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SOME OBSERVATIONS ON ANAL ABSCESS AND FISTULA

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At the beginning of the 16th century John Arderne developed a treatment of fistula-in-ano which was to last for over 450 years and is still used today. His practice was to lay open the track, and then to dress the wound without cauterization (which was at that time considered essential to prevent infection). Whenever possible he lived in the patient's home to tend the dressings personally until healing was complete; from all accounts his results compared favourably with those of contemporary surgeons.

The next major advance in the understanding of anal abscess and fistula came in 1880, when Desfosses and Herrmann¹ described the various types of glands found in the ano-rectal region. For clarity and accuracy their treatise is still unsurpassed today. They recognized *inter alia* the 'deep intramuscular' anal glands—long canals or ducts opening into the valves of Morgagni, whose outer ramifications penetrate the internal sphincter and may even enter the external sphincter. They believed these glands to be morphologically equivalent to the cloacal sex glands of dogs. They also suggested that infection of these glands might account for abscess formation and the subsequent development of fistula.

Both Miles² and, later, Lockhart-Mummery³ in their text-books on rectal disease stated unequivocally that fistula-in-ano was a complication following on abscess, yet this does not appear to be common knowledge even today. Kratzer and Dockerty⁴ demonstrated the intramuscular glands in human embryos by means of serial sections; each embryo had about 3-5 glands, of which 2-3 were posterior (Fig. 1). It was also shown that ducts ran caudad in most instances. The proximal lining was squamous and the alveolar cells were columnar. About 30% of the specimens gave a positive mucin stain. Professor Harris⁵ has shown that these deep intramuscular anal glands develop before the muscularis mucosae (which in the anus we prefer to call the muscularis submucosae) and penetrate at a stage when internal and external sphincters have not yet overlapped. Several authors^{6,7} have demonstrated the presence of epithelium in the track of excised fistulae, strongly suggesting a glandular origin.

One must therefore conclude that ischio-anal abscess (a more correct anatomical term than 'ischio-rectal') and fistula-in-ano are merely two stages in the same disease process. Goodsall² was probably not quite correct in stating that posterior fistulae all open in the mid-line; nor was Hiller³ right in supposing that suppuration in the ischio-anal space follows along the peri-vascular plane to the anal epithelium. The cloacal sex glands of other mammals are usually paired in two groups opening into the posterior anus on either side of the mid-line. This seems a reasonable explanation of the facts as we know them; added support is given by a study of these glands in the gorilla, in whom (as in the human) they are vestigial.

It will be clear that incision only of an ischio-anal abscess will lead to a high incidence of recurrence. It is usually possible at operation to demonstrate the internal opening, and this should be laid open and the lining excised or curetted. If this cannot be done, the patient should be warned that a second staged operation may be necessary. In dealing with fistula it should also be remembered that glandular tissue may line portions of the track, especially if there has not been any acute or gross infection. If the fistula is only laid open, these glandular cell-nests may form the nidus for later troubles. It would seem logical to *excise* fistulae; at the same time removing scar tissue which otherwise delays healing.

The occasional rectal surgeon is often concerned about how much of the sphincter muscles he may safely divide without producing incontinence. As a general rule, if there is any doubt whatever in the surgeon's mind, he should play safe, open the lower portion of the track, and place a thick braided silk ligature round the compromised muscle. This promotes fibrous tissue reaction and allows the muscle to be divided a week or so later without danger of retraction. In fact one can divide much more muscle than most physicians would believe possible. To understand the reason for this, a few words must be said about sphincteric function: It has been assumed in the past that a sphincter acts by virtue of its pinch-cock or purse-string effect. Detailed study of several body sphincters has shown that this is not correct, and that a combination of angulation plus valve-flap effect is more

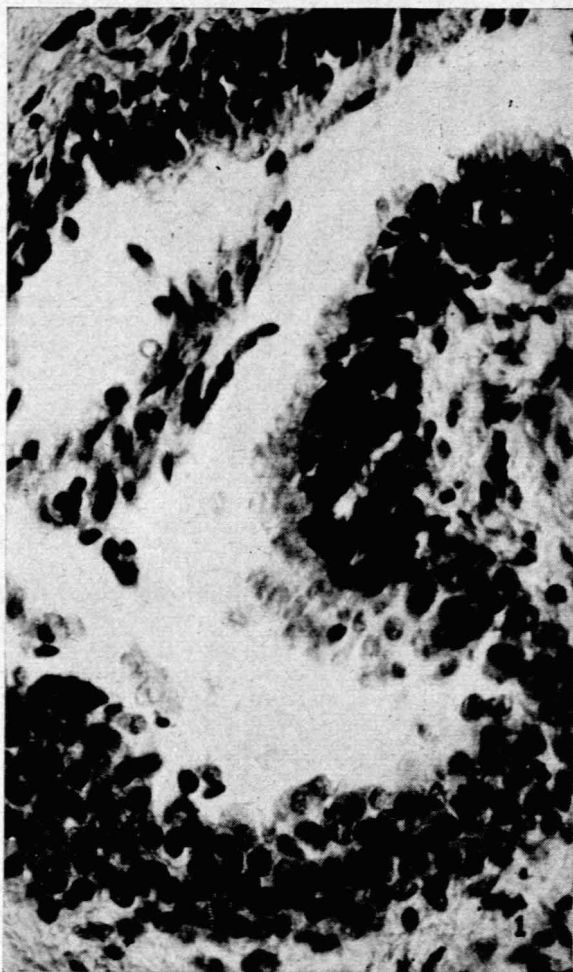


Fig. 1. Microscopic section taken through the duct of an anal intramuscular gland, $\times 200$. Note the columnar secretory mucosa merging into cuboidal ductal epithelium near the orifice.

important (e.g. oesophago-gastric and ileo-caecal areas). Our new concept of anal control is that continence depends upon the angle between rectum and anus produced by the pubo-rectalis sling of the levator ani. Provided this remains anatomically and functionally intact, the remainder of the

internal and external sphincters may be divided. Fibres from the levator ani blend with those of the external sphincter, and these two must be regarded as a single physiological unit. The three divisions of Milligan and Morgan are artificial and have, I believe, outlived their usefulness.⁹

The rationale of a wide accompanying skin excision is to allow adequate external drainage until the slower-growing internal mucosal wound has healed, and to have a flat smooth wound without danger of overlap or pocket formation. It is most important that the surgeon should attend these wounds personally; and in the more serious cases we review the wound under general anaesthesia in the operating theatre every 7-10 days. Pockets are opened and overhanging skin or mucosal edges are trimmed. We have found this procedure invaluable.

As long ago as 1927¹⁰ Gabriel raised the question of skin grafting of very large wounds, and this is without doubt a useful procedure in selected cases. Small 'postage-stamp' Thiersh grafts are used. They should not be sutured, but are kept in position by means of a firm elastoplast dressing. The bowels should be confined for 5-6 days and antibiotic cover should be used.

OPSOMMING

Ischio-anal-abses en buis is twee betoginge van dieselfde siekte. In die meeste gevalle is abses 'n gevolg van aansteking van die 'diep intramuskulaar' anus-kliere; en 'n buis volg altyd 'n abses. As die chirurg 'n abses insny, moet hy ywerig vir die innerlike opening soek, en dit ook oopsny. Dit is beter om 'n buis uit te sny as net oop te sny. Ons glo vandag dat die analsirkelspier nie deur middel van sy knypaksie werk nie, maar op die slinger van die pubo-rektalis afhang om onmatigheid te voorkom. Die chirurg kan dus die grootste deel van die spier veilig deursny; maar as hy nie seker daarvan is nie, is dit beter om die buis in twee stadiums te opereer. 'n Oorplant van vel kan in uitgekieste gevalle nuttig wees.

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