

trial. In this way, as Franks¹¹ cogently observed to the United States Atomic Energy Commission in 1947, we shall not acquire as much knowledge but we shall be a little more certain that the "facts" we "know" might be correct.

We thank Miss J Horrocks and Mrs S Clamp for their expert help with data handling and Mrs D Blackband, Miss C Hildyard, Mrs J Elwine, and Mrs J Wakefield for secretarial help. We should like to acknowledge the financial support which we have received and continue to receive from the Yorkshire Cancer Research Campaign.

Appendix

There were two major problems inherent in analysing these data statistically.

Firstly, we had to decide whether to view the comparison between observer A (a consultant surgeon) and observer B (a more junior person) as comparisons between observers or as comparisons between one observer (B) and a standard (A). In the former case methods such as those advocated by Kendall and Stuart⁸ would have been applicable; in the latter measures such as those of Yerushalmy.⁹ We adopted the former method. Although the consultant had an advantage in terms of experience, we considered that no one individual is sufficiently authoritative to be regarded as "the standard." When the clinician and his findings are measured against the findings of a pathologist it may be more appropriate to use "standard-setting" methods.

Secondly, as often happens in clinical medicine, some features of breast lesions are judged to be absent much more often than they are present. The customary form of notation for expressing the outcome of dichotomous observations made by two independent individuals is as follows:

	Observer A		
	+	-	Total
Observer B			
+	P ₁₁	P ₁₂	P _{1.}
-	P ₂₁	P ₂₂	P _{2.}
Total	P. ₁	P. ₂	1

Here the "usual" means of measuring observer agreement ($po = P_{11} + P_{22}$) is totally inadequate. This has been characterised as the "index of crude agreement" by Rogot and Goldberg.¹⁵ We used in this case a combination of the methods of Dice¹⁶ and Rogot and Goldberg, and attempted to produce an index of agreement which reflects the chance of the "other" observer agreeing with a positive finding by either. We opted to avoid the chance-corrected agreement statistics of Scott¹⁷ and Cohen¹⁸ since the latter assume homogeneity and independence. We also ignored the statistic of Cichetti¹⁹ for assessing disagreement along a continuum—for example, tumour size—since we are by no means sure (on medical grounds) how to allot correct "weighting" to the gravity of the "error."

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(Accepted 16 August 1977)

Upper gastrointestinal endoscopy—a GP service

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British Medical Journal, 1977, **2**, 1199-1201

Summary

Since 1974 there has been an open endoscopy service available to general practitioners in the Bournemouth and Christchurch area. Patients are referred directly with a standard form. A retrospective comparison of requests for barium-meal examinations and for endoscopy by general practitioners showed that the reasons

for referral were similar. Forty per cent of patients in each group showed no abnormality. Ulceration was found in 21.1% of patients who underwent endoscopy and 9.7% investigated by barium meal. Duodenitis or gastric erosions were found in a further 16% of endoscopies. More hiatus hernias and deformed duodenal caps were found at barium meal. Despite these differences the results of follow-up were similar.

Introduction

Fibreoptic instruments permitting upper gastrointestinal endoscopy have been available for routine use only in the past decade; their use has been largely confined to patients selected by hospital doctors. Direct referral by general practitioners for barium-meal examination has been widely available for several years, but there has been no report of a direct referral upper gastrointestinal endoscopy general practitioner service.

GPs have been able to request barium-meal examinations at

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this hospital for the past 10 years. In 1974 an upper gastro-intestinal endoscopy service was made freely available. Reports have suggested that fiberoptic examination of the upper gastrointestinal tract may be more useful than radiology, disclosing more disease and enabling lesions to be biopsied.

We have reviewed the outcome of 304 patients who underwent endoscopy at the discretion of general practitioners over the first 27 months of the service. There was no prior requirement for a barium meal. For comparison we have summarised the results of 191 GP-requested barium-meal examinations from February to July 1977.

Methods

In February 1974 the GPs in the Royal Victoria Hospital catchment area were informed that the endoscopy service would start. They were supplied with request forms that were to be sent to the staff nurse in charge of the endoscopy unit. She is responsible for booking the patients and instructing them on the regimen. It is important that patients should realise that they cannot drive themselves home and that they will remain in hospital for about three hours.

TABLE I—Reasons for referring patients for examination

	Patients who underwent endoscopy (n = 304)		Patients who underwent barium meal (n = 191)	
	No	%	No	%
Dyspepsia	260	(85.5)	156	(81.7)
Vomiting	6	(2)	23	(12)
Dysphagia	13	(4.3)	10	(5)
Anaemia or gastrointestinal bleeding or both	25	(8.2)	2	(1)

TABLE II—Summary of findings in the endoscopy and barium meal groups

	Patients who underwent endoscopy (n = 304)		Patients who underwent barium meal (n = 191)	
	No	%	No	%
Oesophagitis or hiatus hernia or both	59	19.4	57	29.8
Duodenitis or duodenal erosions and/or inflamed pylorus (3 only)	43	14.1		
Prepyloric ulcer or duodenal ulcer or both	41	13.5	11	5.6
Gastritis	25	8.2		
Gastric ulcer { benign	21	6.9	5	2.6
{ malignant	2	0.7	3*	1.6
Deformed duodenal cap or pylorus but no duodenal ulcer	6	2%	24	12.6
Gastric erosions	5	1.6		
Oesophageal stricture { benign	4	1.3	3	1.6
{ malignant	1	0.3	1	0.5
Normal	119	39%	80	41.9
Other (foreign body, diverticulae, volvulus of stomach, or malabsorption)			7	3.7

*Two were subsequently shown to be benign.
Note: Some patients at endoscopy had more than one lesion present—for instance, gastric and duodenal ulcers.

TABLE III—Follow-up (3-30 months later) of 304 patients referred by GPs for gastroscopy

	Total	Symptoms settled	Continuing symptoms	Referred for surgery	Lost to follow-up
Oesophagitis or hiatus hernia or both	59	36 (61)	20 (33.9)		3 (5.1)
Duodenitis or erosions or inflamed pylorus	43	31 (72)	7 (16.3)		5 (11.6)
Prepyloric ulcer or duodenal ulcer or both	41	26 (63.4)	4 (9.7)	5 (12.2)	6 (14.6)
Gastritis	25	15 (60)	8 (32)		2 (8)
Gastric ulcer { benign	21	14 (66.7)	3 (42.3)	3 (42.3)	
{ malignant	2			1 (50)	
Deformed duodenal cap or pylorus but no ulcer	6	4 (66.7)	2 (33.3)		
Gastric erosions	5	5 (100)			
Oesophageal stricture { benign	4	3 (75)		1 (25)	
{ malignant	1			1 (100)	
Normal	119	92 (77.3)	19 (16)		8 (6.7)

We use a day ward with 11 beds for preparation and recovery and a separate clinical investigation room to perform the gastroscopies. In most examinations an Olympus GIF-K Oblique Viewer fibroscope with Olympus CLE light source was used. An Olympus GF B2 side-viewing fibroscope was used for the remainder.

Immediately before the examination the patient's throat was sprayed with a local anaesthetic and 5-20 mg diazepam (Valium) was injected intravenously, the patient lying in the left lateral position. This dose of diazepam was exceeded in some cases, usually in fit young adults with high tolerance to sedation. As experience was gained we used less diazepam to premedicate. The gastroscopies were performed by the gastrointestinal unit, two members of which are clinical assistants from general practice, trained in using fiberoptic instruments. Two half-day sessions a week are used for this service, 8-12 patients being examined in each session.

After examination reports were sent directly back to GPs unless there was serious disease, when a hospital appointment would be made. Patients who were discovered to have peptic ulcers were asked to return about two months later for another endoscopic examination. Lesions were biopsied at the discretion of the operator.

Three to 30 months after endoscopy and five to eight months after barium-meal examinations, the GP's records were studied to find out what happened to the patients. The amount of information was limited but we have tried to enumerate those patients who have recovered, those still needing treatment or future investigation, and those who had subsequent surgery.

Results

GPs referred 304 patients for gastroduodenoscopy in the 27-month period under review. Eighty GPs were informed and 45 used the service. The number of patients referred by each doctor varied from one to 40. The average age of patients was 50 years, and the average waiting time between referral and examination was 29 days.

The reasons for referral are given in table I and the indications for endoscopy and barium meal are broadly similar. Table II summarises the findings of both endoscopic and barium-meal examination. In most cases GPs referred patients with symptoms attributable to peptic ulceration, both doctor and patient wishing to know if there was a lesion that could be treated to avoid symptoms and complications. Using endoscopy 21.1% of patients had ulcers (both gastric and duodenal), whereas only 9.7% of patients had ulcers shown on barium meal. If we also include the patients who have endoscopically diagnosed gastric erosions or duodenitis 35.2% of patients had abnormalities justifying specific treatment.

A higher proportion of hiatus hernias were disclosed by radiology as might be expected. We do not know how many of these hiatus hernias were causing symptoms. The numbers and types of oesophageal stricture discovered by both procedures were similar.

Gastritis was included in the follow-up results (table III) because it featured on 25 endoscopy reports. This diagnosis was made macroscopically, however, and the findings do not necessarily correlate with histological appearances.

TABLE IV—Results of follow-up endoscopy of 62 patients with ulcers. Percentages given in parentheses

	Total	Healed	Referred for surgery	Lost to follow-up or not rescoped
Duodenal ulcer	41	19 (46.3)	5 (12.2)	17 (41.5)
Benign gastric ulcers	21	11 (52.4)	3 (14.3)	7 (33.3)

