

Haemorrhoids—objective measurement of proctoscopic appearances

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Summary

The proctoscopic diagnosis of haemorrhoids may be influenced by the surgeon's knowledge of the presence or absence of associated symptoms. In this study, an observer with no knowledge of the history, was used to check the surgeon's proctoscopic findings in 12 asymptomatic controls, and 24 symptomatic patients on 2 occasions, the latter group undergoing McGivney rubber band ligation.

There was very good correlation between the findings of the surgeon and the observer, indicating a lack of 'historical bias'. The documentation method designed to allow this comparison proved sufficiently accurate and reproducible to enable a correlation between haemorrhoidal mass and symptoms. Relief of symptoms after treatment correlated well with an objective reduction in haemorrhoidal mass.

Introduction

A patient with haemorrhoids may or may not complain of symptoms. As there is no simple documentation method that quantifies haemorrhoids objectively, the surgeon is forced to rely heavily upon the symptoms both in the diagnosis of haemorrhoids and in the response to treatment. By the time the surgeon comes to perform the proctoscopy, therefore, he has already been conditioned by the history in a positive or negative fashion on whether or not he is likely to diagnose haemorrhoids, or record any change in response to treatment. Thus after taking the history, the surgeon may become unduly biased in his proctoscopic observations.

The aim of this study, therefore was to test whether 'historical bias' was occurring by comparing the proctoscopic findings of 2 surgeons, only one of whom knew the case history. To compare their findings accurately, it was necessary to devise a simple quantitative recording method denoting the number, position and size of each haemorrhoid.

Method

Patients entered into the study were out-patients referred to the authors' general surgical clinic, which has a principally gastroenterological interest. They fell naturally into 2 groups: an asymptomatic or control group, who had no symptoms suggestive of haemorrhoids, and a symptomatic group, with symptoms suggestive of haemorrhoids.

At presentation, each group was assessed symptomatically and proctoscopically by the surgeon, and this was repeated 4 weeks later. On each occasion a second surgeon, called the 'observer', also examined the patients, *proctoscopically only*. The observer had no prior knowledge, either of the history, or of whether it was the patient's first or second assessment. All patients were examined in the left lateral position using a standard proctoscope of internal diameter 20 mm and length 63 mm.

After the initial assessment, all the patients in the symptomatic group had McGivney rubber band ligation carried out by the surgeon, dealing with the most prominent haemorrhoids. At their second visit, therefore, any proctoscopic changes in response to rubber band ligation were being assessed.

Recording the findings

Each proctoscopic finding was recorded by the surgeon and observer on a standard 6 cm diameter circle drawn on square millimetre graph paper. The number, position and 3-dimensional picture of the size of any haemorrhoids, gained by the usual method of advancing and withdrawing the proctoscope 2 or 3 times along the anal canal and rectum, was immediately depicted as accurately as possible in 2 dimensions on the graph paper circle. From each record, the following information was calculated.

(1) *Number of haemorrhoids*. The absolute number was counted.

(2) *Position of haemorrhoids*. On the diagrammatic record, the position of each haemorrhoid was noted.

A line passing from the centre of the circle through the summit of the haemorrhoid was extended to the periphery of the circle and the position was recorded in degrees, the anterior position being 0°, and posterior 180°, reading clockwise.

(3) *Mass of haemorrhoids.* The area of all the haemorrhoids on each record was measured in mm² and summated to give the 'total haemorrhoid mass'.

Thus, each patient had a total of 4 records available for comparison, 2 from the surgeon and 2 from the observer. Statistical analysis was made using the Mann-Whitney U-test, statistical significance being taken as $P < 0.05$.

Results

Twelve patients were available for analysis in the asymptomatic group (8 male, 4 female, average age 40.2 years, range 25–73 years) and 24 patients in the symptomatic group (15 male, 9 female, average age 50.9 years, range 22–83 years).

Symptomatic assessment by the surgeon of the response to rubber band ligation in the 24 patients showed that 18 responded well, with complete cessation of their symptoms while 6 had a poor response.

Number of haemorrhoids (Table 1)

In the asymptomatic group there was no significant difference between the surgeon and observer findings at either of the 2 visits. Six of the 12 were found to have some degree of haemorrhoids. In the symptomatic group, the surgeon found a significant drop in the number of haemorrhoids from medians of 3 to 2 in the good responders and no change in the poor responders. The observer findings showed a fall from medians of 4 to 3.5 in the good responders but this failed to reach statistical significance. There was good correlation between surgeon and observer on their first visit findings and on the lack of any change in the poor responders.

TABLE 1. Number of haemorrhoids observed. (Medians + ranges in brackets)

	Visit	Surgeon	Observer
Asymptomatic (<i>n</i> = 12)	1	0.5 (0–5)	2.5 (0–5)
	2	1.5 (0–8)	1.5 (0–4)
Symptomatic: Good response (<i>n</i> = 18)	1	3 *(1–6)	4 (0–8)
	2	2 *(0–7)	3.5 (0–7)
Symptomatic: Poor response (<i>n</i> = 6)	1	3.5 (3–4)	3 (3–7)
	2	3.5 (3–5)	3 (3–4)

* The difference between observations on visits 1 and 2 were significantly different ($P < 0.05$).

Position of haemorrhoids

The total number of haemorrhoids recorded in each position by surgeon and observer are shown in Fig. 1. The haemorrhoids in both groups were distributed round the anal canal in 3 peaks at 90°, (left lateral), 240°, (right posterior), and 330° (right anterior). There was however considerable overlap between these traditional sites.

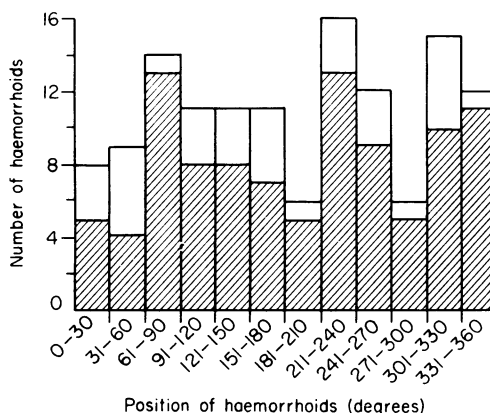


Fig. 1. Surgeon (▨) and observer (□) findings of position of haemorrhoids.

Mass of haemorrhoids (Table 2)

In the asymptomatic group, there was no significant difference between the findings of the surgeon and observer on either visit. However, the total haemorrhoid mass in the asymptomatic group was significantly less than that in the symptomatic group for both the surgeon and observer. On their review at the second visit, both surgeon and observer demonstrated a statistically significant reduction in the mean total haemorrhoid mass in the good responders and, correspondingly, no significant change in the poor responders.

TABLE 2. Haemorrhoidal mass (mm²). Medians and ranges (in brackets)

	Visit	Surgeon	Observer
Asymptomatic (<i>n</i> = 12)	1	75 (0–1340)	410 (0–1400)
	2	50 (0–1220)	170 (0–950)
Symptomatic: good response (<i>n</i> = 18)	1	820 (75–1895)	1080 (0–2095)
	2	234 *(0–1230)	830 *(0–1819)
Symptomatic: poor response (<i>n</i> = 6)	1	1057 (684–1628)	890 (506–1968)
	2	898 (500–1398)	1400 (472–2498)

* The difference between observations on visits 1 and 2 was significantly different ($P < 0.05$).

A total of 36 haemorrhoids were ligated in the 24 patients. Table 3 further analyses the surgeon's findings, comparing the effect of rubber band ligation on those haemorrhoids that were ligated with changes in those that remained unligated.

Ligation had no effect on the neighbouring unligated haemorrhoid mass. The significant fall in the mean total haemorrhoid mass was entirely due to changes in the ligated haemorrhoid mass. There was a reduction in the mass of the ligated haemorrhoids in the 6 patients who were poor responders but this was not statistically significant.

Discussion

What are haemorrhoids? When patients who complain of particular symptoms are proctoscoped the surgeon may be strongly biased into describing what he sees as haemorrhoids.

Undoubtedly, he occasionally sees large 'haemorrhoids' in patients who have no anorectal symptoms at all, and small ones in patients with severe symptoms. How objective is he in his assessment of haemorrhoids? How well does the existence or size of haemorrhoids correlate with symptoms? How is the mass of haemorrhoids affected by treatment, and how does any change in mass relate to symptomatic relief? To the authors' knowledge there has been little attempt to produce hard data to answer such questions.

The main object of this study was to assess the objectivity of the surgeon in his proctoscopic examination of haemorrhoids. Unfortunately, no ideal quantitative assessment of haemorrhoids existed to be utilized. Therefore a simple semi-quantitative recording expedient was devised for use in this study. It is clear that the recording method used was not strictly quantitative. Each surgeon or observer was asked to use the devised system to record his findings, and in the process displayed not only what he saw, but also *his own individual manner of using the recording system*. Because of this second feature (which, incidentally, is a feature of almost all data-collecting systems, although usually to a much lesser degree) individual recorded values were not of great significance. Much more important was the correlation between observers, and con-

sistency in any changes seen with time. If, for example, the presence of a large pile mass is associated with symptoms, the authors would expect, by use of their system, not necessarily to find that 2 observers would each record a larger mass in symptomatic than in asymptomatic subjects. Similarly, if effective treatment reduces pile mass, they would expect both observers to record a reduction in treated patients, but not in untreated controls.

As the results clearly indicate, the authors were able to achieve an excellent degree of correlation between the findings of the surgeon and observer. The surgeon and observer agreed closely on the proctoscopic appearances, particularly on any changes or continued similarities between visits in the 2 groups. Both surgeon and observer noted a reduction in the mean number of haemorrhoids in those who responded well to ligation, although only the reduction noted by the surgeon was statistically significant. On all other points of comparison, the surgeon and observer findings were in agreement. These data imply strongly that knowledge of the case history and treatment of the subject did not bias the surgeon unduly in his proctoscopic assessment of haemorrhoids.

Six out of the 12 asymptomatic patients were noted to have haemorrhoids, which were fewer and smaller than those found in the symptomatic group.

There was no change in the number, or mass of these haemorrhoids during the 4 weeks under study.

Standard teaching states that haemorrhoids are predominantly in the left lateral, right posterior, and right anterior position. While the authors recorded peaks in those positions, there was also considerable overlap between the peaks, and much more variation than previous studies have indicated.

The size, or mass of the haemorrhoids appears to be the most important determinant of whether a patient has symptoms or not. The average mass in the asymptomatic group was significantly less than in the asymptomatic group on their first visit. Disappearance of the symptoms after rubber band ligation was associated with a significant reduction in the haemorrhoid mass towards the level found in the asymptomatic group. The symptoms confirmed, however, if there was no significant reduction. It is

TABLE 3. Surgeon's findings of changes in the haemorrhoidal mass in the ligated and unligated groups (in mm²). Medians and ranges (in brackets)

Visit	Good response (n=18)		Poor response (n=6)	
	Ligated mass	Unligated mass	Ligated mass	Unligated mass
Mass (mm ²)				
1st	497 (75-1840)	252 (0-490)	713 (70-1249)	461 (0-872)
2nd	86 (0-980)*	181 (0-475)	418 (116-1300)	456 (70-963)

* The difference between observations on visits 1 and 2 were significantly different ($P < 0.05$).

interesting to note that those who had a poor response to rubber band ligation had the greatest haemorrhoid mass recorded at their first visit. If the total haemorrhoid mass is very high to begin with, therefore, rubber band ligation is less likely to be successful in reducing the size to a level where symptoms disappear, although the lack of relief in some patients may have been due to failure to ligate all the haemorrhoids at one time. Certainly, some patients obtain relief after ligation of remaining haemorrhoids.

From the range of haemorrhoid mass that the authors have recorded in the 2 groups, and the differences found in the good and poor responders to rubber band ligation, there would appear to be

a relatively critical haemorrhoid mass, below which the patient is asymptomatic and above which he has symptoms.

Finally, it has been shown that the response to rubber band ligation is entirely related to the changes in the ligated haemorrhoid itself. No change took place in neighbouring unligated haemorrhoids in response to the ligation.

It is concluded, therefore, that a surgeon is not unduly biased by the history when deciding on the presence or absence of haemorrhoids proctoscopically. Moreover, the recording method was found to be simple and reproducible. It has enabled the authors to correlate haemorrhoid mass with symptoms and with the response to treatment.