SUMMARY: The treatment of haemorrhoids by anal dilatation is described in a series of 100 patients treated at the U.K. Military Hospital, Singapore.

Ninety-seven per cent of the patients were satisfied with the results and only three proceeded to haemorrhoidectomy. The good results obtained in the age groups involved in the trial suggest that the procedure should be applied to all cases of haemorrhoids in the Services as the initial treatment. Formal haemorrhoidectomy should be reserved for failures of the method.

Universal application of this method in Army hospitals could result in a saving of approximately 2,500 man days per year.

Introduction

Haemorrhoids are one of the commonest ailments that afflict mankind. It is difficult to find out the true incidence. Undoubtedly many people suffer from haemorrhoids and many more have some degree of the condition without symptoms. It is common to find haemorrhoids in symptomless patients and Buie (1960) reports an incidence of 52 per cent in a large series of unselected patients examined by proctoscopy at the Mayo Clinic. The incidence increases with age and Goligher (1967) estimates that at least 50 per cent of people over the age of 50 years have some degree of haemorrhoid formation. Levitt (1973) working from the figures for all hospital admissions in Western Australia in 1971, estimated that 7 per cent of the population will require admission for treatment of haemorrhoids at some time during their life.

Haemorrhoids are classified as internal and external, the former arising in the upper two thirds of the anal canal, the latter in the lower one third of the canal which is lined with anal skin. They are usually described as first, second or third degree depending on the extent of prolapse at proctoscopy (Goligher 1967). To assess the size and degree of prolapse at proctoscopy, the instrument is slowly withdrawn whilst the patient bears down. When the proctoscope just emerges from the anus the haemorrhoids are examined, if no red anal mucosa is evident the haemorrhoids are first degree. If red mucosa does project then they are second or third degree. The patient is instructed to stop straining, if the haemorrhoid slips back into the anal canal then it is second degree, if it stays down until reduced digitally then it is third degree.

It has been shown that the severity of symptoms from haemorrhoids has no relationship to the degree of haemorrhoids on examination. Many patients with severe symptoms are found to have relatively minor degree of haemorrhoids on proctoscopy. In assessing the results of treatment a careful analysis of subjective symptoms is a more accurate method than the objective physical signs at examination.

Three forms of treatment are available for haemorrhoids:—(a) Palliative. (b) Injection. (c) Some form of operation.

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Symptomless haemorrhoids found incidentally do not require any treatment. The use of suppositories is extremely common both by prescription and by self medication. The suppositories usually contain an astringent, such as Hammamelidin, to diminish the bleeding. Such treatment is usually not effective but one has only to look at the newspapers and popular press to see that a large trade is done in such preparations.

The treatment of haemorrhoids by injection was started in Dublin by Morgan and Colles in the 1870’s. The method was widely practised in America by travelling quacks but was eventually restored to the medical profession and accepted by the turn of the century. In practice the injection of sclerosant is given into the submucous areolar tissue in which the haemorrhoidal veins lie above the haemorrhoid itself and at the level of the ano-rectal ring. All cases of first degree haemorrhoids are suitable for injection with a good chance of success, most second degree haemorrhoids can be attempted with less prospects of success and third degree haemorrhoids are not suitable for treatment by injection.

The surgical treatment of haemorrhoids is one of the oldest operations, and Parks (1955) has traced its history from ancient Greece and Rome. Basically the operations consist of ligation, excision and cautery. The most common operations is that based on the work of Milligan and Naunton Morgan (1937) and is known as the low ligation and excision operation. It is recommended by Goligher (1967) after comparative trials of many methods.

None of the well established methods of haemorrhoidectomy are without associated complications such as pain, bleeding, urinary retention, minor degree of incontinence of flatus or faeces, fibrosis or stenosis of the anal canal, skin tags and at least a few weeks away from work.

A new regime for the treatment of haemorrhoids was first described by Peter Lord in 1968 and 1969. This procedure was based on the forcible dilation of the lower rectum and anal canal under general anaesthetic. This was followed by the use of an anal dilator and a bulk laxative such as Normacol. He based the procedure on the belief that haemorrhoids constitute a reversible condition and that they are caused by narrowing of the lower rectum or anal canal. This narrowing interferes with the normal process of defaecation and leads to an abnormal raising of the intra-rectal pressure during the act, causing venous congestion and thus haemorrhoids. He believed that if a patient with third degree haemorrhoids is examined rectally under the anaesthetic and with one finger of each hand inserted into the lower rectum and anal canal, circular constrictions can be felt. One of these was described by Miles in 1919 who named it the “Pecten Band”. These bands were often multiple, not confined to the level of the anal sphincter and often found around the lower third of the rectum. The aim of the forcible anal dilation is to break down these encircling bands until the route from upper rectum to the exterior is widely opened.

There is also a competitor for the non-operative treatment of haemorrhoids—Rubber Band Ligation. This technique was first described by Blaisdell (1958), and was developed and described by Barron (1963). Using a special instrument through a proctoscope, small rubber bands are applied around the base of a haemorrhoid. Trials have been published by Carden (1965), Clark, Giles and Goligher (1967), Groves, Evans and Williams (1971) and Jones and Schofield (1974).
M. S. Owen-Smith

Materials and methods

A preliminary trial was carried out on 27 patients at The Queen Alexandra Military Hospital, Millbank. A consecutive series of 100 patients was then carried out at the ANZUK Military Hospital, Singapore. All patients who were referred for treatment of haemorrhoids were treated by anal dilation in the first instance.

In each case a full history was taken and physical examination performed. Examination included abdominal and rectal palpation and proctoscopy. The perianal area was inspected for the presence of anal skin tags, perianal haematoma, fissures, fistula or excoriation of skin. The haemorrhoids were assessed as first, second or third degree depending on the extent of prolapse on proctoscopy (Goligher 1967). The diagnosis was confirmed to the patient and their main diet and bowel habits were discussed. Emphasis was placed on the importance of straining at stool, constipation, lack of adequate fluid and dietary roughage in the possible aetiology of haemorrhoids. They were told of the proposed treatment, the aim of which was to stretch the back passage—which had become too tight—and to allow it to heal in the stretched position. The second part of the treatment was their responsibility and consisted of passing a large size anal dilator according to a set regime, and to keep the stools bulky and soft by the use of a bulk laxative.

Time in hospital

Due to difficulties of transport and for social convenience the patients were admitted rather than being treated as day cases. They all returned home the day after operation where possible.

Anal dilatation

The patient was given a general anaesthetic without the use of muscle relaxants. Sigmoidoscopy was followed by anal dilatation. One finger of each hand followed by two fingers were inserted into the anal canal. The wrists were then pronated and the hands distracted. In most cases tight circumferential bands could be felt and these gave way in a characteristic manner. Three or even four fingers of each hand could then be inserted and dilation continued over a period of two or three minutes. A little bleeding from tears in the mucosa was common, but was usually only slight. A lubricated roll made of a swab was placed half in the anal canal, the patient recovered and returned to the ward.

Use of dilator

The patients were instructed in the method by which the 4 cm diameter dilator was to be passed into the anal canal. The majority found that the most satisfactory way was to pass the well lubricated dilator just after they had had a bath. Sometimes they found it easier to pass the dilator whilst sitting on the lavatory. The dilator must be passed to its fullest extent and left in position for about a minute according to the following schedule:

(a) Every day for two weeks. (b) Every other day for two weeks. (c) Twice a week for one month. (d) Once a week for one month.

A printed instruction leaflet was given to each patient to remind them of these details.
Use of Isogel

The granules were swallowed dry and washed down with a large glass of water. The water caused the granules to swell up and the resultant gel was passed through the bowels producing a soft and bulky motion. This dose was very variable; most patients were started on two tablespoonfuls once a day and they were told that they must vary this from half a teaspoon up to three or four teaspoons a day according to requirement. The aim should be to produce a bulky bowel action, with no straining, once a day.

The patients were discharged the day after operation, after it had been confirmed that they could pass the dilator without difficulty. They were told to work on the day following discharge.

Follow-up

All patients were seen after two weeks and again after six weeks. In most cases a third consultation was made after a few months for follow up information.

Symptomatic relief was judged by asking the patient whether he was relieved of his presenting symptoms, if so, whether he was completely better or had some residual symptoms. They were also asked about their bowel habits and their overall opinion of the method of anal dilatation.

Results

The results of the preliminary trial of 27 patients were very encouraging. There were 25 male and two female patients and seven had received previous treatment for haemorrhoids. Ten were aged 20 to 30, nine were 31 to 40, four 41 to 50 and four were over 50 years old. All were pleased with the results and considered themselves improved or cured. Three patients had to have a second dilatation before they became free of symptoms.

In the 100 patients from ANZUK Military Hospital there were 70 males and 30 females who had anal dilatations in a period of just over two years. The ANZUK force was tri-national and tri-service, 46 of the patients were British, 33 Australian and 21 New Zealanders. The age distribution is as given in Figure 1.

Their symptoms were the usual ones of bleeding and pain on defaecation, lumps in the anal region and perianal irritation. Only one complained of occasional soiling of underclothes and he had had this ever since previous operations for fistulae which had resulted in extensive perianal fibrosis.

Nine patients had inadequate follow up as their ships had left Singapore. All these patients were mild cases, all were free of symptoms in the first few weeks after dilatation and one would have expected them to do well. Ninety-one patients were available for follow-up over a prolonged period.

Three patients were regarded as failures of the method, one after a second dilatation, and proceeded to haemorrhoidectomy. Two of these were women and one a young man. Five patients had a second dilatation, one proceeded to haemorrhoidectomy and the other four were cured.

There were associated anal fissures in four, skin tags were excised in five and one patient also had treatment for a solitary ulcer of the rectum. Thirteen patients had received previous treatment elsewhere for haemorrhoids.
ANAL DILATATION FOR HAEMORRHOIDS

Fig. 1. Age distribution of 100 patients who had anal dilatations in a period of just over two years.

Table I shows the results of treatment based on the relief of symptoms. Only seven patients had residual symptoms and three of these proceeded to haemorrhoidectomy. Table II shows the patients' own assessment of the treatment. There were no complications arising directly from the method of treatment, in particular there was no incontinence. There were 87 patients who were discharged the day after operation.

**Table I**

Patients' assessment of treatment

<table>
<thead>
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<th>Patients</th>
<th>Assessment</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Excellent</td>
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<tr>
<td>Number of patients</td>
<td>62</td>
</tr>
</tbody>
</table>

**Table II**

Symptoms at review

<table>
<thead>
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<th>Symptoms</th>
<th>Number of patients</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>No symptoms</td>
<td>93</td>
<td>4 after second dilatation, 9 had only 2 to 4 weeks follow-up</td>
</tr>
<tr>
<td>Some residual symptoms</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>No change</td>
<td>3</td>
<td>had haemorrhoidectomy</td>
</tr>
</tbody>
</table>
Analysis

Discussion

Aetiology

Traditionally it has been taught that haemorrhoids are essentially a type of varicosity in the anal canal. There is good evidence however that this concept is not correct and Levitt (1973) has argued against it. If haemorrhoids do consist mainly of dilated veins then bleeding from them should be dark red "venous" type blood. This is not so, the bleeding is invariably bright red, both as a complaint by the patient and observation by the surgeon at proctoscopy. If the veins in the haemorrhoid are varicose then it should be possible to aspirate blood easily as in a varicose vein of the leg. Attempts to do this result in the production of only a few drops of blood. The haemorrhoid when excised is a fairly solid piece of tissue. When this is examined it is found to consist of a mass of tissue which is covered by anal mucosa and skin. Microscopically the central core consists of connective and elastic tissues with an abundance of blood vessels. These are arterioles, venules and large blood sinusoids with finger like projections leading towards the epithelium of the anal canal. The whole of the tissue between the anal epithelium and the muscle layer is probably similar to this picture. This haemorrhoidal tissue is enlarged at the site of its principal blood supply in the characteristic sites around the anal canal—at 3, 7 and 11 o'clock as seen in the lithotomy positions. These sites correspond with the distribution of the terminal branches of the superior haemorrhoidal artery.

One factor causing congestion of the haemorrhoid is the compression of the superior haemorrhoidal veins, as they lie in the submucosa of the lower rectum, between the descending mass of hard faeces and the anal musculature (Parks 1956). This is made worse by prolonged straining at stool which raises the pressure of the valveless portal system and thence to the superior haemorrhoidal venous plexus. Some degree of distention of the haemorrhoidal venous plexus is the inevitable accompaniment of every act of defaecation. This may be enough to give the majority of people mild internal haemorrhoids by middle age. The distending effect of normal defaecation may be amplified if the patient suffers from constipation and has repeated prolonged episode of straining to pass hard motions. A similar bad effect may result from patients with diarrhoea, and aperient addicts, where straining with an empty bowel is a feature.

Faulty habits of defaecation are probably the greatest factor in the aetiology of haemorrhoids. Normally a bulky soft stool should be produced in an easy, daily motion lasting a minute at the most. In some there is a prolonged act of forcible defaecation with protracted straining, often whilst reading a newspaper or book. As Goligher (1967) writes "such a practice may concentrate into 12 months the injurious effects on the haemorrhoidal veins of 12 years of normal defaecation".

Follow up

The follow up of haemorrhoidectomy cases is usually confined to the good results obtained by a particular operative technique. Little factual information is available to analyse the method of healing of the anal wounds, the incidence of immediate complications after operation, pain, the formation of skin tags, recurrence of haemorrhoids, subsequent anal stenosis and impairment of anal continence. One such study (Watts, Bennett, Duthie and Goligher 1964) investigated these problems after five different techniques of haemorrhoidectomy in 100 patients. They found out that ten days after
operation there was a great amount of destruction of anal mucosa by all methods, but at six weeks there had been remarkable regeneration of the mucosa. Fibrosis in the anal canal in 13 per cent and frank stenosis in 4 per cent were recorded. Skin tags were common and 35 per cent were found on examination after six months. Sizeable recurrent haemorrhoids requiring further treatment occurred in 5 per cent. Pain is difficult to evaluate but no less than 31 per cent of patients were recorded as having "severe" and "more than average" pain. Anal sphincter stretch had been found to be of use in reducing post operative pain but did not attain statistical significance (Watts, Bennett, Duthie and Goligher 1964). In this study and in Bennett, Friedman and Goligher (1963) minor imperfections of anal control such as leakage of flatus (13 per cent), faeces (3 per cent) and soiling of underclothes (7 per cent) occurred, one or more of these defects were found in 20 per cent of cases. Haemorrhage occurred in 5 per cent being equally divided between reactionary and secondary forms.

Comparative studies

Jones and Schofield (1974) compared the results of three methods of treatment for haemorrhoids in successive series totalling 300 patients. Satisfactory results were obtained in 95 per cent of patients after haemorrhoidectomy, 92 per cent after elastic band ligation and 91 per cent after maximal anal dilatation.

The complications recorded in each group were similar in number but different in type, and the re-operation rate was the same at 6 per cent. The main complications of haemorrhoidectomy were pain, haemorrhage, retention of urine, anal narrowing and skin tags; for elastic band ligation they were minor bleeding, pain and residual piles; for maximal anal dilatation they were skin tags, residual piles, prolapse and minor incontinence.

Their conclusions were that the hospitalisation and convalescence following haemorrhoidectomy were difficult to justify. They suggested that anal dilatation should not be used in the older patient. Their declared policy, which seems very sensible, is to carry out Lord's procedure of maximal anal dilatation on patients under the age of 55 and Barron's elastic band ligation on the older patients. Haemorrhoidectomy is reserved for any failures of the other two methods.

Chant, May and Wilken (1972) compared haemorrhoidectomy with anal dilatation in 54 patients. Both procedures were relatively successful in relief of bleeding and pain, but haemorrhoidectomy was significantly better than dilatation in controlling prolapse and soiling.

Hood and Williams (1971) compared the results of anal dilatation and rubber band ligation for internal haemorrhoids in 53 patients. The results were similar in both groups but the patients' opinion of the operation was significantly better for rubber band ligation, however the drawback to this was the greater number of visits (2 to 3) for that form of treatment. The number of treatment sessions required for rubber band ligation is a considerable drawback both for the patient and for the clinic involved. Groves, Evans and Williams (1971) found that in 156 patients treated by this method for internal haemorrhoids nearly three quarters of them required three or more sessions for treatment.
Bulk forming aperients

Bulk forming aperients are often used in the treatment of colorectal-anal lesions and to some extent have given great help in the management of patients with bowel problems. Bulk aperients are an established part of the Lord regime for treatment of haemorrhoids by anal dilatation. In my opinion they are of use, and in most cases bring an abnormal bowel habit and stool back to normal. A controlled trial on the use of such bulk laxatives alone in the treatment of haemorrhoids was done by Broader, Gunn and Alexander-Williams (1974). Only 10 per cent of the patients admitted to constipation. The regular use of bulk forming evacuants appeared to affect the signs and symptoms of haemorrhoids more favourably than the placebo, but the difference was not statistically significant.

Complications of anal dilatation

Critics of anal dilatation believe that slight leakage of flatus or faeces is one of the principal complications of the method. Lord denies that any patient has been rendered incontinent, but some have a degree of temporary loss of control of flatus and a lesser number had slight leakage of faeces. Fussell (1973) following up a group of 46 women who had anal dilatation showed that 11 had temporary difficulty in control and of these, three had persistent trouble enough to require further treatment. Jones and Schofield (1974) had 2 per cent of 100 patients with some degree of faecal incontinence. This complication was not apparent in this series of relatively young patients.

Prolapse of redundant mucosa is quite common in the presentation of third degree haemorrhoids, indeed Lord has described a special clamp with haemostatic jaws to use on the tags at the time of dilatation (Lord 1969). The clamp is curved to fit across the buttock and is strapped in place after application and excision of the tag and kept on for one hour. It can then be removed without resultant bleeding. Jones and Schofield (1974) reported six patients out of 100 who had mucosal prolapse sufficient to require operation after dilatation. All six patients were over the age of 65. In this series 5 per cent had prolapse of redundant mucosa which was excised at the time of anal dilatation. No patient developed this after operation.

Slight splitting of the skin and anal mucosa is common after dilatation, this is associated with a little bleeding. Occasionally a deeper fissure is made, but this always heals well. Lord (1968, 1969) used a sponge placed in the anal canal after dilatation to prevent such bleeding and haematoma formation but we have found no need for this procedure. This complication was of no importance in the present series.

Conclusions

From my experience there is no doubt that the Lord method of treatment has a place in the management of haemorrhoids, but only if the surgeon is prepared to learn the method. He must become adept at identifying the tight bands in the anal canal and lower rectum and realise by touch when they have been stretched sufficiently. Not all patients require dilatation to more than six fingers for instance. One must be gentle, for rough, sudden dilatation may result in temporary incontinence of flatus and faeces. The dilator need not be used for the suggested six months period, in fact we now only use it for three months at the most. The dosage of Isogel has to be adjusted from patient to patient and perhaps one of the important reasons for continuing with the dilator is...
that it is a constant reminder to the patient to make sure that he is controlling the motions correctly by diet and Isogel.

Not only is the Lord method of treatment important for providing an alternative to operative treatment for haemorrhoids, but it has made us look hard at the possible cause of the disease and hopefully we may be able to do something to prevent it by education of the public in their eating habits and in the prevention of prolonged straining or the passage of hard bowel motions.

Some patients do better than others. This is so after most surgical procedures and anal dilatation is no exception. There is no doubt that the morbidity, complication rate and time spent in hospital is very low, especially when compared with haemorrhoidectomy. In 1972 there were 229 admissions to Army Hospitals for haemorrhoids. The average duration of stay, including hospital sick leave, was 13 days, and some 3,000 man days were lost. To this must be added unit sick leave and light duties as loss of availability of personnel. It is my belief that all patients with second degree or worse haemorrhoids should be treated by anal dilatation in the first instance. Haemorrhoidectomy should be reserved for the failures of dilatation treatment. By adopting this regime we would avoid doing a more severe operation than is necessary in the majority of cases. There are very few complications in the age group of the Army and we would cut down the number of man days lost to the Service by about 90 per cent.

Surgeons tend to be conservative in sticking to traditional methods of treatment, and will often reject new methods without either a trial, or without a real enthusiasm to master the new techniques involved. We have no direct financial inducement to operate as there is in Western Australia according to Levitt (1973). There virtually all private patients have haemorrhoidectomy whereas 25 per cent of public hospital patients are treated conservatively. This method has in my experience much to recommend it and its widespread adoption in Service hospitals would help us all determine its proper place in the treatment of haemorrhoids.

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Anal Dilatation for Haemorrhoids

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