

## INTER-HOSPITAL MOBILE OESOPHAGO-GASTRO-BULBOSCOPY EMERGENCY SERVICE

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Oesophago-gastro-bulboscopy was performed in 102 cases of acute massive haematemesis and/or melaena in different hospitals or clinics in the town of Pécs, the condition of the patients having been in general incompatible with transport to the endoscopic laboratory. The aetiology of the bleeding was clarified in 90 cases, it remained unidentified in 8 cases, though it was successfully localized. Fibreoptic endoscopy is regarded as an essential tool of early aetiological diagnosis of upper digestive tract bleedings even in centres lacking modern equipment.

### Introduction

BENKŐ et al. were the first in Hungary to undertake early gastroscopy within the first or second week of acute massive gastric bleeding [2, 4]. HÁMORI et al. considered urgent endoscopy feasible in case of haematemesis and/or melaena and developed an early combined diagnostic approach [10–14]. Their programme includes blood coagulation study, urgent oesophagoscopy, gastroscopy and, if necessary, an early barium meal. The general lines of their programme correspond to those recommended by PALMER and SCOTT [17] and AVERY-JONES [1]. Since the introduction of fibreoptic instruments, the possibilities of endoscopy have been expanding, and in our view oesophago-gastro-bulboscopy in itself provides the necessary diagnostic information in most cases [19]. The informative value of fibreoptic endoscopy in acute upper intestinal tract haemorrhages is amply documented in Hungarian literature [7, 9, 21, 22], and urgent endoscopy for the location of the source of an acute bleeding is regarded to-day as a primary task. Numerous hospitals or institutions lack, however, the necessary facilities and therefore a mobile emergency service operating in the various centres of Pécs has been called into existence. In this paper the results of our experience will be reported on the basis of 102 cases of emergency oesophago-gastro-bulboscopy.

### Patients and Methods

All the patients had haematemesis and/or melaena. Blood transfusions had been given to all but one or two patients. The youngest patient was 7, the oldest 81 years of age, (mean 51.9 years) 44 patients were over 60. The male-to-female ratio was 62: 40.

We arrived at the scene in 1 to 2 hours after the call. Endoscopy was performed within 12 hours of the last sign of haematemesis or melaena. Two thirds of the patients had endoscopy at the bedside, one third in the surgical theatre. Premedication consisted in general of diazepam, atropine and local application of lidocaine-spray. Children were examined under general anaesthesia. Only one adult had to be given general anaesthesia because of restlessness. The routine of gastric lavage prior to endoscopy was dispensed with, unless we had to perform it prior to reexamination, if the first examination had failed to locate the source of bleeding. The instrument used was an end-view Olympus GIF-D type panendoscope.

## Results

Identification of the cause and source of the bleeding proved correct in 90 of the 102 cases (88%). The results providing for aetiologic diagnosis are shown in Table I. In one case, endoscopic location of the source of bleeding proved inaccurate.

**Table I**  
*Endoscopic diagnosis*

Source of bleeding	Number of cases
Oesophagitis	2
Oesophageal varices	6
Gastric varices	8
Mallory-Weiss syndrome	8
Gastric ulcer	23
Gastric erosions (one or more)	15
Duodenal erosions	2
Jejunal ulcer	1
Duodenal ulcer	19
Gastric carcinoma	5
Tumour ruptured into duodenum	1
Total	90

In 8 cases accurate identification of the aetiology was prevented by massive bleeding, but we were none the less able to locate its source in all of these cases, as confirmed by subsequent surgery (Table II).

In two of the cases bleeding had ceased by the time of endoscopy.

In one case endoscopy failed to provide any clue either to the cause or to the source of bleeding. In a further case three potential sources were found, but none of them was identifiable as the responsible lesion.

Still in another case upper gastrointestinal bleeding could be ruled out with certainty, haematemesis marking the onset of acute massive haemorrhage

**Table II**  
*Identification of the site of bleeding*

Site of bleeding	Number of cases
Subcardial part of the stomach	6
Antrum	1
Anastomosis	1
Total	8

due to mesenteric thrombosis. Resection of the involved small intestinal portion was successful.

In 38 of the 90 cases the lesions to which the bleeding was attributable beyond any doubt were found in association with other potential sites of bleeding (Table III).

**Table III**  
*Potential source of bleeding found in association with the bleeding lesion*

Cause of bleeding	Potential source(s) of bleeding
Oesophagitis	Pyloric ulcer + hiatus hernia 1
Oesophageal varices	Gastric polyp 1
	Duodenal ulcer 1
Mallory-Weiss syndrome	Oesophageal varices 2
	Hiatus hernia 2
	External obstruction of duodenum 1
Gastric varices	Oesophageal varices 8
Gastric erosion(s)	Oesophageal varices 4
	Hiatus hernia 2
	Gastric varices 1
	Oesophageal varices + hiatus hernia 1
Gastric ulcer	Hiatus hernia 2
	Gastric erosions 5
	Duodenal erosions 2
	Oesophageal varices 1
	Duodenal ulcer 2
	Gastric ulcer (elsewhere) 1
Duodenal erosions	Duodenal ulcer + hiatus hernia 1

Table IV shows the types of bleeding.

No complications of any major severity were encountered.

**Table IV**  
*Character of bleeding at the time of endoscopy*

Squirting or dripping	30
Oozing	48
Bleeding has ceased, but its traces are observable	21
No sign of bleeding	3
Total	102

### Discussion

On our arrival at the scene, most patients exhibited massive bleeding. In 50% endoscopy was performed after starting the blood transfusion. Most patients were in too poor condition for transport to the endoscopic laboratory. The instrument and the source of light were, however, moved without any difficulty to the site. At first the preparatory steps took more time than did the examination in the endoscopic laboratory, later, however, increasing familiarity with the method in the various centres allowed to proceed with the endoscopy in some minutes after our arrival, the patients having been already started on the necessary premedication simultaneously with the call.

According to DEMLING [6] emergency endoscopy has to provide satisfactory answers to the following questions.

- (1) Is there any bleeding or has it ceased spontaneously?
- (2) Does the bleeding require conservative or surgical therapy?
- (3) Does it call for emergency surgery?

(4) Is a transthoracic or transabdominal approach required? The answers to these questions are based on aetiological diagnosis and on the assessment of the intensity of bleeding.

Correct diagnosis was attained in 88%, a number consistent with the published figures [5—9, 16, 20—23] though slightly lower than those obtained in our laboratory on bleeding patients [19]. The cause of this may lie in the fact that in our laboratory the examination is performed, if possible, within the first hour of bleeding, whereas in the present cases we were unable to do so until being called.

Attention must be drawn to the 8 cases in which the bleeding could be located, though accurate identification of its source had been prevented by massive bleeding. Reexamination consequent upon gastric lavage provided,

however, the necessary information in all of these cases. This point has to be stressed, because ever since the introduction of panendoscopy the justification for pre-endoscopic gastric lavage has remained controversial. According to COTTON *et al.* [5], it may cause erosions. We also consider its routine use unnecessary before oesophago-gastro-bulboscopy, but if the first investigation has failed to identify the responsible lesion, we regard its use as indispensable. In 8 cases the site of bleeding could not be visualized in spite of tilting the patient into various positions. Reexamination after gastric lavage allowed, however, to locate the bleeding in all of these cases. In this situation endoscopic localization is indispensable, even in the absence of aetiologic diagnosis, for the selection of the appropriate surgical approach.

Potential sites of bleeding, in addition to its identified source, were found in 38 cases. The advantage of endoscopy lies in the identification of the actual source of bleeding even in this situation. In the present cases the frequency of non-bleeding oesophageal varices in association with the bleeding lesions was strikingly high. The oesophageal varices represented potential sources of bleeding in 16 cases while being actually responsible for it in no more than 6. The finding of a hiatus hernia in association with bleeding lesions was fairly high (8 cases), but all were non-haemorrhagic. This is consistent with the observations reported by PAUL *et al.* [16] and TULASSAY *et al.* [22]. Non-haemorrhagic erosions along with bleeding lesions were also found in some cases. This may be connected with the special character of the present material and with the protracted course of the bleeding in a number of cases.

The ideal objective is not to subject the patient to surgery unless necessary and, conversely, not to sacrifice him to an over-conservative attitude [10]. The contemporary fiberoptic instruments are a suitable means to this end. According to REISING *et al.* [18], since the introduction of emergency endoscopy in acute bleedings the number of blood transfusions as well as the duration of the surgical interventions, and also the mortality, have been on the decline. HIMAL *et al.* [15], on the evidence of an automated comparative analysis, found the death figures significantly lower in that group in which the source of bleeding had been identified preoperatively.

From the present review it emerges that it is irrelevant to the diagnostic yield of oesophago-gastro-bulboscopy whether it has been performed on the spot by an inter-hospital mobile emergency service or under ideal conditions in the endoscopic laboratory. On the faith of our observations we may recommend this policy because it ensures aetiological diagnosis even in centres lacking up-to-date equipment.

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