Clinical and Endoscopic Findings in Patients Presenting with Upper Gastrointestinal Bleeding at a Tertiary Care Hospital

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ABSTRACT

Background

Upper gastrointestinal (UGI) bleeding is a severe medical condition that requires prompt evaluation and management. Understanding the clinical and endoscopic findings in patients presenting with upper gastrointestinal bleeding is essential for accurate diagnosis and effective treatment.

Objective

To investigate the age and sex composition, clinical presentations, and endoscopic findings of patients with upper gastrointestinal bleeding at a tertiary care hospital.

Method

A total of 561 patients with upper gastrointestinal bleeding were included in the study. Data on age, sex, and clinical presentation were collected for each patient. Endoscopic findings were recorded, and the relative frequency of various upper gastrointestinal lesions was analyzed.

Result

The age distribution of patients revealed that 40.82% were between 15 and 45 years, 32.98% were aged 46 to 65 years, and 26.20% were above 65 years. Among the patients, 73.08% were male and 26.92% were female. Hematemesis was observed in 248 cases, while melena was present in 136 cases, and both were present in 171 cases. Recent onset anemia with positive occult blood was reported in 6 patients. The most common endoscopic finding was varices (39.39%), followed by ulcers (15.51%). Mallory Weiss tear was noted in 5.53% of cases.

Conclusion

According to our findings, varices are the most common endoscopic finding in individuals with upper gastrointestinal bleeding rather than peptic ulcer disease. The considerable increase in varices emphasizes the critical importance of early identification and care in high-risk individuals, as well as contributing to a better understanding of upper gastrointestinal bleeding.

KEY WORDS

Bleeding, Endoscopy, Esophageal varices, Gastric varices, Gastrointestinal hemorrhage, Upper gastrointestinal tract

INTRODUCTION

Upper Gastrointestinal(GI) bleeding is described as any bleeding within the lumen of the gastrointestinal tract from the upper esophagus to the ligament of Treitz at the duodenum.[1] It typically manifests clinically as hematemesis, melena, hematochezia, anemia, or occult gastrointestinal bleeding.[1]

Upper GI bleeding is the most common acute medical emergency requiring urgent clinical assessment and resuscitative care.[2] Upper GI endoscopy is the mainstay for the diagnosis and management of upper gastrointestinal bleeding which accurately delineates the bleeding site and establishes the exact cause, aids in deciding the necessity for surgery, and provides useful prognostic information.[2] Moreover, an initial Rockall scoring system is devised for assessment before endoscopy which can predict rebleeding and death.[3,4] In predicting the rebleeding of peptic ulcers, the Forrest classification can be used.[5] Endoscopic therapy along with appropriate medication is adopted as a management approach.[6] Among the medications used, Proton pump inhibitors (PPIs) have proven to be the most effective ones by reducing the risk of rebleeding, need for surgery, average hospital stay, average blood transfusion amount, and mortality.[6]

Based on the data in Nepal, it accounts for up to 2.5% of emergency department admissions.[7] Despite the high incidence and mortality rates, there are only limited published studies even in the urban settings of Nepal, with the studies on the rural areas taking a clear backseat. This study aims to study the clinical and endoscopic findings among patients with upper GI bleeding.

METHODS

A descriptive cross-sectional study was conducted among the patients presenting to the gastro-enterology Department of Internal Medicine in Kathmandu University Hospital, Dhulikhel, Kavrepalanchowk, Nepal after obtaining ethical approval from the Institutional Review Committee (Reference number: IRC-KUSMS 245/22). Data from January 2017 to January 2022 was collected between 12 December 2022 to 5 January 2023 from medical records. Patients above 18 years presenting with upper gastrointestinal bleeding as hematemesis, melena, or both, nasogastric aspirate of blood, or new onset anemia with a positive occult blood test were included in the study. All pregnant women, patients with bleeding due to systemic diseases, and patients having missing or incomplete data on the medical records of the hospital were excluded. A convenience sampling method was used. Five hundred sixty-one samples were included in the study. Data were entered and analyzed in Microsoft Excel 2016.

RESULTS

A total of 561 cases of upper GI bleeding were identified and studied for clinical and endoscopic findings. There were 410 (73.08%) males and 151 (26.92%) females, and the male-female ratio was 2.72:1. The mean age of the population was 49.95 ± 17.31 years. Out of 561 cases, 229 (40.82 %) patients were of the age group (15 to 45 years) followed by 185 (32.98%) in the age group (45 to 65 years) and only 147 (26.20%)of the age group (> 65 years) (Table 1).

Table 1. Age and Sex composition of patients with UGI bleeding

Age (in years)	Male N (%)	Female N (%)	Total N (%)
15-45	180 (32.09)	49 (8.73)	229 (40.82)
46-65	142 (25.31)	43 (7.66)	185 (32.98)
Above 65	111 (19.77)	36 (6.42)	147 (26.20)
Total	433 (77.17)	128(22.81)	561 (100)

According to our study, 248 patients presented with hematemesis, 136 presented with malena, and 171 patients presented with both hematemesis and malena. Recent onset anemia with positive occult blood was found in 6 patients (Table 2). During the endoscopy, the most common finding was varices found in 221 (39.39%) patients followed by ulcers in 87 (15.51%) patients, gastritis in 34 (6.06%) patients, and Mallory-Weiss tear in 31(5.53%) patients. Among them, 62 (11.05%) patients had normal findings on endoscopic examination (Table 3).

Table 2. Clinical presentation of patients with Upper GI bleeding

Clinical Presentation	N (%)
Haematemesis	248 (44.21 %)
Malena	136 (24.24%)
Recent onset anemia with positive occult blood	6 (1.07%)
Haematemesis and Malena	171 (30.48%)
Total	561 (100)

DISCUSSION

Upper Gastrointestinal bleeding is defined as a hemorrhage from anywhere from the mouth to the ligament of Treitz- and has various underlying factors, including, but not limited to, peptic ulcer perforation, variceal bleeding, Mallory Weiss syndrome, and esophagitis.[7] Globally, peptic ulcer has been reported to be the most common etiological factor behind upper gastrointestinal bleeding.[8] While the total incidence is declining, the major cause remains perforation of a peptic ulcer, with nearly 30 hospitalizations per 100,000 population in the US, where the hospitalization rate for upper gastrointestinal bleeding is 67 cases per

Table 3. Relative frequency of endoscopic findings of patients with upper GI bleeding

Endoscopic findings		N (%)	
Varices	Esophageal Varices	208(37.08)	221 (39.39)
	Fundal Varices	8 (1.43)	
	Esophageal and Fundal Varices	5 (0.89)	
Ulcer	Gastric Ulcer	40 (7.13)	87 (15.51)
	Duodenal Ulcer	34(6.06%)	
	Esophageal Ulcer	13(2.32%)	
Normal			62 (11.05)
Gastritis and Duodenitis			44 (7.84)
Gastritis			34 (6.06)
Mallory Weiss tear			31 (5.53)
Esophagitis and Gastritis			16 (2.85)
Hiatal hernia			16 (2.85)
Esophagitis			15 (2.67)
Dieulafoy's lesion			9 (1.60)
Growth			8 (1.43)
GAVE			8 (1.43)
Telangiectasia			4 (0.71)
Polyp			4 (0.71)
Hookworm			2 (0.36)
Grand Total			561 (100)

100,000.[9] This changing trend is largely attributed to effective Helicobacter pylori eradication therapy.[9]

In this study, the mean age group affected was found to be 49.95 ± 17.31 which is similar to the findings of a previous study done in the same setting more than a decade ago. In comparison to the aforementioned study, the male-to-female ratio has increased from 1.8:1 to 2.72:1. Males being more commonly affected than females has been found in other studies as well.[10,11]

Patients with upper gastrointestinal bleeding present with hematemesis, malena, or both.[12] In a study with a similar demographic profile, patients with upper gastrointestinal bleeding commonly presented with a combination of hematemesis and melena, followed by those presenting with melena alone and then hematemesis alone.[13] In our study, 248 patients were presented with hematemesis, 136 patients were presented with malena, and 171 patients were presented with both hematemesis and malena.

While upper gastrointestinal bleeding is common in Nepal, there have been limited studies in establishing the clinical and demographic profile. Our main aim was to compare and capture the changing trends in the etiological factors of upper gastrointestinal bleeding due to accessible therapies for Helicobacter pylori. A prior study, conducted at our center in 2010, had reported peptic ulcer to be the most common cause, cohesive with international findings, however, in our current study, results have reported a change with nearly 39.39% of the cases being variceal (esophageal and fundal) compared with approximately 15.51% cases being due to some form of ulcer (gastric, duodenal or esophageal).[1] We attribute this change to the aggressive detection and therapy of Helicobacter pylori.

It could also be attributed to increased use of over-the-counter as well as prescribed drugs controlling peptic ulcers like proton pump inhibitors and early detection of peptic ulcer disease due to increased health facilities.[14] It could also be due to the burden of chronic liver disease (CLD) whose most common endoscopic finding is found to be gastro-esophageal varices in a study by Bhattarai et al.[15] Dewan et al. from Chitwan, Nepal had reported that esophageal varices (47.5%) were the most common cause of UGI bleed.[13] Likewise, studies by Jain et al., Anand et al. and Rao et al. have also reported esophageal varices as the most common cause of UGI bleeding with their respective incidences being 47.4%, 45.5%, and 51% respectively.[16-18] However, in another study done in Gandaki province, Nepal, peptic ulcer disease, detected in 35.7% of patients was regarded as the most common cause of upper GI bleeding.[19]

This study highlights notable demographic and etiological shifts in findings among patients of upper gastrointestinal bleeding (UGIB), in contrast to a study conducted by Gurung et al. at the same center in 2010.[1] In the earlier study, peptic ulcer disease was reported as the leading cause, while our findings indicate a significant incidence of esophageal varices (39.39%) compared to a lower prevalence of esophageal varices (15.6%) in the earlier research. We also observed differences in the prevalence of gastric ulcers, with 7.13% in our study and a higher 25.6% in the earlier study. Moreover, our study reveals a male predominance (73.08%), which contrasts with the undisclosed gender distribution in the prior research.[1] These disparities in our findings underscore the dynamic nature of UGIB etiology, potentially influenced by factors such as improved detection and treatment of Helicobacter pylori, increased use of proton pump inhibitors (PPIs), and enhanced access to healthcare facilities.

However, it is essential to acknowledge the limitations of our study. First, it is a descriptive cross-sectional study, which limits the ability to establish causality or determine temporal relationships. Second, the study was conducted at a single tertiary care hospital, which may not fully represent the population at large. Further studies with larger sample sizes and more comprehensive data collection are warranted to provide a more detailed understanding of UGI bleeding in this population.

CONCLUSION

This study reveals that varices are the most common endoscopic finding among patients presenting with upper gastrointestinal bleeding which contrasts with many other studies and supports the changing trends in findings among patients of upper GI bleeding. The substantial increase in the incidence of esophageal varices as a leading endoscopic finding underscores the critical need for early detection and intervention in high-risk populations. The widespread availability and use of proton pump inhibitors (PPIs) and antibiotics for Helicobacter pylori eradication in recent years could potentially contribute to the decline in peptic ulcer-related bleeding and the subsequent rise in variceal bleeding cases, as supported by the changing landscape of UGI bleeding causes in our study. Further research, including diverse populations, is needed to validate these trends and develop effective interventions to reduce UGI bleeding's impact.

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