:

.

: 1996 1 1997 1
(25%) 42 (43 ,
A) 1997 2 1998 2
26 (27 , B) .
, T, N .

.

: A 43 42 (97.7%),
B 27 26 (96.3%). T A T2
6 5 , T3 31 28 , T4 5 2 (83%), B
T2 3 3 , T3 21 17 , T4 2 1 (81%).
N A 64% (27/42), B 69% (18/26) .

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1996 1
1997 1 (sodium
diatrizoate and meglumine diatrizoate, Schering AG, Germany)
42 (43
, A) 1997 2 1998 2
26 (27
, B) . A 59.9
(: 24 - 77 , 24 , 18), B
60.7 (: 39 - 86, 13 , 13) .
A 5-10
25ml 1000ml
600ml-900ml
, B 1 35ml
15-20
530-700ml .
(iodine 300mg/ml, Ultravist 300,
Schering, Seoul, Korea) 120ml 2-2.5ml ,

:

40

3 . Somatom
Plus-S (Siemens Medical System, Erlagen Germany)
20mm/sec
10mm/sec 10mm
.

2
.

, X-

X-
. ,
T, N
.

T
T1( ) T2( ) (Fig.
1). T3,
T4 .
1cm
1cm 3
1 .
1-3
N1 , 4 N2 .
1997 American Joint Committee on
Cancer (5th edition) TNM system
.

T N
A B Fisher's
exact test .
kappa index .

A B

A B 22
(52.4%), 12 (46.2%)
(Table 1). X- A 11 (26.2%),
B 14 (53.8%)
. A 1 (hepatic flexure of the
colon) (splenic flexure of the colon) 2
2
, B 1 S 2
2 . A
1 (97.7%) B
1 , S

Table 1. **Tracing of the Distended Bowel Loop**

	Group A	Group B
Cecum	12 (28.6%)	9 (34.6%)
Ascending colon	10 (23.8%)	3 (11.5%)
Hepatic flexure of the colon	4 (9.5%)	8 (30.8%)
Transverse colon	7 (16.7%)	3 (11.5%)
Splenic flexure of the colon	3 (7.1%)	0 (0%)
Descending colon	2 (4.8%)	3 (11.5%)
Sigmoid colon	2 (4.8%)	0 (0%)
Rectum	2 (4.8%)	0 (0%)
	42 case	26 case
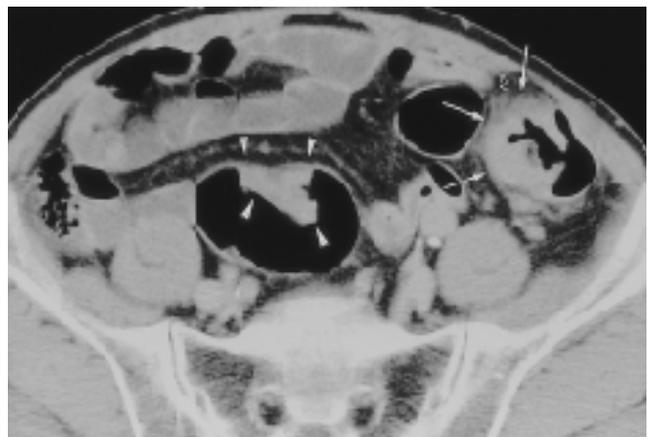
Fig. 2. **Air enema CT scan.** Synchronous colon cancer with different stage is well visualized. CT scan shows circumferentially thickened, lobulated mass at descending colon(arrows). Soft tissue densities are seen in adjacent pericolic fat suggesting T3(open arrow). Pathologic examination revealed tumor invasion into pericolic fat(T3). Another sharply defined polypoid mass is identified at sigmoid colon(arrowheads). It is sharply defined without peritumoral infiltration suggesting T2. Pathologic examination revealed tumor invasion limited into muscularis propria(T2).

Fig. 1. **The gastrografin enema CT scan shows sharply defined polypoid mass at left anterior wall of rectum(arrows). We can not differentiate between T1 and T2 on CT scan. Pathologic examination reveals tumor confined to mucosa and submucosa (T1).**

1cm (
96.3%) .

T A T2 6 5 , T3 31
28 , T4 5 2 (83%)
(Table 2), B T2 3 3 , T3 21 17 ,
T4 2 1 (81%) (Table
3) (Fig. 2-4) .

kappa index
T A kappa index 0.52
B 0.43
. N A 64% (27/42) , B
69% (18/26) kappa index 0.41, 0.43

(Table 4, 5) (Fig. 5, 6) . T
N A B
(P= 0.4807, Fisher's exact test) .

Table 2. T Staging in Group A

*Path. CT	T1	T2	T3	T4	Total
T1		1			1
T2		4	0		4
T3		1	28	3	32
T4			3	2	5
Total		6	31	5	42

*Path. : pathologic stage

Table 3. T Staging in Group B

*Path. CT	T1	T2	T3	T4	Total
T1		1			1
T2		2	2		4
T3			17	1	18
T4			2	1	3
Total		3	21	2	26

* Path.: pathologic stage

Table 4. N Staging in Group A

*Path. CT	N0	N1	N2	Total
N0	16	4	2	22
N1	3	5	1	9
N2	2	3	6	11
Total	21	12	9	42

* Path. : pathologic stage

Table 5. N Staging in Group B

*Path. CT	N0	N1	N2	Total
N0	12	5		17
N1	1	3		4
N2	1	1	3	5
Total	14	9	3	26

* Path. : pathologic stage
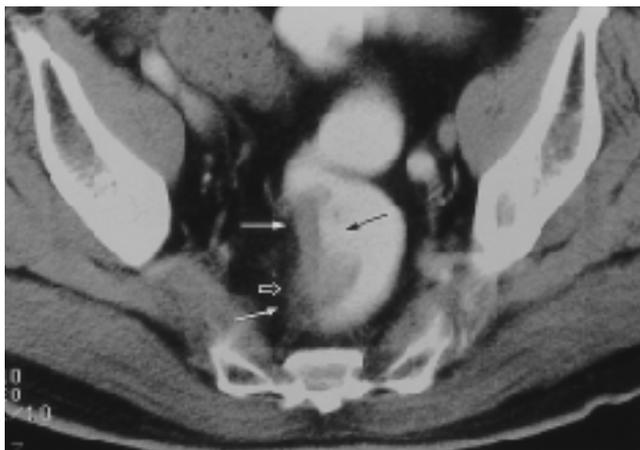
Fig. 3. The gastrografin enema CT scan shows ulcerofungating mass of right lateral sigmoid colonic wall(arrows) with subtle soft tissue strands extending into the pericolic fat(open arrow) suggesting T3. Pathologic examination revealed tumor invasion into pericolic fat(T3).
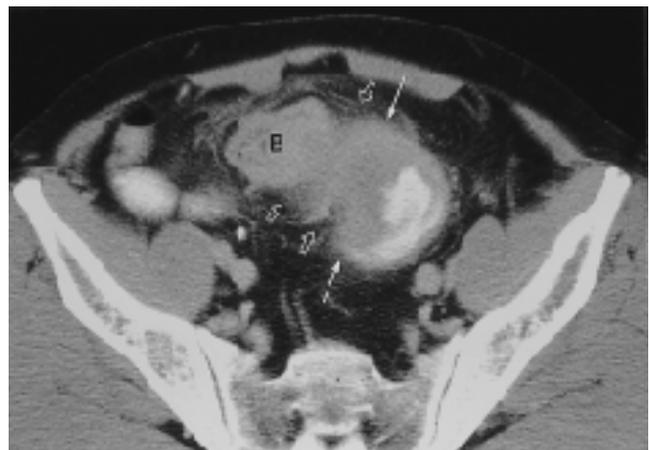

Fig. 4. The gastrografin enema CT scan shows a eccentrically thickened anterior right lateral sigmoid colonic wall(arrows) with direct invasion into adjacent bladder suggesting T4. A thickening of the bladder wall and perivesical infiltration(open arrows) is seen. Pathologic examination revealed tumor invasion into the pericolic fat and adhered paravesical fat tissue (T4).(B= Bladder)
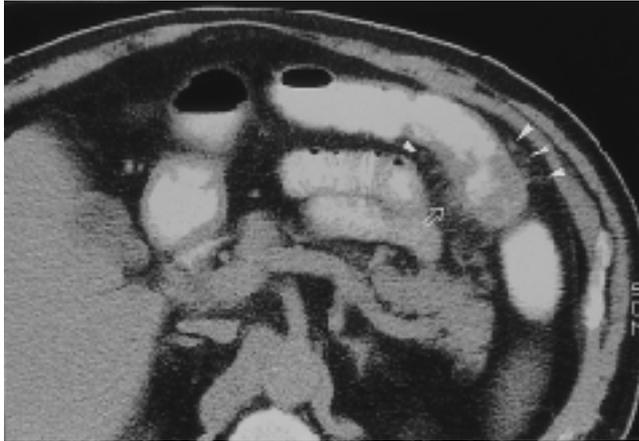
Fig. 5. The gastrografin enema CT scan shows irregular wall thickening at the splenic flexure of the colon and pericolic infiltration(open arrow). Three clustered nodes(arrowheads), each less than 1cm, are seen(N1). Pathologic examination revealed that one metastatic lymph node of 12 dissected pericoloc lymph nodes(N1).

Fig. 6. Air enema CT scan shows irregular sigmoid colonic wall thickening(arrows). Multiple enlarged lymph nodes(arrowheads) larger than 1cm are identified(N2). Pathologic study revelaed five metastatic lymph nodes of 18 dissected pericolic lymph nodes (N2).

CT

.   (3.7)   (2)

                                                    (8)   . Megibow
                                                (8)

                2-3mm   4-6mm   (negative
      6mm   (3-6).   contrast media)

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                                                                                    S
                                                                                  (8,9) ,

                                                                          S
                        .   .

                                                                                            X-
                        (10)   X-

            .   Balthazar   .

84%

95%, 68%   (3, 12).

T   58%, N   68%   .   N

(11).   1cm   3

Tompson (12)   1

, ,   ,   T

,   .

.   .

T2 T3   ,   T

(T4)   ,   N   .

(3

.   T1 T2

T1 T2   T2

.   .

(mucocele)   T3   T4   .

.   T   N

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2-3

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1cm

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Comparative Study between Gastrografin Enema and Air Enema CT: Evaluation of the Diagnostic Accuracy of Lesion Detection and Staging of Colorectal Cancer[1]

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Purpose: We compared the use of diluted gastrografin enema- and air enema CT for the evaluation of the diagnostic accuracy of preoperative lesion detection and the staging of colorectal carcinoma.

Materials and Methods: Forty-two patients (43 lesions) with colorectal carcinoma, diagnosed by barium enema and/or colonoscopy, underwent preoperative diluted (2.5%) gastrografin enema CT, and in another 26 patients (27 lesions) with colorectal carcinoma, air enema CT was performed. The presence or absence of lesion, its spread (T), and peritumoral lymph node (N) were analyzed. All patients underwent surgery and pathologic confirmation was obtained.

Results: Gastrografin enema CT and air enema CT demonstrated the primary tumor in 97.7% (42 of 43) and 96.3% of cases (26 of 27), respectively. A comparison of gastrografin enema CT and the pathologic results showed that the disease was correctly staged as T2 in five of six cases, as T3 in 28 of 31, and as T4 in two of five. Using air enema CT, the disease was correctly staged as T2 in three of three cases, as T3 in 17 of 21, and as T4 in one of two. Overall, carcinoma was correctly staged by gastrografin enema CT in 83% of cases (35 of 42) and by air enema CT in 81% (21 of 26). Nodal involvement was accurately detected in 64% of cases (27 of 42) using gastrografin enema CT and in 69% (18 of 26) using air enema CT.

Conclusions: These findings suggest that the use of gastrografin enema or air enema CT does not significantly affect the diagnostic outcome.

Index words : Colon, CT
Colon, neoplasms
Contrast media, comparative studies

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