Retrospective Study of Pathologically Proven Colitis in King Chulalongkorn Memorial Hospital

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To assess the basic clinicopathological information of colonic inflammation in Thai patients, the authors retrospectively analyzed the 249 biopsied cases with pathological diagnosis as colitis in King Chulalongkorn Memorial Hospital during the five-year period from 1998 to 2002. All subjects were included in this study, whether newly diagnosed or follow-up cases. There were 122 (49%) males and 127 (51%) females with the mean age of 51 years. Non-specific colitis was the most frequent histological diagnosis (72%), followed by infectious colitis (12%), in particular mycobacterial infection. The biopsy specimens were commonly obtained from the rectosigmoid colon (38%). Mucous bloody diarrhea (28%), watery diarrhea (26%), and lower gastrointestinal bleeding (19%) were the three most common symptoms at presentation in order of frequency.

Keywords : *Colitis, Thai patient*

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Colitis, an inflammation of the large intestine, is the common condition in general practice. Colitis can be presented with a wide spectrum of etiology and clinical manifestations ranging from a very mild self-limited episode to an acute toxic colitis requiring aggressive management. It is important to identify the cause of the colitis in order to allow for prompt and accurate treatment[1]. Thus, biopsies of the suspected lesions are necessary for given histopathological information, besides careful history, complete physical examination, and appropriate serologic tests[2]. The authors also retrospectively collected and analyzed the prevalence of colitis in Thai patients.

Material and Method

All colorectal biopsies signed out with the terms colitis mentioned in the pathological reports were retrieved from the surgical pathology files at King Chulalongkorn Memorial Hospital between the years 1998 and 2002. Subjects from this list were entered into the study, whether first visit, follow-up, or work-up for any reason and classified as original final pathological diagnosis. Additional information including age, sex, chief complaint, and biopsied site were obtained from the pathology reports. Chief complaints were stratified into watery diarrhea, mucous bloody diarrhea, lower gastrointestinal hemorrhage, and abdominal pain. The rest such as constipation, follow-up after colonic resection, or biopsy to rule out tumor were categorized as "other". The biopsied locations were divided into ascending, transverse, descending, rectsigmoid, and multiple sites.

Two hundred and forty-nine cases were included. The underlying medical history and subsequent follow-up were also reviewed when available. The patients had a median age of 51 years and consisted of 122 men and 127 women.

Hematoxylin and eosin stained (H&E) sections were performed routinely in each case. Special stains would be provided if necessary, either histochemical stains (Mayer's mucicarmine, periodic acid-Schiff and Grimelius) or antibodies.

Results

From 1998 to 2002, 249 patients in the present study had a median age of 51 years (Table 1) compris-

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Table 1. Distribution of sex and mean age of the patients with colitis

Classification	Male	Female	Mean age (years)	Total (%)
Infectious				29 (12%)
-Mycobacterium	10	9	38	19
-CMV	4	1	43	5
-Amebiasis	3	1	55	4
-Actinomycosis	1	0	59	1
IBD	10	6	46	16 (6%)
Ischemic	5	6	69	11 (4%)
Radiation	1	9	59	10 (4%)
SRUS	2	1	40	3 (1%)
PMC	1	2	55	3 (1%)
Non-Specific				
-Acute	37	44	49	81 (33%)
-Chronic	27	35	51	62 (25%)
-Chronic and acute	21	13	46	34 (14%)
Total	122 (49%)	127 (51%)	51	249 (100%)

CMV, Cytomegalovirus; IBD, Inflammatory bowel disease; SRUS, Solitary rectal ulcer syndrome; PMC, Pseudomembranous colitis

ing 122 men (49%) and 127 women (51%). Non-specific colitis was the most frequent diagnosis, approximately three fourths of the patients (72%). For specific colitis, infection was the most common etiology (12%), especially *Mycobacterium spp.* (19 cases), followed by cytomegalovirus (5 cases), amoebic colitis (4 cases), and *Actinomyses spp*. (1 case), respectively. Additionally, colitis resulting from *Mycobacterium spp*. most commonly occurred in the youngest of the mean age (38 years). Conversely, the oldest mean aged group (69 years) frequently suffered from ischemic colitis.

The most common biopsied location was rectosigmoid (38%), multiple (34%), ascending (13%), descending (9%), and transverse colon (6%), in order of frequency (Table 2). Regardless of unspecific colitis, colitis resulting from mycobacterium infection was the most frequently diagnosed from the specimens that were obtained from the ascending colon (11 from 19 cases).

Some patients presented with more than one symptom. Mucous bloody diarrhea was the most common presenting symptom in the patents who underwent colonic biopsy, accounting for 28% (Table 3). The other symptoms included watery diarrhea (26%), lower gastrointestinal hemorrhage (19%), and abdominal pain (12%), in order of frequency. Among these chief complains, however, there was never a predominant symptom that helped to suggest the clinical diagnosis.

Discussion

Regardless of non-specific or unknown etiologic colitis, specific infection of the colon was the most common condition in the present study, accounting for 12%, which was the most frequent in tropical areas and rapidly increased due to increasing prevalence of HIV infection. The signs and symptoms at the time of presentation were nonspecific[3]. According to the medical records, all patients who suffered from mycobacterium colitis have had the underlying disease of AIDS and/or pulmonary tuberculosis. Colitis from

Table 2. Location of biopsies in colitis

Classification	Ascending	Transverse	Descending	Rectosigmoid	Multiple	Total (%)
Infectious						29 (12%)
-Mycobacterium	11	1	0	0	7	19
-CMV	1	0	0	1	3	5
-Amebiasis	1	0	0	1	2	4
-Actinomycosis	0	0	0	1	0	1
IBD	0	0	0	6	10	16 (6%)
Ischemic	0	5	6	0	0	11 (4%)
Radiation	0	0	0	4	6	10 (4%)
SRUS	0	0	0	3	0	3 (1%)
PMC	0	0	0	2	1	3 (1%)
Non-specific						
-Acute	6	6	4	38	27	81 (33%)
-Chronic	6	4	8	24	20	62 (25%)
-Chronic and acute	6	0	4	15	9	34 (14%)
Total	31 (13%)	16 (6%)	22 (9%)	95 (38%)	85 (34%)	249 (100%)

CMV, Cytomegalovirus; IBD, Inflammatory bowel disease;
SRUS, Solitary rectal ulcer syndrome; PMC, Pseudomembranous colitis

Table 3. Predominant symptoms in colitis

Classification	Watery diarrhea	Mucous bloody diarrhea	LGIB	Pain	Other	Total (%)
Infectious						29 (12%)
-Mycobacterium	2	5	2	10	0	19
-CMV	2	0	3	0	0	5
-Amebiasis	0	4	0	0	0	4
-Actinomycosis	0	1	0	0	1	1
IBD	6	7	3	0	0	16 (6%)
Ischemic	1	3	5	1	1	11 (4%)
Radiation	0	4	5	1	0	10 (4%)
SRUS	0	0	0	1	2	3 (1%)
PMC	2	1	0	0	0	3 (1%)
Non-specific						
-Acute	24	18	16	3	20	81 (33%)
-Chronic	21	13	8	10	10	62 (25%)
-Chronic and acute	8	15	5	3	3	34 (14%)
Total	66 (26%)	71 (28%)	47 (19%)	29 (12%)	37 (15%)	249 (100%)

CMV, Cytomegalovirus; IBD, Inflammatory bowel disease;
SRUS, Solitary rectal ulcer syndrome; PMC, Pseudomembranous colitis

cytomegalovirus (CMV) (Fig. 1), the second most common infectious colitis in the presented data, was the most important opportunistic infection in immunocompromised hosts. Four male patients of CMV colitis had the underlying disease of AIDS and another female was the SLE case with prolonged steroid administration. Amoebic colitis should be considered in tropical areas, in which the organisms built up the ulcer (Fig. 2).

Pseudomembranous colitis (PMC) (Fig. 3) is one of colonic inflammations that must be considered in patients with prolonged hospitalization together with antibiotic therapy. The disease is manifested by *Clostridium difficile*. Diarrhea and crampy abdominal pain usually occur[4]. The prevalence was 3% in the presented report.

Ischemic colitis refers to a syndrome that is manifested by occlusive or non-occlusive vascular disease affecting the colon (Fig. 4). The diagnosis should be considered in older patients with cardiovascular disease, arrythmias, vasculitis, previous aortic surgery, and those in shock. Symptoms range from painless hematochezia to those with abdominal pain with bloody stools, fever, and tenesmus[5]. In the present study, the most affected patients had old age with, when historically reviewed, past medical diseases such as ischemic heart disease, stroke, or diabetes mellitus.

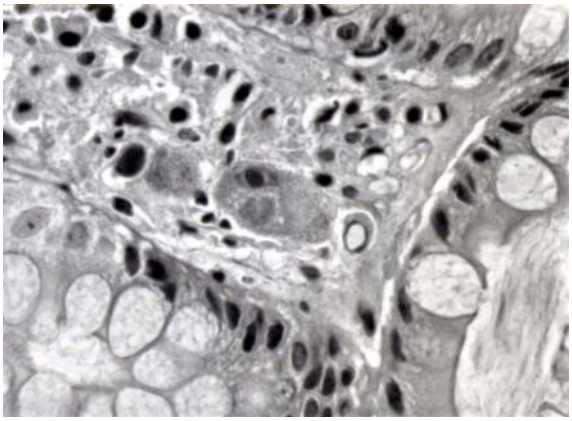

Fig. 1 CMV colitis-Infected cells in the subepithelial area showing cytomegalic intranuclear and intracytoplasmic inclusions (H&E stain, x 400)

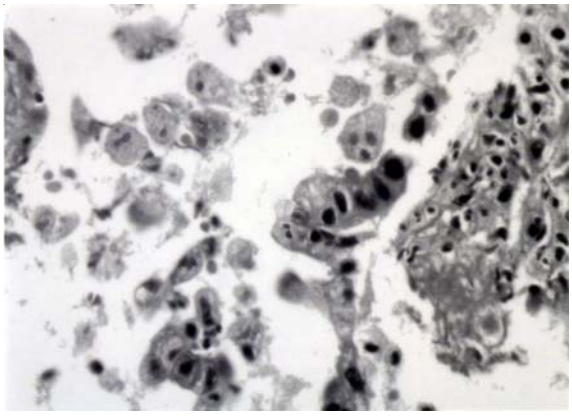

Fig. 2 Amoebic colitis-Amoebic organisms ingested red blood cells associated with denuded colonic epithelium and fibrinous exudates (H&E stain, x 400)

The presenting symptoms were also varied. The biopsied sites were obtained from transverse (5/11 cases) and descending colon (6/11 cases) related to splenic flexure, a watershed region of mesenteric circulation.

Radiation colitis is becoming more frequent as the use of radiation is increasing (Fig. 5). Radiation has both short-term and long-term effects. Colitis can occur months to years after treatment[6]. In the present study, all female cases of radiation colitis had had cervical cancer treated by radiotherapy.

Inflammatory bowel disease (IBD), both ulcerative colitis (UC) and Crohn's disease (Fig. 6), was the second most common group of specific colitis, accounting for 16%. However, as previously stated, the collected data included new visits and periodical follow-up patients. Pathologists should be keep in mind that this entity is clinicopathological diagnosis. The diagnostic accuracy is reduced when the data is incomplete[7]. Nostrant TT et al conclude that when a specimen is obtained within the initial 4 days from the onset of symptoms, plasmacytosis in the lamina propria extending to the mucosal base and mucosal distortion were the two most useful criteria to diagnose the first attack or recurrent ulcerative colitis[8]. However, these features are found transiently in patients with infectious colitis and could not be differentiated from each other; in particular the specimens are not obtained during the first 4 days of the illness[9,10]. Therefore, the specimens of our information were obtained from multiple locations, regardless of unspecific colitis. This is similar to previous reports that multiple tissues from various anatomic sites increased the accuracy for diagnosis of IBD[11]. However, no single test is enough to diagnose IBD[12]. Although examination of colorectal biopsy specimens is a reliable method for diagnosing IBD, it cannot replace good history taking and close follow-up. Solitary rectal ulcer syndrome (SRUS) (Fig. 7) is occasionally found in colonic biopsy, accounting for 1% in the present report, but most general pathologists may misdiagnose it as inflammatory bowel disease or malignancy[13,14].

Seventy-two percent of the presented subjects were pathologically diagnosed as non-specific colitis, whether acute (Fig. 8), chronic, or combined. According to a series by Notteghem B et al, half of the patients, who were firstly diagnosed as acute unclassified colitis, had a final diagnosis of IBD after follow-up with a 2.5-3 year period. Those patients had the mean age of 32.3 years[15]. Therefore, ischemia, infections, partially treated ulcerative colitis, and findings in patients undergoing endoscopy to role out a tumor can be included in the feature of acute unclassified colitis. Thus, the pathological appearance of acute inflammation does not predict the outcome. Additional information including medical history and laboratory data is important as well as a periodic check-up after colonic biopsy. Interestingly, Haboubi NY et al have studied and reviewed the cases that were pathologically diagnosed as non-specific colitis, particularly chronic colitis[16]. This term is inappropriate to encompass various conditions, including normal biopsies, sometimes communicating the wrong message[17]. Pathologists should be aware of using the term chronic colitis[1,2].

In conclusion, colonic biopsy plays a significant role contributing to the principal diagnosis of colorectal inflammation. However, it must be interpreted together with clinical information and follow-up is recommended in some suspected cases. Clinicopathologoical correlation is essential to reduce the diagnosis of non-specific colitis.

Refernces

1. Tsang P, Rotterdam H. Biopsy diagnosis of colitis: possibilities and pitfalls. Am J Surg Pathol 1999; 23: 423-30.
2. Carpenter HA, Talley NJ. The important of clinicopathological correlation in the diagnosis of inflammatory conditions of the colon; histological patterns with clinical implications. Am J Gastroenterol 2000; 95: 878-96.
3. Kumar NB, Nostrant TT, Appelman HD. The histopathologic spectrum of acute self-limited colitis (acute infectious-type colitis). Am J Surg Pathol 1982; 6: 523-9.
4. Giannella RA. Antibiotic-associated diarrhea and Clostidium difficile: an update. Rev Esp Enferm Dig 2001; 93: 535-43.
5. Newman JR, Cooper MA. Lower gastrointestinal bleeding and ischemic colitis. Can J Gastroenterol 2002; 16: 597-600.
6. Leupin N, Curschmann J, Kranzbuhler H, Maurer CA, Laissue JA, Mazzucchelli L. Acute radiation colitis in patients treated with short-term preoperative radiotherapy for rectal cancer. Am J Surg Pathol 2002; 26: 498-504.
7. Shepherd NA. Pathological mimics of chronic inflammatory bowel disease. J Clin Pathol 1991; 44: 726-33.
8. Nostrant TT, Kumar NB, Appelman HD. Histopathology differentiates acute self limited colitis from ulcerative e colitis. Gastroenterology 1987; 92: 318-28.
9. Surawicz CM. The role of rectal biopsy in infectious colitis. Am J Surg Pathol 1988; 12 Suppl 1: 82-8.
10. Geboes K, Ectors N, D'Haens G, Rutgeerts P. Is ileoscopy with biopsy worthwhile in patients presenting with symptoms of inflammatory bowel disease? Am J Gastroenterol 1998; 93: 201-6.

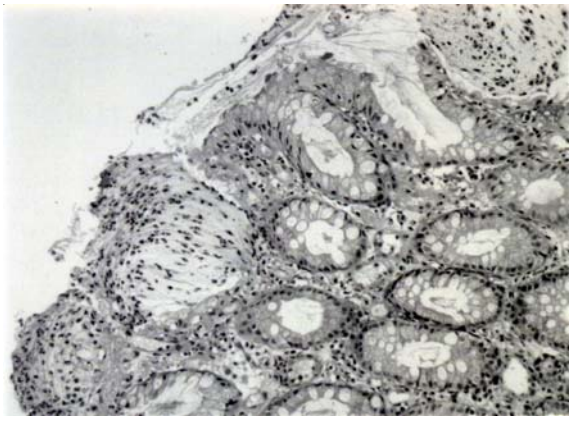

Fig. 3 Pseudomembranous colitis-Loss of colonic glands with numerous neutrophils producing volcano-like feature (H&E stain, x 200)

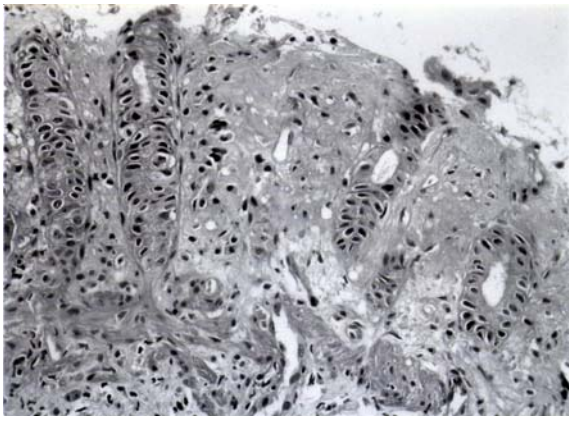

Fig. 4 Ischemic colitis-Markedly decreased colonic crypts and inflammatory cells (H&E stain, x 200)

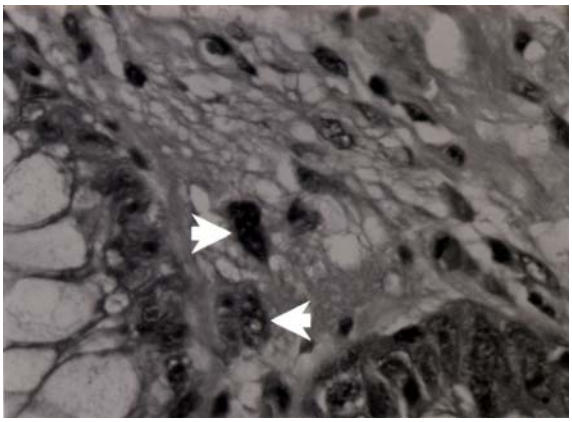

Fig. 5 Acute radiation colitis-Bizarre fibroblasts (arrows) presented in the subepithelial region (H&E stain, x 400)

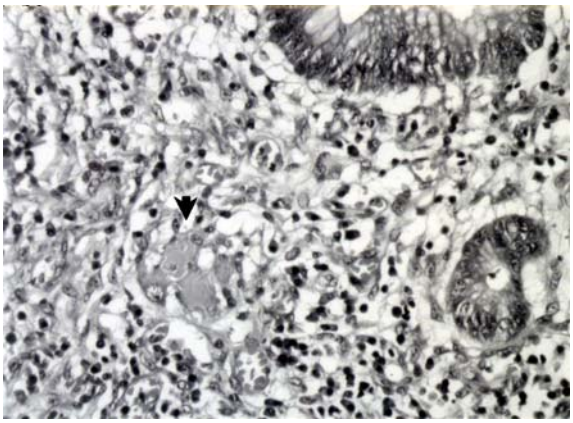

Fig. 6 Crohn's disease-Histiocytic aggregate (arrow) merged with acute and chronic inflammatory cells in the lamina propria (H&E stain, x 400)

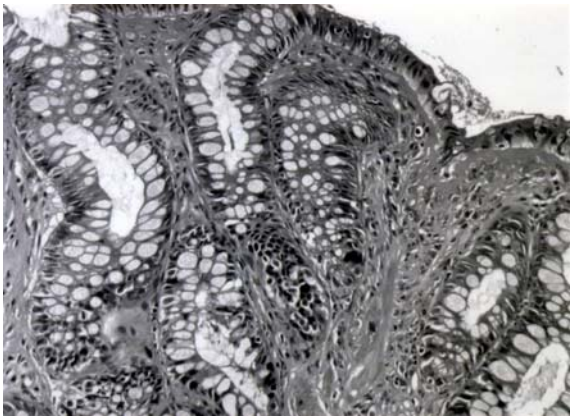

Fig. 7 SRUS-Proliferate fibromuscular strips accompanied by dysplastic colonic epithelium (H&E stain, x 200)

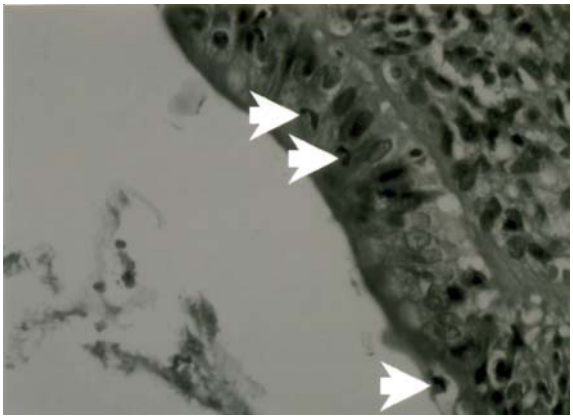

Fig. 8 Acute unclassified colitis-Neutrophils (arrows) infiltrate into the colonic epithelium (H&E stain, x 400)

11. Tooson JD, Varilek GW. Inflammatory disease of the colon. Narrowing a wide field of symptoms and possible causes. Postgrad Med 1995; 98: 46-8, 54, 57-8 passim.
12. Geboes K. Crohn's disease, ulcerative colitis or inderterminate colitis - how important is it to differentiate? Acta Gastroenterol Belg 2001; 64: 197-200.
13. Levine DS, Surawicz CM, Ajer TN, Dean PJ, Rubin CE. Diffuse excess mucosal collagen in rectal biopsies facilitates differential diagnosis of solitary rectal ulcer syndrome from other inflammatory bowel diseases. Dig Dis Sci 1988; 33: 1345-52.
14. Morson B. Colorectal biopsy in inflammatory intestinal diseases. Leber Magen Darm 1983; 13: 261-9.
15. Notteghem B, Salomez JL, Gower-Rousseau C, Marti R, Lemahieu M, Nuttens MC, Dupas JL, Colombel JF, Cortot A. What is the prognosis in unclassified colitis? Results of a cohort study of 104 patients in the Northern-Pas-de-Calais region. Gastrornterol Clin Biol 1993; 17: 811-5.
16. Haboubi NY, Kamal F. Non-specific colitis, is it a justifiable diagnosis? Colorectal Dis 2001; 3: 263-5.
17. Levine TS, Tzardi M, Mitchell S, Sowter C, Price AB. Diagnostic difficulty arising from rectal recovery in ulcerative cilitis. J Clin Pathol 1996; 49: 319-23.

การศึกษาแบบย้อนหลังของลำไส้ใหญ่อักเสบจากผลการวินิจฉัยทางพยาธิวิทยาในโรงพยาบาลจุฬาลงกรณ์

มานะ ทวีวิศิษฏ์, นฤมล วิเศษโอภาส

เพื่อต้องการทราบข้อมูลพื้นฐานทางคลินิกและพยาธิวิทยาของการอักเสบในลำไส้ใหญ่ จึงทำการศึกษาย้อนหลังจากใบรายงานผลทางพยาธิวิทยาของผู้ป่วยทั้งหมดไม่ว่าจะเป็นผู้ป่วยที่เพิ่งได้รับการวินิจฉัย หรือ เป็นผู้ป่วยที่ทำการติดตามผลการรักษาในโรงพยาบาลจุฬาลงกรณ์ ตั้งแต่ พ.ศ. 2541 ถึง พ.ศ. 2545 รวม 5 ปี จากผู้ป่วยทั้งหมดจำนวน 249 ราย จากการศึกษาพบว่าเป็นชาย 122 ราย (49%) หญิง 127 ราย (51%) โดยมีอายุเฉลี่ย 51 ปี ผลทางพยาธิวิทยาที่ได้รับการวินิจฉัยบ่อยที่สุดคือลำไส้ใหญ่อักเสบแบบไม่เฉพาะเจาะจง (72%) ตามมาด้วยลำไส้ใหญ่อักเสบติดเชื้อ (12%) โดยเฉพาะเชื้อในกลุ่มวัณโรค ลำไส้ใหญ่ส่วนปลายและไส้ตรงเป็นบริเวณที่ได้รับการตัดชิ้นเนื้อส่งตรวจบ่อยที่สุด (38%) อาการที่เป็นปัญหาสำคัญจนทำให้ผู้ป่วยต้องมาพบแพทย์มากที่สุดคือ ถ่ายเป็นมูกเลือด (28%), ถ่ายเหลว, (26%) และเลือดออกจากทางเดินอาหารส่วนปลาย (19%) ตามลำดับ