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The value of flexible sigmoidoscopy for patients with bright red rectal bleeding

軟性乙狀結腸鏡於評估直腸鮮血的作用

Objective. To review the diagnostic yield of flexible sigmoidoscopy in patients presenting with bright red rectal bleeding.
Design. Retrospective study.
Setting. University teaching hospital, Hong Kong.
Subjects and methods. Patients who underwent flexible sigmoidoscopy between January 1995 and April 1996 for investigation of bright red rectal bleeding were recruited. The extent of the endoscopic examination, complications, and endoscopic findings were recorded.
Results. A total of 1052 patients were included in the study. The mean length of endoscopic examination was 55 cm. There were no complications attributed to the procedure. Thirteen (1.2%) patients aged from 41 to 87 years were found to have malignant tumours that were not palpable on digital examination. All the tumours were moderately differentiated adenocarcinoma. Two patients had synchronous liver metastasis at presentation. Adenomatous polyps were detected in 81 (7.7%) patients, of whom 76 were older than 40 years. The majority of polyps were tubular adenomas associated with mild or moderate dysplasia. Other endoscopic findings included hyperplastic and juvenile polyps, proctocolitis, diverticulosis, irradiation colitis, ischaemic colitis, rectal ulcers, and infective colitis. The overall diagnostic yield was 21.1%. No mucosal lesion was detected by flexible sigmoidoscopy in 78.9% of patients in whom the rectal bleeding was due to either haemorrhoids or anal fissure.
Conclusions. Cancer was detected in 1.2% and adenomatous polyps in 7.7% of patients with bright red rectal bleeding using flexible sigmoidoscopy. All cancers and 94% of adenomatous polyps were detected in patients older than 40 years. Flexible sigmoidoscopy appears to be a valuable initial investigation for bright red rectal bleeding in patients older than 40 years.

目的：總結軟性乙狀結腸鏡檢查對於直腸出血患者的診斷成效。
設計：回顧性研究。
安排：大學教學醫院，香港。
患者與方法：在1995年1月至1996年4月期間，曾接受軟性乙狀結腸鏡檢查以研究直腸出血的患者。記錄了內窺鏡檢查的深度、併發症和內窺鏡檢查的發現。
結果：本研究包括1052名患者。內窺鏡檢查的平均深度為55 cm。研究發現患者沒有因進行內窺鏡檢查而出現併發症。此外，13名(1.2%)年齡為41至87歲的患者有惡性腫瘤，這些腫瘤用指檢均探測不到；而所有腫瘤均為中道分化腺癌。兩名患者同時呈現肝轉移。81名(7.7%)有腺瘤息肉的患者中，76名超過40歲。大部分息肉是與輕度及中度發育不良的管狀腺瘤有關。其他內窺鏡檢查的發現包括增生息肉和幼年息肉、直腸結腸炎、腸憩室病、放射結腸炎、缺血性結腸炎、直腸潰瘍以及傳染性結腸炎。總診斷成效為21.1%。經軟性乙狀結腸鏡檢查顯示，78.9%的患者沒有粘膜損傷，其直腸出血均為痔疾或肛裂引致。
結論：利用軟性乙狀結腸鏡檢查發現，直腸出血患者中，1.2%有癌症，7.7%有腺瘤息肉。所有癌症和94%的腺瘤息肉均在40歲以上的患者中發現。軟性乙狀結腸鏡檢查對於初步診斷為直腸出血的40歲以上的患者似乎有價值。

Key words:
Colorectal neoplasms;
Sigmoidoscopy

關鍵詞：
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Introduction

Since its introduction in the 1970s, flexible sigmoidoscopy has been widely used for the investigation of patients with lower gastrointestinal tract symptoms. Bowel

preparation with a single phospho-soda enema prior to the examination is usually effective for providing a clear view of the rectum and distal colon.[1] Patient acceptance of this procedure is high.[2] For properly trained personnel, endoscopy can be performed as an office procedure without sedation. Since the majority of colorectal neoplasms are located in the distal large bowel, sigmoidoscopy using a standard 60-cm flexible sigmoidoscope can reveal two thirds of these lesions.[3]

Bright red rectal bleeding is one of the most common presentations encountered by colorectal surgeons. Whether the entire large bowel should be examined following presentation with this common problem remains controversial. The purpose of this retrospective study was to evaluate the diagnostic yield of flexible sigmoidoscopy in the investigation of bright red rectal bleeding.

Subjects and methods

A retrospective study of patients presenting with bright red rectal bleeding who underwent flexible sigmoidoscopy between January 1995 and April 1996 in the Department of Surgery, Queen Mary Hospital (QMH), was conducted. Inclusion criteria for recruitment were as follows:

(1) age 16 years or older;
(2) absence of other bowel symptoms, including altered bowel habit, abdominal pain, tenesmus, or passage of mucus;
(3) no previous history of colorectal cancer or inflammatory bowel disease; and
(4) no family history of familial adenomatous polyposis or hereditary non-polyposis colorectal cancer.

A total of 1052 patients were included in the study. All patients had the passage of fresh blood as their chief complaint. Haemorrhoids or anal fissures were believed to be the cause of bleeding for the majority of patients before sigmoidoscopy was performed. Patients with significant additional bowel symptoms underwent colonoscopy or barium enema study instead of sigmoidoscopy. Patients with a palpable rectal tumour at digital examination were excluded. The procedures were performed by colorectal surgeons or by surgical trainees under supervision in the endoscopy suite. A single Fleet enema (CB Fleet Co. Inc., Lynchburg, US) was administered approximately 1 hour before sigmoidoscopy. The procedure was performed with the patient in the left lateral position, and a standard 60-cm fibreoptic flexible sigmoidoscope (Olympus CF-P20S; Olympus Optical Co., Ltd., Tokyo, Japan) was used. No patients required sedation. Endoscopic findings were recorded in a computer database.

Results

During the study period, 537 men and 515 women presenting with bright red rectal bleeding underwent flexible sigmoidoscopy. Patients' ages ranged from 16 to 96 years (mean, 54 years). Complete sigmoidoscopy to 60 cm was achieved in 862 patients. Incomplete examinations were due to poor bowel preparation for most patients. Other causes included obstructive lesions, poor pain tolerance, and an acute kink in the bowel loop. The mean length of examination for incomplete examination was 32 cm. The endoscope could be introduced into the descending colon or more proximally in 879 patients. The overall mean length of examination was 55 cm. There were no complications attributed to the procedure.

Thirteen (1.2%) patients had malignant tumours detected by sigmoidoscopy. The location of the tumours is shown in the Fig. The mean age of these patients was 69 years (range, 41-87 years) [Table 1]. Two patients had synchronous liver metastasis. Twelve patients subsequently underwent surgical resection. Histological examination showed Dukes' A disease in four patients, Dukes' B in six patients, and

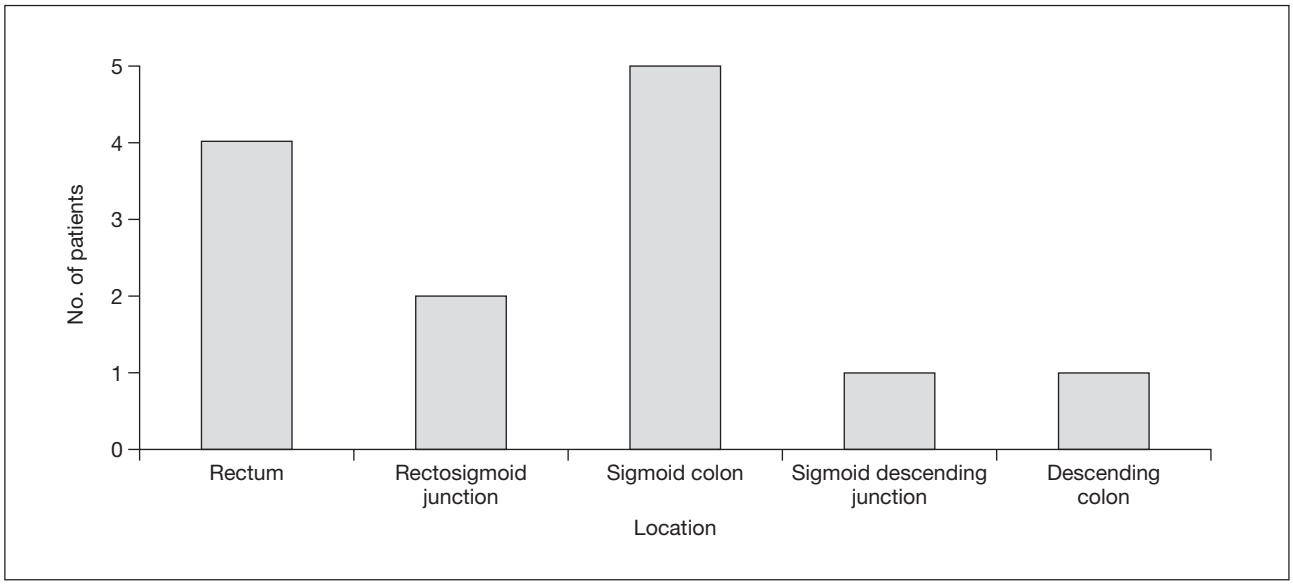

Fig. Location of cancers identified by flexible sigmoidoscopy

Table 1. Age of patients found to have colorectal cancer at flexible sigmoidoscopy

Age-group (years)	No. of patients
41-50	1
51-60	1
61-70	4
71-80	6
81-90	1
Total	13

Table 2. Age of patients with adenomatous polyps detected at flexible sigmoidoscopy

Age-group (years)	No. of patients
≤40	5
41-50	15
51-60	19
61-70	17
71-80	21
>80	4
Total	81

Dukes' C in two patients, including one with liver metastasis. All tumours were identified as moderately differentiated adenocarcinoma.

Eighty-one (7.7%) patients aged from 35 to 86 years were found to have one or more adenomatous polyps (Table 2). Ninety-four percent of these patients were older than 40 years. All of these patients subsequently underwent full colonoscopy, and 127 adenomatous polyps were endoscopically removed. No malignant tumours were detected during colonoscopy in this group of patients. The majority of the polyps were tubular adenomas with mild or moderate dysplasia. Hyperplastic polyps were found in 29 patients. Five of these patients had co-existing hyperplastic and adenomatous polyps. Juvenile polyps were diagnosed in two patients.

Proctocolitis was detected in 39 patients. Histological examination revealed ulcerative colitis in two patients, and non-specific inflammation in the remainder. Diverticulosis, irradiation colitis, ischaemic colitis, rectal ulcers, or infective colitis, were identified in 63 patients. No mucosal lesions were detected in the remaining 830 patients in whom the rectal bleeding was attributed to either haemorrhoids or anal fissure. The overall diagnostic yield for flexible sigmoidoscopy was 21.1% and the yield for neoplastic lesions was 8.9%. There was no significant difference in the endoscopic findings for procedures performed by colorectal surgeons compared with those performed by trainees under supervision.

Discussion

Rectal bleeding is a common clinical problem. Approximately one in seven persons aged from 20 to 64 years have a history of rectal bleeding.[4] Among local colorectal surgical units, there is currently no consensus as to how patients should be further investigated if an obvious anal cause for the bleeding is identified. Some investigators have suggested that colonoscopy should be performed for all individuals presenting with rectal bleeding because of the potentially high diagnostic yield of abnormal findings, including neoplastic disease.[5-7] Colonoscopy, however, causes inconvenience to patients due to the need for thorough bowel preparation. The procedure may also cause intense abdominal pain and necessitate use of sedatives, and may be complicated by bowel perforation and bleeding. Routine colonoscopy for investigation of rectal bleeding is also not desirable in the presence of limited health resources. The use of flexible sigmoidoscopy may offer a more cost-effective diagnostic approach, particularly for patients presenting with only bright red rectal bleeding.

Since the introduction of flexible sigmoidoscopy, it has become a popular diagnostic tool for the investigation of the lower gastrointestinal tract. Bright red rectal bleeding is the most common indication for flexible sigmoidoscopy in the unit at the QMH. It is a safe procedure, as demonstrated by the lack of complications in a large study involving 1015 patients.[8] Compared with the traditional 20-cm rigid sigmoidoscope, the diagnostic yield of flexible sigmoidoscopy is higher.[9,10]

A critical aspect of the management of patients with bright red rectal bleeding is to determine whether there is underlying neoplastic disease. Mehanna and Platell[11] examined a group of 85 patients presenting with bright red rectal bleeding. All patients had a benign anal cause identified for the bleeding. One patient was diagnosed with rectal carcinoma and two patients were diagnosed with rectal polyps at rigid sigmoidoscopy. Flexible sigmoidoscopy was performed for the remaining 82 patients and five further patients were found to have adenomatous polyps.

According to previous studies, the majority of neoplasms in patients presenting with bright red rectal bleeding can be detected by flexible sigmoidoscopy. Church[12] colonoscoped 115 patients with bright red rectal bleeding and found only one case of adenoma proximal to the splenic flexure. In a series of 2200 patients, Shinya et al[13] reported that bright red rectal bleeding originated distal to the splenic flexure in 95% of patients. Van Rosendaal et al[14] reported that 94% of polyps (>5 mm) found in patients with bright red rectal bleeding were detected within 60 cm of the anus. Cheung et al[15] evaluated 330 patients with rectal bleeding by flexible sigmoidoscopy and barium enema. Cancers were found in 30 patients and 93% of these could be identified by flexible sigmoidoscopy. The use of flexible sigmoidoscopy also detected 88% of polyps. Conversely, Fine et al[16] reported that 9% of 217 patients with bright red rectal bleeding had lesions beyond the reach of the sigmoidoscope, and thus they argued that colonoscopy should be the initial diagnostic approach. However, patients were excluded from that study if blood was seen only on toilet paper after wiping or dripping into the commode after a bowel movement, typical indications of benign anal disease. In this study, the overall diagnostic yield for neoplastic lesions was 8.9% in

a group of patients for whom the cause of bleeding in the majority was due to haemorrhoids or anal fissure. Cancer was detected in 1.2% and polyps in 7.7% of patients by flexible sigmoidoscopy. All cancers and 94% of adenomatous polyps were detected in patients older than 40 years.

Conclusion

Whether colonoscopy should be performed for all patients presenting with rectal bleeding remains debatable. Colonoscopy is not without risk and it imposes higher costs and greater discomfort and inconvenience for patients than does flexible sigmoidoscopy. It is thus our considered opinion that flexible sigmoidoscopy is a valuable initial investigation for patients older than 40 years presenting with bright red rectal bleeding.

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