Article

PAMJ Clinical Medicine

Research

Indications and findings of lower gastrointestinal endoscopy: a retrospective study in Eastern Regional Hospital, Koforidua, Ghana

Amoako Duah, Forster Amponsah-Manu, Frempong Asafu-Adjaye, William Erzuah Arthur, Sedina Asafu-Adjaye

Corresponding author: Amoako Duah, St Dominic Hospital, Department of Medicine, Akwatia, Ghana. amoakoduah@yahoo.com

Received: 25 Apr 2020 - **Accepted:** 27 May 2020 - **Published:** 22 Jun 2020

Keywords: Lower gaetrointestinal endoscopy, bleeding per rectum, colorectal cancer, Ghana

Cite this article: Amoako Duah et al. Indications and findings of lower gastrointestinal endoscopy: a retrospective study in Eastern Regional Hospital, Koforidua, Ghana. PAMJ Clinical Medicine. 2020;3(65). 10.11604/pamj-cm.2020.3.65.23093

Available online at: https://www.clinical-medicine.panafrican-med-journal.com/content/article/3/65/full

Indications and findings of lower gastrointestinal endoscopy: a retrospective study in Eastern Regional Hospital, Koforidua, Ghana

Amoako Duah[1,&], Forster Amponsah-Manu[2], Frempong Asafu-Adjaye[3], William Erzuah Arthur[2], Sedina Asafu-Adjaye[4]

[1]St Dominic Hospital, Department of Medicine, Akwatia, Ghana, [2]Eastern Regional Hospital, Department of Surgery, Koforidua, Ghana, [3]Trust Hospital, Department of Medicine, Accra, Ghana, [4]Pantang Hospital, Department of Medicine, Accra, Ghana

[&]Corresponding author

Amoako Duah, St Dominic Hospital, Department of Medicine, Akwatia, Ghana

Abstract

Introduction: *colonoscopy is a safe and effective means of visual inspection of the large bowel from the distal rectum to the caecum. There is a paucity of data on this procedure in Ghana. The only data in literature are from Kumasi and Accra. This paper reviews the indications and findings of lower gastrointestinal endoscopy (LGIE) in Eastern Regional Hospital, Koforidua, Ghana.* ***Methods:*** *a retrospective study was undertaken on patients who underwent colorectal endoscopy between January 2019 and December 2019.* ***Results:*** *one hundred and six (106) LGIE procedures were performed. Sixteen patients had flexible sigmoidoscopy and the rest had full colonoscopy. Of those who had colonoscopy, caecal intubation rate was 86.2%. Males were 69 and mean age 56.67 ± 16.48. The most common primary indication was bleeding per rectum. The most common primary endoscopic finding was haemorrhoids (54.17%) followed by colorectal tumors (15.0%). 11.6% of the patients had normal endoscopic findings. A diagnosis of haemorrhoids was made in 61.6% of those presented with bleeding per rectum as an indication and was the commonest cause of lower gastrointestinal bleeding (LGIB).* ***Conclusion:*** *the commonest indication for colonoscopy was rectal bleeding, while the most frequent pathology was haemorrhoids. The proportion of our patient population found to have a colorectal tumor or polyps was not insignificant. Screening program for colorectal cancer in Ghana should be considered.*

Introduction

Colonoscopy is a safe and effective means of visual inspection of the large bowel from the distal rectum to the caecum and terminal ileum. LGIE may be carried out for diagnostic and or therapeutic reasons [1,2]. Colonoscopy is important in the investigation of symptoms arising from the lower gastrointestinal tract and is the gold standard for diagnosis and screening of colorectal cancer [3]. This procedure is cost effective as it can be used to obtain tissue (biopsy) and perform interventional procedures like total resection of lesion, haemostasis, dilatation etc. Other indications for colonoscopy are to investigate the cause of gastrointestinal bleeding and unexplained anemia, abdominal pain, unexplained changes in bowel habit, suspicion of malignancy, or an abnormality found on abdominal ultrasound, colonic X-rays, barium enema or a computerised tomographic (CT) scan [2]. Even though the procedure is widely used in developed countries, it is not readily available in Ghana [4]. Scanty data are available on the indications and findings of colonoscopy in Ghana. The only data in literature are from Kumasi and Accra [5-7]. The aim of our study was to retrospectively evaluate the indications and findings in patients subjected to LGIE in Eastern Regional Hospital (ERH), Koforidua, Ghana.

Methods

This is a retrospective study, performed by reviewing the records of all patients who underwent diagnostic LGIE in Eastern Regional Hospital in Koforidua from January 2019 to December 2019. Formal approval was obtained from the institutional Ethical Review Board at the Eastern Regional Hospital. The endoscopy unit was set up and started operating in January 2019. Before then, the patient in the catchment area have to travel to Accra for endoscopy services, especially those who could afford. The unit operated on an open access policy. As such primary care providers could directly refer without consultation with a gastroenterologist or endoscopist. They thus served patients referred from various hospitals in eastern region and its environs, including those from the regional hospital. Bowel preparation was by ingestion of 2 litres of polyethylene glycol-containing solution 12 hours before the procedure (typically overnight). Bowel preparation was deemed optimal when there were no solids in the stool and patients with suboptimal bowel preparation were rescheduled. Sedation with intravenous midazolam 2.5mg (Dormicum®, Roche, Switzerland) and pethidine 25mg (Intravenous Infusions Ltd, Ghana) was routinely used for all

colonoscopies. Experience gastroenterologist performed all the procedures. Data on other investigations the patients had done prior to being sent to the endoscopic center for LGIE were not available from the records. All patients subjected to colonoscopy for various indications during the aforementioned period were included in the study except those that were grossly incomplete, inconsistent or illegible. An informed consent was obtained from each patient prior to the procedure. Data available from the records included the age and gender of the patients, principal indication for the procedure and primary LGIE findings. Although biopsies were taken in some instances, information on histological diagnosis was not available. Data entry and analysis were done with Stata version 13 (StataCorp, College Station, TX). Descriptive statistics were expressed as frequencies and percentages.

Results

One hundred and six LGIE (full colonoscopy and proctosigmoidoscopy) procedures were performed over the period. Caecal intubation rate was 86.2%. Poor bowel preparation or patient inability to comfortably tolerate and some technical difficulties of the procedure accounted for the failure to intubate the cecum in all cases. Sixty-nine (65.09%) were males giving a male to female ratio of 1.9: 1. Their ages ranged from 21 to 97 years, with a mean age of 56.67 ± 16.48 years. (Table 1). The commonest indications for colonoscopy were rectal bleeding 75 (66.96%), abdominal pain 20 (17.86%), chronic diarrhea and chronic constipation representing 5 (4.46%) and 4 (3.57%) respectively. Only 2 (1.79%) patient undergone LGIE on account of colorectal cancer screening (Table 2). Endoscopic findings were haemorrhoids 65 (54.17%), diverticulosis 15 (12.50%), colorectal cancer 18 (15.0%), polyp 5 (4.17%), melanosis coli 2 (1.67%) and ulcerative colitis 1 (0.83 %) (Table 3). Among patients whose indication for LGIE was bleeding per rectum, more than half had hemorrhoids as their primary finding. It is worth noting that 12.22% of such patients had a colorectal tumor with 3.33% having a colorectal polyp. Thus, almost 15.55% of patients having LGIE because of bleeding from rectum were found to have either a colorectal tumor or a potential precursor of it (Table 4).

Discussion

Colonoscopy has emerged as the procedure of choice for evaluation of patient with lower gastrointestinal symptoms, colorectal cancer (CRC) screening, and polyp surveillance with its ability to allow for therapeutic intervention. Ghana as a country has no national screening program for colorectal cancer [5] and patients undergo LGIE for specific indications. Therefore, LGIE is rarely performed for the purposes of colorectal cancer screening in Ghana. The main aim of our study was to determine the indications and findings of patient undergoing colonoscopy at Eastern Regional Hospital, Koforidua in Ghana. This study represents the first ever report on LGIE findings from regional hospital in Ghana and few of such report on Ghanaian patients after earlier ones by Dakubo *et al*. [5,6] in Accra and Gyedu *et al*. [7] in Kumasi.

From this study, the commonest indications for colonoscopy were bleeding per rectum (66.96%), abdominal pain (17.86%) and an unexplained change in bowel habit (constipation and diarrhea) (8.3%). This is not surprising since bleeding per rectum and abdominal pains are problems that prompts patients to seek urgent medical help. These were also the indications for colonoscopy in the works carried out by Kassa *et al*. [8] Sahu *et al*. [9] and Berkowitz *et al*. [1] in their Ethiopian, Indian and South African patients, respectively. Previous study by Gyedu *et al*. [7] from Kumasi in Ghana also reported bleeding per rectum, colorectal tumour, hemorrhoids and change in bowel habit as the commonest indications for colonoscopy. Similar studies from Egypt and Nigeria also reported bleeding per rectum as the most common indication for LGIE accounting for 50.0% and 43.3% of their patients, respectively [10,11]. In the Nigeria study, altered bowel habits accounted for as much as 36.2% of the indications for

LGIE [10]. In the Egyptian study by El batea *et al*. [11] 48.0% and 30.0% of patients had LGIE for diarrhea and constipation, respectively.

The commonest colonoscopy finding in this study was haemorrhoids (54.17%) which was higher than 42.0% and 32.3% in previous studies conducted in this country by Gyedu *et al*. [7] and Dakubo *et al*. [6] respectively. This is also high compared to the 18.9% and 20.9% reported among Egyptian and Nigerian patients, respectively [10,11]. However, this is similar to study conducted by Ray-Offor *et al*. [12] in Port Harcourt Rivers State, Nigeria, which recorded 57.1% of their patients as having haemorrhoids. This shows that haemorrhoids are uncommon in Ghana. Detection of tumours in the large bowel is the single most important reason for endoscopy either in symptomatic patients or for screening purposes [13]. Colorectal tumor was the endoscopic diagnosis for 15.0% of our patients. This is similar to 15.6% reported in the Nigerian series and 15.0% reported in Egyptian series. However, this is higher than 9.6% reported by Gyedu *et al*. [7] and 9.0% reported by Dakubo *et al*. [14] in Ghana. The study probably confirmed the fact that the incidence of adenocarcinoma of the colon and rectum is rising in Ghana [5]. This may be as a result of an increase in the life expectancy of the population and improvements in diagnosis. Additionally, most of the cancers were found in the rectum. Previous studies conducted in West Africa reveal that about 50% of colorectal cancers are located in the rectum.

Polyp detection rate in this study was 4.17% which is much lower than that in Western literature. However, this is slightly lower than other studies in African and Asia [11,15] but slightly higher than 3.0% detected by Dakubo *et al*. [6] in this country. The differences may be attributed to the age and sex of the participants and environmental factors including diet [16]. This may also reflect the population incidence or an underestimation due to missed lesion resulting from inadequate bowel preparation and lower caecal intubation rate. Diverticular disease was found in 12.50% of the patients which is higher than 3% reported by Dakobu *et al*. [6] and 5.5% from another study by Gyedu *et al*. [7] in this country. This is similar to 16.4% from study conducted in Cameroon by Kenfack *et al*. [17] and 16.5% by Nigerian study [18]. Previous literature has reported higher prevalence of the disease in the western countries, as high as 50% in North America adult population as compared to a 0.5% prevalence in the developing nations of Africa and Asia [19]. The classic high-fat diet and low fiber-diet of the western culture may be a major contributor of high prevalence of diverticulosis. The higher prevalence of this study compared to previous once in Ghana may be attributed to adoption of western diet and the ageing population by Ghanaians.

Inflammatory bowel disease was diagnosed in only one (0.83%) of our patient. This is very low compared to 25.0% and 18.0% reported in studies conducted in Egypt and Nigeria respectively [10,11]. Furthermore, higher percentages were also recorded in studies conducted by Al-Nakib *et al*. [16] amongst Kuwaitis, Al-Shamali *et al*.[20] amongst Saudis and Sahu *et al*. [21] amongst Indians. However, similar findings were found in previous studies conducted in Ghana by Dakubo *et al*. [6] which reported 0.5% of UC and Gyedu *et al*. [7] which reported none. Another study in Nigerian also reported only one case of UC in their patients [12]. The main reason may be due to racial and lifestyle differences, dietary factors, geographical and environmental variations. Another reason may be under-diagnosis likely because of low index of suspicion by clinicians and patients seeking other forms of treatment [22] or may be relatively uncommon in Ghana [23]. It has been established that inflammatory bowel disease is common in Europe, Scandinavia and the US but rare in the black populations of sub-Saharan Africa [24-26].

In 11.67% of our patients, the LGIE found no evidence of organic disease. This frequency is smaller than 23.6% and 41.6% reported in previous Ghanaian studies and 20% reported by Olokoba *et al*. [18] in Nigeria. In Europe, Exbrayat *et al*. [27] and Kmieciak *et al*. [28] reported normal cases in 68.1%

and 57% of their patients respectively. The differences generally reflect the fact that colonoscopies are most often performed in patients already having digestive symptoms in Ghana and many African countries. However, in the western countries most colonoscopies are conducted in patients with no symptoms mainly for colorectal cancer screening. Moreover, variations observed in the different values would be related to the type of LGIE performed for the patients. In about 14.1% of our patients undergoing LGIE for bleeding per rectum, a primary endoscopic diagnosis of colorectal tumor or polyp was made. This is comparable to the 11.8% reported among similar patients in the Accra study [5] but lower than the 17.4-23.1% reported elsewhere in west Africa [10,29,30]. A diagnosis of haemorrhoids was made in 61.6% and was the commonest cause of LGIB. This is similar to findings of the Accra and Kumasi study [6,7] but higher than the 31.0% reported in a study conducted in Nigeria by Akere *et al*. [31]. This is in contrast to UK study which found diverticular disease as a common cause of LGIB [32].

Conclusion

The commonest indication for colonoscopy was rectal bleeding, while the most frequent pathology was haemorrhoids. The proportion of our patient population found to have a colorectal tumor or polyps was not insignificant. Screening program for colorectal cancer in Ghana should be encouraged due to increasing number of tumour findings on colonoscopy. There is the need to establish more endoscopy centers in the country and more health professionals trained to perform them.

What is known about this topic

- *The most common primary indication for lower gastrointestinal endoscopy in Ghana is bleeding per rectum;*
- *Haemorrhoids is the common primary endoscopic finding in Ghana.*

What this study adds

- *Presents first data from regional hospital in Ghana about indications and findings of lower gastrointestinal endoscopy;*
- *Number of patients with colorectal tumours and diverticulosis in this study were higher than previous studies conducted in Ghana on this subject;*
- *Normal endoscopic findings of patients in this study were far lower than earlier studies conducted on this subject.*

Competing interests

The authors declare no competing interests.

Authors' contributions

Amoako Duah, the principal investigator of the project and Foster Amponsah-Manu were involved in concept design, data analysis and drafting of the manuscript. Frempong Asafu-Adjaye, Sedina Asafu-Adjaye and William Erzuah Arthur assisted the principal investigator in the collection, analysis and interpretation of the data and critically revised the article. All the authors provided final approval of the article.

Acknowledgments

We are grateful to Mariam, Bernice, Ransford, Hilda, Helena and all the endoscopy nurses of eastern regional hospital Endoscopy Unit, for their assistance during patient recruitment. Special appreciation also goes to the management members especially the medical director for their immense contribution in the setting up of the endoscopy unit and their continuous support in its operation.

Tables

Table 1: demographic characteristics

Table 2: indications of lower gastrointestinal endoscopy

Table 3: lower gastrointestinal endoscopy findings

Table 4: lower gastrointestinal endoscopy findings among patients presenting with bleeding per rectum

References

1. Berkowitz I, Kaplan M. Indications for colonoscopy: an analysis based on indications and diagnostic yield. S Afr Med J. 1993;83(4): 245-8. **PubMed**| **Google Scholar**
2. Grassini M, Verna C, Niola P, Navino M, Battaglia E, Bassotti G. Appropriateness of colonoscopy: diagnostic yield and safety in guidelines. World J Gastroenterol. 2007;13(12): 1816-9. **PubMed**| **Google Scholar**
3. Multi-Disciplinary Taskforce. New consensus colorectal cancer screening guidelines. Gastroenterology. May 2008.
4. Awuku YA, Kuenyefu Y, Oduro-Donkor D, Awuku NA, Sarkodie BD. The Geographical Distribution of Gastrointestinal Endoscopy Services within Government and Faith Based Hospitals in Ghana. Post Graduate Medical Journal Of Ghana. 2018;7(2): 86-89.
5. Dakubo J, Kumoji R, Naaeder S, Clegg-Lamptey J. Endoscopic evaluation of the colorectum in patients presenting with haematochezia at Korle-bu Teaching Hospital, Accra. Ghana Med J. 2008;42(1): 33-7. **PubMed**| **Google Scholar**
6. Dakubo JCB, Seshie B, Ankrah LNA. Utilization and diagnostic yield of large bowel endoscopy at Korle-Bu Teaching Hospital. Journal of Medical and Biomedical Sciences. 2014;3(1): 6-13. **Google Scholar**
7. Gyedu A, Yorke J. Lower gastrointestinal endoscopy: a review of the patient population of Kumasi. Arch Int Surg. 2014;4(3): 162-6. **Google Scholar**
8. Kassa E. Colonoscopy in the investigation of colonic disease. East Afr Med J. 1996;73(11): 741-5. **PubMed**| **Google Scholar**
9. Sahu SK, Husain M, Sachan PK. Clinical spectrum and diagnostic yield of lower gastrointestinal endoscopy at a tertiary centre. Internet J Surg. 2009;18(1): 1-5.
10. Al atise OI, Arigbabu AO, Agbakwuru EA, Lawal OO, Ndububa DA, Ojo OS. Spectrum of colonoscopy findings in Ile-Ife Nigeria. Niger Postgrad Med J. 2012;19(4): 219-24. **PubMed**| **Google Scholar**
11. Elbatea H, Enaba M, Elkassas G, El-Kalla F, Elfert AA. Indications and outcome of colonoscopy in the middle of Nile delta of Egypt. Dig Dis Sci. 2011;56(7): 2120-3. **PubMed**| **Google Scholar**
12. Ray-Offor E, Ibeanusi SEB. Diagnostic Yield of Colonoscopy. J Clin Gastroenterol Hepatol. 2018;2(2): 11. **Google Scholar**
13. Doubeni CA, Weinmann S, Adams K, Kamineni A, Buist DS, Ash AS *et al*. Screening colonoscopy and risk for incident late-stage colorectal cancer diagnosis in average-risk adults: a nested case-control study. Ann Intern Med. 2013;158(5 Pt 1): 312-20. **PubMed**| **Google Scholar**
14. Dakubo JC, Naaeder SB, Tettey Y, Gyasi RK. Colorectal carcinoma: an update of current trends in Accra. West Afr J Med. 2010;29(3): 178-83. **PubMed**| **Google Scholar**
15. Ghazzawi I, Ajlouni Y, Smadi B. Colonoscopy at King Hussein Medical Center; indications, effectiveness, safety and outcome. Jord Roy Med Serv. 2010;17(1): 15-20. **Google Scholar**
16. Ashley IV, Betsy CW, Eugene WG, Cynthia AT, Chery LR, Patricia AT. Dietary polyamine intake and risks of colorectal adenomatous polyps. The American Journal of Clinical Nutrition. 2012;96(1): 1333-1141. **PubMed**

17. Kenfack GU, Eloumou SAFB, Nga WTB, Guy Sadeu Wafeu, Paul Nkemtendong Tolefac, Agnes Malongue *et al*. Indications, Yield and Outcome of Colonoscopy: a 7-Year Retrospective Study in Resource-Limited Setting. Open Journal of Gastroenterology. 2019;9(3);49-58. **Google Scholar**
18. Olokoba AB, Obateru OA, Bojuwoye MO, Olatoke SA, Bolarinwa OA, Olokoba LB. Indications and findings at colonoscopy in Ilorin, Nigeria. Niger Med J. 2013;54(2): 111-4. **PubMed**| **Google Scholar**
19. Hobson KG, Roberts PL. Etiology and pathophysiology of diverticular disease. Clin Colon Rectal Surg. 2004;17(3): 147-53. **PubMed**| **Google Scholar**
20. AlShamali MA, Kalaoui M, Hasan F, Khajah A, Siddiqe I, Al-Nakeeb B. Colonoscopy: Evaluating indications and diagnostic yield. Ann Saudi Med. 2001;21(5-6): 304-7. **PubMed**| **Google Scholar**
21. Nakib BA, Jacob GS, Liddawi HA, Bayoumi A. Fiberoptic colonoscopy: a report of findings in 481 patients from Kuwait. Dis Colon Rectum. 1983;26(4): 236-8. **PubMed**| **Google Scholar**
22. Archampong TN, Nkrumah KN. Inflammatory Bowel Disease in Accra: what new trends. West Afr J Med. 2013;32(1): 40-4. **PubMed**| **Google Scholar**
23. Nkrumah K. Inflammatory bowel disease at the korle bu teaching hospital, accra. Ghana Med J. 2008;42(1): 38-41. **PubMed**| **Google Scholar**
24. Segal I, Tim LO, Hamilton DG, Walker AR. The rarity of ulcerative colitis in South African blacks. Am J Gastroenterol. 1980;74(4): 332-6. **PubMed**| **Google Scholar**
25. Karlinger K, Györke T, Makö E, Mester A, Tarján Z. The epidemiology and the pathogenesis of inflammatory bowel disease. Eur J Radiol. 2000;35(3): 154-67. **PubMed**| **Google Scholar**
26. Sandler RS, Golder AL. Epidemiology of Crohn´s disease. J Clin Gastroenterol.1986;8(2): 160-5. **PubMed**
27. Kmieciak Le Corguillé M, Gaudric M, Sogni P. Relevance of Colonoscopy Indications in an AP-HP Gastroenterology Department in 2001; application of Criteria Established by a Panel of European Experts. Gastroentérologie Clinique et Biologique. 2003;27: 213-218.
28. Exbrayat C, GarnierA, Billette de Villemeur A. Results of Colonoscopies According to Their Indications and Consequences for the Detection of Polyps and Colorectal Cancers. Masson, Paris. 2002.
29. Mbengue M, Dia D, Diouf ML, Basséne ML, Fall S, Diallo S *et al*. Contribution of coloscopy to diagnosis of rectal bleeding in Dakar (Senegal). Med Trop (Mars). 2009;69(3): 286-8. **PubMed**| **Google Scholar**
30. Okon JB, N´Dri N, Toth´o A. Diagnosis of hematochezia in Abidjan Cocody University Hospital (Ivory Coast). Med Sante Trop 2012;22(4): 398-400. **Google Scholar**
31. Akere A, Oke TO, Otegbayo JA. Colonoscopy at tertiary health care facility in Southwest Nigeria: Spectrum of indications and colonic abnormalities. Ann Afr Med. 2016;15(3): 109-13. **PubMed**| **Google Scholar**
32. Oakland K, Guy R, Uberoi R, Hogg R, Mortensen N, Murphy MF *et al*. acute lower GI bleeding in the Uk patient characteristics, interventions, and outcomes in the first nationwide audit. Gut. 2018;67(4): 654-62. **PubMed**| **Google Scholar**

Table 1: patient demographics (N = 106)	
SEX	**N (%)**
Female	37 (34.91)
Male	69 (65.09)
AGE	
Mean + SD	56.67 ± 16.48
AGE GROUP	
20 39	16 (15.09)
40 59	45(42.45)
60 79	36 (33.96)
> 80	9 (8.49)

Table 2: indications for lower gastrointestinal endoscopy	
INDICATIONS	**N (%)**
Bleeding per rectum	75 (66.96)
Abdominal pains	20 (17.86)
Diarrhoea	5 (4.46)
Constipation	4 (3.57)
Weight loss	3 (2.68)
Screening purposes	2 (1.79)
Rectal prolapse	2 (1.79)
Abdominal mass	1 (0.89)
TOTAL	112*
*Some patients had more than one (1) indication	

Table 3: lower gastrointestinal endoscopic findings L Lower gastrointestinal endoscopic findings		
FINDINGS	**N (%)**	
Normal	4(11.67%)	
Abnormal	106(88.33%)	
Haemorrhoids	65 (54.17)	
Diverticular disease	15 (12.50)	
Rectal cancer	13 (10.83)	
Colon cancer	5 (4.17)	
Polyps	5 (4.17)	
Melanosis coli	2 (1.67)	
Ulcerative colitis	1 (0.83)	
TOTAL	120*	
*Some patients had more than one (1) endoscopic finding		

Table 4: lower gastrointestinal endoscopic findings among patients presenting with bleeding per rectum	
Findings	**N (%)**
Normal	2 (2.22%)
Haemorrhoids	61 (67.78%)
Diverticular disease	12 (13.33%)
Rectal cancer	9 (10.0%)
Colon cancer	2 (2.22%)
Polyps	3 (3.33%)
Ulcerative colitis	1 (1.11%)
Some patients had more than one (1) endoscopic finding	