

CORRELATION OF ENDOSCOPIC AND HISTOLOGICAL DIAGNOSIS IN UPPER GASTROINTESTINAL LESIONS

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ABSTRACT

A correlation between endoscopic and histological diagnosis was studied in 240 patients undergoing upper gastrointestinal endoscopy for dyspeptic symptoms. The biopsies from one or all the three sites were taken from oesophagus (158), stomach (193) and duodenum (146) according to the presenting symptoms of the patients. There was a better correlation between endoscopic and histological diagnosis when a positive finding was seen by the endoscopists as compared to when the endoscopy revealed no abnormality. One out of six benign looking ulcers in oesophagus and 1 out of 9 benign looking gastric ulcers turned out on endoscopy, to be malignant on subsequent histology. Inflammation of oesophagus, stomach and duodenum were the most commonly missed lesions on endoscopy (JPMA 40: 281, 1990).

INTRODUCTION

The use of flexible fiberoptic gastroscope is now a part of routine gastroenterological practice. Endoscopic examination is recommended with negative Barium x-rays, in patients with persistent dyspeptic symptoms. Barium x-rays may not be the final answer in lesions like reflux oesophagitis, bile gastritis, ulcers of oesophagus and stomach and mass lesions¹. Any patient experiencing upper abdominal symptoms might reasonably be asked to have an endoscopic examination². An appreciable number of endoscopic examinations specially done in patients with persistent non-ulcer dyspeptic symptoms are normal and many lesions may not be detected without histology. The purpose of this study was to find out the correlation between the endoscopic and histological diagnosis and to determine the prevalence of upper gastrointestinal lesions in dyspeptic patients in Karachi.

PATIENTS AND METHOD

Endoscopically directed biopsies were taken from 240 patients referred for dyspeptic symptoms. The endoscopic diagnoses were recorded at the time of endoscopy, and multiple biopsies were taken from oesophagus, stomach and duodenum in different combinations according to the presenting symptoms of the patients and the endoscopic findings. Out of 240 patients, oesophageal biopsies were taken in 158, gastric biopsies in 193 and duodenal biopsies in 146 cases. The endoscopic biopsies were flattened on a piece of filter paper and fixed in 10% buffered formalin. They were processed for routine paraffin embedding and trimming. Serial sections were examined in light microscope with the help of H&E, reticulin and PAS stains. The histological diagnosis was made without prior knowledge of endoscopic findings. The diagnostic criteria were used as described^{3,4}.

RESULTS

TABLE I. Correlation of endoscopic and histological diagnoses in oesophagus of 158 cases.

Histology/ Endoscopy	No significant Changes	Reflux Oesophagitis	Ulcers	Hyperplastic Epithelium	Carcinoma in situ	Carcinoma	Percentage of Correlation
No significant change (97)	47	12	-	38	-	-	48.5
Oesophagitis (32)	3	21	3	4	1	-	80
Ulcer(6)	-	-	5	-	-	1	83
Carcinoma (23)	-	-	-	-	-	23	100
Total	(158)	50	33	8	42	1	24

Table-I shows the distribution of histological lesions, and their correlation with endoscopic diagnosis in 158 oesophageal biopsies. Fifty showed no significant changes, 33 reflux oesophagitis, 8 benign ulcers, 42 hyperplastic epithelium and 25 carcinomas. There was 100% correlation between the two diagnostic methods when carcinoma was diagnosed on endoscopy. One benign looking ulcer turned out to be malignant on subsequent histology. A single case of carcinoma in situ presented as inflammation on endoscopy. There was a poor correlation between the two diagnostic methods when no significant changes were seen on endoscopy.

TABLE II. Correlation of endoscopic and histological diagnoses in stomach of 193 cases.

Histology/ Endoscopy	No Sig. Change	Chr. Gastr.	Atroph. Gastr.	Chr. Gastr. & Atroph. Gastritis	Ulcers	Erosion	Acute Gastr.	Erosive Gastr.	Polyp	Carci- noma	% of Corr.
No significant change (109)	50	46	7	6	-	-	-	-	-	-	45.8
Gastritis (63)	14	35	2	9	-	-	3	-	-	-	77
Ulcers (9)	-	1	-	-	6	1	-	-	-	1	66.6
Erosion (1)	-	-	-	-	-	1	-	-	-	-	100
Carcinoma (9)	-	-	-	-	1	-	-	-	-	8	88.8
Polypoidal lesion (2)	-	-	-	-	-	-	-	1	1	-	50
Total (193)	64	82	9	15	7	2	3	1	1	9	

Table-II shows correlation in 193 gastric biopsies, which was good when positive diagnosis was made on endoscopy and poor in negative endoscopy. The lesion most frequently missed was chronic gastritis. One benign looking ulcer was histologically malignant and one large dirty ulcer suspected to be malignant was benign on histology. A distinct and rare clinico-pathological entity eosinophilic gastritis was only diagnosed on histological examination.

TABLE III. Correlation of endoscopic and histological diagnoses in duodenum of 146 cases.

Histology/ Endoscopy	No. Significant Changes	Ulcers	Duodenitis	Duodenitis with Brunner Gland Hyperplasia	Schwannoma	Percentage of Correlation
No significant change (63)	33	-	30	-	-	52.3
Duodenitis (70)	7	-	53	10	-	90
Ulcers (7)	-	7	-	-	-	100
Nodular Mucosa (5)	-	-	-	5	-	-
Polypoidal growth (1)	-	-	-	5	-	-
Total (146)	40	7	83	15	1	

Table-III shows the correlation in 146 duodenal biopsies. The most commonly missed lesion was duodenitis. A case with a polypoidal mass in the duodenum was diagnosed as schwannoma on histology. The nodularity of mucosa seen on endoscopy was found to be produced by brunner gland

hyperplasia.

DISCUSSION

The oesophageal lesions revealed a better correlation between the two methods with a positive endoscopy and a poor correlation with negative endoscopic findings. All 23 cases of carcinoma diagnosed on endoscopy were subsequently confirmed by histology. Inflammatory changes endoscopically labelled as oesophagitis could only be found in 32 cases. It was on subsequent histology only that of these 32 cases, 21 were classified as reflux oesophagitis, one case on histology turned out to be carcinoma in situ. The most commonly missed oesophageal lesion on endoscopy was reflux oesophagitis and hyperplastic epithelium both being intra-epithelial lesions. According to Pope⁵ a negative endoscopic finding did not rule out the possibility of presence of reflux oesophagitis. According to Morson and Dawson³ in the early stages of reflux oesophagitis the oesophageal mucosa may look normal on endoscopy. The present study reaffirmed that a few oesophageal lesions are likely to be missed on endoscopic examination alone. In the gastric lesions there existed no correlation between the two diagnostic methods specially when endoscopy was negative, the subsequent histology in most cases revealed gastritis with variable degrees of atrophy and activity classified according to Whitehead⁴. Thus because of the poor correlation the endoscopists should convey the endoscopic findings such as erythema, oedema, and exudate to the pathologist along with the biopsy rather than making a diagnosis on endoscopy alone. Similar observations have been reported by Morson and Dawson³. Histological examination of the ulcerative gastric lesions is the most valuable diagnostic method as apparently benign gastric ulcer may in fact be malignant which can only be confirmed by histology. In our series one out of nine cases of benign looking gastric ulcers turned out to be malignant which is comparable to the findings of Cohn-Jones² where 10% of benign ulcers were diagnosed as malignant on subsequent histology. The diagnostic correlation in the duodenal lesions showed similar trends as in oesophagus and stomach. A poor correlation existed between the two methods when endoscopy was normal. Duodenitis was the commonest lesion missed on endoscopy. Our findings of correlation in the two diagnostic methods in duodenal lesion was in sharp contrast to findings of Owen⁶, where, when endoscopy was normal, histology was also normal in 99% cases, and when duodenum was abnormal endoscopically, lesions could be confirmed only in 70% cases. The study of Paoluzi et al.⁷ revealed that endoscopic and histological findings were in agreement in 82% of patients but endoscopic judgement of inflammation was false positive in 17 of 54 (35%) observations of histologically normal mucosa. The observation made in our study points to the importance of biopsy for the histological examination not only in ulcerative and mass lesion of upper gastrointestinal tract but also in cases with negative endoscopic findings. Our understanding of the prevalence of upper gastrointestinal mucosal lesions in dyspeptic patients has greatly improved by routine endoscopic and histological examination, as compared to when endoscopic examination alone was done without routine biopsies⁸.

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