

CT

1

2 . 3 .

CT
 : 1991 3 1998 5 262
 26
 40 CT . CT , ,
 , , / , ,
 TNM : , , S
 : , 가 , 12% (3/26)
 (p < 0.01). /
 (p < 0.01), / 가 (p < 0.01). CT
 (p < 0.05). TNM
 : 가 , CT ,

(signet ring cell carcinoma)
 (1).
 mucin)

(extracellular CT
 TNM

50-80%

(2).

가 ,

가 (3-7).

1991 3 1998 5 26 262

40

CT

CT

가 CT
 (8-10).

26 11 , 15
 23-83 61.8 .
 40 23 , 17

CT

33-75 57.4 .
 (colon) (rectum)

CT Somatom plus-Drg (Siemens, Erlangen, Germany)
 HiSpeed Advantage system (GE Medical system,
 Milwaukee, Wis, U.S.A.)

1
 2
 3

(Bari-um sulfate;
E-Z cat; E-Z-Em, Westbury, NY, USA) 1
600ml, 300mL

500ml
(iopamidol, Iopamiro 300, Bracco, Milan, Italy) 120-150ml
(Medrad, Pittsburg, Pa, U.S.A.) 2.5-
3.0ml/sec 65-70sec

10mm
13 (50%) 28 (60%)

CT 가
CT 가
CT (lumen)
(circumferential),
(eccentric)

(polypoid),
(infiltrative)
(Fig. 1).
(thickness) (length)

CT collimation

TNM

: CT

CT
Fisher's Exact Test

CT 13 (50%), 8 (31%), 2 (7.7%), 1 (4%)
24 (60%), 9 (23%), 5 (13%), 1 (2.5%)
(p > 0.05).
3 (12%)
(Fig 2)
(p < 0.01).
16 (62%), 10 (38%)
35 (87.5%), 5 (12.5%) (p < 0.05),
19 (73%), 7 (27%)
2 (5%), 38 (95%) (p < 0.01).
10 (38%) (Fig 2,3), 9 (35%), 7 (27%)
35 (87.5%), 3 (7.5%),
2 (5%) (p < 0.05).
3.5 ± 1.66cm (1 - 7cm), 6.0 ± 1.83cm (3 - 10cm)
± 0.52cm (0.5 - 3cm), 5.2 ± 1.53cm (3 - 10cm)
0.24, 0.24 ± 0.11 (p < 0.01).
CT 22 (85%) (Fig. 2-4), 2 (8%),
23 (57.5%), 17 (42.5%) (p < 0.05).

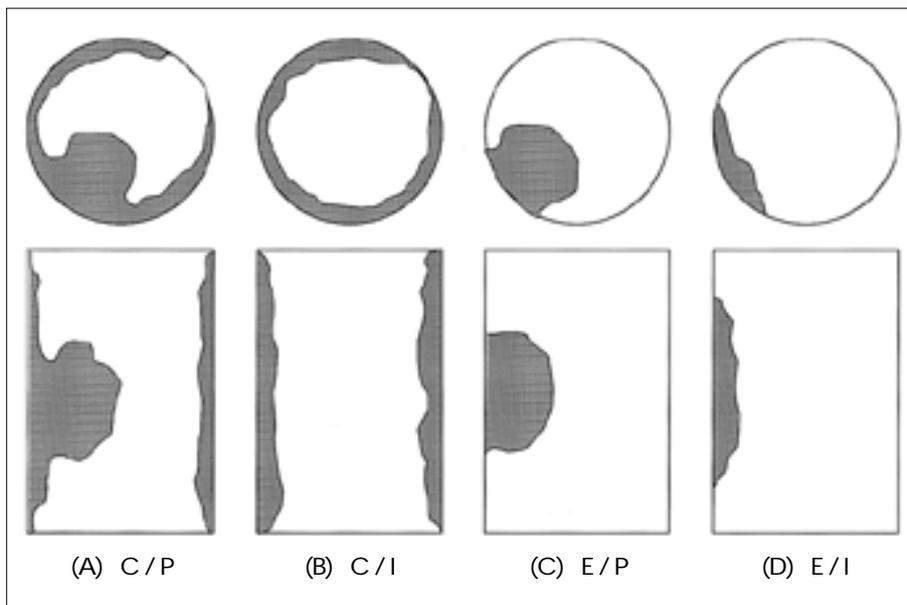


Fig. 1. Diagram of tumoral shape
A. C/P indicates that a tumor shows circumferential and polypoid growth pattern.
B. C/I indicates that a tumor shows circumferential and infiltrative growth pattern.
C. E/P indicates that a tumor shows eccentric and polypoid growth pattern.
D. E/I indicates that a tumor shows eccentric and infiltrative growth pattern.

22 (85%) (Fig. 2-4),
 4 (15%), 14
 (35%), 26 (65%) (p < 0.01).

TNM
 TNM
 가 (p > 0.05) (Table 1). 2
 7 2 (31)
 가 7 (27%) (5 , 1 , 가
 1) , 7 (18%) (4 , 1 , 2)
 가 .
 5-19 (10 , 12) ,
 8 -6 (23 , 40)

Table 1. TNM Stage in Patients with Colorectal Mucinous Adeno-carcinoma and Non-mucinous Adenocarcinoma on Surgical Specimen

		MC n= 26 (%)	NMC n= 40 (%)	p value
T	T2	-	1 (2.5)	> 0.05
	T3	24 (92)	38 (95)	
	T4	2 (8)	1 (2.5)	
N	N0	17 (65)	20 (50)	> 0.05
	N1	6 (23)	5 (37.5)	
	N2	3 (12)	5 (12.5)	
M	M0	25 (96)	34 (85)	> 0.05
	M1	1 (4)	6 (15)	

MC, Mucinous adenocarcinoma; NMC, Non-mucinous adenocarcinoma

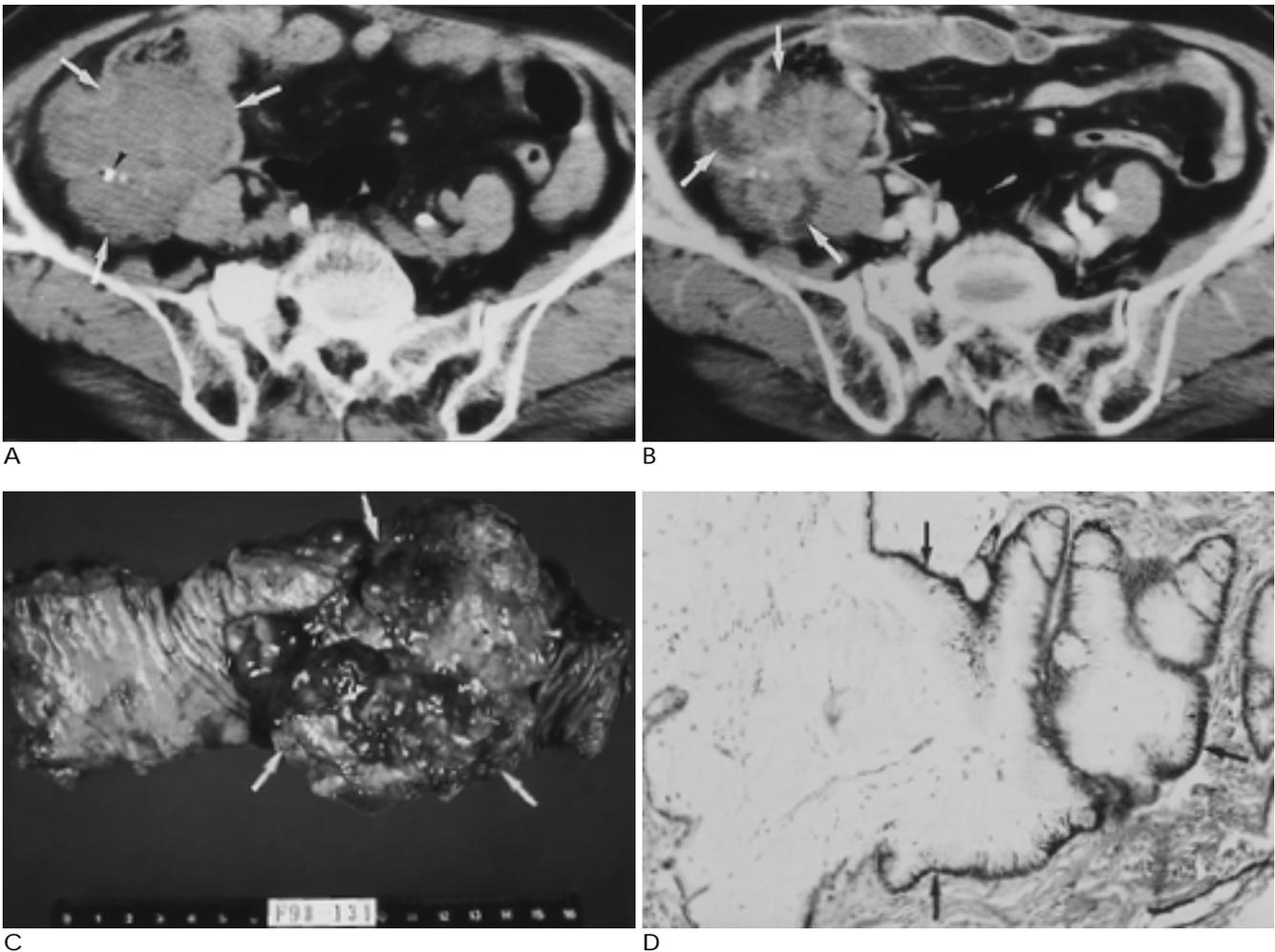


Fig. 2. A 78-year-old woman with mucinous carcinoma of eccentric/polypoid shape and thickness to length ratio 0.7.
 A. Unenhanced CT shows a lobulated hypoattenuating mass (arrows) containing punctate calcifications (arrowhead) in the cecum.
 B. Contrast-enhanced CT shows heterogeneous enhancing mass with irregular hypoattenuated portion (arrows) within the lesion.
 C. Photography of the resected specimen shows a lobulated polypoid mass (arrows) with yellowish mucin pool (arrowheads) at the surface of the mass.
 D. Photomicrograph of resected specimen shows mucin secreting adenocarcinoma cells within massive mucin pool (arrows) (H & E stain, × 100).



Fig. 3. A 67-year-old woman with mucinous carcinoma. Contrast-enhanced CT shows intraluminal eccentric and polypoid mass (arrows) with heterogeneous hypoattenuation in the rectum.

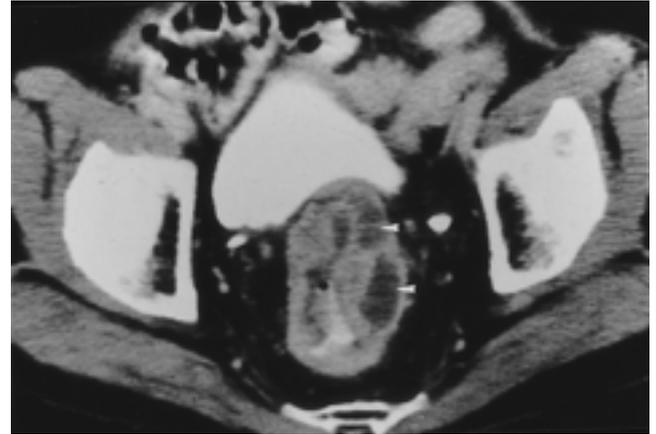


Fig. 4. A 61-year-old man with mucinous carcinoma of circumferential/polypoid shape. Contrast-enhanced CT shows circumferential wall thickening of the rectum with heterogeneous enhancing mass containing multifocal hypoattenuated mucin pool (arrowheads).

Table 2. Incidence of Tumor Recurrence according to the Duke Classification of Tumor staging in Colorectal Mucinous and Non-mucinous Adenocarcinoma during Follow-up

Mucinous Adenocarcinoma		
Duke Classification	Patients number	Recurrence (%)
A	-	-
B	15	4 (27)
C	10	2 (20)
D	1	1 (100)
Total	26	7 (27)
Non-mucinous Adenocarcinoma		
Duke Classification	Patients number	Recurrence (%)
A	-	-
B	18	2 (11)
C	15	4 (27)
D	6	1 (17)
Total	40	7 (17)

(4,5,7), 1985 Umpleby (3)
 (60-80%) (80%)
 50%
 (1,10,14)
 10-15%
 , 40 가 (1,8,9,11). 20%
 40% 가 (1-6),
 (11-13). 가 15 (58%)
 (3,5,11-13) 가 (3,5-13),
 가 8 (31%) 9
 (23%)
 CT /

Parham(15) 1923

가

(2,3,5,10,11,13)

가

1976 WHO

(extracellular mucin)

가

50-70%

(dystropic calcification)

가 가 (ontogenic calcification) (14).
(1-7,10-13).

, 5
(1-5,10,11,14). Sasaki (4)
75% 75%
75%
가 Duke's 가
5
가
가
(1,5,8), 가
(10,11) . Earls (8)
Umpleby (3)
containing peri-interstitial tissue)
tance) (surgical margin) 가
가
5 - 19 , 8 - 6
TNM
가
CT

가

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CT Findings and Clinical Characteristics of Colorectal Mucinous Adenocarcinoma¹

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Purpose: To establish the CT findings and clinical characteristics of colorectal mucinous adenocarcinoma.

Materials and Methods: The CT features of 26 surgically proven cases of colorectal mucinous adenocarcinoma were reviewed. The subjects were selected from among 262 patients with colorectal cancer, of whom 40 with non-mucinous adenocarcinoma were included as a control group. Contrast-enhanced CT images were analyzed for tumor location, the presence or absence of tumoral calcification, tumor shape (circumferential or eccentric, polypoid or infiltrative), tumor thickness-to-length ratio, and attenuation and homogeneity. In each group, the TNM stage of pathologic specimens was compared. During follow-up, the incidence of recurrence, and outcome, were also compared.

Results: CT images of mucinous adenocarcinoma revealed intratumoral calcification in three patients (12%, $p < 0.01$). Tumors were eccentric and polypoid-shaped, with a high tumoral thickness/length ratio ($p < 0.01$). On contrast-enhanced images, most were seen as a heterogeneous hypoattenuated mass. No differences in TNM stage were found in surgical specimens. In patients with mucinous adenocarcinoma, recurrence during the early follow-up period is more common than in patients with non-mucinous cancer.

Conclusion: Contrast-enhanced CT reveals mucinous adenocarcinoma as an eccentric polypoid mass with heterogeneous hypoattenuation. In patients with mucinous colorectal cancer, careful follow-up is required because tumors tend to recur early in the follow-up period.

Index words : Colon, CT
Colon, neoplasms
Rectum, CT
Rectum, neoplasms

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