

PELVIRECTAL FISTULA IN ANO*

T. W. N. IRWIN, M.B. (RAND), F.R.C.S. (EDIN.), *Department of Surgery, University of the Witwatersrand, Johannesburg*

The orthodox treatment of fistula *in ano* is not applicable to the pelvirectal fistula. The relative incidence of complicated fistulae *in ano*, which includes the pelvirectal fistula, has been estimated at 5-8% of all fistulae.¹⁻⁴ In a recent series of 118 patients with fistula *in ano*¹ there were 4 in whom the internal opening was above the anorectal ring. Two of these patients were not given any treatment and 2 were submitted to rectal excision. This latter seems an inordinately radical procedure for relief of a non-malignant condition. In this paper a case is reported in which surgical cure was achieved by direct surgical closure of the internal opening, and a method of exposure is described.

CASE REPORT

Bantu Constable A.S., aged 32 years, was first seen on 14 March 1966 with the complaint of pain of 3 months' duration at the anus and perineum. The pain had fluctuated in severity and had been aggravated by defaecation. During the previous week it had become intense but had suddenly been relieved 3 days previously after the passage *per rectum* of a large quantity of pus. There had been no history of diarrhoea or dysentery, abdominal pain or any other significant symptom to suggest a specific cause for his complaint. There were no symptoms referable to the genito-urinary system.

On examination he had a temperature of 101°F. The sigmoid colon was palpable per abdomen but there were no other masses. A marked swelling was noted to the left and posterior to the anus in the ischio-rectal fossa. Rectal examination was severely painful and the sphincter tone was markedly increased. A tender brawny induration could be felt posterolaterally, extending well into the ischio-rectal fossa. A diagnosis of ischio-rectal abscess was made, but pain excluded complete assessment. He was admitted to Baragwanath Hospital.

Under general anaesthesia a search was made for an internal opening but none was found at the usual level. A curvilinear incision was made in the posterolateral position over the most prominent region of the mass. A quantity of pus was evacuated and the necrotic, infected and indurated tissue coned out as far as possible. It was noted that this tissue extended upwards towards the roof of the ischio-rectal fossa, and it was not possible to remove it completely. The cavity was lightly packed with gauze wrung out in acriflavine emulsion. The pus and excised tissue were sent respectively for bacteriological and histological examination.

Pus Swab Report

Direct examination revealed the presence of Gram-negative bacilli and Gram-positive cocci. On culture the following organisms were isolated: *B. klebsiella aerogenes* following organisms were isolated: *B. klebsiella aerogenes* *Staphylococcus aureus* sensitive to penicillin.

Histology Report

Section of the biopsy specimen submitted from the perianal abscess showed fibro-fatty tissue. Along one surface there was granulation tissue infiltrated by polymorphs, plasma cells, lymphocytes and a small number of foreign-body giant cells. The remainder of the subcutaneous tissue showed fibrosis. No specific aetiological factor could be observed. The features were those of non-specific acute-on-chronic inflammation.

Management

Radiological examination of the chest was normal. Frei's test was negative. The VDRL and WR tests were negative.

Postoperative care consisted of twice daily eusol irrigation of the wound, and administration of penicillin 2 million units and streptomycin ½ G twice daily.

One week later the wound was reviewed under general anaesthesia and again a portion of the indurated tissue was excised from the ischio-rectal fossa.

Over the next 3 weeks the wound closed rapidly and the patient was finally discharged with a small residual cavity lined by healthy granulation tissue from which there was minimal exudate.

When seen 3 weeks after discharge, the patient had a fistula *in ano*, the external opening of which was embedded in the scar of the ischio-rectal fossa wound. Rectal examination disclosed an indurated thickening which could now be felt to extend above the anorectal ring. Sinography was performed and showed a vertical sinus track extending upwards through the ischio-rectal fossa to the posterolateral wall of the rectum. A barium enema performed at the same time showed continuity between the sinus and the rectum (Fig. 1).

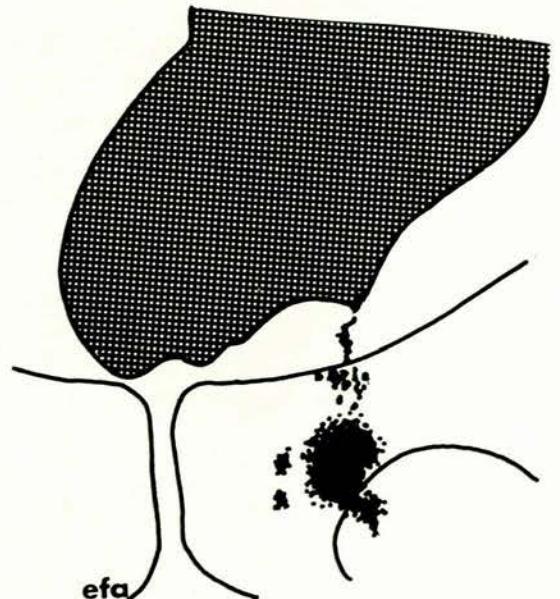


Fig. 1. Fistulous track leading from the rectum.

*Date received: 22 April 1968.

The posterior wall of the rectum was exposed through the sacrococcygeal approach on 1 June. The abscess cavity walled in with fibrous tissue was readily encountered (Fig. 2). The wall of the abscess was excised and fibrous tissue

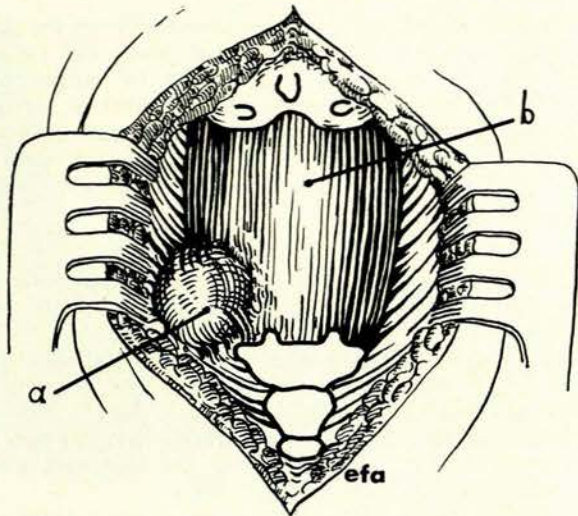


Fig. 2. Abscess cavity (a) and rectum (b).

overlying the rectum shaved away until healthy, supple rectal wall remained. The rectal opening into the abscess cavity was sutured with catgut and the muscle repaired with non-absorbable sutures. A Zimmer-Redivac drainage tube was left down to the site of closure and the wound closed in layers. The patient was turned into the supine position and a right upper transverse colostomy performed with suture of mucosa to skin. Following this procedure the fistula healed rapidly and on 6 July the colostomy was closed. The fistula has remained healed and the patient has perfect continence. Disability following the procedure consisted of an area of anaesthesia over the posterior part of the perineum in the distribution of the coccygeal nerves. The patient complained of neuralgic pain over the lower part of the sacrum for 3-4 months. This was not so severe as to require analgesic medication and has now disappeared.

DISCUSSION

Of the surgical measures available, the standard fistulectomy results in recurrence more often than not. With each succeeding re-operation the situation deteriorates, with increasing scarring and destruction of tissue. The old type of Seton operation, which attempts to preserve continence, is difficult to apply and is often not successful.

Cauterization of the sinus with chemical applications, copper sulphate crystals, mustine and similar preparations, produces necrosis of tissue and exposes it to further infection and again does not cure the condition.

Marsupialization of the ischio-rectal fossa as described by Eisenhammer⁷ has many disadvantages. The operation consists of excision of the contents of the ischio-rectal fossa—excision of all 'infectable tissue'⁸—and skin grafting the resulting U-shaped cavity. When used for pelvic-rectal fistulae the aim is to reduce the length and size of the fistula, but it is not expected to cure it.

The fistula, although shallower, still drains into the marsupialized space and continues to discharge. The anal canal is left as an island in the middle of this space. It becomes bulky and oedematous and the epithelium becomes hyperkeratotic. Sitting constitutes a hazard, as sensation in the remaining peri-anal skin is diminished or absent and it is liable to ulceration and infection.

The patient suffering from a fistula of this nature frequently undergoes repeated operations, perhaps ultimately rectal excision, or is declared inoperable and continues to suffer intermittent discharge and chronic discomfort or pain.

It is suggested that a proportion of these fistulae, particularly those arising from the posterior or lateral wall of the rectum, can be treated by direct surgical closure performed through the exposure described below, either combined with a temporary defunctioning colostomy or as a single procedure.

Operations of the Kraske type, in which large pieces of the sacrum as well as the coccyx are removed after division of the sacrospinous ligaments and most of the sacrotuberous ligaments, seem unnecessarily destructive. Unsatisfactory results of coccygectomy for coccydynia suggest that removal may be unwarranted. The unpleasant and sometimes crippling pain of coccygeal neuralgia following this operation has rightly brought the procedure into disrepute. Osteoplastic flaps of sacrum as described by Rydgiel, Hegar⁵ and others, likewise involved section of sacrospinous and sacrotuberous ligaments as well as division of portions of the coccygeal and sacral plexuses, and although the defect in the pelvic floor was less serious, the stability of the sacrum was doubtless interfered with and the anaesthesia, paraesthesia and neuralgia which ensued were a serious disability.

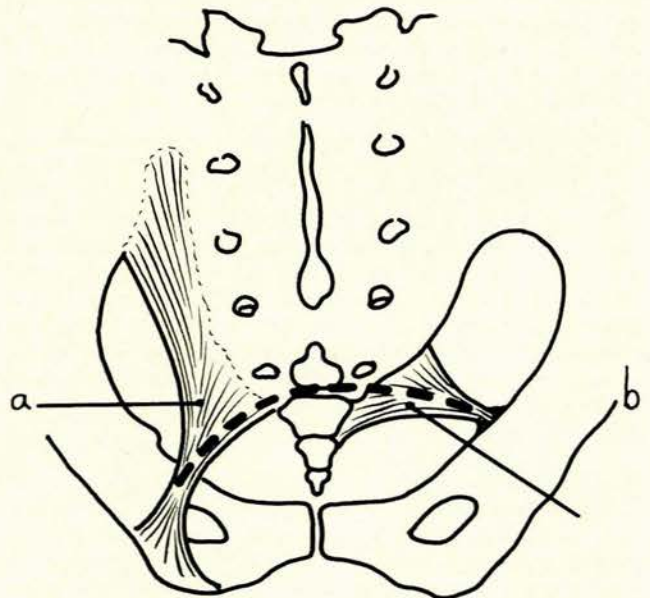


Fig. 3. Posterior aspect of the sacrum and coccyx showing direction of fibres, the sacrotuberous ligament (a) and the sacrospinous ligament (b).

A consideration of the anatomy of the region with particular reference to the sacrospinous ligament, the sacrotuberous ligament and the anococcygeus muscle (Figs. 3 and 4) suggests a rational surgical approach to

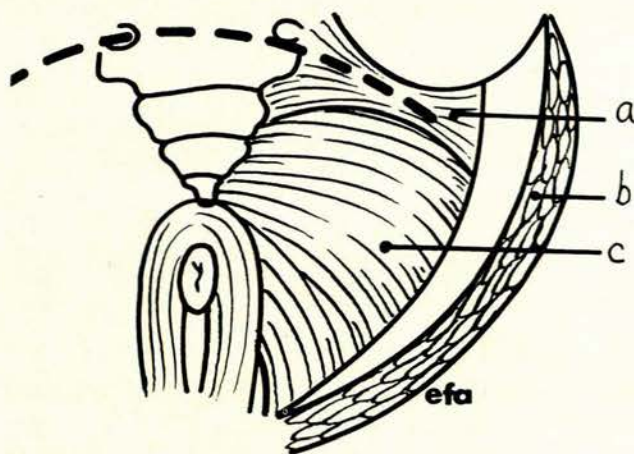


Fig. 4. Pelvic floor viewed from above. a = anococcygeus muscle; b = obturator internus muscle; c = levator ani muscle.

the supralevator space and the back of the rectum. The sacrum and coccyx are preserved because of their important attachments for the anchoring mechanism of the pelvis and the pelvic floor. It is suggested that this approach can be applied, among other conditions, to supralevator fistula *in ano*.

The Sacrococcygeal Exposure with Direct Closure of Rectal Opening

By appropriate investigation, causes of fistula such as carcinoma, actinomycosis, granuloma venereum, syphilis, tuberculosis and Crohn's disease are excluded. The exact site of the fistula is determined by sinography which may be combined with opaque dye or barium enema. Standard preparation of the bowel, consisting of adequate mechanical cleansing and reduction of intestinal flora to a minimum, is carried out. Where colostomy is indicated the usual explanatory discussion with the patient is undertaken. With the use of diathermy, blood loss during this approach need be no more severe than in any deep pelvic procedure, but provision should be made for one or two units of whole blood to be given during operation.

General anaesthesia is induced and an intravenous drip commenced. The patient is turned into the prone position on an operating table which breaks in the middle at the level of the hip-joints. The so-called jack-knife position is produced by tilting the table. Towels are carefully applied to seal the anus from the field of operation.

A vertical midline incision is made from approximately the spine of the third sacral vertebra to the perineum, $\frac{3}{4}$ - 1 inch behind the anus, and deepened through subcutaneous tissue down to the fascia overlying the sacrum and coccyx and anococcygeus muscle. The wound edges are undercut at this level, and the medial edge of the

gluteus maximus is encountered at its attachment to the lateral border of the sacrum and coccyx and anococcygeus muscle. The medial edge of gluteus maximus is encountered at its attachment to the lateral border of the sacrum and the sacrotuberous ligament. This attachment is elevated with a periosteal elevator to a distance of $\frac{1}{4}$ - $\frac{1}{2}$ inch. A St. Mark's retractor is then placed to separate the wound edges as widely as possible. The sacral and coccygeal cornua are likewise felt. The ligaments may be ossified in the adult and may require section with bone-cutting forceps.

The level of the sacrococcygeal joint may be recognized by depressing the coccyx or moving it with a bone hook or stout pair of forceps grasping a coccygeal cornu. The sacrococcygeal joint is divided horizontally and the incision continued laterally and downwards in the line of the fibres of the sacrotuberous ligament as far as possible (Fig. 3). The more horizontally directed fibres of the sacrospinous ligament are next encountered (Fig. 3) and these, too, are divided in the line of their fibres laterally towards the spine of the ischium. The coccygeus muscle is attached to the anterior aspect of this ligament and is divided in the same direction. The retrorectal space is entered and the posterior aspect of the rectum is seen. The coccyx may be retracted downwards quite readily and the levator ani muscle, being attached to it, moves downwards with it. By finger dissection the supralevator space is defined and the pathology dealt with *secundem artem*. By this exposure an aperture measuring $3\frac{1}{2}$ inches vertically and $2\frac{1}{2}$ inches horizontally is obtained (Fig. 2).

Closure of the wound is readily effected by suturing the dense fascia over the dorsum of the coccyx and sacrum with chromic catgut. A Redivac suction tube may be left *in situ*, emerging between the divided fibres of sacrococcygeus and sacrotuberous ligaments on one side. These fibres are then approximated and sutured with catgut. The St. Mark's retractor is removed, the soft tissues are approximated with a layer of subcutaneous catgut sutures, and all dead-space is eradicated as in the primary closure of the wound in the treatment of pilonidal sinus. The skin is closed with fine monofilament nylon sutures and a compression dressing applied. The table is straightened and the patient turned gently into the supine position and redraped. The temporary right transverse colostomy is then performed.

SUMMARY

The methods of treatment of pelvirectal fistula *in ano* are briefly reviewed. A case is described in which direct closure of the opening in the rectum resulted in cure of the fistula. A method of surgical exposure is described in which minimal damage is done to the anchoring mechanisms of the pelvic floor.

I should like to thank Miss E. F. Andrews of the SAIMR for her care with the illustrations.

REFERENCES

1. Bennett, R. C. (1962): Proc. Roy. Soc. Med., 55, 756.
2. Eisenhammer, S. (1966): Dis. Colon Rect., 9, 91.
3. Bremner, C. G. (1964): S. Afr. J. Surg., 2, 147.
4. Abdel Samie, L., Heita, G. and Bekheit, F. (1964): J. Egypt. Med. Assoc., 47, 156.
5. Bickham, W. S. (1930): *Operative Surgery*, vol. 5, pp. 253 - 258. Philadelphia: W. B. Saunders.