Mucinous Carcinoma of the Colon and Rectum in Phramongkutklao Hospital

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Objective: *The objective of the present study was to compare the clinicopathological significance between mucinous carcinoma and nonmucinous adenocarcinoma.*
Material and Method: *Patients with carcinoma of the colon and rectum who had the first operation in the Department of Surgery, Phramongkutklao Hospital between 1999 and 2004 were included in the present study. Patients were divided into two groups: nonmucinous group and mucinous group. Clinicopathological data of these patients were recorded.*
Results: *Four hundred and nine patients were included in the present study. Forty four (10.7%) were mucinous carcinoma. There was no difference in sex distribution, location of tumors, depth of invasion, lymph node involvement, distant metastasis, TNM stage, lymphatic invasion, vascular invasion, perineural invasion, peritoneal seeding, curability, positive microscopic margin, and adhesion to the surrounding structure.*
Conclusion: *Colorectal mucinous carcinoma had no clinicopathological difference from nonmucinous adenocarcinoma of colon and rectum.*

Keywords: *Mucinous carcinoma, Adenocarcinoma, Colon, Rectum*

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Colorectal mucinous carcinoma was suggested to have different etiology from other histiologic types of colorectal cancer. Mucin was important in pathogenesis of mucinous carcinoma. There was a difference in the incidence of mucinous carcinoma between Western and Asian populations (10-20% in Western series[1-3] and 4.0-4.2% in Asia[4,5]).

Some studies have reported that mucinous carcinoma was found more in men[6,7], younger age[4,5,8], proximal colon[3,4,9], and advanced stage[2,4,5,9]. However, some studies showed no significant difference between the two[7,10].

The objective of the present study was to define and compare the clinicopathological significance of mucinous carcinoma and nonmucinous adenocarcinoma.

Material and Method

Patients with carcinoma of the colon and rectum who had the first operation in the Department of Surgery, Phramongkutklao Hospital between 1999 and 2004 were included in the present study. Patients were divided into two groups: nonmucinous group and mucinous group. Clinicopathological data of these patients were recorded.

Patient gender, age, tumor location, depth of invasion, organ metastasis, stage at operation, adhesion at operation, and surgical curability were recorded from each patient. Tumors were staged according to the TNM system. All resected specimens were examined by our hospital pathologists. Tumors were included as mucinous carcinoma only if the primary tumor displayed a mucinous histologic pattern more than 50% of the section. Curative resection was defined as complete, one-step removal of all gross tumor with negative surgical margins in microscopic examination.

Patients with mucinous carcinoma were compared with patients with nonmucinous differentiated adenocarcinoma for difference in the clinicopathological features. The chi-square test was used in SPSS 10.0 computer program.A p-value of less than 0.05 was considered statistically significant.

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Results

438 patients had the first surgery for carcinoma of the colon and rectum between 1999-2004. Twenty nine patients were unresectable and excluded from the present study because there was no final pathological report. Therefore, four hundred and nine patients were included in the present study. Forty four patients (10.7%) were in the mucinous group with a mean age of 60.3 years (range 30-86 years). Three hundred and sixty five patients (89.2%)were in the nonmucinous group with a mean age of 63.7 years (range 21-88 years).

Table 1 shows no difference in sex distribution, location of tumors. Table 2 shows no difference in the depth of invasion, lymph node involvement, distant metastasis, TNM stage, lymphatic invasion, vascular invasion, perineural invasion, peritoneal seeding, curability, positive microscopic margin, and adhesion to surrounding structure. Moreover, Males had the same chance to have mucinous carcinoma as females ($p = 0.100$), and right colon had the same chance to have mucinous carcinoma as the left colon ($p = 0.057$).

Discussion

Previous studies have shown conflicting results on the clinicopathological features of mucinous carcinoma of the colon and rectum. Du et al[4] found that mucinous carcinoma was found in a younger age, advanced stage, proximal colon, and worse 5-year survival rate in the rectum. Symonds et al[1] found that mucinous carcinoma was more common in the rectum and had a poorer 5-year survival. Kanemitsu et al[5] found that mucinous carcinoma was found in younger age and had more lymph node involvement, more peritoneal dissemination, more advanced stage, lower curability, and lower 5-year survival rate.

The present study found no clinicopathological difference between mucinous carcinoma and nonmucinous adenocarcinoma. Sasaki et al[7] found that the worse clinicopathological significance was in mucinous carcinoma which had an amount of mucus more than 75%. Mucinous carcinoma with less than 75% mucus was similar to nonmucinous adenocarcinoma. Purdie et al[10] showed that mucinous carcinoma with more than 50% mucin showed no clinicopathological difference when compared to nonmucinous adenocarcinoma, except DNA ploidy.

The greater aggressiveness of mucinous carcinoma was suggested by the amount of mucin which was important in the pathogenesis. Worse clinicopathological significance might be found in mucinous carcinoma that had the amount of mucin more than 75%.

Conclusion

Colorectal mucinous carcinoma had different features from adenocarcinoma of the colon and rectum but had no clinicopathological difference.

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Table 1. Comparison between mucinous carcinoma and nonmucinous adenocarcinoma of colon and rectum (sex and location of tumors)

	Nonmucinous (365 patients)	Mucinous (44 patients)	p-value
Sex			p = 0.083
Male	210 (57.5%)	31 (70.5%)	
Female	155 (42.5%)	13 (29.5%)	
Location of tumor			p = 0.058
Ascending	46 (12.6%)	11 (25.0%)	
Hepatic flexure	15 (4.1%)	4 (9.1%)	
Transverse	17 (4.6%)	0	
Splenic flexure	10 (2.7%)	1 (2.3%)	
Descending	16 (4.4%)	2 (4.5%)	
Sigmoid	148 (40.6%)	10 (22.7%)	
Rectum	113 (31.0%)	16 (36.4%)	

Table 2. Comparison between mucinous carcinoma and nonmucinous adenocarcinoma of colon and rectum (clinicopathological features)

	Nonmucinous (365 patients)	Mucinous (44 patients)	p-value
Tumor			p = 0.098
T1	21 (5.8%)	0	
T2	40 (10.9%)	2 (4.6%)	
T3	259 (70.9%)	32 (72.7%)	
T4	45 (12.4%)	10 (22.7%)	
Nodes			p = 0.167
N0	193 (52.9%)	17 (38.6%)	
N1	108 (29.6%)	17 (38.6%)	
N2	64 (17.5%)	10 (22.8%)	
Metastasis			p = 0.469
M0	300 (82.2%)	38 (86.4%)	
M1	65 (17.8%)	6 (13.6%)	
Staging			p = 0.120
1	45 (12.3%)	1 (2.3%)	
2	117 (32.1%)	15 (34.1%)	
3	138 (37.8%)	22 (50%)	
4	65 (17.8%)	6 (13.6%)	
Invasion			
Lymphatic	102 (27.9%)	10 (22.7%)	p = 0.441
Vascular	65 (17.8%)	4 (9.1%)	p = 0.131
Perineural	33 (9.1%)	2 (4.5%)	p = 0.298
Seeding	18 (4.9%)	3 (6.8%)	p = 0.563
Curability			p = 0.328
Curative	313 (85.7%)	40 (90.9%)	
Palliative	52 (14.3%)	4 (9.1%)	
Positive microscopic margin	12 (3.3%)	1 (2.3%)	p = 0.706
Adhesion			
Urinary	24 (6.5%)	3 (6.8%)	p = 0.648
Gynecological	15 (4.1%)	2 (4.5%)	p = 0.884
Small bowel	12 (3.3%)	1 (2.3%)	p = 0.706
Pelvis	11 (3.1%)	1 (2.3%)	p = 0.774

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มะเร็งลำไส้ใหญ่ชนิดสร้างสารมิวซินในโรงพยาบาลพระมงกุฎเกล้า

บรรลือ เฉลยกิตติ

วัตถุประสงค์*: วัตถุประสงค์ของการศึกษาเพื่อศึกษาเปรียบเทียบ การตรวจพบ ผลทางพยาธิวิทยา และความรุนแรงของโรคระหว่างมะเร็งลำไส้ใหญ่ชนิดสร้างสารมิวซินกับชนิดไม่ได้สร้างสารมิวซิน*

วัสดุและวิธีการ*: ผู้ป่วยมะเร็งลำไส้ใหญ่ที่ได้รับการผ่าตัดครั้งแรกที่โรงพยาบาลพระมงกุฎเกล้าตั้งแต่ พ.ศ. 2542 ถึง พ.ศ. 2547 ถูกแบ่งเป็นสองกลุ่มคือ กลุ่มที่สร้างมิวซิน และ กลุ่มที่ไม่ได้สร้างมิวซิน นำมาเปรียบเทียบลักษณะการตรวจพบผลทางพยาธิวิทยา และความรุนแรงของโรค*

ผลการศึกษา*: มีผู้ป่วยมะเร็งลำไส้ใหญ่ชนิดสร้างสารมิวซิน 44 ราย (10.7%) จากจำนวนทั้งสิ้น 409 ราย พบว่าไม่มีความแตกต่างกันของทั้งสองกลุ่มในเรื่อง เพศ ตำแหน่งในลำไส้ใหญ่ ความลึกของพยาธิสภาพ การกระจายของต่อมน้ำเหลือง การกระจายสู่อวัยวะอื่นเช่นตับ ปอด เยื่อบุช่องท้อง ระยะของโรค ความสามารถผ่าตัดออกได้หมด และการแพร่โดยตรงต่ออวัยวะข้างเคียง*

สรุป*: ไม่มีความแตกต่างของ การตรวจพบ ผลทางพยาธิวิทยา และความรุนแรงของโรคระหว่างมะเร็งลำไส้ใหญ่ชนิดสร้างสารมิวซินกับชนิดไม่ได้สร้างสารมิวซิน*