ments. A compulsive thief, of otherwise obsessional temperament, now works contentedly surrounded by lady clerks' handbags in an office—an impossibly provocative social situation for him before the operation. Two female patients with restless sexual propensities based on feelings of insecurity and tension have settled down to happier marriages than expected, one after rostral leucotomy and the second after a more posterior reoperation. One should, however, be very cautious in the presence of sex perversion or fetishism. Such patients provide striking contrasts to some seen in whom posterior cuts have resulted in loss of all feeling for others and a selfish egotism which may destroy the happiness of a whole family or group. The previous personality must be taken into consideration in final judgments on such issues, as socially undesirable traits not recognized before operation can be enhanced in certain instances even by limited cuts.

Therapeutic Persistence

I would also like to stress the need for therapeutic persistence and the use of all methods before too deteriorating procedures are finally decided upon or the too ready throwing in of one's hand when confronted with difficulties after modified leucotomy. One patient with a very severe obsessional neurosis had had 15 years of psychoanalysis and supportive therapy on and off before faith was finally lost by both patient and therapist alike in this approach, and modified leucotomy agreed to. This resulted in some relief of tension but a release of severe paranoid and depressive symptoms. These complications then had to be dealt with by the giving of insulin and E.C.T. A second operation, still confined to the lower quadrants but farther back, relieved further tension, but obsessional thoughts persisted. She is now being treated as an out-patient with intravenous acetylcholine injections and occupational therapy, where some might have decided that after the failure of so much psychotherapy, the first leucotomy, and the complications that ensued there was nothing more to be done; especially as a full operation was thought to be contraindicated in this particular patient because of certain personality traits. If one's operative efforts are not irretrievable it always leaves hope that other measures, short of deteriorating cuts, may be effective which would have failed before. Thus some phobic states may be further helped by intravenous acetylcholine injections after the edge has been taken off the patient's anxiety by modified leucotomy; and treatment with E.C.T. and insulin may become effective in depressives and schizophrenics where it has failed before. We have seen several examples of this. In addition, a reasonably intact personality is still preserved. Time for further psychotherapy can also be gained.

Conclusion

I must finally pay my very grateful tribute on behalf of all psychiatrists here to the many neurosurgeons in England for all the patience and co-operation they have shown us in our often stumbling and hesitant efforts for the relief of mental suffering by a method which is as yet obtaining only a hazardous social and medical respectability. I am certain, however, that a large number of psychiatric patients would echo these thanks. They and their families should be the real judges of our success or failure, and not our own theoretical prejudices and emotionally toned judgments. Psychiatry often creates insoluble difficulties for itself when we leave the patient's bedside and become too involved in speculative philosophical issues. If we are only content to remain doctors, constantly searching for new and better practical ways of trying to help our individual patients, the future of leucotomy is assured—at least until better ways are discovered for the practical relief of so much persistent individual human misery and social incapacity.

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ANAL FISSURE

BY

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An anal fissure is a triangular ulcer at the anal verge, extending into the anal canal. The lesion is often associated with severe pain, and when untreated tends to run a course of exacerbations and remissions.

Aetiology and Pathology

The fissure begins as a tear at the anal verge. This tear might be caused by the passage of unusually large or hard faeces (sometimes enema tubing) or may be related to temporary incoordination of the external sphincter, with slow relaxation of the subcutaneous part. The elliptical shape of the superficial portion of the external sphincter leaves vulnerable the midline posteriorly, and hence the fissure is nearly always in this position. The anterior fissure is seen almost exclusively in the female, and is due to the unprotected anterior segment.

A fissure is about 2 cm. long and 1.5 cm. wide, and the apex extends just above the anal intermuscular septum, to overlie the lower border of the internal sphincter. At first the fissure is uncomplicated. The floor contains longitudinal fibres of the corrugator ani muscle. Their presence indicates the shallow depth of the ulcer and a likelihood of healing without surgical intervention. If a skin tag ("sentinel pile") be present, it is small. There is no induration of the base, but the fissure is extremely tender and associated with much sphincter spasm.

This spasm prevents the ulcer from healing. It deepens, and the floor is then formed by circular fibres of the subcutaneous portion of the external sphincter. The skin tag is often large and oedematous; at the proximal end of the fissure the mucous membrane becomes polypoidal. This secondary mucosal polyp is found in a high percentage of chronic anal fissures. The edges of the ulcer are well defined and overlap the floor of the ulcer, so that the true size is concealed. Infection is an important complication of the fissure. The inflammation is localized and may end in suppuration, with abscess formation; this usually discharges into the anal canal to form a blind internal fistula. Much less often the abscess discharges on to the perianal skin, with the formation of a low anal fistula.

Clinical Features

Males and females are affected with equal frequency. The pain is described as burning, shooting, or aching in nature, and is related to defaecation; sometimes the act is extremely painful, but more often the pain begins half an hour after and drags on for another hour or two.

Passage of blood with the motions is alarming to the patient even though it is slight in amount; it is usually observed on the toilet paper as well as on the motion. If the patient has associated haemorrhoids their prolapse might be, to the patient, the obvious cause of the discomfort.

The fissure can always be seen without subjecting the patient to the agony of rectal palpation. The buttocks are firmly parted and the anal verge inspected; this in turn is gently opened with the index fingers of each hand. If the surgeon has secured the confidence of his patient the subcutaneous sphincter will relax to reveal the fissure in most of its length and the surgeon can see the floor without difficulty. Palpation must often be confined to the perianal region, searching for evidence of deeper infection, but in the more patulous type of anus it is possible to push the finger upwards along the anterior segment, and, gently turning the finger, palpate the upper end of the fissure for a polyp while the base of the fissure can be felt between the forefinger and thumb.

Proctoscopy and sigmoidoscopy should not be attempted at this stage. Carcinoma of the rectum and sigmoid practically never coexist with an anal fissure, although they are excluded by subsequent sigmoidoscopic examination.

Treatment

The treatment advised will depend upon the type of fissure, the nature of the patient, and the preference of the surgeon.

1. Conservative Treatment

A small number of cases respond to conservative measures. The bowel habit is regulated by adjusting the diet and by prescribing aperients, particularly paraffin oil. Just before the bowel action the patient passes into the rectum a finger lubricated with an ointment containing a surface analgesic, such as cinchocaine 10%. Acute fissures which are shallow and contain longitudinal fibres in their floor may respond to such treatment, but even in these the outcome is unpredictable. Further, some patients are sensitive to cinchocaine and other such ointments and develop a rash around the anus, whilst others are disturbed by the pain and by the slowness of the cure and seek more active measures.

2. Injection

Injection treatment appeals to many because success, when it comes, is often dramatic. Either the water-soluble procaine hydrochloride or the oily solution "proctocaine" can be used. The effect of the latter is said to last longer, but this is disputed, and certainly complications following its use are seen in cases referred to the proctologist.

The injection is best made with the patient in the right lateral position (for the right-handed surgeon). The left index finger is inserted into the anal canal, and after cleaning the skin a subcuticular wheal is raised with procaine. The needle is then pushed forwards, first on one side of the anal canal and then on the other, and 5 ml. of proctocaine or procaine injected on each side in order to cause temporary

relaxation of the sphincter muscle; 1 or 2 ml. is finally injected into the base of the ulcer. The sphincters promptly relax and enable a second finger to enter the anal canal alongside the first. The muscles are then gently stretched.

Injections in this region are usually acutely painful, so that a failure is the more disappointing to the patient. Injections in such a contaminated area may cause abscess and fistula formation. If proctocaine be injected too superficially a necrotic ulcer will develop.

3. Digital Dilatation

The most popular method of treatment is digital dilatation of the anal canal. The patient is given a general anaesthetic, and the anal canal is gently stretched until two or more fingers can be inserted into it.

Again this simple method may produce a permanent immediate cure. But it is uncertain: an over-vigorous stretch has caused serious damage to the sphincter muscle; whilst one too gently performed is ineffective. Carefully done with local analgesia and combined with dietetic and habit adjustments, it can be recommended for the uncomplicated fissure.

4. Excision of Fissure

Radical cure of an anal fissure entails excision of the ulcer, with division of the subcutaneous sphincter muscle. The patient is anaesthetized and placed in the lithotomy position. The fissure is then excised. A triangular piece of skin is outlined, with the apex at the anus and base outwards and including the fissure ulcer. It is dissected upwards off the underlying tissue. The subcutaneous sphincter is divided in the centre of the wound, and the two ends retract to leave a wound approximately 1½ in. (3.8 cm.) long and 1 in. (2.5 cm.) wide (Fig. 1).

Gabriel (1930, 1952) advises that this wound be left open and be permitted to heal by second intention. This entails a prolonged regime of some weeks before the wound is healed. The surgeon must be careful to keep the wound flat so that pockets will not form. In good hands the results of the operation are excellent, but if the surgeon be less vigilant the scar puckers to leave a tight anus, with the possibility of recurrence.

Suture of the wound cannot be recommended, because the danger of abscess and fistula formation is too great. Moreover, when the wound is sutured there is a possibility of the anus becoming constricted and again favouring recurrence.

The best treatment is to apply a split-skin (Thiersch) graft to the wound after excision (Hughes, 1952). After excision in the manner outlined above, a row of guy sutures are placed in position along either side of the wound (Fig. 2). A graft of split-thickness skin is taken from the leg or arm, applied to a mould of tulle gras and wool (Fig. 3), and then held firmly in the wound as the guy sutures are tied across the back of the mould (Fig. 4). A preliminary course of succinylsulphathiazole before the operation and antibiotic therapy post-operatively controls any tendency for contami-

FIG. 1

FIG. 2

FIG. 3

FIG. 4

FIG. 1.—The subcutaneous portion of the external sphincter is divided. FIG. 2.—Guy sutures are inserted along the edges of the wound. FIG. 3.—A mould is made of tulle gras and wool; over the face of the mould is laid the split skin graft. The mould with graft is placed in the wound. FIG. 4.—The graft is secured by tying the guy sutures across the back of the mould.

nation to develop into infection. The antibiotic therapy consists of penicillin "distaquaine" fortified, 300,000 units, and streptomycin 0.5 g. both three times a day for four days. The graft is inspected on the fourth or fifth post-operative day and the mould removed. Any excess skin is removed and a piece of cotton-wool is placed over the grafted area to keep it dry. The patient is discharged on the fifth or sixth day post-operatively with the wound healed.

Goodsall (1892) practised sphincterotomy with good results. He did not excise the ulcer but simply cut through the subcutaneous sphincter. The wound healed by secondary intention. In patients with chronic fissures who are unwilling to undergo operation this process has more to commend it than digital dilatation.

Discussion

An anal fissure is a non-malignant condition of the anus, causing acute discomfort to the patient. He asks for relief, but is reluctant to accept a treatment that demands an absence from work for any prolonged period.

Acute uncomplicated fissures not uncommonly respond to more conservative measures. The patient is advised of the nature of his condition, suitable adjustment is made to his diet to give a bulky but soft stool, and digital dilatation is practised; an injection of local analgesia often helps to break the vicious circle by enabling the surgeon to dilate the anus gently.

Chronic fissures, particularly those complicated by some degree of infection of the deeper tissues, are unlikely to obtain permanent relief by such measures. If an anaesthetic is to be given to the patient, the fissure is best excised so that recurrence is prevented. If there are associated haemorrhoids, these should be removed. After excision of the fissure and division of the subcutaneous sphincter the wound can be left open to heal by secondary intention, but this prolongs the convalescence, demands daily dressings and keen appreciation by the surgeon of the importance of a flat wound until completely covered by epithelium, and still leaves a scar which as it matures might be responsible for recurrence of the fissure. Therefore I favour primary skin-grafting to the wound after the fissure has been excised (Hughes, 1952). The period in hospital and that of convalescence are much shortened, no dressings are required after the grafted area has been inspected, the absence of granulation tissue eliminates fibrosis, and the chances of recurrence of the fissure are slight. The results of primary skin-grafting have been excellent: all 12 cases subjected to excision of the anal fissure combined with primary skin-grafting have had a 100% "take" and all have left hospital within a week of the operation with the fissure removed and the wound healed.

Summary

The aetiology and pathological and clinical features of anal fissure have been briefly reviewed. The acute but otherwise uncomplicated fissure may respond to treatment administered in consulting-rooms, but chronic fissures, particularly those complicated by infection, superficial or deep, usually require more radical treatment. The fissure should be excised, the subcutaneous sphincter divided, and a primary split-thickness skin graft applied. The fissure is removed and the wound completely healed during a stay of six to seven days in hospital.

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INTESTINAL PROTOZOA IN MENTALLY DEFICIENT CHILDREN

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Specimens of faeces from mentally deficient children in the wards of Harperbury Hospital, Shenley, Hertfordshire, were examined by various methods in order to ascertain the degree of infections by intestinal protozoa.

This paper gives particulars of the methods used and the results obtained in a "pilot" survey which was undertaken during September and October, 1952.

Materials and Methods

The total number of mentally deficient children currently treated at Harperbury Hospital was 56. Specimens of faeces for this survey were secured from 50. All those examined were male. Their age distribution and the duration of their stay in hospital were as follows:

Age	No. of Children	Time in Hospital	No. of Children
5 to 7 years	.. 10	Less than 3 years	.. 8
8 to 10 "	.. 15	From 3 to 5.9 years	.. 21
11 to 13 "	.. 18	From 5 to 8.9 years	.. 18
14 to 17 "	.. 7	Over 9 years	.. 3
Mean age of the group 10 years		Mean duration, 5.36 years	

The children came from the London and Middlesex areas, and none had resided in a tropical or subtropical country. There was some contact between them and outside because they attended school. Intestinal disturbances were not uncommon.

Specimens were placed in new clean waxed cream cartons and carried by messenger to the London School of Hygiene and Tropical Medicine. When received they were usually 3 to 5 hours old, but in a few instances they were from 10 to 12 hours old. Most of the specimens were formed. Each batch was inoculated at once in culture media, then examined directly and after concentration. Particulars of the techniques follow.

Direct Examination.—In addition to the direct films in saline and iodine (double strength Gram's iodine) a third film was made in a drop of 1% aqueous solution of eosin. This procedure (Kuenen and Swellengrebel, 1913), besides improving the efficiency of the direct examination (three films seen instead of the usual two), has some other advantages. The eosin solution has the property of staining everything in the stool pink, except living protozoa. On this pink background the living protozoa (and their cysts) stand out prominently as colourless, pearl-like, refractile bodies which can be recognized very easily even with the 2/3 objective. Moreover, the chromatoid bodies of the cysts of *Entamoeba histolytica* (invisible in the iodine preparation) are much more distinguishable in eosin films than in ordinary saline preparations. Each of the three films of the direct method was examined for about 10 minutes, first under the 2/3 objective and then under the 1/6 (with a $\times 10$ eyepiece).

Concentrated Specimens.—The original centrifugal flotation technique of Faust *et al.* (1939) was modified in order to facilitate detection of cysts of the smaller intestinal protozoa. Tests were made with denser solutions of zinc sul-