Endoscopy in upper gastrointestinal haemorrhage

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Summary

Endoscopy was performed in 194 patients who presented with upper gastrointestinal haemorrhage from January 1986 through June 1987. A cause of bleeding was identified in 187 cases (96.4%). The most common cause was duodenal ulcer which was evident in 84 cases (43.3%). Endoscopic proof of bleeding was seen in 122 patients (65.2%) while an assumed cause was designated in 65 cases (34.8%). Endoscopic evidence of bleeding was more evident in the group examined within 24 hours of admission (70.0%) compared with the group endoscoped after 24 hours of admission (21.0%) ($p < 0.001$). Our results favour early endoscopy. Logistic problems are discussed and a combined medical-surgical gastrointestinal endoscopy service suggested.

Key words – Endoscopy, upper gastrointestinal haemorrhage, duodenal ulcer, endoscopic evidence.

Introduction

Upper gastrointestinal haemorrhage is a common cause of hospital admission, with a reported incidence of 50 – 100 admissions per 100,000 population.[1,2] Proper management is based on accurate identification of the cause of bleeding. Endoscopy is presently recognised as the investigation of choice because of its superiority over other diagnostic modalities.[3] On an emergency basis, a firm diagnosis can be obtained in 80 – 90% of patients in experienced hand.[4] This study records our experience in the use of upper gastrointestinal endoscopy in patients with this condition.

Materials and Methods

At the University Hospital, Kuala Lumpur, gastrointestinal (GI) endoscopy is performed in a combined medical-surgical unit. In the 18-month period from January 1986 through June 1987, upper GI endoscopy was performed on 194 patients who presented with haematemesis,

melena or both. Due to logistic constraints, the procedure was performed only on Mondays, Wednesdays and Fridays in most cases. Emergency endoscopy was, however, performed as a bedside procedure in the occasional patient when this was indicated, but only after adequate haemodynamic resuscitation. Pre-endoscopic gastric lavage was not carried out.

Oesophago-gastro-duodenoscopy was performed using a flexible, end-viewing Olympus^{R} GIFQ endoscope, employing standard described techniques.[4] Most patients were fasted at least 6 hours before examination. The majority of cases had mild sedation, using intravenous diazepam (5 – 10 mg.) or midazolam (2–5 mg.), in addition to oropharyngeal 10% xylocaine spray. Endoscopic proof of bleeding was obtained when the lesion showed active haemorrhage or stigmata of recent bleed such as a black base, clotted vessel or adherent clot. This endoscopic proof of bleeding was seen in 122 patients (65.2%). Alternatively, a lesion was designated as the assumed cause of bleeding if no other source should be identified in a full survey of the oesophagus, stomach and duodenal cap.

Relevant information, including endoscopic findings, was recorded in prepared forms by the examining endoscopist immediately after the procedure. The acquired data was analysed at the end of the 18-month study period.

Results

Of the 194 patients studied, 135 (69.6%) were males while 59 (30.4%) were females; giving a male: female ratio of 2.3:1. The majority of patients were Chinese (76.8%), while Indians and Malays accounted for 11.9% and 10.8% of patients respecitvely. The age distribution is shown in Table I. The youngest patient was a 14-year-old boy who presented with melena. Endoscopy revealed a duodenal ulcer hidden by an adherent clot. The oldest patient was a 87-year-old female who was diagnosed to be bleeding from an ulcer in the lesser curvature of the stomach.

Table 1

Age Distribution of Patients
(N = 194)

Age (Years)	Number	Percentage
11 – 20	8	4.1
21 – 30	23	11.9
31 – 40	34	17.5
41 – 50	35	18.0
51 – 60	34	17.5
61 – 70	27	13.9
71 – 80	23	11.9
80 – 90	10	5.2
	194	100.0

Melena (57.7%) was a more frequent presentation than haematemesis (21.6%). Forty patients (20.6%) presented with both symptoms. Only in those patients with oesophageal varices was haematemesis the more prominent feature (52.6%).

Duodenal ulcer (43.3%) was the most frequent diagnosis, followed by gastric ulcers (23.2%). Only 4 cases of gastric carcinoma were recorded in this study. The miscellaneous group consisted of patients with Mallory-Weiss tears, gastric polyps and anastomotic ulcers. In 7 patients, no cause of upper GI bleed could be ascertained at endoscopy. Explanations include presence of large amounts of blood and clots, that lesions had healed at time of examination or that haemorrhage was due to lesions beyond the range of the endoscope.

As ours is not a routine emergency service, the timing of endoscopy was dependent on the referring clinicians and the availability of endoscopy suite facilities. However, the procedure was performed such that the admission-endoscopy interval was as short as possible. Of all patients in the series, 109 (56.2%) were examined within 24 hours of admission, 59 (30.4%) between 24 to 72 hours and 26 (13.4%) after 72 hours. The small number of cases in which no lesion was identified on endoscopy precludes analysis of the relationship between endoscopic diagnostic rate and timing of examination. However, endoscopic proof of bleeding is best obtained if the procedure was performed within 24 hours of admission (Table II).

Table II

Category of Endoscopic Diagnosis
(N = 187)

	Admission – Endoscopy Interval (Hours)		
	< 24	**> 24**	**TOTAL**
Endoscopic proof of bleeding	83 (79.0)	39 (44.8)	122 (65.2)
Assumed cause of bleeding	22 (21.0)	43 (55.2)	65 (34.8)
	105 (100.0)	84 (100.0)	187 (100.0

NOTE: Numbers in brackets represent percentages.

The incidence of smoking, alcohol consumption and various agents suspected to cause an increased incidence of upper GI bleeding was studied in our patients. Smoking was noted in 46 patients (23.7%) – 69.5% of these in the group with duodenal ulcer. Alcohol consumption was identified in 33 patients (17.0%). This was particularly prominent in those in whom haemorrhage was diagnosed as due to oesophageal varices (52.6%) and erosive gastritis (34.4%). The use of other drugs was not common in this series – aspirin in 7 patients, non-steroidal analgesics in 11 patients and steroids in 2 cases. Use of Chinese and other traditional medication was recorded in 10 patients.

Associated medical conditions were noted in 39 cases (20.1%) – being commoner in patients above 60 years of age (26.7%) compared with patients up to 60 years (17.2%). These consisted mainly of chronic renal failure, ischaemic heart disease, respiratory conditions and liver cirrhosis.

Discussion

Upper gastrointestinal haemorrhage is a common and potentially fatal condition – with mortality estimated at 10%.[5] Early identification of the cause of bleeding is useful in the management and prognostication of such patients. It aids the operating surgeon when such intervention is indicated. It has been noted that history and physical examination is of limited value in indicating the bleeding lesion – diagnosis being correct in only 40% of cases at admission.[6] Endoscopy is the procedure of choice in the diagnosis of these lesions.[2,3,7,8] Advantages include the ability to identify erosions and small ulcers that may be missed in a barium examination, whether a lesion is actually responsible for the bleed and to estimate the activity and rate of blood loss in an actively bleeding lesion.

Our diagnositc rate of 96.4% is comparable to other reported series.[7,8] Previous studies have indicated a fall in diagnostic rates as the admission-endoscopy interval increased.[6,7] The chances of seeing a lesion actually bleeding are best in the first 24 hours after admission.[6] In the absence of actual bleeding or stigmata of recent haemorrhage, any endoscopic diagnosis is, at best, a diagnosis by inference. The correctness of this assumption depends on the time interval between examination and the last bleed; e.g. acute erosions can develop rapidly after admission. Although 56.2% of our patients were examined within 24 hours of admission, the procedure was performed after 24 hours in 82 patients (43.8%). In the groups of patients examined after 24 hours, only about 40% were seen to be actively bleeding or had stigmata which suggested recent bleed (Table II). There is a significant difference between the detection rate of proof of bleeding between those examined before and after 24 hours (X^2 test; $p < 0.001$). Our study favours early endoscopy as currently advocated.[6,8,9]

The main problem of early endoscopy is one of logistics. Primary requirements include trained personnel – both endoscopists and paramedical staff, adequate facilities and time. While these factors have been less than optimal, we have managed to pool resources into a combined medical-surgical gastrointestinal endoscopic service. This allows for greater flexibility, availability of an endoscopist if another is otherwise occupied and discussion between gastroenterologist and surgeon in the management of these patients. For these reasons, the authors suggest that this model may be adopted in other centres in the country.

The causes of bleeding as defined by endoscopy were studied. Table III allows some comparison between the pattern of diagnoses seen at our centre and earlier reported Western studies.[1,8,2] The distribution of such lesions varies widely with reported series.[7] This is attributed to several factors including varied patient populations and hospital bias. Duodenal ulcer, seen in 43.3% of patients, was the commonest cause in this series. This is at variance with the other reported figures. A study from Singapore revealed that 32.5% of their cases of investigated upper GI haemorrhage was due to duodenal ulceration.[10] The relatively low incidence of gastric carcinoma as a cause of bleeding, however, appears to be a uniform phenomenon. A better description of the distribution of aetiologies of upper gastrointestinal haemorrhage can only be obtained in a large-scale multicentre study which encompasses a variety of medical settings.

Table III

Diagnosis of Cause of Bleeding (%)

	Present Study 1987 (N = 194)	ASGE* 1981 (N = 2097)	Cotton et al 1973 (N = 208)	Schiller et al 1970 (N = 2149)
Duodenal ulcer	43.3	22.8	24.0	29.0
Gastric ulcers	23.2	21.9	28.3	15.1
Erosive gastritis	14.9	29.6	8.6	2.9
Oesophageal varices	9.8	15.4	3.4	2.4
Gastric carcinoma	2.1	3.7	1.9	2.2
Others	3.1	6.6	18.9	22.3
No diagnosis	3.6	–	14.9	14.9

*Percentages of positive diagnosis made.

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