

A REVIEW OF 600 UPPER GASTROINTESTINAL ENDOSCOPY

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SYNOPSIS

Upper gastrointestinal endoscopies were performed in 600 patients between May 1975 and September 1977. Of these 88.5% were Chinese, 3.3% Malays, 6.5% Indians and 1.7% others. Results show that gastritis, 23.3% was the commonest lesion followed by duodenal ulcer, 22.8% and gastric ulcer, 18.2%. Duodenities accounted for 7.3%, carcinoma of stomach, 6.2%, normal, 14.7% and miscellaneous 7.5%.

There was a male preponderance in all diagnosis except in the normal group (M:F = 0.7:1). Chinese account for 80% of patients in all diagnosis except in duodenitis (Chinese 77%, Indians 11%).

This study highlights the entity of duodenal inflammation in the absence of ulceration — 'duodenitis'. It was classified endoscopically into superficial, erosive and hyperplastic types. Of the 44 cases of duodenitis, 21 were superficial duodenitis (47.7%), 18 erosive duodenitis (40.9%) and 5 hyperplastic duodenitis (11.4%). The clinical significance of duodenitis, and its relationship with duodenal ulcer is still unclear, merits long-term study.

No significant complications were encountered in the examinations. It was concluded that upper gastrointestinal gastroscopy is a safe and useful procedure in the diagnosis of gastrointestinal disorders.

INTRODUCTION

Since the first fiberoptic gastrointestinal endoscope introduced by Hirochowitz in 1958 there had been rapid technical improvement in the fiberoptic and mechanical systems with incooperation of insufflation, suction and biopsy devices. In Singapore, fiberoptic gastrointestinal endoscopy has gained wide acceptance among medical practitioners and patients as a useful tool in the diagnosis of gastrointestinal disorders.

Present study is a review of 600 upper gastrointestinal endoscopies performed in the University Department of Medicine (II), Singapore General Hospital, between May 1975 to September 1977.

PATIENTS AND METHODS

Patients with upper gastrointestinal complaints with or without prior barium meal examinations were subjected to endoscopic examination after consent for endoscopy was obtained.

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Patients with evidence of intra abdominal perforation, in shock or after recent myocardial infarction or radiological evidence of aortic aneurysm were excluded from the examination. Premedications consisted of I/M injection Atropine 0.6 mg and Pethidine 50 mg ½ hour prior to the procedure and I/V Valium 5 — 10 mg was given should the patient require more sedation. Five mls of 2% Viscous lidocaine hydrochloride (Xylocaine) was used as a topical anaesthetic.

The first 100 cases were examined with sideviewing fiberoptic gastro-duodenoscope Olympus JF-B2. Subsequent examinations were performed with the forward-viewing panendoscopes Olympus GIF-D3 or GIF-P2 supplemented when necessary with JF-B2. 87 repeat endoscope examinations were excluded from this study.

RESULTS AND DISCUSSION

600 patients were endoscoped between May 1975 and September 1977. Repeat endoscopy of 87 patients were excluded in this study. There were no significant complications arise from these examinations. Table 1 shows the ethnic distribution of the patients endoscoped, the general population, and the average admissions to Singapore General Hospital over the period 1975-1977. There were 531 Chinese (88.5%), 20 Malays (3.3%), 39 Indians (6.5%) and 10 Others (1.7%).

Results of the diagnosis is shown in Table 2. Gastritis was the commonest lesion detected, occurring in 140 patients (23.3%) followed by 137 duodenal ulcer (DU) (22.5%) and 109 gastric ulcers (GU) (18.2%). The ratio of DU : GU was 1.3: 1. This figure is similar to that reported

by Yeoh (1961) and Chen (1976) where the DU : GU ratio being 1.6 : 1 and 1.13 : 1 respectively. Higher DU : GU ratio of 2.3 : 1 was reported by Chua and Seah (1969). Ong and Yong (1968) however reported an excess of gastric rather than duodenal ulcer with DU : GU ratio being 0.77 : 1. Their patients were selected for surgery because of severe to massive bleeding and may have biased the figure. Duodenitis accounts for 7.3% of cases and Ca stomach 6.2%.

The ethnic distribution of major diagnosis is shown in Table 3. As reported in all other local studies, the incidence of peptic ulcer is highest in Chinese compared to Malays, Indians and other races, relative to their numbers in the general population and to the number of hospital admissions. Chinese patients constitute 88% and 93% of all cases of duodenal ulcer and gastric ulcer respectively. The low proportion of Malays with peptic ulcer was consistent with the observation by Alhady (1965) in a survey of patients in Malaya with radiologically proved peptic ulcers. Of the 140 gastritis, 129 were Chinese constituting 92% of cases. Likewise of the 37 carcinoma of stomach, 36 were Chinese (97%). This high frequency of carcinoma of stomach among Chinese was also reported by Fung from our unit in 1973. The striking absence of Malays in these series suggest that carcinoma of stomach must be very rare in Malays.

The distribution of duodenitis among different ethnic groups has not been documented. Present study shows that of the 44 cases of duodenitis diagnosed endoscopically 34 were Chinese (77%) and 5 Indians (11%). This distribution corresponds closely with the ethnic distribution of percentage of patients admitted to the hospital.

TABLE 1
Number of Patients and Ethnic Distribution

Race	No. of Patients	% of Cases	% of Ethnic Group in Singapore	Admission to SGH % 1975 — 1977
Chinese	531	88.5	76.2	76.5
Malay	20	3.3	15.0	7.9
Indian	39	6.5	7.0	11.6
Others	10	1.7	1.8	4.0
Total	600	100	100	100

TABLE 2
Results of 600 Patients Endoscoped

	No.	%
Gastritis	140	23.3
Duodenal ulcer	137	22.8
Gastric ulcer	109	18
Normal	88	15
Duodenitis	44	7.3
Carcinoma stomach	37	6.2
Miscellaneous	45	7.5

TABLE 3
Ethnic Distribution of Major Diagnosis

	Chinese		Malay		Indian		Others	
	No	%	No	%	No	%	No	%
Gastritis	129	(92)	1	(0.7)	8	(6)	2	(1.4)
Duodenal ulcer	121	(88)	5	(4)	8	(6)	3	(2)
Gastric ulcer	102	(93)	2	(2)	4	(4)	1	(1)
Duodenitis	34	(77)	2	(5)	5	(11)	3	(7)
Carcinoma of Stomach	36	(97)	0	(0)	1	(3)	0	(0)

The miscellaneous group is shown in Table 4.

Figure 1 shows the age distribution. In gastritis the largest number of patients falls in the 4th and 5th decades with mean age of 47 years. In DU, the largest number of patients were in the 3rd and 4th decade with the mean age of 40 years while in GU 4th decade with the mean age of 40 years while in GU 4th and 5th decade with the mean age of 53 years. The finding that DU appears in younger patients than in GU was noted in all studies in Singapore. In carcinoma of stomach the largest number in the 6th and 7th decade with the mean age of 62 years. Although carcinoma of stomach occurs predominantly in elderly patients, 5 cases between 30-39 years were detected with the youngest patient being 35 years old.

Table 5 shows the sex distribution of the major groups of diagnosis. In all diagnosis except the normal group, there was male preponderance. In DU the male: female ratio was 4 : 1 while in GU 3.7 : 1 and carcinoma of stomach 2 : 1, duodenitis 4.5 : 1. This male preponderance was noted in all the studies of upper gastrointestinal disorders although the relative frequency varies

TABLE 4
Miscellaneous Group

Diagnosis	No
Esophageal varices	10
Gastric polyp	8
Esophagitis	7
Carcinoma of esophagus	5
Hiatus hernia	4
Stomal ulcer	4
Mallory Weiss syndrome	4
Primary duodenal tumour	1
Cronkhite Canada syndrome	1
Esophageal web	1
Total	45

with the types of disorder, patients' age and geographical location. It is interesting to note that there was more female than male in the normal group. The reason for this is not clear.

The symptoms of the major diagnosis were analysed and showed in Figure 2. Upper abdominal pain was the commonest symptom in all groups. Gastrointestinal bleeding occurred in 54% of DU patients as compared 28% of GU patients with $p < 0.001$. In carcinoma of stomach the commonest symptom was upper abdominal pain (49%) followed by loss of weight (46%) and gastrointestinal bleeding (32%). This differed from the finding of Fung (1971) and Ong (1973). Nevertheless abdominal pain, loss of weight and gastrointestinal bleeding were the three most frequent symptoms of carcinoma of stomach. Symptoms of duodenitis will be discussed shortly.

The entity of duodenal inflammation in the absence of ulceration — "duodenitis" has been recognised since 1837.

Early studies were firmly based on examination of the resected duodenal bulb and by means of radiology. (Ostrow and Resnick, 1959; Beck et al, 1965). Radiology however suffers the drawback that small superficial mucosal lesions may fail to retain barium contrast material and in the absence of irritability a false report may result (Neval, 1973).

TABLE 5
Sex Distribution

Diagnosis	Male	Female	Male : Female Ratio
Gastritis	85	55	1.5 : 1
D.U.	110	27	4 : 1
G.U.	86	23	3.7 : 1
Normal	37	51	0.72 : 1
Duodenitis	36	8	4.5 : 1
Ca Stomach	25	12	2 : 1

AGE DISTRIBUTION.

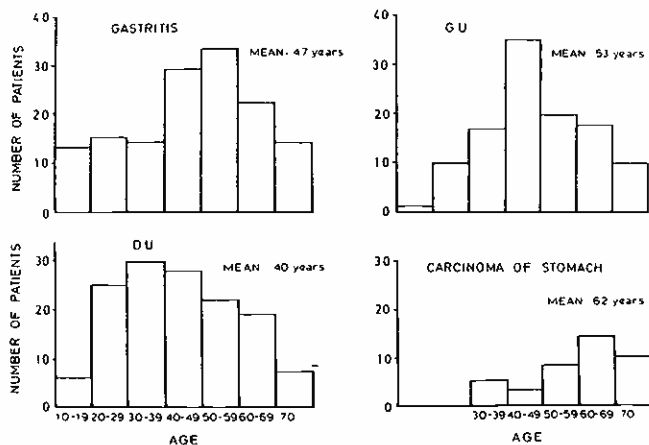


Figure 1
Age distribution of major diagnoses.

MAJOR PRESENTING SYMPTOMS

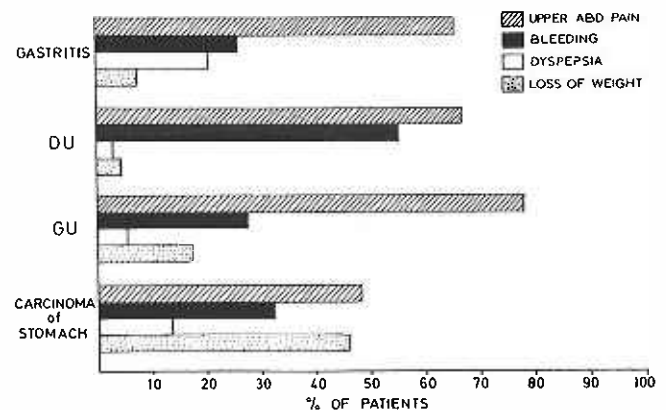


Figure 2
Major Presenting Symptoms of the major diagnoses.

With the advent of fiberoptic pan endoscopy adequate visualisation of duodenal bulb can be achieved quickly, thereby offering a sensitive and specific diagnostic method in the evaluation of the activity of duodenal disease. In addition, direct target biopsy permits the suspicious area to be examined histologically (and allows clinical, endoscopic, radiologic and histologic correlations to be made).

Table 6 shows the distribution of clinical and endoscopic findings in these cases. 19 of the 44 patients had ulcer like abdominal pain, 18 patients had vague dyspeptic symptoms including andominal distension, cramps, excessive belching. 7 patients had melana and or haematemesis, 2 had nausea and vomiting, 2 had loss of weight. 2 of the patients had history of heavy alcohol intake and 4 were on corticosteroids.

TABLE 6
Duodenitis
Clinical and Endoscopic Findings

Clinical —	
Upper abdominal pain	19
Dyspeptic symptoms	17
Melaena and/or haematemesis	7
Others	4
Endoscopic —	
Superficial	21
Erosive	18
Hyperplastic	5

Duodenitis is diagnosed endoscopically when there is localised or diffused hyperaemia, nodularity, intraluminal haemorrhage and/or superficial erosion of the duodenal mucosa. Three broad types are recognised namely (a) superficial duodenitis, when there is inflammation and friability of duodenal mucosa with little distortion of muscosal contour, (b) erosive duodenitis, when there is erosion of duodenal mucosa with or without localised or diffuse hyperaemia of mucosa and (c) hyperplastic duodenitis, when localised swellings appear as hyperaemia mammilations or nodes in the mucosa. Often there is a mixed picture and the more prominent type is adopted.

Present study showed there were 21 superficial duodenitis, 18 erosive duodenitis and 5 hyperplastic duodenitis. 5 patients presented with melana or/and haematemesis was found to have erosive haemorrhagic duodenitis while none of the patients with hyperplastic duodenitis presented with gastrointestinal bleeding, their commonest symptom was that of dyspepsia.

Barium meal examination were available in 20 patients. They were 8 normal examination, 5 show duodenitis, 2 showed sarred duodenum and 5 (?) duodenal ulcers. There was no attempt to correlate the radiographic findings with endoscopic findings as the barium meal examinations were done ranging from one month to 4 years with majority more than 3 months prior to endoscopic examination. The presence of duodenal ulcer shown by radiology however did suggest that a duodenal ulcer might have healed or a small duodenal ulcer, though not likely, was missed on endoscopy.

Direct target biopsies were obtained in 30 patients. In all cases there were increase in inflammatory cell infiltrate in the lamina propria consisting mainly of mononuclear cells. Duodenal erosions were present in 5 cases and villous changes in 13 cases. Present study however do not attempt to correlate endoscopic findings with histologic findings as what constitutes the endoscopic biopsy specimen of normal duodenal mucosa has yet to be defined locally. The lamina propia includes chronic inflammatory cells in health (Doniah and Shiner 1957) and assessment of excessive chronic inflammatory cells is therefore highly subjective. Whether duodenitis is a clinical pathological entity or it is just part of the duodenal ulcer diathesis remains contraversal. We are in the process of follow up the evolution of duodenitis by repeating endoscopy in these patients as well as to establish the histological criteria or normal duodenal histology and duodenitis.

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