SURGICAL PROCEDURES IN GENERAL PRACTICE

This is one of a series of articles contributed by invitation

ANAL FISSURE

BY

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The successful management of a case of anal fissure depends so much on accurate diagnosis and on the ability to make a satisfactory examination that a few words must first be said on these important preliminaries. A fissure of the anus should be suspected whenever a patient complains of severe anal pain of a burning or cutting nature which is felt at or shortly after defaecation and lasts for a variable time. The only other conditions which cause severe pain in this region are: (1) an acute tense anal haematoma, (2) an acute abscess, (3) the impaction of a piece of bone or other sharp foreign body in the anal canal within the grasp of the anal sphincters, (4) a carcinoma involving the anal canal and anal margin. According to the length of the history, some idea will be gained whether the condition is acute or chronic, but it is remarkable how often patients report a recent exacerbation of anal pain as if it were a new thing, whereas in reality they have suffered this at intervals for many months or years.

Diagnosis

The diagnosis of anal fissure is made in the first instance by inspection. Separation of the buttocks and anal margin permits the lower end of a fissure, or sometimes even its whole extent, to be seen. Situated posteriorly as a rule, and only rarely laterally and anteriorly, a fissure is often indicated by a slightly raised lip of skin at its lower border; in chronic cases this becomes enlarged until it forms the "sentinel tag," a prominent bright-pink external tag of skin which is often flattened from side to side in a very characteristic way.

The depth of a fissure can often be fairly well estimated by inspection: the shallow bright-red surface of a recent fissure is in marked contrast with a deep chronic fissure, the base of which often has an indolent greyish appearance; the transverse fibres of the subcutaneous external sphincter are frequently seen traversing the base of a chronic fissure. A discharge of pus from the fissure indicates active infection at its base, and the presence of a short dorsal fistula is evidence of a previous complication of the same nature.

Palpation of the anal margin with a forefinger will show at once if the subcutaneous external sphincter is in spasm, and then an attempt should be made to introduce a finger. A digital examination of the anal canal and rectum is advisable in almost all cases, and if suitable local anaesthetics are used it is quite feasible to do this without causing pain. A small moist pledget of cotton-wool is dipped into decicain crystals (Bayer) and laid on to the surface of the fissure for a few minutes. In addition to this an ointment of 3 per cent. decicain in white vaseline may be used as a lubricant, and by massaging this gently into the anal canal a satisfactory examination can almost invariably be made. The points which are particularly to be noted digitally are the characteristic signs of chronicity—induration at the base or lower border of the fissure and a fibrous contracture of the subcutaneous external sphincter. A recent abscess in relation to the fissure can often be felt as a small in-

durated mass the size of a walnut when the tissues at the anal margin are palpated between the forefinger in the rectum and the thumb outside (bidigital method). A fibrous polyp or hypertrophied papilla in the anal canal can be made out digitally and confirmed by the passage of a small proctoscope.

Any other associated rectal condition, such as internal haemorrhoids or proctitis, should be recognized, and every effort must be made to exclude a coincident neoplasm of the rectum, whether innocent or malignant. A child's sigmoidoscope such as Vann's (external diameter $\frac{3}{8}$ inch) gives a view up to eight inches, and Morgan and Officer's latest pattern (external diameters, $\frac{1}{2}$ and $\frac{3}{8}$ inch), with its admirable magnifying attachment (Genito-Urinary Co.), gives a splendid view up to 25 cm. Either of these sigmoidoscopes can be passed readily in the majority of fissure cases after anaesthetizing the fissure by a surface application of decicain as described.

Palliative Treatment

Small superficial fissures will heal satisfactorily if treated on palliative lines. The stools are rendered soft by a morning and evening dose of mineral oil: an olive oil and gruel enema may be needed at the outset if a constipated faecal mass is present in the rectum. Much relief is experienced if the patient sits in a hot bath morning and evening. Locally, in the acute stage, the patient is given a 3 per cent. decicain ointment, which, when inserted digitally, quickly relieves pain and spasm. After a few days the ointment may be changed to zinc and castor oil, cod-liver oil and vaseline, or a scarlet-red ointment. Topical applications to stimulate healing are helpful, the usual one being pure ichthyol, which is applied on a wooden applicator. A silver nitrate stick produces more effect, but its application is very painful unless the fissure is first anaesthetized by a subcutaneous injection of novocain or procaine beneath it.

Injection

Injection of the external sphincter with an anaesthetic solution in oil is an excellent method of dealing with a superficial fissure accompanied by a marked degree of sphincter spasm. Two solutions commonly used are "percaine oily solution" (Ciba Ltd.), which contains 0.5 per cent. percaine and 1 per cent. phenol in almond oil, and prococaine (A. & H.), containing butesin (6 per cent.) and procaine base (1.5 per cent.) in almond oil.

Method.—A warm dry sterile 10-c.cm. syringe is filled with the warmed solution (two 5-c.cm. ampoules) and a $1\frac{1}{2}$ or 2 inch No. 20 Record needle is firmly attached. With the patient lying on his right side with the knees drawn up, a small intradermal wheal of 1 per cent. aqueous procaine is made with another syringe and a fine hypodermic needle about an inch posterior to the anal margin. The operator then inserts his left forefinger into the anal canal as a guide, and the oily solution is injected deeply into the sphincter through the wheal; the needle is passed first on one side, then on the other, and care is taken to alter the direction of the needle slightly so that the solution is distributed evenly; in other words, "pooling" must be avoided (Fig. 1).

It need hardly be said that strict aseptic precautions are to be observed in giving this injection, not only in the

sterilization of the syringe and needle and the preparation of the skin, but also in avoidance of infection of the puncture from the anus during the injection. Puncture of the anal canal with the needle point would be likely to be followed by disastrous consequences, and at no time

FIG. 1.—Injection of oil-soluble anaesthetic in the treatment of anal fissure.

during the injection should the needle be so close that it can be felt with the finger in the anal canal.

The result of the injection is a relaxation of the external sphincter ani which usually lasts in some degree for several weeks. A few minutes after the injection has been completed it will be found that the fissure can be displayed fully, without causing pain, by separating the anal margins, and an application of pure ichthylol is given to it by means of a wooden probe. For the week or two following the injection the patient is instructed to apply some 3 per cent. decicain ointment digitally to the anal canal night and morning, and particularly before each action of the bowels. Spasm and pain being relieved, the fissure usually heals quickly; the application of ichthylol may be repeated with advantage two or three times a week until the fissure is seen to be healed. Before the patient is discharged it should be possible to pass a finger into the rectum without causing pain or opening up the fissure in the least.

Surgical Cure

It should be generally recognized that there is little prospect of permanently curing a chronic anal fissure except by an accurately planned and well-executed surgical operation. The objects which can be achieved with certainty by this and by no other method are: (1) removal of the sentinel tag or raised lip of skin, which, being situated at the lower extremity of the fissure, acts as a mechanical hindrance to drainage; (2) division of the spastic and contracted subcutaneous portion of the external sphincter, which in the typical chronic fissure case forms a fibrous ring round the anal outlet. The operation can be carried out under local, low spinal, or general anaesthesia. In some patients who have reached the limits of nervous prostration from long-continued pain a preliminary intravenous injection of evipan or pentothal is advisable, the anaesthesia being carried on with gas, oxygen, and a minimum amount of ether.

With the patient in the lithotomy position a triangular incision is made with a scalpel as indicated in Fig. 2; the triangle is approximately isosceles in shape, the sides

being about $1\frac{1}{4}$ inches in length. The cut having been made through skin into the subcutaneous fat, the flap is raised up from its base forwards with toothed dissecting forceps and scissors. When the apex is reached a little traction is applied and the scissor cuts are made from both sides in turn until the triangle of skin, together with the sentinel tag and lateral margins of the fissure, is

FIG. 2.—Excision of chronic anal fissure (half scale).

quite free and can be removed. If a finger is passed into the anal canal at this stage the contracted subcutaneous portion of the external sphincter is felt traversing the wound, and this part of the muscle is next divided with straight scissors, until the forefinger can be passed in without feeling any trace of the ridge or bar caused by its contracture. The internal sphincter and remaining portions of the external sphincter may with advantage be given a slight lateral stretching by means of the two forefingers introduced into the canal and gently separated.

Careful search is made for a fibrous polyp at the upper end of the fissure, and if hypertrophied anal papillae are present they should be excised with scissors or a diathermy knife or snare after crushing their bases. Internal haemorrhoids must be removed by ligature and excision only if they are of the third degree and therefore likely to interfere with the drainage of the fissure wound. An application of tannic acid (40 per cent. in aqueous 1 in 1,000 flavine lotion) may with advantage be made to the surface of the wound, and the operation is completed in the usual way by injection of sterile vaseline into the rectum from a collapsible tube; a small piece of rubber tube is inserted and a gauze dressing moistened in dettol lotion is tucked into the anal canal, the chief object being to keep the wound margins apart.

Post-operative Measures

Much care is required subsequently to make sure that the external drainage is maintained. The gauze inserted at the operation is not removed until the third post-operative day; a short evipan anaesthesia may be given, and after the gauze has been withdrawn and the wound irrigated it is carefully inspected to see that the outer part—that is, the base of the triangle—has not fallen together. In stout subjects particularly there is a tendency for this to happen, and it must be met by a little lateral stretching until the wound surfaces have separated and the triangle is thus properly re-formed. A pledget of wool held in dissecting forceps should be swept down the centre of the wound, from the apex in the anal canal down to the base, to prove that the original floor of the wound is still presenting; and if the patient has had

evipan a forefinger should be passed in and out to confirm that the wound is smooth and open. A corner of fine dressing gauze moistened in eusol or diluted Milton lotion must then be passed into the canal with sinus forceps and arranged over the wound surface: in order to render the next dressing more easy for the patient the surface of gauze adjacent to the wound may with advantage first be given a smear of cod-liver oil and vaseline ointment. When the gauze is actually being tucked in it is essential to have an assistant to retract one buttock and help to hold the wound open—it is usually impossible in the early stages to do this dressing single-handed.

Subsequent dressings are done twice daily and are rendered less painful by the patient having a hot bath beforehand. In very sensitive subjects a decicain ointment may be used on the gauze for the first few days, and the oral administration of luminal or bromides is often extremely helpful during the first week after operation. In all cases it is undoubtedly beneficial to carry out a regular dilatation of the anal canal: this is done by means of the St. Mark's Hospital dilator, the outer end of which has a diameter of one inch (Fig. 3). This

FIG. 3.—The St. Mark's Hospital dilator.

dilator, warmed and lubricated with a zinc and castor-oil cream or a cod-liver oil and vaseline ointment, is passed at each routine dressing night and morning from the fourth post-operative day onwards. By this means the inner margins of the wound are kept separated, and the dilatation serves to re-educate the patient in sphincter relaxation, with the accompanying desirable state of comfort which fissure cases have invariably lost by the time surgical treatment is sought.

The rate of healing varies a good deal in different subjects; if the granulations become indolent or protuberant their surface should be pared down with scissors and touched from time to time with a silver nitrate stick or crystal of copper sulphate. In eighteen to twenty-one days after operation the patient will be fit for discharge home; the inner extremity of the wound will be healed over or nearly so, and there will still be a residual external wound, oval or triangular in shape. Digital examination now should prove the anal canal to be smooth and free from spasm so that a finger is admitted painlessly. The patient takes a St. Mark's dilator on discharge and is asked to pass this twice daily for the first week or two and then at increasing intervals. All forms of active exercise will in due course be permissible, but for the first few weeks after the wound has healed running and riding should be prohibited, as there is some risk of the tender epithelium splitting in the middle line; if this should happen the patient will notice slight soreness and bleeding. The treatment is to touch the open surface with a silver nitrate stick; and after a few days' inactivity, with cod-liver oil, desitin, or scarlet-red ointment as a dressing, the healing will again be complete.

The criterion of cure is the restoration of a smooth and permanently healed anal canal which will admit a finger and dilator without pain or opening up the scar, and allow the passage of normal formed stools without the least discomfort.

SURGERY OF THE GALL-BLADDER

PROFESSOR GREY TURNER'S SECOND LECTURE

The second of Professor Grey Turner's Lettsomian Lectures on the surgery of the gall-bladder and common bile duct was delivered before the Medical Society of London on March 1. Professor Turner mentioned that immediately after delivering his first lecture he returned to his old city of Newcastle and there ran across an old patient on whom he had operated for an acute condition of the gall-bladder twenty-eight years ago. All that had been done was to open the gall-bladder, remove the stones, and drain. The mucous membrane was found on operation to be gangrenous in patches and there was much surrounding oedema and inflammation. The patient made a good recovery, and there had been no recurrence of symptoms during the long intervening period. Such a case was a useful reminder to those younger surgeons who unless they attempted in all cases to carry out a cholecystectomy felt that they were not doing their best for their patients.

One of the newer methods advocated and practised in recent years was electrocoagulation. It deserved serious consideration, and he had no doubt that it had a large field of usefulness. But in this method it was considered essential to expose and ligate the cystic duct in order to avoid a biliary fistula; there were cases in which the exposure of the neck of the gall-bladder and the cystic duct was very difficult, and although many surgeons had been able to carry out the operation successfully there might yet be many disasters associated with it. It was stated that for dealing with an inflammatory condition that had extended beyond the gall-bladder into the liver no method was so likely to cut the process short as diathermic destruction. But having watched these patients and their after-histories he could say with confidence that, while keeping an open mind towards new methods, the recuperative power of Nature should not be under-estimated. In his opinion there were some conditions in which drainage of the gall-bladder held out a better prospect than mere excision. When dealing with large numbers of very small stones it was better from a therapeutic point of view to establish drainage either through the gall-bladder itself or through the duct. They must not destroy the gall-bladder and feel that a complete operation had been done.

His own personal figures for operations to the end of 1938 were as follows:

	Operations	Deaths	Percentage
All cases	1,040	61	5.86
Limited to gall-bladder	790	28	3.55
Common duct involved	220	29	13.18
This series had runs of	162	2	1.23
	56	1	1.78
	50	1	2.00
	268	4	1.49

The figure of 3.55 per cent. included all kinds of inflammatory conditions, many of them associated with complications which might carry serious risks. Although the position was accepted that in the great majority of cases cholecystectomy was probably the best operation, there were occasions when it ought to be recognized that drainage was better. To the young surgeon he would say: "When in doubt, drain."

Recurrences and Secondary Operations

Late recurrent attacks were often due to transitory inflammation of the biliary tract. This view was based on the further after-history or on the fact that at another operation nothing of a gross nature was found to explain the recurrence. The liver, again, was an extremely sensitive organ, subject to great variation in size and vascular content; it ought to be regarded not only as a secreting organ but as a great vascular "side-track," so to speak,