

Endoscopy: throat spray or sedation?

ABSTRACT—Anxious patients tolerate endoscopy poorly. It was proposed that such patients might derive most benefit from sedation, while most non-anxious patients would prefer endoscopy with lignocaine throat spray alone. In a prospective study, 200 outpatients underwent diagnostic endoscopy after receiving one of two detailed information sheets which offered them either the choice between spray or sedation ($n = 100$) or the same choice but encouraged those who were anxious about endoscopy to choose sedation ($n = 100$). When given an informed choice, most non-anxious patients prefer not to be sedated during diagnostic endoscopy. If patients who are anxious about the procedure are advised to choose sedation, those who nevertheless opt for topical throat spray alone find the endoscopy just as comfortable. If the endoscopy were to be repeated, 73% of the spray group and 77% of the sedation group would make the same choice again. Of 33 patients who chose spray but had been given only sedation for a previous endoscopy, 26 (79%) would choose spray again for a future endoscopy. The choice of spray or sedation should reflect the patient's view as well as that of the endoscopist.

Upper gastrointestinal endoscopy has become a safe procedure over the last two decades, with established guidelines for standards of sedation and patient monitoring [1]. In Britain, sedation during endoscopy is standard practice, with 90% of endoscopists using an intravenous benzodiazepine for at least 75% of endoscopies [2]. However, the presumed need for sedation differs widely between endoscopists and between countries, and many centres now routinely perform upper endoscopy with anaesthetic throat spray alone [3–8]. The results of some [9], but not all [8,10], studies have suggested that endoscopy with spray alone is tolerated less well. None the less, when given the choice, many patients may prefer spray alone because they can leave

hospital and resume their normal daily activities immediately [5,9].

Although there are obvious cost and time advantages to endoscopy without sedation, relatively little is known about attitudes of *patients* to endoscopy and the factors that influence them. Results of previous studies have suggested that patients who are anxious about the procedure tend to tolerate endoscopy poorly [5,11], while those with previous endoscopy experience tolerate the procedure well [5].

The aims of this study were to determine the proportion of patients who, given an informed choice, would opt for throat spray alone rather than intravenous sedation for upper gastrointestinal endoscopy, and to assess whether anxious patients would find endoscopy with throat spray alone unacceptably uncomfortable and would benefit most from sedation.

Subjects and methods

One hundred consecutive outpatients (group 1) referred for diagnostic endoscopy were sent an information sheet which listed the advantages of spray or sedation and offered them the choice between the two at the time of endoscopy; this information was reinforced by the endoscopist immediately before the endoscopy. The next 100 patients (group 2) were given an information sheet which again offered free choice but advised any patients who were at all anxious about the test to choose sedation; again, this suggestion was reinforced by the endoscopist before patients were asked their choice prior to the endoscopy.

Questionnaires

Both groups of patients completed a questionnaire immediately before the test to assess their level of anxiety about the endoscopy on a five-point nominal scale, and to ascertain their reasons for choosing a spray or sedation. After the endoscopy, patients were given a second questionnaire with their discharge letter, which they were asked to return the next day. In this second questionnaire, the amount of discomfort they had experienced during the endoscopy was assessed on a five-point nominal scale and compared with the endoscopist's assessment of their anxiety, ease of introduction of the endoscope, and apparent discomfort during the endoscopy.

Statistical analysis

Data processing was performed on an Apricot 386 personal computer, using a Paradox database (Borland International, Scotts Valley, CA) and CRISP (Crunch

STEPHEN P PEREIRA, MRCP

Research Registrar

S HYDER HUSSAINI, MRCP

Research Registrar

PETER J V HANSON, MD, MRCP

Senior Registrar

MARK L WILKINSON, MD, FRCP

Senior Lecturer

GORDON E SLADEN, DM, MRCP

Consultant Physician and Gastroenterologist

Division of Medicine, UMDS of Guy's and St Thomas'

Hospitals, London

Interactive Statistical Package, Crunch Software Corporation, San Francisco, CA). A two-tailed *t*-test was used for continuous variables, the χ^2 test for proportions (with continuity correction), and the Mann-Whitney test (adjusted for ties) for discontinuous variables.

Results

The 200 diagnostic endoscopies were performed over eight months by two endoscopists using an Olympus GIF-Q20 endoscope. In two patients in group 1 who requested sedation, the endoscopy was incomplete due to benign oesophageal strictures which could not

be passed with the endoscope. All other endoscopies were completed successfully.

The questionnaire responses of patients' anxiety and discomfort, and the endoscopists' assessments of patients' anxiety and discomfort, are summarised in Table 1.

Of the first 100 patients (47 men) in group 1, 59 opted for topical throat spray alone (lignocaine 100 mg); 93% chose spray to avoid post-procedure drowsiness. The remaining 41 patients, who opted for sedation, were given diazepam (mean dose, 12.2 mg; range 5–20 mg). They chose sedation because they were worried about the diagnosis (15%) or possible discomfort (44%), or because they had been given sedation for a previous endoscopy (41%).

Table 1. Summary of questionnaire responses in patients undergoing upper gastrointestinal endoscopy: group 1 were given an informed choice between intravenous sedation or pharyngeal spray alone, and group 2 were offered the same choice but encouraged to choose sedation if at all anxious about the test. (Figures in brackets are percentages.)

	Group 1			Group 2		
	Sedation	Spray	<i>p</i> value	Sedation	Spray	<i>p</i> value
No. of patients	41	59		48	52	
Men (%)	12 (26)	35 (74)	0.006	11 (23)	35 (67)	<0.0001
Women (%)	29 (55)	24 (45)		37 (77)	17 (33)	
Age (years) (SD)	52.6 (16.1)	45.7 (15.0)	0.033	53.0 (17.4)	51.6 (17.8)	NS
Range (years)	21–79	22–79		23–85	19–84	
Diazepam dose (mg) (SD)	12.2 (4.1)	–		13.3 (3.8)	–	
Range (mg)	5–20	–		5–20	–	
Patients' anxiety about discomfort						
Nil	4 (10)	11 (19)		5 (11)	13 (25)	
Mild	20 (50)	24 (41)	NS	13 (28)	25 (49)	0.0003
Moderate	6 (15)	16 (28)		18 (38)	10 (20)	
Extreme	10 (25)	7 (12)		11 (23)	3 (6)	
Endoscopist's assessment of patients' anxiety						
Nil	7 (17)	26 (44)		7 (15)	27 (52)	
Mild	11 (27)	15 (25)	0.0011	17 (35)	11 (21)	<0.0001
Moderate	12 (29)	15 (25)		13 (27)	12 (23)	
Extreme	11 (27)	3 (5)		11 (23)	2 (4)	
Endoscopist's assessment of patients' discomfort						
Nil	5 (12)	27 (46)		7 (15)	24 (46)	
Mild	21 (51)	19 (32)	0.038	18 (38)	14 (27)	0.004
Moderate	11 (27)	9 (15)		13 (27)	12 (23)	
Severe	4 (10)	4 (7)		10 (21)	2 (8)	
Patients' assessment of endoscopy						
Comfortable	7 (17)	2 (3)		6 (13)	8 (15)	
Mildly uncomfortable	13 (32)	14 (24)	0.011	18 (38)	15 (29)	NS
Moderately uncomfortable	12 (29)	22 (37)		12 (25)	17 (33)	
Very uncomfortable	9 (22)	21 (36)		12 (25)	12 (23)	

NS = not significant

Patients who chose spray were more likely to be male (74% men *vs* 45% women) and younger (mean, age 46 *vs* 53 years) than those in the sedation group. Anxiety was similar in the two groups, but in the spray group introduction of the endoscope was easier and patients appeared to be more comfortable during the test. However, those in the spray group experienced more discomfort than those given sedation, although the proportion of patients who found the endoscopy either better or worse than expected was similar in the two groups.

Effect of advising anxious patients to choose sedation

The next 100 patients (group 2) were advised to choose sedation if they were at all anxious about the procedure. In contrast to the previous 100, those who chose spray in this group were significantly less anxious and did not experience greater discomfort than those in the sedation group. According to the endoscopist, the spray group also appeared to be less anxious and tolerated the endoscopy better than the sedation group. However, in general, the endoscopist was a poor judge of patient anxiety and discomfort and tended to underestimate both factors.

Patient's preferences concerning future endoscopies

After the test, patients in both groups were asked their preference for spray or sedation if they were to have another endoscopy in the future. Patients' preferences were similar in the two groups and the combined results are presented below. If the endoscopy were to be repeated, 73% of the spray group and 77% of the sedation group (NS), would make the same choice again. Five of 89 patients (6%) who chose sedation, and 6 of 111 (5%) who chose spray, stated that they would refuse a repeat examination.

Seventy-six of the 200 patients (38%) had undergone one or more previous endoscopies with sedation only. The 43 patients who had undergone one previous endoscopy reported less anxiety ($p = 0.005$) but the same degree of discomfort ($p = 0.86$) as those without endoscopy experience. In contrast, the 33 patients who had undergone at least two endoscopies in the past also reported less anxiety ($p < 0.0001$), but experienced significantly less discomfort ($p = 0.014$) than those who had not had a previous endoscopy.

Of the 76 patients with previous endoscopy experience, all of whom had been given sedation in the past, 43 again received sedation and 33 chose spray for the current endoscopy. Twenty-six (79%) of the latter stated that they would again choose spray at a future endoscopy.

Discussion

Topical pharyngeal anaesthesia alone for upper endoscopy holds advantages over sedation for both

endoscopist and patient. These include shorter endoscopy time [3], lower incidence of hypoventilation and hypoxia [2,11], and the lack of antegrade amnesia, allowing the endoscopist to explain exactly what has been found, and advise and prescribe as appropriate. The patient can get up immediately after the procedure, and drive or go back to work the same day. Intravenous access is usually unnecessary, and there may be a lower risk of instrument damage [9] and cardiopulmonary complications [2,11].

Against these advantages of endoscopy with spray alone is the possible risk of greater patient discomfort. Earlier studies have suggested that endoscopy with sedation is more comfortable than without [13–15], but the level of sedation used may have exceeded the 'modern' end-points of anxiolysis and light amnesia [16], and patients were not given the choice between spray and sedation.

In contrast to previous reports, the present study allowed patients an informed choice between spray and sedation. The results confirm that anxious patients tolerate endoscopy without sedation less well than non-anxious patients. However, when the former are advised to choose sedation, those who opt for topical throat spray alone find the endoscopy just as comfortable as the sedation group, and would again choose spray if they were to undergo a repeat endoscopy. Moreover, more than three-quarters of patients who have undergone at least two endoscopies, with sedation and then with spray, would also choose spray at a future endoscopy.

Conclusion

The endoscopist is a poor judge of patients' anxiety before, and discomfort during, endoscopy and tends to underestimate both. In contrast, when patients are given appropriate information about the advantages of spray or sedation, they are best able to assess these factors. Given the choice, at least half will opt for throat spray alone. Patients should be given an informed choice between spray and sedation for diagnostic upper gastrointestinal endoscopy.

Acknowledgements

We thank the nursing staff of the Endoscopy Unit for their assistance throughout the study, and Chris Bonell and Chris Lowe of the Clinical Audit Department, for help with data collection and analysis.

References

- 1 Bell GD, McCloy RF, Charlton JE, Campbell D, *et al.* Recommendations for standards of sedation and patient monitoring during gastrointestinal endoscopy. *Gut* 1991;32:823–7.
- 2 Daneshmend TK, Bell GD, Logan RF. Sedation for upper gastrointestinal endoscopy: results of a nationwide survey. *Gut* 1991;32:12–5.

- 3 al-Atrakchi HA. Upper gastrointestinal endoscopy without sedation: a prospective study of 2000 examinations *Gastrointest Endosc*. 1989;**35**:79-81.
- 4 Ladas SD, Giorgiotis G, Pipis P, Papaianou C, *et al*. Sedation for upper gastrointestinal endoscopy: time for reappraisal? *Gastrointest Endosc* 1990;**36**:417-8.
- 5 Hedenbro JL, Lindblom A. Patient attitudes to sedation for diagnostic upper endoscopy. *Scand J Gastroenterol* 1991;**26**:1115-20.
- 6 Kingston RD. Sedation for upper gastrointestinal endoscopy. *Gut* 1991;**32**:832-3.
- 7 Cann PA. Is sedation the choice of most outpatients for gastroscopy? *Gut* 1992;**33**:S15.
- 8 Giaffar MH, Jesudason K, Hishon S. Diagnostic upper gastrointestinal endoscopy with and without sedation: a controlled study. *Gut* 1992;**33**:S16.
- 9 Hoare AM, Hawkins CF. Upper gastrointestinal endoscopy with and without sedation: patients' opinions. *Br Med J* 1976;**ii**:20.
- 10 Froehlich F, Thorens J, Schwizer W, Kohler M, *et al*. Are conscious sedation and pharyngeal anaesthesia useful for gastroscopy? A randomised double-blind placebo-controlled prospective study. *Gut* 1993;**34**:S40.
- 11 Bell GD. Review article: premedication and intravenous sedation for upper gastrointestinal endoscopy. *Aliment Pharmacol Ther* 1990;**4**:103-22.
- 12 Pereira SP, Hussaini SH, Hanson PJV, Engelman JL, *et al*. Patient expectations and sedation preferences for upper gastrointestinal endoscopy (OGD). *Endoscopy* 1993;**25**:323.
- 13 Walker B, Smith MJ. Upper gastrointestinal endoscopy—a survey of patients' impressions. *Postgrad Med J* 1978;**54**:253-6.
- 14 Beavis AK, Labrooy S, Misiewicz JJ. Evaluation of one visit endoscopy clinic for patients with dyspepsia. *Br Med J* 1979;**i**:1387-9.
- 15 Thompson DG, Lennard-Jones JE, Evans SJ, Cowan RE, *et al*. Patients appreciate premedication for endoscopy. *Lancet* 1980;**ii**:469-70.
- 16 McCloy R. Asleep on the job: sedation and monitoring during endoscopy. *Scand J Gastroenterol* 1992;**27**(Suppl 192):97-101.

Address for correspondence: Dr M L Wilkinson, Gastroenterology Unit, 18th Floor, Guy's Tower, Guy's Hospital, London Bridge, SE1 9RT.