

UPPER GASTROINTESTINAL ENDOSCOPY AT THE KORLE BU TEACHING HOSPITAL, ACCRA, GHANA

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SUMMARY

Objectives: To study the indications for endoscopy, the endoscopic diagnosis and other lessons learnt.

Methods: A retrospective and prospective audit of all upper gastrointestinal endoscopies performed in the Endoscopy Unit of the Korle-Bu Teaching Hospital from January 1995 to December 2002 was performed.

Results: A total of 6977 patients, 3777 males and 3200 females with age range 1 year 8 months to 93 years were endoscoped. The mean age of males was 43.5 ± 0.5 and females 43.7 ± 0.6 years. Epigastric pain (42.5%), dyspepsia (32.8%) and haematemesis and melaena (14.2%) were the commonest reasons for endoscopy. Chronic duodenal ulcer (19.6%), acute gastritis (12.7%), duodenitis (10.2%), oesophagitis (7.5%) were the commonest diagnoses. Normal endoscopy was reported in 41.1% patients, and was higher in the younger age group compared to the older ($R = 0.973$, $P < 0.001$). Nine hundred and ninety (14.2%) patients were endoscoped for haematemesis and melaena of which chronic duodenal ulcer (32.1%), gastritis/gastric erosions (12.8%), oesophageal varices (9.8%), carcinoma of the stomach (6.4%), and duodenitis (4.2%), were the commonest causes. No lesion was found in 20.6% of these patients. Urease test was positive in 75% of all biopsy specimen and 85% in chronic duodenal ulcer, gastritis and duodenitis.

Conclusion: The normal endoscopy rate is high and needs to be reduced in order to help prolong the lives of the endoscopes. Chronic duodenal ulcer is usually associated with *H. pylori* infection and is the commonest cause of upper gastrointestinal bleeding.

Keywords: Upper gastrointestinal bleeding, haematemesis, melaena

INTRODUCTION

Upper gastrointestinal (GI) endoscopy is an established mode of investigation and treatment of a wide range of upper gastrointestinal conditions. In most cases it is the first line of investigation, comparing favourably with upper gastrointestinal radiographical studies and even giving better results. It is the best form of investigation for upper gastrointestinal bleeding because of its better diagnostic yield^{1,2} especially for superficial lesions such as oesophagitis, gastritis, duodenitis, Mallory Weiss tear etc. It also offers the opportunity for biopsy of lesions for histology in malignant disease, and histology, culture and urease test in *Helicobacter pylori* infection. It is also free from the possibility of exposure to ionizing radiation.

The main limitations of the procedure are its invasiveness, discomfort and a slight risk of morbidity and even mortality. These problems have largely been overcome by the introduction of better equipment and good endoscopy practice³. There is also the problem of documentation of findings since the endoscopist may be the only person who sees the lesion. The introduction of closed circuit television (CCTV) with video and photographic recording facilities, have helped a great deal to overcome the main drawback of documentation of findings. The availability of these facilities also helps to enhance the teaching of endoscopic skills.

Upper gastrointestinal endoscopy was first introduced into English speaking West Africa in Ibadan⁴. In 1979 the procedure was introduced to the Korle-Bu Teaching Hospital⁵ and was functional till the late 1980's when the facility broke down. In 1995 a new endoscopy unit was established at the Korle-Bu Teaching Hospital. This retrospective and prospective study was to review the work of this endoscopy unit.

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METHODS

The operative records of all gastrointestinal endoscopies performed between January 1995 and December 2002 in the Endoscopy Unit was studied. The endoscopic facility served both in-patients and out-patients (who were treated as day cases). Endoscopies were performed with the Olympus GIF Q20 (Olympus, Keymed) for adults and Olympus GIF P20 and GIF XP20 (Olympus, Keymed) for children. Three main forms of analgesia and sedation were used namely; throat spray alone with 2% lignocaine (Xylocaine, Astra-Zeneca), throat spray with 2% lignocaine and intravenous sedation with 2.5-5mg of midazolam, and general anaesthesia for paediatric patients. Biopsies were routinely taken from lesions in the stomach and oesophagus for histology. Biopsies were also taken for histology and the urease test for the detection of *H. pylori* in all patients with peptic ulcers, gastritis, duodenitis and normal endoscopies. A total of nine hundred and ninety nine (999) biopsies were taken in this group. Two hundred of these biopsies were analysed with the urease test while the remaining 799 were sent for histology. Statistical calculations were done with the Microsoft Excel 2002 for Windows software.

RESULTS

A total of 6977 patients, 3777 males and 3200 females with age range 1 year 8 months to 93 years were endoscoped in the study period of 7 years. The mean age of males was 43.5 ± 0.5 (95% confidence interval [C.I.]) and females 43.7 ± 0.6 (95% C.I.). Most of the patients endoscoped were between the ages of 20 and 69 years as shown in Figure 1. Epigastric pain and dyspepsia were the commonest reasons for endoscopy. Other important reasons for endoscopy are detailed in Table 1. Diagnoses made at endoscopy are shown in Table 2. A normal endoscopy was reported in 41.1% of patients. There was a higher percentage of normal endoscopies in young patients compared to older patients (Figure 2).

The prevalence of carcinoma of the stomach was highest in the older age group as detailed in Table 3. Carcinoma of the stomach was, however, not seen in the first two decades of life.

Nine hundred and ninety patients were endoscoped for upper gastrointestinal bleeding i.e. haematemesis and melaena. The causes of upper gastrointestinal bleeding are given in Table 4. No cause of bleeding was found in 20.6% of patients.

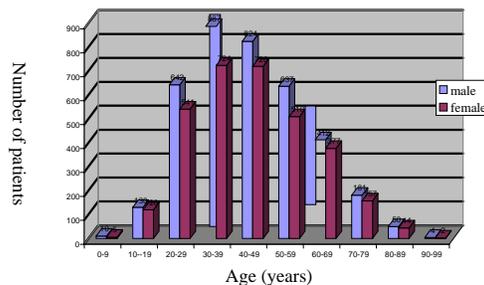


Figure 1 Age and sex distribution of 6977 endoscopy patients

Table 1 Indications for endoscopy

Indication	Number of patients	Percentage
Epigastric pain	2967	42.5
Dyspepsia	2286	32.8
Upper GI bleeding	990	14.2
<i>Haematemesis</i>	480	
<i>Melaena</i>	786	
Vomiting	366	5.2
Gastric outlet obstruction	240	3.4
Heartburn	237	3.4
Weight loss	135	1.9
Anaemia	117	1.7
Dysphagia	117	1.7
Abnormal barium meal	4	0.1

Table 2 Endoscopic diagnosis

Endoscopic diagnosis	Number of patients	Percentage
Chronic duodenal ulcer	1383	19.6
Acute gastritis	897	12.7
Duodenitis	717	10.2
Oesophagitis	528	7.5
Gastric ulcer	225	3.2
Gastric carcinoma	176	2.5
Chronic gastritis	159	2.5
Oesophageal varices	132	1.9
Gastric erosions	129	1.8
Hiatus hernia	57	0.8
Other	45	0.6
Normal endoscopy	2866	41.1
Total	6977	100

Note: In some cases more than one diagnosis was made.

Urease test results on 200 specimens taken from patients showed a positive result in 75% of the specimens and 85% in patients with chronic duodenal ulcer, gastritis and duodenitis.

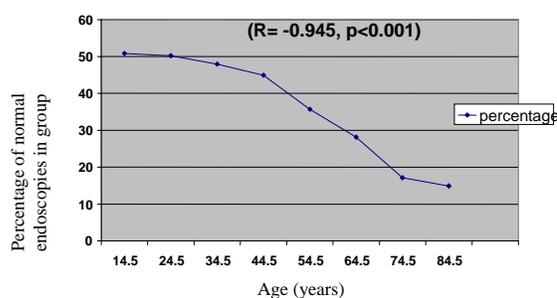


Figure 2 Distribution of normal endoscopies as percentage of the total number per age group

Table 3 Prevalence of Carcinoma of the stomach

Age	Number of patients	Number of patients with carcinoma of stomach	Percentage of patients with Carcinoma of stomach
0-9	15	0	0
10-19	250	0	0
20-29	1183	4	0.3
30-39	1611	13	0.8
40-49	1544	31	2.0
50-59	1147	41	3.5
60-69	789	39	4.9
70-79	338	34	10.1
80-89	94	10	10.6
90-99	6	3	50.0
Total	6977	176	2.5

Table 4 Causes of upper gastrointestinal haemorrhage in 990 patients

Diagnosis	Number	Percentage
Chronic duodenal ulcer	318	32.1
Gastritis and gastric erosions	127	12.8
Oesophageal varices	97	9.8
Carcinoma of the stomach	63	6.4
Duodenitis	42	4.2
Gastric ulcer	37	3.7
Prepyloric ulcer	24	2.4
Oesophagitis	23	2.3
Gastric polyp	10	1.0
Oesophageal varices and chronic duodenal ulcer	9	1.0
Mallory-Weiss tear	8	0.8
Gastric varices	7	0.7
Carcinoma of the oesophagus	6	0.6
Duodenal polyp/Dieulafoy and others	4	0.4
Failed OGD	11	1.1
Normal OGD	204	20.6
Total	990	100

One death secondary to massive bleeding oesophageal varices was reported in the series and one case of respiratory difficulty in a seventy year old man was successfully managed with intranasal administration of oxygen.

DISCUSSION

Studies have shown that upper gastrointestinal endoscopy offers a clear advantage over radiology in the investigation of upper gastrointestinal symptoms. It gives a better diagnostic yield particularly in the investigation of upper gastrointestinal bleeding, inflammatory conditions of the upper gastrointestinal track like oesophagitis, gastritis and duodenitis² as well as the diagnosis of Mallory Weiss tears and vascular malformations.

Our study has shown that epigastric pain, dyspepsia and upper gastrointestinal bleeding were the commonest reasons for endoscopy. Abnormal barium meal is no longer a strong reason for endoscopy as it was in the early days following the introduction of the procedure to the West African region^{4,5}. This may reflect the confidence that clinicians have in endoscopy as a diagnostic tool with a higher sensitivity^{1,2,6}.

Peptic ulcers were the commonest cause of upper gastrointestinal bleeding with duodenal ulcer the leading cause in this group. Other important causes were acute gastritis and gastric erosions, oesophageal varices and carcinoma of the stomach. Reports from the western countries indicate that even though duodenal ulcer is a leading cause of upper gastrointestinal haemorrhage, it is rivalled by other causes like gastric ulcer, gastritis and oesophageal varices^{2,7,8}. In Western societies, Mallory Weiss tear, a rare finding in our series, is a very important cause of upper gastrointestinal bleeding. The explanation for this is that binge drinking and alcoholism that are significant underlying causes of upper gastrointestinal bleeding are more common in the Western countries. Normal endoscopy was reported in 41.1% of the total number of patients endoscoped and in 20.6% of patients endoscoped for upper gastrointestinal bleeding. In our study there was a steady fall in the normal endoscopy rate with advancing age, being as high as 50.8% in patients between the ages of 10 and 19 years, and as low as 13.8% in patients between ages 80 to 89 years.

The normal endoscopy rate of 41.1% in our study compares favourably with the 40% rate found in another study⁹. In this same study a lower abnor-

mal endoscopy rate was found in younger patients compared with older ones.

Our study also showed that malignant diseases of the stomach was more common in patients over fifty years of age, accounting for 24% of all the abnormal finding in this age group. In patients below the age of forty, however, the incidence of gastric carcinoma was lower than 2% with no cases diagnosed in the first two decades of life. The low diagnostic yield in young people means that a rigorous evaluation at the clinical level has to be done before endoscopy is requested.

Endoscopy is an expensive investigation^{6,7,10}, with most of this expense being borne by the cost of the equipment and their maintenance. In the cash strapped health services in our parts of the world therefore, care of the endoscopic equipment is of paramount importance. Our study has shown that there are many normal endoscopies particularly in young people under the age of 30 years. This age group also has a very low incidence of malignancies in the stomach. To help cut costs and help increase the life span of the endoscopes therefore, there is the need to screen patients particularly the young ones carefully before referral for endoscopy. Those with mild symptoms could be treated empirically for up to six weeks and if symptoms do not resolve or recur during this period then referrals can be made for endoscopy. Patients, who present with upper gastrointestinal bleeding, severe dyspeptic symptoms, and older individuals who have dyspepsia should however, have their endoscopic examination early. Similar sentiments have been expressed in at least three studies^{6,10,11}.

Upper gastrointestinal endoscopy when done under sedation and pharyngeal anaesthesia or when done under pharyngeal anaesthesia alone is a safe and well tolerated procedure. Sedation predominates in the western world though³. There was a high incidence of *H. pylori* infection in the biopsies analysed with the urease test amounting to as high as 75% in all patients who had endoscopy. The positive result was even higher (85%) in patients with duodenal ulcer and inflammatory conditions like duodenitis and gastritis. A study in the West African sub-region has reported a high incidence of *H. pylori* in upper gastrointestinal endoscopy biopsy specimen which match the finding in our urease tested specimen¹².

In conclusion we assert that the normal endoscopy rate is unduly high and needs to be reduced by rigorous screening of young patients in order to

help prolong the lives of the endoscopes. Upper gastrointestinal endoscopy is safe. Duodenal ulcer is the commonest cause of upper gastrointestinal bleeding and is usually associated with *H. pylori* infection. Treatment of duodenal ulcer must therefore include acid reduction and *H. pylori* eradication all the time.

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