

Profile Of Nonvariceal Upper Gastrointestinal: Bleeding In A Tertiary Referral Hospital

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Citation

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Abstract

Background: Upper gastrointestinal bleeding is one of the most commonly encountered emergencies in day-to-day practice, of which, variceal bleed secondary to portal hypertension is well known and documented with various protocols for its management. In this study, an attempt has been made to define the various causes of nonvariceal upper gastrointestinal bleeding, to outline management modalities and to determine the final outcome of patients.

Methods: A retrospective analysis of patients presenting with upper gastrointestinal (UGI) bleeding between January 1998 to December 2001 (4 years) was conducted. A total of 180 patients were considered, of which 60 were excluded due to endoscopically proven variceal bleeding. Of the 120 patients, the various causes were determined by different investigations and were treated by a multimodality approach.

Results: Out of the 120 patients, most of the patients belonged to an age group of more than 50 years (mean age - 48.5 years). Haematemesis was the most common presentation and Acute Gastric Mucosal Lesion (AGML) was the most frequently encountered lesion. The cause of bleeding was not identified in 10 patients (undetermined group). Twenty-two patients (18.3%) underwent surgery and we had an over-all mortality of 15.8% (19 patients).

Conclusion: Nonvariceal UGI bleeding is common, the cause of which needs to be determined early. There is a male preponderance and the incidence and mortality increases with advancing age. AGML being the leading cause can be managed conservatively most of the time. Rare and unrecognized causes of nonvariceal UGI bleeding are not rare and the undetermined group remains a diagnostic problem.

INTRODUCTION

UGI bleeding is one of the most common emergencies encountered in surgical practice. It is estimated that 1 – 2% of all acute admissions are due to GI bleeding¹. The morbidity, mortality and the diversity of the causes adds to the therapeutic problems in these patients. Sophisticated diagnostic and therapeutic modalities of management have failed to bring down the overall mortality of these patients. This is a retrospective study involving patients with nonvariceal UGI bleeding where in various causes have been detected and managed. It is surprising to note that though nonvariceal bleeding is common, timely diagnosis and intervention is not possible due to lack of facilities resulting in high mortality and morbidity.

PATIENTS AND METHODS

An attempt to retrospectively analyze patients admitted to

Kasturba Medical College Hospital, Manipal, India with nonvariceal UGI bleeding is made. The study was carried out over a period of 4 years (between January 1998 and December 2001). The total number of patients in this study was 180, admitted under various Surgical and Medical specialties, out of which 60 patients were endoscopically proven to have variceal bleeding and were excluded. The remaining 120 cases were included in the present study. These patients were analyzed in detail depending upon the history, habits, sex incidence, emergency / elective admissions, the amount of blood loss and blood requirements. Out of these, 78 cases (65%) were encountered in the emergency room and the remaining 40 (35%) were inpatients. All patients were resuscitated initially and once haemodynamically stable, were subjected to examination.

Upper gastrointestinal (UGI) endoscopy was the chief

investigative modality. However a prothrombin time (PT), ultrasonogram of abdomen (USG) to ascertain the liver status and in appropriate cases, an angiogram was done to detect the source and site of bleeding. Treatment ranged from therapeutic endoscopy (injection of adrenaline, 1:10000) to various surgical procedures depending upon the cause.

RESULTS

The patient profile is outlined in Table 1. The mean age was 48.5 years. The commonest mode of clinical presentation was haematemesis, (93 patients - 77. 5%) followed by melena (27 patients - 22. 5%). All patients underwent UGI scopy within 6 - 48 hours of admission and the cause was identified in 110 (91.7%) but in 10 patients (8.3%) cause could not be determined despite an angiogram and were placed in the undetermined group.

Figure 1

Table 1: Patient Profile

Males: 89 (74.2%) Females: 31 (25.8%)

Age Group	No. of Patients	Percentage
<30	29	24.0
30-50	32	26.5
>50	59	49.5

The various lesions encountered are as shown in Table 2. AGML was the commonest lesion. Therapeutic endoscopy in the form of injection of bleeding sites with adrenaline (1:10000) was done in 17 patients [8 – duodenal ulcers (DU), 8 – gastric ulcers (GU), 1 Dieulafoy's]. Two cases rebled (DU) and a repeat endoscopy showed a prominent, pulsating vessel and these patients were subjected to surgery and were cured with no recurrence of ulcers. Twenty two patients were operated upon and the criteria for considering these patients for surgery were: a) persistent bleed or rebleed, b) failure of therapeutic endoscopy, c) hypotension, d) prominent / pulsating or spurting vessel and e) patients requiring repeated blood transfusions.

Figure 2

Table 2: Etiology of NVUGIB in our patients

Lesion	Number	Percentage
Acute gastric mucosal lesion (AGML)	55	45.83
Gastric ulcer (GU)	18	15
Duodenal ulcer (DU)	10	8.3
Pseudoaneurysm	05	4.2
Mallory-Weiss	04	3.3
Oesophagitis	04	3.3
Dieulafoy's	03	2.5
Stomach		
Ca	02	1.7
Leiomyoma	01	0.8
Acute myeloid leukemia (AML)	02	1.7
Leptospirosis	02	1.7
Ca esophagus	02	1.7
Ca post.1/3 tongue	02	1.7
Cause not identified (undetermined group)	10	8.3

Majority of the patients were managed conservatively. Table 3 summarises the various management modalities. In the undetermined group (10 cases), 6 were subjected to an angiogram and 2 underwent laparotomy for continuous bleeding and on table gastrotomy and enterotomy was performed with gastroscopy and enteroscopy, but in vain. We had a mortality of 19 patients (AGML - 9, GU - 2, pancreatic pseudoaneurysms - 2, undetermined group - 6).

Figure 3

Table 3: Management modalities

Lesion	No.	Conservative Management	Surgery	
AGML	55	52	03	Subtotal gastrectomy
GU	18	14	04	Partial gastrectomy
DU	10	04	06	Truncal vagotomy, pyloroplasty, under running of vessel
Dieulafoy's	3	-	2	Wedge resection Under running of vessel
Stomach				
Ca	2	1	1	Distal radical gastrectomy
Leiomyoma	1	1		
Pseudoaneurysm	5	2	3	Arterial ligation
Cause not known	10	8	2	Laparotomy

Figure 4

Table 4: Mortality rate

Age	No. of Cases	Mortality
<30 yrs	29	2
30-50 yrs	32	6
>50 yrs	59	11

DISCUSSION

Our hospital is a tertiary referral center, which takes care of complicated and referred cases from other institutions. In our study, AGML was found to be the most common cause of nonvariceal bleeding. Alcohol ingestion, drugs (Non Steroidal Anti Inflammatory Drugs - NSAID), intracranial hemorrhage and stress due to trauma and various surgical procedures are the usual etiological factors². In our patients, majority were alcoholics (30), followed by NSAID ingestion (13). Seven patients were admitted under neurosurgery for head injury and intracranial hemorrhage and 5 were from orthopaedics and ENT postoperative wards. Interference of NSAIDS with prostaglandin synthesis, loss of gastric mucosal defense and an inhibitory effect on platelet aggregation are found to be the causes for GI bleeding in this condition³. Bleeding in such cases is due to a superficial mucosal injury with erosions and capillary oozing. In most instances, bleeding is not massive, is self limiting and stops spontaneously in 90% of cases with simple withdrawal of the offending substance^{3,4}. When conservative management fails surgical therapy in the form of subtotal gastrectomy is the treatment of choice in such patients⁴.

There are various modalities for management of bleeding gastric ulcer, like endoscopic injection of adrenaline, under running of the bleeding vessel, excision of the ulcer and gastric resection^{5,6}. As no prospective, randomized comparison of these procedures is available so far, in fit patients, Billroth I gastrectomy is considered to be the most definitive procedure^{7,8}.

Dieulafoy's lesion is a mucosal erosion with a cap of thrombus overlying a ruptured submucosal vessel. Approximately 80% of these lesions are found within 6 cms of the gastroesophageal junction on the lesser curve of the stomach. The bleeding that emanates from the large and abnormally located artery is typically intermittent and brisk. The etiology of this lesion is unknown⁹. Out of the three cases we encountered, in two cases the lesion was around 1 - 3 cms from the cardia and in the other, it was on the lesser curve. Since bleeding from a Dieulafoy's lesion often is life threatening, intervention should be immediate and aggressive. Therapeutic endoscopy has been found to have only partial success. There are two schools of thought in the surgical management of a Dieulafoy's lesion. Welch et al¹⁰ advocate a simple under running of the vessel. But Veldhyzen et al¹¹ feel a wide excision of the lesion is mandatory, not only to avoid future bleeding from the same site but also to arrive at a histopathological diagnosis.

Pseudoaneurysms are a rare complication of chronic pancreatitis and the splanchnic vessels (splenic, hepatic, gastroduodenal and pancreaticoduodenal) are the one usually involved¹². A high incidence of pseudoaneurysms in our hospital is due to our proximity to Kerala state, where chronic calcific pancreatitis (tropical pancreatitis) is common. They can present as massive haematemesis and is due to an intraductal bleed and is also called as 'haemosuccus pancreaticus'¹³. An UGI scopy shows blood in first and second part of the duodenum and in some cases blood can be seen oozing out from the ampulla of Vater. Coeliac angiography is the investigation of choice and also used to embolize the lesion at the same sitting. Surgical options are resection or arterial ligation¹⁴. In our series of 5 cases, 3 had to be operated up on as facilities for embolization were not available at that time. Two underwent embolization and were found to be symptom free at follow-up.

The undetermined group posed the greatest difficulty as no cause could be identified in these patients even though repeated angiography, on table enterotomy and enteroscopy was performed. Sugawa et al¹⁵ advocate that in 3-20% of undetermined cases, cause cannot be determined. There is only one study so far in literature by Langman et al¹⁶, where in they conducted a post mortem in 68 such patients. The cause was identified in only 8 of them, the lesions being Dieulafoy's, pancreatic pseudoaneurysm and carcinoma of esophagus. The cause was largely unknown in 60 patients.

Patients with UGI bleed are known to have a high mortality and are due to end organ failure¹⁷. In our patients, old age, persistent hypotension, myocardial infarction, adult respiratory distress syndrome (ARDS), sepsis, uremia and chronic renal failure (CRF) were the causes of mortality. A comparison of our series with the available International series^{15,18}, is presented in Table 5.

Figure 5

Table 5: Comparison of our data with the International data

	Dronfield (1982) (n=1037)	Sugawa (1990) (n=469)	Present series (2001) (n=120)
AGML %	03	36	45.83 (55)
GU %	15	21	15 (18)
DU %	7.5	17	8.3 (10)
Mallory-Weiss %	05	11	3.3 (04)
Others %	12.5	13	19.1 (23)
Undetermined %	27.5	21	8.3 (10)
Mortality %	24	32	15 (19)

CONCLUSIONS

Nonvariceal UGI bleeding is a common cause of haematemesis and is more common in males. Incidence and mortality increase with advancing age. AGML is the most common etiological factor and the majority of these patients can be managed conservatively. UGI scopy is the diagnostic and therapeutic tool of choice and helps in the therapy of some of the lesions. Resuscitation plays a crucial role in the initial management of these patients.

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