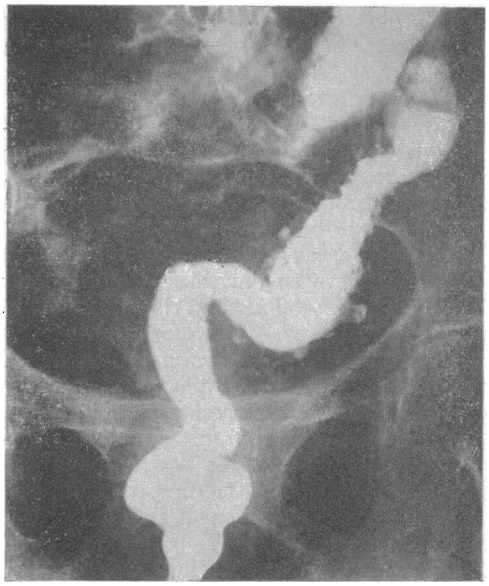

FIG. 2.—Barium enema to show associated rectal stricture and diverticulitis.

free, or to recommend further palliative irradiation to what is already a case of over-irradiation.

The following cases present a few points of further interest.

A woman, aged 70, developed a rectal stricture one year after radium treatment. At routine gynæcological follow-up she was noted to be tumour free and was reassured, but her rectal symptoms attributed to the radium slowly worsened. After *fifteen years* she was referred for a surgical opinion. Treatment with rectal washouts and paraffin emulsion brought rapid relief. A barium enema (Fig. 2) designed to produce a picture of a rectal stricture also demonstrated diverticulitis. Was the marked diverticulitis and not the rectal stricture responsible for most of her symptoms?

Another patient, aged 53, developed a metastasis in the left pubic bone from a carcinoma of the thyroid; she was treated by three courses of external irradiation. A full therapeutic dose of radioactive iodine was given later to ablate the residual thyroid tissue in the neck in the hope of persuading the metastasis to take up further doses of isotope. At this time she developed profuse rectal bleeding and the pelvic metastasis became tender. To bring the symptoms under control transfusions and a temporary colostomy were necessary.

The dose of irradiation received in the rectum from the isotope was extremely small, but the dose of external irradiation was sufficient to account for the rectal reaction. The administration of the isotope at that time was unfortunate, as it appeared responsible for the symptoms. Had the metastasis in the pelvis taken up the isotope this could have been the case.

Another aspect was encountered in a woman aged 31, who received external irradiation to enlarged lymph nodes in the left groin and two years later developed rectal symptoms. A barium enema revealed localized colitis or possible radiation damage of the pelvic colon. On sigmoidoscopy, the bowel was normal to 15 cm at which point there was an ulcer and a stricture which did not appear to be typical of ulcerative colitis. Her symptoms continued, and six years later she had progressed to a total colitis—allowing scope for speculation on the relationship.

Finally, we must remember the number of radiation-induced tumours now being reported in the literature in regions such as the pharynx and skin. I do not know of a reported case of such a tumour in the rectum, but with the increasing use of supervoltage therapy for pelvic tumours and greater tissue penetration, have we seen the end of this problem—or the beginning?

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REFERENCES

BLOOM, H. J. G. (1959) *Proc. R. Soc. Med.*, **52**, 495.
BRICK, I. B. (1955) *Arch. intern. Med.*, **96**, 26.
REQUARTH, W., and ROBERTS, S. (1956) *Arch. Surg., Chicago*, **73**, 682.
STRICKLAND, P. (1954) *Brit. J. Radiol.*, **27**, 630.
TODD, T. F. (1938) *Surg. Gynec. Obstet.*, **67**, 617.
WIGBY, P. E. (1943) *Amer. J. Roentgenol.*, **49**, 307.

Incision and Primary Suture of Abscesses of the Anal Region

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FROM time immemorial, the treatment of an acute abscess has been to incise and drain it. Granulation tissue grew in from the walls of the cavity and eventually filled it. The skin grew over the granulations and the incident was closed. It was considered essential that the cavity should fill in evenly without pocketing or the abscess might recur or a fistula form. In large abscesses around the anus, this pocketing was prevented by packing the cavity with gauze. As the abscess filled in, the pack was changed—often such a painful procedure that an anæsthetic was required. In any event, in an abscess of this size it was often weeks before healing took place. Antibiotics did not cure an established abscess nor expedite healing. Many years ago, when penicillin became available, I observed that if it had been given for some days in the vain attempt to cure the abscess the lesion appeared to heal more quickly after operation. I postulated the

theory that before operation the lining of the abscess had not only prevented infection in the abscess from getting into the circulation, but had also prevented penicillin in the circulation from getting into the abscess. At operation, the lining had been damaged and the penicillin already in the circulation had entered the abscess cavity, overcoming the infection and allowing quicker healing. Nearly ten years ago, I started operating on all abscesses on this principle. Pre-operatively a large dose of antibiotic was injected. Half to one hour later, at the peak of concentration of antibiotic, the abscess was incised, the pus and dead tissue were evacuated and the lining curetted to allow blood laden with antibiotic to ooze in. The antibiotic was expected to overcome the infection, so that primary suture could be carried out and healing obtained.

The following case shows the optimum result obtained by this treatment.

A man aged 45 presented with increasing pain and throbbing around the anus for six days. On examination, an abscess was discovered, so 100 mg terramycin was injected intramuscularly with the pre-anæsthetic. Forty minutes later under Pentothal and cyclopropane the abscess was incised. The cavity was about 2½ in. (5·5 cm) in diameter. Pus was evacuated and the lining curetted. A large stitch then completely encircled the cavity so that on tying it was completely obliterated. On the fourth day, when the sutures were removed, the wound edges were in firm apposition. On the seventh day, the wound remained healed and the patient went back to heavy work. He had been treated as an out-patient and there was no recurrence.

Experience over the years has shown that certain factors can delay or prevent the rapid primary healing obtained in this case:

(1) *Skin necrosis.*—If conservative treatment is continued until the abscess points through the skin, this skin may slough. The firm sutures obliterating the cavity will cut through this skin, leaving a superficial ulcer, which may prolong healing by as much as two weeks.

(2) *Inadequate evacuation of the abscess.*—All loculi must be discovered, evacuated and curetted. If one loculus is left, it will grow into a new abscess. All slough must be evacuated.

(3) *Inadequate suturing.*—The abscess cavity must be completely obliterated by the sutures. Failure to do this will allow the dead space to fill with blood which may become the focus of new infection when the antibiotic is discontinued.

(4) *Large pelvi-rectal abscesses* in which the roof of the cavity is beyond the reach of the finger. Such cavities are almost impossible to obliterate.

In a series of 200 consecutive cases, the incidence of these factors will be discussed. Of these cases, 13 had perineal, 109 perianal and 78 ischiorectal abscesses.

Perineal abscesses, 13. 11 male, 2 female. 11 healed within seven days, 1 in eight to twelve days and 1 in over twelve days. Gaping of the wound occurred in the last two cases after the sutures were removed; possibly the sutures were not firm enough. 12 abscesses were due to staphylococci and one, which healed in seven days, to *B. coli.*

Perianal abscesses, 109. 79 male, 30 female. These abscesses were often of considerable size, often multilocular, and the cavity sometimes encircled the anus posteriorly. After evacuation of the contents, the ischiorectal fascia, shutting off the fossa, was always found to be intact.

Among 85 patients healing in seven days, one was notable. She was 38 weeks pregnant, with an abscess 1½ in. (3·8 cm) in diameter. About a week after being discharged healed, her baby was delivered without the wound breaking down.

In the 24 patients not healed by seven days 14 were healed in eight to twelve days and 10 in over twelve days. Skin necrosis at the operation was noted in 9. One case was badly sutured and the wound gaped widely on the fourth day when the stitches were removed. In only one patient, a young man, was a chronic fistula left. One old woman developed a fistula a few weeks after operation which quickly flared up into another abscess. When this was opened, a piece of nylon suture was found and removed; the cavity was curetted, primary suture was carried out and there was no recurrence. Similarly in an old woman who had an ischiorectal abscess, it would appear that the nurse cut away the knot from the deep mattress suture and allowed it to remain in the tissues.

The type of organisms in the pus, 60% staphylococci, appeared to play no part in delaying healing.

Ischiorectal abscesses, 78. 53 male, 25 female. In these cases an opening in the ischiorectal fascia was discovered leading into a cavity of varying sizes alongside the anus. In 55 healing was complete in a week, 8 healed in eight to twelve days and 11 in over twelve days. In the 19 cases with delayed healing, 7 had skin necrosis, and a loculus was missed in 1. In the remainder, the wound gaped after the sutures had been removed, suggesting poor suturing. There was 1 case of chronic fistula. Staphylococci occurred in 36% and did not appear to delay healing.

Of the 4 cases classed as complete failures, 2 were large pelvirectal abscesses, in which the cavity was not obliterated, the wound suppurated and broke down widely. The third was an old woman from whom large sloughs were evacuated at operation and further sloughs occurred later. The fourth broke down on the eighth day in a moderately severe undiagnosed diabetic.