SURGICAL PROCEDURES IN GENERAL PRACTICE

This is one of a series of articles contributed by invitation

ANO-RECTAL ABSCESS

BY

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When Padua was the great medical centre in Europe there were many well-known anatomists whose names are with us still: Vesalius, Fallopius, Gasserius, and, in connexion with this article, Morgagni. Morgagni studied the anatomy of the rectal outlet. The columns, the crypts, and the papillae, the little sentinels of special sensation which all preserve his name, were objects of his special study, and are closely concerned with the pathology of infection in this region. Now, nearly two centuries later, our knowledge of this region has been advanced by another Morgan and his colleague Milligan and others (1937). Their description, based on repeated dissections of the musculature surrounding the anal canal, has clarified and stabilized the anatomy of this region. A knowledge of this anatomy is essential to a proper understanding of the paths of infection which lead to ano-rectal infection, and so to effective treatment (Fig. 1).

FIG. 1.—Anatomy of the rectal outlet (after Milligan and Morgan). P.R. = pelvi-rectal; I.R. = ischio-rectal; S.M. = submucous; P.A. = peri-anal.

The Origin of Ano-rectal Abscesses

It is customary to consider these under four headings: (1) peri-anal (subcuticular or marginal); (2) submucous; (3) ischio-rectal; (4) pelvi-rectal.

PERI-ANAL ABSCESS

A small superficial abscess around the margin of the anus may be due to an infected hair follicle or sebaceous gland, but more often it can be traced to infection behind a fissure, to a thrombosed external haemorrhoid, or to some trauma at the anal margin. Occasionally a submucous abscess makes its way down to the subcuticular region, and a neglected marginal abscess may spread into the ischio-rectal fossa.

SUBMUCOUS ABSCESS

This is not common. It is usually met with above the anal canal, is seldom large, and soon attracts attention from the pain it gives. The commonest cause is probably a thrombosed internal pile or trauma from a foreign body.

An abscess in this situation, if neglected, may occasionally find its way outwards between the superficial and deep portions of the external sphincter to the ischio-rectal fossa, or, by spreading downward, pass between the superficial external sphincter and the subcutaneous sphincter or superficial to the latter, and so form a peri-anal or marginal abscess.

ISCHIO-RECTAL ABSCESS

Most importance attaches to this variety, because the ischio-rectal fossa is the most common site for ano-rectal infection. In many instances an abscess in this situation seems to arise without obvious cause. Tuberculous infection will be considered later, but it is probable that not more than 10 per cent. of the abscesses are due to this cause.

Trauma from within sometimes plays a part. It is not surprising, when we realize the great power of the sphincters that guard the anal exit, that the lining of the canal is sometimes torn by foreign bodies or brick-like faeces as they pass by and that infection follows. It is perhaps a matter for surprise that this does not happen more often. On one occasion a patient came to consultation in great agony and barely able to walk. Excruciating rectal pain had immediately followed defaecation. A rectal examination revealed a stout fish-bone firmly impacted across the anal canal with both ends deeply buried. This was cut in two and the two halves pulled out, and several weeks afterwards I opened up an ischio-rectal abscess on both sides and later carried out radical procedures for the fistulae that followed.

On another occasion, in dealing with an ischio-rectal abscess at St. Mark's in the case of an ex-soldier, I removed a rifle bullet which was embedded in the cavity. This bullet had penetrated the lumbar region some years before and had never been located. A great variety of foreign bodies which have passed down the alimentary tract have been found in abscesses and fistulous tracks. Trauma from without resulting in a haematoma in the loose areolar tissue of the fossa, such as follows a kick or fall, is sometimes responsible for an acute abscess. A boy admitted with a bilateral ischio-rectal abscess gave a history that some weeks previously he slipped when walking along a wall and landed astride it. When these abscesses follow injury there is usually an acute stage which is easily recognized. In other instances, when no apparent cause can be traced and no connexion with the anal canal recognized, the abscess may be insidious in its onset and subacute or even chronic from the start. In some of these a communication with the anal canal does exist and often allows the transition from abscess to fistula to pass unnoticed. The pathology of many such cases has in the past been obscure.

It is not unlikely, however, that some of these abscesses and the fistulae which follow can be explained by infection arising in peri-anal glands, vestigial structures embedded in the muscular coats, possibly once active for sex attraction. Dukes, at St. Mark's, called our attention to the occasional presence of these glands and noted instances of a duct leading from them into the crypts of the anal canal. In two cases under my care and in one under Mr. H. Dodd this origin was definitely established and the transitional lining of the abscess cavities demonstrated (Gordon-Watson and Dodd, 1935). Further evidence in support

of this view of the origin of some of the ischio-rectal abscesses can only be obtained when a case with a track leading into the bowel is operated on early, before the transitional lining of the track has been obliterated by granulation tissue.

For the most part an ischio-rectal abscess, if adequately treated, is not a serious affair, but occasionally the reverse is the case. A man with a septic sore on the face, which had been incised, was later found to be extremely ill, with a temperature of 105° and a pulse of 140; an acute ischio-rectal abscess developed which gave a culture of haemolytic streptococcus. In other instances, happily rare, *Clostridium welchii* takes a hand, and a spreading gas infection is apt to ensue unless early radical measures are adopted. In one instance I met with this condition following acute gangrenous sloughing of prolapsed haemorrhoids which nearly proved fatal. As might be expected, ulcerative proctitis may sometimes infect the ischio-rectal fossa; and, lastly, when malignant disease low down is advanced and ulcerated an ischio-rectal abscess is not an uncommon sequel.

PELVI-RECTAL ABSCESS

Abscesses which form above the levator ani are fortunately far from common. They may arise from injury due to a foreign body in the rectum or from ulceration of the rectal wall, or be due to the spread of some infective condition in the pelvis or around the prostate. I have known a pelvic appendix abscess and a pyosalpinx both give rise to a pelvi-rectal abscess, and these often point in the rectum. On one occasion when draining one of these abscesses a small gauze swab was delivered through an opening in the levator ani. The patient had undergone a pelvic operation some time previously.

Treatment of Ano-rectal Abscesses

It is important not to forget that a fistula is the sequel to an abscess, that a neglected abscess in this region invariably ends in a fistula, and that most fistulae can be prevented if the abscess which precedes it is dealt with promptly and effectively.

PERI-ANAL ABSCESS

A superficial abscess round the anal margin should be dealt with under local anaesthesia. Novocain (2 per cent.) is injected under the skin over the area involved, and after incision enough skin is cut away to allow free drainage. It is wise to make a careful investigation with a director in case there is a communication with the anal canal, either deep or superficial to the subcutaneous sphincter. If the former is the case the subcutaneous sphincter is divided.

SUBMUCOUS ABSCESS

It is advisable to use the diathermy needle in these cases or, as an alternative, to transfix the cavity with a ligature which will eventually cut through, otherwise troublesome haemorrhage may follow. Every bleeding-point must be ligatured. If freely incised no packing is necessary, but a tube should always be inserted through the anus, after the sphincter has been gently stretched.

ISCHIO-RECTAL ABSCESS

An ischio-rectal abscess can usually be recognized by careful bidigital examination. The boundaries of the fossa are laterally the obturator internus and mesially the levator ani and musculature of the anal ring. When operating it is absolutely essential to remove a wide area of skin so as to secure free drainage (Fig. 2). When this has been done tubes and packing are unnecessary and only cause discomfort. If septa exist they should be broken down gently with the finger and curettage

avoided. A careful search is made for any opening into the anal canal. If one exists, on no account should the musculature superficial to it be divided at this stage, unless only the subcutaneous sphincter is involved. The track can easily be located later if a silk ligature is passed through it and out through the anus and loosely knotted outside. After a wash-out with peroxide some bipp is spread on a layer of gauze and the cavity lightly dressed with this. Hot fomentations are then applied for forty-

FIG. 2.—Illustrating a crucial incision for ischio-rectal abscess. The skin flaps should be excised back to the dotted lines.

eight hours or so. At the end of forty-eight hours the gauze is removed and the cavity irrigated daily with saline, or eusol if the pus is offensive, until healed. After the first few days the patient is allowed to sit in a bath daily. At the end of a fortnight or so, when the cavity has contracted down to small dimensions, if a fistula exists it can then be slit up to the surface without damage to control, provided that the internal opening is not above the deep portion of the external sphincter, which should never be divided, at any rate in one stage.

Sometimes an ischio-rectal abscess makes its way behind the bowel to the opposite side. It is well to bear this in mind. Very occasionally an ischio-rectal abscess occurs as an extension of a pelvi-rectal abscess which has burrowed through the levator ani. If most of the skin forming the floor of the abscess has been cut away this complication can usually be established, if it exists. These operations should be performed under low spinal or general anaesthesia, preferably pentothal and gas-and-oxygen. A considerable number of the fistulae which find their way to St. Mark's Hospital show cicatricial evidence of a previous inadequate incision into the ischio-rectal fossa that is usually linear and too short. This method encourages the formation of a fistula and saves no time; rather the reverse. The excision must be T-shaped or, preferably, crucial, and all the loose overlapping edges of skin removed. If the abscess is acute and the temperature high, and especially if there is any suggestion of a gas infection, Carrel-Dakin treatment is essential, combined with anti-gas-gangrene serum. If the culture reveals streptococci sulphanilamide should be employed (with due precaution as to diet, etc.).

PELVI-RECTAL ABSCESS

Much depends on the origin of an abscess in this situation. With one finger in the rectum the location and extent can be gauged. A small incision is first made through the skin of the ischio-rectal fossa, and a director guided by the finger in the rectum is then passed upwards and thrust through the levator ani until pus is reached. A pair of forceps is then passed along the director and the track through the muscles stretched. Before the forceps is removed a drainage tube is passed up along the forceps and firmly attached to the skin. Before dealing with the abscess the interior of the bowel is carefully

examined for evidence of fistula. Subsequent treatment will depend on the origin of the abscess. Every effort should be made before and after to locate the source of infection. Great care is required not to shorten or remove the tube too quickly, and it may sometimes be wise to investigate the sinus with lipiodol and x rays if healing is delayed.

In the event, happily rare, of an acute pelvi-rectal abscess with gas infection prompt and somewhat drastic surgery is required to lay this freely open to the surface, and no consideration of sphincteric function should be allowed to hamper the surgeon in his effort to check an infection which may easily prove fatal.

TUBERCULOUS ABSCESS

Gabriel, at St. Mark's, shortly after the war examined seventy-five cases of fistulae histologically and by inoculation, and obtained positive results in twelve of them. In five consecutive years at St. Mark's 888 cases of fistula were operated on, and in 119 (13.4 per cent.) of these there was histological evidence of tuberculosis. A tuberculous abscess in a patient who is not the victim of active tubercle elsewhere responds well to surgical treatment, though progress is usually sluggish. If a tuberculous ischio-rectal abscess is met with in association with active pulmonary tuberculosis surgery should be limited to simple drainage, and radical measures avoided, at any rate in the first instance, until the patient's power of repair has been ascertained. A cure can only be expected if the constitutional measures adopted against the disease bear fruit.

REFERENCES

- Gordon-Watson, Sir Charles, and Dodd, H. (1935). *Brit. J. Surg.*, 22, 703.
Milligan, E. T. C., et al. (1937). *Lancet*, 2, 1119.

TUBERCULOSIS IN WALES

THE COMMITTEE'S REPORT

The report is published this week of the committee appointed in September, 1937, by Sir Kingsley Wood, when Minister of Health, in response to the request of the King Edward VII Welsh National Memorial Association for an inquiry to be held into the anti-tuberculosis service in Wales and Monmouthshire.¹ The committee consisted of Mr. Clement Davies, K.C., M.P., and Dr. F. J. H. Coutts, C.B., and its inquiry was held, in the main, in public. The report—a Blue-book of nearly 300 pages—gives a searching analysis of the whole situation, and is outspoken in criticism of the bad housing and bad hygienic conditions that are allowed to persist in many areas. The backward local authorities are unsparingly rebuked for their neglect.

The problem of tuberculosis is relatively more serious in Wales than in England, for the death rate has not declined so rapidly and exceeds that of England. The excessive mortality in Wales occurs among young adults aged 15–25 and in the age group 25–45. In contrast with England, the rates at 15–25 show little change since 1921, and the rate for females is distressingly high. For many years, however, the crude death rates from tuberculosis at all ages for seven of the Welsh counties have exceeded those for all the other counties in England and Wales. Certain areas, notably in Anglesey, Caernarvon, and Merioneth, are especially afflicted.

Racial Susceptibility not a Factor

Why Wales should lag behind in the diminution of tuberculosis mortality is carefully considered. The report

states that, for practical purposes, racial susceptibility as a factor in causing high mortality may be ignored, and everything possible should be done to combat the fatalistic attitude which is still prevalent in Wales and is encouraged by over-emphasis on this point. Improvement of housing and sanitary conditions, and, above all, a stricter insistence on the segregation of the infective case, are more important for a population considered to be specially susceptible. Segregation in tuberculosis is one of the most powerful preventive measures against the spread of the disease.

The National Memorial Association

The Welsh National Memorial Association undertakes, on behalf of the county and county boroughs in Wales and Monmouthshire, their duties under the Public Health Act, 1936, for the treatment of tuberculosis. Preventive duties are, however, in the hands of the local authorities, and the committee is satisfied that this broad division of responsibilities should be maintained. The association, which under its president, Lord Davies, raised large sums of money for the provision and equipment of hospitals and dispensaries, now depends for its income on contributions from the rates. The governing body is largely composed of representatives nominated by the county or county boroughs, but the association retains its character as a voluntary organization, and it is the general desire that it should continue to do so. The committee was impressed with the general efficiency of the association's work, and could find no evidence that it was carried out on extravagant lines. It is satisfied that additional bed accommodation is necessary if tuberculosis is to be adequately dealt with.

The number of beds at present available to the association is below the usually accepted standard, and the home conditions in some parts of Wales render it imperatively necessary from the point of view of prophylaxis to segregate a larger proportion of patients. There is room for a new fully equipped hospital of 200–250 beds in the Swansea area, but if such a hospital is provided further consideration ought to be given to future use of the South Wales Sanatorium.

In dealing with the difficult problem of hospital provision the committee suggests that in the special circumstances of Wales, with a widely scattered population in some areas, small local institutions of a simpler type might be valuable adjuncts to the more fully equipped hospitals. These could very suitably be provided in conjunction with any general regional hospital scheme, and would be used for cases requiring observation or prolonged segregation. The future development of residential accommodation should be planned with these principles in mind. Grave consideration should be given before spending any large sums in improving or extending those institutions which were from the outset inconvenient and unsuitable.

The committee is satisfied that the research activities of the Memorial Association cannot be curtailed without serious loss to the efficiency of the organization, and recommends that the proposal for the provision of a new laboratory, in conjunction with the School of Medicine and the Cardiff Royal Infirmary, should be approved. It suggests that the proposal to establish a village settlement in Wales should be thoroughly explored.

Tuberculosis After-care

After-care work on an organized basis, to secure the social welfare of patients and their families, has made very little headway in Wales, though it has not been entirely neglected. In many of the rural areas little has been done beyond the relief of necessitous cases as ordinary members of the community. The committee does not recommend that the association should undertake after-care work, but it trusts that as a result of the inquiry local authorities will realize the importance of setting up effective care organizations invested with the widest possible powers and equipped with efficient personnel. The committee finds that the scheme of treatment drawn up on

¹ H.M. Stationery Office. (4s. 6d.)