma in situ(DCIS) of the breast.

**Materials and Methods :** Mammograms of 34 patients with DCIS of the breast detected between January 1992 and November 1998 were retrospectively analyzed. Histologic subtypes were classified as either comedo or noncomedo. Mammographic findings were classified in one of four ways : microcalcification only, microcalcification with mass, mass or asymmetrical density only, or normal. Microcalcifications was classified as either predominantly casting or granular. We also determined whether microcalcification was multifocal.

**Results :** Histologic examination revealed the comedo type in eight patients and the noncomedo type in 26. Among the eight comedo-type cases, mammography demonstrated microcalcification only in five and microcalcification with mass in three. Among 26 noncomedo-type cases, microcalcifications only was seen in ten, microcalcification with mass in two, mass or asymmetrical density only in six, and normal features in eight. Six of the comedo type were predominantly casting and two were predominantly granular. Predominantly casting calcification was present in four of 12 cases of the noncomedo type and predominatly granular was in eight. Multifocality was seen in four comedo-type cases, but in none of those that were of the noncomedo type.

**Conclusion :** We conclude that the comedo subtype of DCIS of the breast is more likely than the noncomedo subtype to be accompanied by microcalcification of the predominantly casting type. Multifocally located microcalcification is a more frequent feature of the comedo subtype than of the noncomedo subtype.

**Index words :** Breast neoplasms, radiography  
Mammography, calcification

Address reprint requests to : Jay Hong Ahn, M.D., Department of Diagnostic Radiology School of Medicine, Yeungnam University  
#317-1 Daemyungdong, Namku, Taegu 705-035, Korea.  
Tel. 82-53-620-3030 Fax. 82-53-653-5484