J Tokyo Wom Med Univ
84 (Extra 3) E338～E341 (2014)

Original

The Distribution of Mucosal Inflammation in Resected Specimens from Patients with Refractory Ulcerative Colitis

Michio ITABASHI, Sayumi NAKAO, Yoshiko BAMBA, Takuzo HASHIMOTO, Tomoichiro HIROSAWA, Shimpei OGAWA and **Shingo KAMEOKA**

Department of Surgery II, Tokyo Women's Medical University

(Accepted September 29, 2014)

In the clinical treatment of ulcerative colitis (UC), it is extremely important to accurately assess therapeutic efficacy in cases of refractory lesions. A total of 77 cases underwent UC surgery in this department from January 2000 to October 2006. The subjects of this study were 41 (male 29, female 12) surgical cases with refractory UC in which specimen mucosal findings and segments were available for evaluation. The large intestine was divided into seven segments according to the Japanese classification of colorectal carcinoma. The distribution of the anal end of the most severe lesion (MSL) was re-evaluated in excised specimens according to Matts's endoscopic classification. The reliability of sigmoidoscopy limited to the sigmoid-descending colon junction (SDJ) for refractory lesions in UC was evaluated. The anal end of the MSL was present in the sigmoid colon or rectosigmoid in 75.6% of cases. The anal end of the MSL was primarily concentrated in the sigmoid colon in 61.0% of cases, while these lesions were only observed in the rectum (Ra and Rb) in 7.3% of cases. Thus, the anal end of the MSL was detected in 82.9% cases in resected specimens from patients with refractory ulcerative colitis. Assessment using sigmoidoscopy limited to the SDJ instead of total colonoscopy is reliable for evaluating the severity of inflammation in most cases of severe refractory UC.

Key Words: ulcerative colitis, sigmoidoscopy, most severe lesion, severity of inflammation, sigmoid-descending colon junction

Introduction

The most common reason for surgery in the treatment of ulcerative colitis (UC) is the presence of refractory lesions. In actual clinical treatment, effective treatment for cases of refractory lesions is extremely important. Assessment of severity and therapeutic efficacy by endoscopic findings is essential[1]. However, insertion of an endoscope into the oral side colon past the sigmoid-descending junction (SDJ) increases internal intestinal pressure, resulting in the risk of perforation and hemorrhage in severe colitis[2]. Considering these risks, we sometimes perform sigmoidoscopy limited to the SDJ instead of total colonoscopy. On the other hand, rectal sparing in which the rectum may be either partially or completely spared of active inflammation is common in UC patients[3]. The purpose of this study was to evaluate the distribution of mucosal inflammation in resected specimens and the usefulness of sigmoidoscopy limited to the SDJ based on the distribution of the anal end of the most severe lesion (MSL) in UC requiring surgery.

Subjects and Methods

At total of 77 cases underwent UC surgery in this department from January 2000 to October 2006. The subjects of this study were 41 (29 male, 12 female) surgical cases with refractory UC in which specimen mucosal findings and segments were available for evaluation; 26 cases were excluded for two reasons. One was that the operative indication was colitic cancer or dysplasia (10 cases), and the other was the inability to accurately determine the MSL through examination of excised specimens (16 cases). A total of 10 cases whose surgical indication

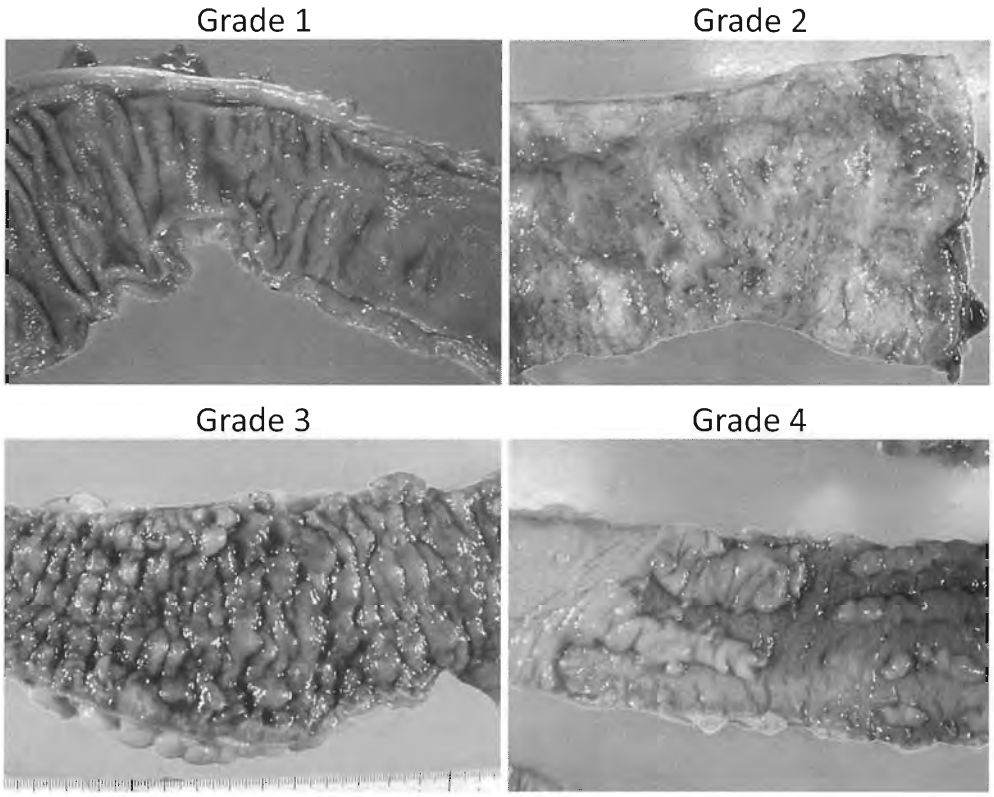

Fig. 1 Macroscopic classification of severity of mucosal inflammation according to Matts's classification
Grade 1 = Normal.
Grade 2 = Mild granularity of the mucosa, with mild contact bleeding.
Grade 3 = Marked granularity and edema of mucosa, contact bleeding, and spontaneous bleeding.
Grade 4 = Severe ulceration of mucosa with hemorrhage.

was cancer or dysplasia were excluded. The median age at operation was 34 years (range 16–61 years). Restorative proctocolectomy with covering ileostomy was performed in all patients. The clinical activities of inflammation of UC were severe in 31 cases and moderate in 10 cases using a modification of the criteria of Truelove and Witts[4]. The large intestine was divided into seven segments excluding the anal canal according to the Japanese classification of colorectal carcinoma[5]. The distribution of the anal end of the MSL was re-evaluated in excised specimens according to the modified Matts's endoscopic classification[6] by an expert surgeon (Fig. 1).

Results

The anal end of the MSL was concentrated in the sigmoid colon in 25 of 41 cases (61.0%), followed by the rectosigmoid colon and descending colon in 6 cases (14.6%). The anal end of the MSL was present in the sigmoid or rectosigmoid colon in 31 cases (75.6%).

The anal end of the MSL was detected in the rectum (Ra and Rb) in only 3 of 41 cases (7.3%). The anal end of the MSL was detected in 34 of 41 cases (82.9%) when observations were limited to the SDJ (Table 1).

Discussion

The activity of UC is usually evaluated based on a combination of clinical, endoscopic, and histological activity indices. Systematic measurement of disease activity in UC is critical for determining the effect of treatment[7]. Endoscopic assessment of the activity and severity of UC is one of the most useful tools for selecting treatment[8][9]. At present, intestinal endoscopic examinations are widely used to assess the efficacy of medical treatment, and Matts's classification[6] and the Rachmilewitz classification[10]

Table 1 Distribution of the anal segment of the most severe lesions

	C	A	T	D	S	Rs	Ra+Rb
No. of patients (n=41)	-	-	1	6	25	6	3
%			2.4	14.6	61.0	14.6	7.3
		-	17.1%			82.9%	

C: cecum, A: ascending colon, T: transverse colon, D: descending colon, S: sigmoid colon, Rs: rectosigmoid, Ra: upper rectum, Rb: lower rectum.

are used to classify the findings. Matts classified the endoscopic findings into 4 grades and the histological findings into 5 grades of severity; he found a good correlation between endoscopic and histological grades. Endoscopic findings of severe or large ulceration and spontaneous bleeding are among the signs of severe disease activity[8].

There are no worldwide criteria to evaluate macroscopic findings in resected specimens. Therefore, the modified Matts's endoscopic classification was used for macroscopic evaluation in the present study. Although it is ideal to examine the entire intestine, there are also many cases in which it is difficult to observe the entire intestine in highly active states due to the risk of exacerbating the lesions. UC is widely known to form lesions continuously from the rectum to the oral colon. However, there are cases in which lesions ranging from the sigmoid colon to the adoral colon are serious despite the absence of prominent inflammation in the rectum[1].

This retrospective study was conducted to evaluate the distribution of mucosal inflammation in resected specimens from patients with refractory ulcerative colitis. Considering the risks, we sometimes perform sigmoidoscopy limited to the SDJ instead of total colonoscopy in severe refractory UC. Thus, it is important to evaluate the usefulness of sigmoidoscopy limited to the SDJ.

The anal end of the MSL was found in the sigmoid colon or rectosigmoid in 75.6% of the cases examined, suggesting that observation of the left colon, and particularly the sigmoid colon, is important. In addition, since the anal end of the MSL was observed in the rectum (Ra and Rb) in only 7.3% of the cases, it is necessary to insert the endoscope to the SDJ to evaluate severity because of rectal sparing. Several studies have reported that rectal sparing was seen in 30–50% of refractory UC patients[3)10)~12)].

However, the anal end of the MSL was observed in the transverse and descending colon in 7 of 41 cases (17.1%). Therefore, observation using sigmoidoscopy limited to the SDJ is reliable for evaluating the severity of inflammation in most, but not all, cases of refractory UC. In severe cases of UC where colonoscopy is contraindicated due to the increased risk of perforation or exacerbation, clinical findings and imaging techniques such as CT and MRI are helpful tools to evaluate severity[13)14)]. It is necessary to evaluate disease activity from a combination of clinical endoscopic and radiographic findings.

Conclusion

The anal end of the MSL was detected in resected specimens from patients with refractory ulcerative colitis in 82.9% of cases. Assessment using sigmoidoscopy limited to the SDJ instead of total colonoscopy is reliable for evaluating the severity of inflammation in most cases of severe refractory UC.

None of the authors has any conflicts of interest to declare.

References

1) **Murano M, Hirata I, Toshina K et al**: Endoscopic diagnosis of refractory ulcerative colitis. Stomach and Intestine **40**: 1352–1360, 2005
2) **Navaneethan U, Kochhar G, Phull H et al**: Severe disease on endoscopy and steroid use increase the risk for bowel perforation during colonoscopy in inflammatory bowel disease patients. J Crohns Colitis **6**: 470–475, 2012
3) **Bernstein CN, Shanahan F, Anton PA et al**: Patchiness of mucosal inflammation in treated ulcerative colitis: a prospective study. Gastrointest Endosc **42**: 232–237, 1995
4) **Truelove SC, Witts LJ**: Cortisone in ulcerative colitis: final report on a therapeutic trial. Br Med J **29**: 1041–1048, 1955
5) **Japanese Society for Cancer of the Colon and Rectum**: Japanese Classification Colorectal Carci-

noma Second Edition, Kanehara, Tokyo (2009)
6) **Matts SG**: The value of rectal biopsy in the diagnosis of ulcerative colitis. Q J Med **30**: 393–407, 1961
7) **Osada T, Ohkusa T, Yokoyama T et al**: Comparison of several activity indices for the evaluation of endoscopic activity in UC: Inter- and intraobserver consistency. Inflamm Bowel Dis **16**: 192–197, 2010
8) **Oshitani N, Kitano A, Fukushima R et al**: Predictive factors for response of ulcerative colitis patients during the acute-phase treatment. Digestion **46**: 107–113, 1990
9) **Matsui T, Wada Y, Hirai F et al**: Endoscopy in clinics of inflammatory bowel disease. Gastroenterol Endosc **48**: 291–302, 2006 (in Japanese)
10) **Rachmilewitz D**: Coated mesalamine (5-aminosalicylic acid) versus sulphasalazine in the treatment of active ulcerative colitis: a randomized trial. BMJ **273**: 82–86, 1989
11) **Moum B, Ekbom A, Vatn MH et al**: Change in the extent of colonoscopic and histological involvement in ulcerative colitis over time. Am J Gastroenterol **94**: 1564–1569, 1999
12) **Joo M, Odze RD**: Rectal sparing and skip lesions in ulcerative colitis: a comparative study of endoscopic and histologic findings in patients who underwent proctocolectomy. Am J Surg Pathol **34**: 689–696, 2010
13) **Patel B, Mottola J, Sahni VA et al**: MDCT assessment of ulcerative colitis: radiologic analysis with clinical, endoscopic, and pathologic correlation. Abdom Imaging **37**: 61–69, 2012
14) **Maccioni F, Calaiacomo MC, Parlanti S**: Ulcerative colitis: Value of MR imaging. Abdom Imaging **30**: 584–592, 2005

潰瘍性大腸炎難治例の手術標本からみた重症度の分布

東京女子医科大学医学部外科学（第2）講座
板橋（イタバシ）　道朗（ミチオ）・中尾紗由美（ナカオサユミ）・番場（バンバ）　嘉子（ヨシコ）・橋本（ハシモト）　拓造（タクゾウ）
廣澤知一郎（ヒロサワトモイチロウ）・小川（オガワ）　真平（シンペイ）・亀岡（カメオカ）　信悟（シンゴ）

潰瘍性大腸炎の臨床では難治例の治療効果判定が極めて重要で内視鏡を用いた重症度および治療効果の判定は必須のものである．重症例では全大腸内視鏡検査を行うことで病変の悪化，腸管内圧の上昇や穿孔の危険性と病変の重症度の広がりを経験的に考慮して，SD junction までのS状結腸内視鏡が行われている．今回，このS状結腸内視鏡による重症度判定の妥当性を潰瘍性大腸炎の手術標本から検討した．2000年10月から2006年までの潰瘍性大腸炎手術症例のうち，切除標本記録から病変の重症度と範囲が判断可能であった51例のうち，癌またはdysplasia合併のために手術となった10例を除く41例を対象とした．41例の切除標本における病変の最も重症な肛門側部位について評価した．最重症肛門側部位が最も多かったのはS状結腸で25例（61.0%）であった．直腸（Ra および Rb）に最重症肛門側部位があった症例は3例（7.3%）にすぎなかった．S状結腸まで観察した場合に最重症肛門側部位があった症例は34例（82.9%）であった．潰瘍性大腸炎における重症度・治療効果判定において可能であれば全大腸内視鏡検査が望ましいが，重症例ではS状結腸までの内視鏡観察による重症度，治療効果判定は妥当と考えられた．また，S状結腸内視鏡検査で診断不能な症例もあることから，臨床所見，内視鏡所見，画像診断で補完して判断する必要がある．