

Spectrum of endoscopic findings in patients referred for suspected upper gastrointestinal bleeding

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Abstract

Upper gastrointestinal bleeding (UGIB) is a common emergency for referral for endoscopy. However, endoscopy may not reveal any findings that may account for the suspected UGIB. We present a review of the findings among patients suspected to have UGIB referred for endoscopy in our local setting. All upper gastrointestinal procedures ($n = 4,640$) done between the periods January 2001 to December 2004 were reviewed. Significant findings were any ulcer diseases, portal hypertension related, malignancies, significant reflux diseases, polyps, vascular formations and any bleeding sources. Suspected UGIB accounted for 8.8% ($n = 373$) of the overall indications. The mean age of patients was 49.5 ± 20.8 years old, significantly older than patients with other indications (45.5 ± 16.2 years old). The findings consisted of peptic ulcer disease (47.5%), significant reflux oesophagitis (3.5%), varices (1.1%), Mallory-Weiss tears (1.1%) and malignancy (0.5%). The ulcerative disorders consisted of duodenal ulcers only ($n = 100$, 56.5%), gastric ulcers only ($n = 44$, 24.9%) and both ($n = 33$, 18.6%). 49.6% of procedures did not reveal any significant findings that may account for UGIB. The overall prevalence of *Helicobacter pylori* was 20.6%. Male and older patients (>50 years) were more likely to have significant findings on endoscopy (p values < 0.05). In conclusion, peptic ulcer disease is the main significant finding among patient with suspected UGIB. Male and older patients were more likely to have significant findings. Importantly, half of the patients with suspected UGIB did not have any significant findings.

Introduction

Upper gastrointestinal bleeding (UGIB) is a common medical emergency that requires urgent treatment. Untreated, it is associated with significant morbidity and despite effective treatment, mortality associated with UGIB remains around 5 to 14% [1, 2]. Confirmed or suspected UGIB is a common indication for admission and referral for endoscopy either as an emergency or elective procedure. The modes of presentations depend on the severity of bleeding with haemodynamic status being the main factor influencing timing of endoscopy. Both international and regional guidelines for non-variceal and variceal UGIB recommend rapid assessment and resuscitation as the initial step in management of these patients. Oesophagogastroduodenoscopy (OGD) should be performed once patients are stable and this should be carried out as soon as possible [3, 4]. Data in

the local setting are lacking. We report our experience in patients referred for endoscopy for suspected UGIB over a three years period.

Methods

The Endoscopic Unit, RIPAS Hospital is the largest endoscopic unit in the country serving three of the four districts for all endoscopic works. The unit receives referrals from the various clinics (RIPAS hospital clinics, government peripheral clinic and private clinics), Tutong Hospital, Temburong Hospital and the various wards in RIPAS Hospital. This Unit has an open access policy for upper endoscopic procedures; referrals are accepted via phone and appointments given at the earliest depending on urgency of the situations. Endoscopic retrograde cholangiopancreatography (ERCP) and lower gastrointestinal endoscopy are referred to the gastroenterologists for consultation prior to giving appointments. Upper gastrointestinal procedures are carried out daily in the morning. All patients admitted for suspected UGIB are given acid suppression therapy either *per os* or via the intravenous route, depending on the clinical parameters. Emergency procedures can

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be arranged at any time by the attending gastroenterologist. Patients were required to fast for a minimum of four hours before procedure. Topical anesthesia was used and conscious sedation provided was required at the patient's request. *Helicobacter pylori* (*H. pylori*) testing was routinely done by rapid urease test (*CLOtest*, Delta West Ltd, Bentley, West Australia) or histology if there was no contraindication. After the procedure, patients were reviewed by the endoscopist with the result of the *CLOtest* and appropriate treatment or advice was prescribed. A repeat endoscopy at six to eight weeks was performed in cases of positive for *H. pylori* or for documentation of ulcer healing, in particularly gastric ulcers.

The endoscopic therapeutic modalities available for the treatment of bleeding lesions included adrenaline injection (1 mg in 1:10,000 dilution), heater probe, haemoclip, sclerotherapy or rubber band ligations for bleeding varices. These various modalities may be used in combinations. Data were collected from endoscopic records.

Demographic details (age, gender, and race), indications and endoscopic findings were collected from the endoscopic sheet. Significant findings were taken as findings that included ulcer diseases, portal hypertension related, malignancies, significant reflux diseases, polyps, vascular formations and any bleeding sources. Data were coded and entered in the SPSS program (Version 10.0, Chicago, IL, USA) for analysis. Level of significance was taken when *P* values were less than 0.05 (two-tailed).

Results

During this period, a total of 4,640 upper gastrointestinal procedures were performed. Complete records were available for 4,329 cases and formed the study cases. Procedures with suspected or confirmed UGIB as the indication for endoscopy accounted for 8.6% (*n* = 373) of cases. The indication for endoscopies over this period is shown in Table 1. Among this various indications, there were more males in the suspected UGIB group (60.3%) and they were also significantly older compared to patients with other indications (49.5 ± 20.8 vs. 45.5 ± 16.2 years old, $p < 0.001$).

Table 1: Overall indications over the three years period

Indications	N (%)
Dyspepsia	2,164 (50.0)
Anaemia	481 (11.1)
Gastrointestinal bleeding	373 (8.6)
Gastroesophageal reflux	287 (6.6)
<i>Helicobacter pylori</i> positive	619 (14.3)
Loss of appetite/loss of weight	85 (2.0)
Vomiting	88 (2.0)
Dysphagia/odynophagia	59 (1.4)
Others	173 (4.0)

The racial breakdown of the patients was similar to the national breakdown with the Malays predominating. The demographic of patients is shown in Table 2.

Table 2: Demographic characteristics of patients with UGIB (*N* = 373)

Mean age (yrs)	49.5 ± 20.8
Sex	
Male	225 (60.3)
Female	148 (39.7)
Racial groups	
Malays	287 (76.9)
Chinese	44 (11.8)
Indigenous	20 (5.4)
Others	22 (5.9)

Age presented as mean \pm standard deviation

Gender and race presented as absolute number and percentages in bracket

Overall, significant findings (findings that were likely to explain bleeding) were seen in 50.4%. The remainders consisted of mild oesophagitis, gastritis, duodenitis or normal findings. Patients with significant findings were more likely to be male (58.2% vs. 38.5%, $p < 0.001$) and older (>50 years old) (63.4% vs. 36.3%, $p < 0.001$). Peptic ulcer disease (PUD) was the most common finding, accounting for 47.5% of cases. The significant findings are shown in Table 3.

Table 3: Overall findings of endoscopic evaluations

Findings	N (%)
Significant oesophageal findings	
Reflux oesophagitis (grade C/D)	13 (3.5) ‡
Mallory Weiss tear	4 (1.2)
Varices	3 (0.9)
Candidiasis	2 (0.6)
Oesophageal ulcers	5 (1.4)
Significant gastric findings	
Gastric ulcer (GU)	77 (20.6) *
Varices	1 (0.3)
Arterio-venous malformation	1 (0.3)
Malignancy	2 (0.6)
Polyps	2 (0.6)
Significant duodenal findings	
Duodenal ulcer (DU)	133 (36.7) *

‡ Overall reflux oesophagitis was seen in 19%

* Concomitant GU and DU occurred in 33 patients

Older patients (>50 years) were more likely to have significant gastric findings (30.9% vs. 15.6%, $p<0.05$). Significant duodenal findings were seen among male patients (45.3% vs. 21.6%, $p<0.001$) and older patients (41.8% vs. 29.6%, $p<0.05$).

The overall prevalence of *H. pylori* was 20.6%. This was higher in males compared to females (23.1% vs. 16.9%, $p = 0.147$) and the younger (<50 years) age group (24.6% vs. 17.0%, $p = 0.071$), although these did not reach statistical significance.

Discussion

Our study showed that only half of patients referred with suspected UGIB have findings that may account for blood loss. This suggests that some of the indications were likely to be wrong diagnosis or bleeding beyond the second part of the duodenum. During upper GI endoscopy, it is routine to inspect up to proximal second part of the duodenum. Examination beyond this point can be difficult and can cause unnecessary discomfort. Furthermore, significant findings beyond this point are uncommon. Other causes of suspected blood loss or anaemia such marrow dysfunction, anaemia of chronic diseases, intravascular haemolysis or non gastrointestinal blood loss should be considered [5,6]. Excess venesections for blood investigations have been reported to be a factor [7,8,9].

Peptic ulcer disease was the most common finding in our study. Other causes such as severe oesophagitis, portal hypertension related disorders or malignancies were less common. Significant findings were more common among the elderly, both significant gastric and duodenal findings. Male patients were more likely to have significant duodenal findings. This is not unexpected considering older patients were more likely to have significant co-morbid conditions and to use medications associated with increased risk for ulcerations. Portal hypertension related disorders have been reported to account for approximately 10% of all UGIB. However, in our study, this only accounted for 1.2% of cases. This most likely reflects the low prevalence of variceal bleeding in our local setting.

Since its discovery, *H. pylori* has emerged as the most important aetiological factor in peptic ulcer disease [10]. It was reported to be responsible for over 95% of duodenal ulcers and 70-80% of gastric ulcers. However, there have been few recent studies that showed declining prevalence [11,12]. Our own data also showed a decline in the prevalence of *H. pylori* from 32.3% to 25.6% over a five years period (2000 to 2004) [13]. Our own study showed that the overall prevalence was 20.6% among patients with suspected UGIB. The prevalence among those with findings of ulcer diseases was 40%. This is lower than previously reported. Reasons that may account for this included predominant use of rapid urease test for *H. pylori* detection which have low sensitivity and presence of blood in the

stomach may produce false negative results [14,15]. Unfortunately we do not have information on non-steroidal anti-inflammatory drugs (NSAIDs) use as this was not reliably documented. NSAID use either overt or occult is now becoming an important factor for *H. pylori* negative ulcers [16].

There are several limitations with our study. Firstly, this was a retrospective study and this is inherently associated with many limitations. Secondly only the main indication for endoscopy was routinely recorded and it is likely that some patients in the other indications groups may have gastrointestinal bleeding and not included in the study group. Thirdly, data on NSAID use were not available. However, despite this our results would be a useful guide for health care worker managing patients with suspected UGIB.

In conclusion, peptic ulcer disease is the main significant finding among patient with suspected UGIB. Male and older patients were more likely to have significant findings. Importantly, half of the patients with suspected UGIB did not have any significant findings.

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