

What happens to patients following open access gastroscopy? An outcome study from general practice

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SUMMARY

Background. Open access gastroscopy allows general practitioners to request a gastroscopy without prior referral to a specialist. The effect of open access gastroscopy upon patient management is poorly explored. Most studies have been hospital based and have focused on diagnostic yields and on means of tightening requests to reduce inefficient use. A user evaluation can only be made by measuring outcomes in primary care.

Aim. A study was undertaken to determine the impact of open access gastroscopy in general practice and in particular, the value of a normal result.

Method. All general practices in South Tees District Health Authority were asked to participate. Any of their patients who had had open access gastroscopy in the year prior to July 1990 were identified from the hospital computer and their general practitioner notes examined. Patient management during the year prior to the open access gastroscopy was compared with the year after. The main outcome measures were: detection rate and grade of lesion, change in graded score of prescribed drugs, consultation rate for dyspepsia and non-dyspepsia problems, and further hospital referral and investigations. Outcomes among those with normal and abnormal gastroscopy results were compared.

Results. The study sample comprised 715 patients, 36% of whom had a normal gastroscopy result, 34% a major abnormality and 26% a minor abnormality (4% of patients had miscellaneous diagnoses). It was found that 39% of all patients, and 60% of those with normal findings on open access gastroscopy had their drug treatment stopped or reduced in grade after the investigation. Of those with a major endoscopic abnormality 58% increased their treatment score. Consultations for dyspepsia in the year before and after gastroscopy fell by 57% overall among those with a normal gastroscopy result, by 37% among those with a minor finding and by 33% in those with a major finding. There was a 21% fall in consultations for all reasons among

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those with a normal gastroscopy result but those with a minor abnormality had a 23% increase in non-dyspepsia consultations. Of all patients 19% were referred to hospital subsequently.

Conclusion. Open access gastroscopy has a major effect upon patient management in general practice, and a normal endoscopy result has as important an impact as an abnormal one. Open access gastroscopy is associated with a rationalization of drug therapy, reduced consultations and a low hospital referral rate.

Keywords: gastroscopy; open access services; outcome; management of disease; workload.

Introduction

OPEN access gastroscopy allows general practitioners to request gastroscopy without prior referral to a specialist. The patient's management remains the responsibility of the general practitioner. Although open access gastroscopy has been available in some areas for over a decade its effect upon patient management in the primary care setting remains relatively unexplored. Most reports concentrate on findings at endoscopy, reiterating the adage that appropriateness of referral equates with a positive detection rate. Evidence suggests that the detection rate from open access gastroscopy does not differ from referrals from hospital outpatient clinics, with normal results found in 30-40% of cases.¹⁻³ A pre-occupation with the need to maintain the diagnostic yield has prompted proposals for protocols to filter patients at referral.^{4,5} However, without information from general practice it is impossible to evaluate an open access gastroscopy service fully, and in particular the impact of a normal result.

A study was undertaken to examine the outcome of open access gastroscopy from the general practice viewpoint, and in particular, what happens to patients with normal results.

Method

All patients who had had open access gastroscopy during the year before July 1990 were identified by computer at Middlesbrough General Hospital, and their general practitioners were asked if they would allow their patients' records to be examined. The records were examined at the general practitioners' surgeries by one of two researchers and data transferred to a central computerized database.

All the endoscopies had been conducted by experienced personnel, consisting of six consultants and two hospital practitioners, each with over 10 years' experience. No objective standardized observational criteria were set but the endoscopists met regularly to discuss findings to reduce observational bias.

Details were collected relating to number of recorded consultations, hospital referrals, diagnostic investigations and drug therapy during the 12 months before and subsequent to the gastroscopy. The diagnosis suspected by the general practitioner at the time of the gastroscopy referral was obtained from the original open access gastroscopy referral form. The gastroscopy

findings were taken from the hospital computer.

In order to categorize the wide range of drugs used, a simplified scoring system was devised, based on ascending efficacy, and indirectly reflecting the costs of the preparations. The scores were assigned in simple hierarchical form and did not reflect quantitative comparative efficacy or costs. The main purpose of them was to record any shifts in prescribing. The scores were: 0 = no drug treatment; 1 = simple antacids or alginates; 2 = dopamine antagonists (metoclopramide, domperidone); 3 = H₂-receptor antagonists, prostaglandin analogues, bismuth preparations and cisapride; and 4 = proton pump inhibitors (omeprazole). Where patients were taking more than one drug the scores were added together, for example an H₂-receptor antagonist plus an antacid equals four.

Statistical analysis was done on a non-parametric basis, using the chi square test with Yates correction, and *P* values.

Results

Complete data were available for 715 of the 954 patients (74.9%) who had had open access gastroscopy in the study year. Records were missing because 31 patients were registered with 18 general practitioners (out of a total of 149) who refused access to records; 13 patients had apparently not attended for endoscopy according to general practice records although hospital data were available; and 22 had died, their notes being recalled by the family health services authority. The causes of death were: myocardial infarction (five patients), stroke (four), cardio-respiratory disease (four), bronchogenic carcinoma (three), carcinoma of the stomach (three), carcinoma of the pancreas (two) and carcinoma of the oesophagus (one). The remaining 173 were lost to follow up either because they had moved or because their notes were missing.

The overall endoscopy results from the 715 patients studied showed no statistically significant variation from the total group of 954, based on chi square analyses of the individual findings. The findings of the entire group and the study population are shown in Table 1. In the entire group, the mean age of those patients with a normal result was 45 years, the mean age of those with a major endoscopic abnormality was 51 years, a minor endoscopic abnormality 52 years, and of those with a miscellan-

eous finding 57 years. In the entire group, the mean waiting time between the request for open access gastroscopy and the procedure was 17 days.

Duration and type of therapy prior to gastroscopy

A total of 298 of the 715 patients (41.7%) had been taking a simple antacid or alginate. A further 304 (42.5%) had been taking a simple antacid or alginate with a more specific drug such as an H₂-receptor antagonist. One hundred and twenty seven patients (17.8%) had been taking either metoclopramide or domperidone only, or in combination with other drugs. A total of 336 patients (47.0%) had been on an H₂-antagonist and two had been taking omeprazole. No correlation was found between the treatment score and the suspected clinical diagnosis (as reported on the gastroscopy request form). Of the patients 10.5% had a score of six or more.

Information on duration of therapy was available for 638 patients and it was found that 48.3% had had drug treatment for four or more weeks before the gastroscopy.

Therapy after gastroscopy

Treatment changes in the year following gastroscopy are shown in Table 2. There was a cessation of therapy or a reduction in treatment score among 60.2% of patients with a normal gastroscopy result. Sixty two patients in this category increased their treatment score. Of patients with a major finding 58.4% had an increase in treatment score. Patients who had minor findings on gastroscopy showed no consistent change.

Consultation rates before and after gastroscopy

In the 12 months after open access gastroscopy, the number of consultations for upper gastrointestinal symptoms in the group of 254 patients with a normal gastroscopy result fell by 57.1% (from 534 consultations in the year before gastroscopy to 229 in the year following gastroscopy). This compares with a fall of 32.9% among those 245 patients who had a major endoscopic abnormality (541 consultations to 363 consultations) ($\chi^2 = 18.14$, 1 degree of freedom (df), $P < 0.001$) and by 36.9% among those 186 patients who had a minor endoscopic abnormality (374 consultations to 236 consultations) ($\chi^2 = 11.01$, 1 df, $P < 0.001$).

Consultations for non-dyspepsia symptoms increased by 2.8% in the group with normal findings (from 787 to 809). The total number of consultations for all reasons fell by 21.4% in patients who had no abnormality. There was a small increase of 3.5% in the number of consultations for non-dyspepsia symptoms recorded for those with a major endoscopic abnormality (from 579 to 599). The total number of consultations for all reasons fell by 14.1% (1120 to 962) among patients with a major endoscopic

Table 1. Findings at open access gastroscopy among the entire group and the study group.

| Outcome | % of patients with outcome ^a | |
|-------------------------------------|---|-----------------------------|
| | In entire group (n = 954) | In study group (n = 715) |
| Normal | 34.1 | 35.5 |
| <i>Major endoscopic abnormality</i> | | |
| Duodenal ulcer | 18.2 | 17.8 |
| Oesophagitis/Barretts oesophagus | 13.7 | 14.4 |
| Gastric ulcer | 3.7 | 3.5 |
| Carcinoma | 0.4 | 0.3 |
| <i>Minor endoscopic abnormality</i> | | |
| Hiatus hernia | 15.3 | 15.4 |
| Gastritis | 8.1 | 8.1 |
| Non-erosive duodenitis | 2.6 | 2.5 |
| <i>Miscellaneous^b</i> | 5.9 | 4.2 |

n = number of patients in group. ^aSome patients had more than one finding so percentage totals more than 100%. ^bFor example, duodenal polyps or a fixed mucosal fold.

Table 2. Treatment changes following gastroscopy.

| Main outcome | No. (%) of patients with outcome whose treatment was | | | |
|---|--|----------------|------------|---------|
| | Stopped/reduced | Left unchanged | Increased | Unknown |
| Normal | 153 (60.2) | 36 (14.2) | 62 (24.4) | 3 (1.2) |
| Major endoscopic abnormality ^a | 47 (19.2) | 51 (20.8) | 143 (58.4) | 4 (1.6) |
| Minor endoscopic abnormality ^b | 66 (35.5) | 43 (23.1) | 75 (40.3) | 2 (1.1) |
| Miscellaneous | 13 (43.3) | 3 (10.0) | 13 (43.3) | 1 (3.3) |

^aDuodenal ulcer, oesophagitis/Barretts oesophagus, gastric ulcer, carcinoma. ^bHiatus hernia, gastritis, non-erosive duodenitis.

abnormality. Those patients with a minor abnormality increased their visits for non-dyspepsia related reasons by 23.0% (from 499 to 614). This was the only group showing no significant decrease in overall consultations. The increase in non-dyspepsia related consultations in this group was significant when compared with those with a normal result ($\chi^2 = 5.09$, 1 df, $P < 0.05$) and those with a major finding ($\chi^2 = 4.11$, 1 df, $P < 0.05$).

Hospital referral and further investigations

During the year after open access gastroscopy 137 patients (19.2%) were referred to hospital for further tests: five had a barium meal examination, 44 an ultrasound scan, and 88 a consultant opinion. Of these 137 patients, 44 had had a normal result at open access gastroscopy, 33 had had a minor abnormality and 53 had had a major abnormality (seven had had miscellaneous lesions, such as polyps). Forty one patients had a follow-up gastroscopy.

Discussion

The chief limiting factor of the study design was the accuracy of the general practice records. However, although details of clinical symptoms were variable and only briefly recorded, there was consistently good recording of drug prescribing, with dates. This was aided in many instances by computerized record keeping. Details of investigations were cross-checked with hospital reports in the file. On the whole, we believe that an accurate picture of practice based management was obtained.

Another potentially limiting factor was the exclusion of 25% of patients for whom data could not be collected. The endoscopy results of this group did not differ from the group as a whole. There were 31 patients whose general practitioners did not consent to the study, but this number is small, representing 3% of the whole, and thus this is not likely to have influenced the result.

The findings presented here confirm those of Scandinavian researchers.⁶ The results indicate that the open access gastroscopy led to a rationalization of patient management, with closer targeting of therapy. Therapy ceased or was reduced in 39% of patients in the 12 months following endoscopy. The majority of these (78%) had a normal or minor endoscopy finding. Conversely, 79% of the patients who had a major endoscopic abnormality continued on the same or an increased treatment score. The management of this latter group can be more directly linked to the open access gastroscopy, if it is assumed that patients with normal findings are more likely to have had a self limiting problem.

Although not reported here three gastric and one oesophageal carcinoma were discovered on open access gastroscopy among all 954 patients and follow-up endoscopies and biopsies showed two gastric ulcers to be malignant (detection rate 6.3 per 1000 endoscopies). The short waiting time of 17 days between the request for gastroscopy and the procedure probably contributed to their earlier detection than through the conventional referral system. However, open access gastroscopy is not necessarily seen as a method to facilitate the earlier detection of cancer and it is likely that many patients who had symptoms consistent with cancer were referred directly to a consultant in the usual way rather than for open access gastroscopy.

The data do not indicate why some of the patients with normal findings continued therapy and indeed that 24% increased therapy. It could be that the existing management was proving effective in some patients while in others the treatment was being driven by symptoms rather than the gastroscopy result. It is also likely that non-clinical factors impinged upon the decision making process within the consultation. In any case a proportion (possibly as many as 60%, reflecting the prevalence of reflux⁷) could

have had non-ulcer dyspepsia sensitive to acid suppression.

A factor not hitherto measured from hospital based studies is the effect of open access gastroscopy upon consultation rates in general practice. This study revealed a reduction in consultations after gastroscopy, most dramatically among those with a normal result. This reinforces the value of a negative endoscopy to the general practitioner.

Among patients who had a minor endoscopic finding, there was a 23% increase in non-dyspepsia related consultations. Their consultations for upper gastrointestinal symptoms fell, in line with those with major endoscopic abnormalities. This is likely to be a reflection of such patients' consultation and health advice seeking behaviour, with the core issues of health concern perhaps not being identified and addressed.^{8,9} This finding is supported by Jones who identified a subset of patients whose consultation pattern was characterized by shifting clinical emphases.⁸

Another important finding is that fewer than a fifth of the patients (19%) required subsequent referral for further investigations or a consultant opinion. Such referrals to specialists are likely to have been fewer had open access ultrasonography been available. This reflects previous findings,¹⁰ reinforcing the central role of the general practitioner in the management of patients and demonstrating that open access gastroscopy is not a surrogate entry point into the secondary care system.

An evaluation of any open access service is incomplete without paying attention to the user, the general practitioner. Arguments relating to hospital workloads need to be balanced with similar information from the primary care setting. The study shows that open access gastroscopy is associated with a rationalization of therapy, a reduction in the number of consultations, and a low re-referral rate. A normal result had as much value in determining management as a positive result.

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