COMMON ANORECTAL CONDITIONS IN THE ARMY.
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Anorectal lesions represent a relatively large proportion of surgical conditions seen in a Military Hospital working under static conditions.

A considerable number of cases are referred because the simple condition of external haemorrhoids is not recognized, the universal presence of internal haemorrhoids of some degree in patients aged 20 to 40 years is not realized and symptomatic measures for the relief of these conditions are not attempted.

There is, however, a relatively high incidence of rectal bleeding and painful anal conditions in a locality where dysentery is endemic.

Anal ulceration and rectal bleeding are so frequently caused by protozoal proctitis that the exclusion of dysenteric ulceration by sigmoidoscopy is essential when examinations of the stools for Entamoeba histolytica are negative.

THROMBOSED EXTERNAL HÆMORRHOIDS.

This condition occurs in men between the ages of 20 and 30 and accounts for 30 to 40 per cent of the outpatient attendances for haemorrhoids; it is the rupture of a thrombosed vein of the external haemorrhoidal plexus which is situated just distal to Hilton's line (fig. 1). The thrombus is recognized as a bluish swelling the size of a pea, nearly always single, close to but not intruding into the anal margin, which feature distinguishes an external pile from a composite third degree intero-external haemorrhoid.

Spontaneous organization is the usual sequence, leaving an anal tag, but rupture of the skin leading to profuse bleeding or suppuration may occur.
Discomfort or pain at the site of the swelling, particularly on defæcation, is experienced for three to four days and then gradually disappears but sudden relief from pain will result if the skin over the clot bursts or a more constant throbbing pain will be felt if the lesion becomes inflamed.

Resolution is the rule and washing of the anus after defæcation and the application of a dusting powder, if available, is sufficient. Should, however, the swelling be large, the skin appear very tense, soggy, or inclined to rupture, then the clot ought to be evacuated. 1 to 2 c.c. of local anaesthetic are infiltrated into the base of the swelling and the mound picked up in forceps and cut off flush with the base, the clot then being picked out of its bed. This technique of "saucerization" gives a flat wound without overhanging edges which heals well and requires neither special dressings nor stay in bed. If anal tags be present from the organization of previous thrombi, and operation is performed on a recent thrombus, these tags should be trimmed off as well, otherwise they become oedematous from the supervening mild infection which ensues and this makes a period of hospitalization necessary.

**INTERNAL HÆMORRHOIDS.**

Neumann studied sections of anal canals in subjects of age groups varying from prenatal life to old age. He found that as age advanced the incidence of hæmorrhoids increased and that they were present in every subject after the age of 20.

An internal hæmorrhoid is a dilatation of the venous and arterial radicles situated at the base of the columns of Morgagni (fig. 1). The main branches of the hæmorrhoidal arteries and veins are found in the right anterior, right posterior and left lateral quadrants and such are the sites of the three primary groups of hæmorrhoids. The morbid anatomy of internal hæmorrhoids can be usefully traced through three stages or degrees for clinical purposes. The initial stage or first degree is represented by a velvety swelling, blue in colour, in which the predominant symptom is bleeding; prolapse does not occur. The second stage is reached when elongation of the pile-bearing area allows prolapse at stool; the mucosa becomes thickened and bleeding is less common. In some cases one group of this second degree hæmorrhoid, which is larger than the other two, may be strangulated by contraction of the anal sphincter after the hæmorrhoid has prolapsed on defæcation. Such a complication may lead to infection and organization and a relatively avascular polypoidal pile be formed. The third stage or degree—well designated intero-external hæmorrhoids—is established by dilatation of the veins communicating between the internal and external hæmorrhoidal plexuses. Chronic congestion results from the failure of the local circulation and produces oedema of the skin and the formation of multiple perianal tags. External hæmorrhoids extend into the anal canal and the internal hæmorrhoids present at the anal orifice without straining. Intero-external hæmorrhoids are frequently strangulated by contraction of the anal sphincter and a large, angry-looking, fleshy mass is seen at the anal orifice; it may be ulcerated or sloughing. When this stage of hæmorrhoids has been present for some years the anal sphincter is relaxed and the prominent symptoms are a moist perineum and pruritus ani.
Correction of constipation, if present, is the prime essential in the management of all cases of haemorrhoids. Adequate fluid intake and the use of cascara, which is probably the best laxative now available, are often adequate measures to control the first degree of haemorrhoids.

Strangulated haemorrhoids demand reduction of the prolapsed mass through the anal sphincter as it is the spasm of this muscle which is the strangulating agent; reduction can frequently be obtained without anaesthesia. Beyond a fluid diet and rest in bed for a few days no further treatment is necessary until the patient is proctoscoped in two months time. In many cases the haemorrhoids will thrombose and neither injection nor operation will be necessary.

Injection of a sclerosing solution above the base of the pile-bearing area is efficacious in the control of bleeding in first degree piles and of prolapse on defaecation in second degree piles. Sigmoidoscopy should precede injection therapy in cases with a recent history of diarrhoea or chronic constipation, to exclude the presence of any other rectal source of bleeding which is commonly found in amebic dysentery, bearing in mind the possibility of carcinoma in patients over 40 years. 4 per cent carbolic in almond oil is used in quantities sufficient to produce pallor of the rectal mucosa dealing with one group at weekly intervals. Complications are extremely rare but it is well to remember that anal oedema and anorectal ulceration may develop if too much of the sclerosing solution be injected at one time or if proctitis, due to amebic dysentery, is present. In haemorrhoids which are bleeding profusely, direct injections into the haemorrhoids of 5 minims of 20 per cent carbolic are effective.

Operative removal of haemorrhoids is rarely necessary and is reserved almost entirely for the intero-external type of haemorrhoids. Miles' operation is simple, requires few instruments or material and gives excellent results. The sphincter is dilated and the three groups of piles pulled down. The mucocutaneous junction is seized with a haemostat and the upper limits of the internal pile with a pair of ring forceps. The group is held with the two forceps and the perianal skin at the periphery of the external hemorrhoidal component divided with scissors. Dissection is carried down to the subcutaneous anal sphincter and the base of the mass of tissue held in the forceps is ligatured with stout silk; the strangulated masses are not cut off; the other groups are dealt with in turn. Separation occurs in three to four days and leaves an entirely flat base. The patient should be fit for light duty fourteen days after the operation.

**Anal Spasm.**

The anal canal is covered with uncornified squamous epithelium and extends from the white line of Hilton below to the dentate line above. The epithelium is upheld by very little connective tissue but is supported by a dense band of fibrous tissue. The main band of the tendon of the longitudinal muscle of the rectum is fixed to this area (fig. 1). The anal canal below the dentate line is supplied by the pudic nerve (sacral 3 and 4) and all lesions of this area cause spasm of the external hemorrhoidal muscle and pain on defaecation. Such lesions are *fissure in ano*, anal ulceration associated with amebic dysentery, anal polyp and anorectal abscess.
Fissure in Ano.

This condition is a linear abrasion situated always in the mid-line posteriorly and extending the length of the anal canal. It is produced mechanically by the passage of a scaly stool tearing the relatively unyielding integument. The abrasion may become infected and the tiny abscesses which form under the skin edge present a pouting bead of tissue overlapping the distal edge of the lesion. This exuberant tissue seen in subacute or chronic states of a fissure is called the sentinel pile of Brodie and is due to inadequate drainage of the outer margin of the fissure. The lateral margin of the abrasion or ulcer always remains distinct.

Many cases of acute fissure in ano respond to the correction of constipation and the local application of cocaine ointment. Should this treatment not be effective then digital dilatation of the anal canal is sufficient to allow healing in the acute condition but in the subacute stage when the fissure is a definite ulcer it is better in addition to excise the edges. A chronic fissure requires excision of the indurated base and division of the dense band of fibrous tissue surrounding the anus (pecten band of Stroud) together with the superficial component of the external sphincter (see fig. 1).

Anal Ulceration in Amoebic Dysentery.

These ulcers which are usually single may be of two types, a small ulcer situated near Hilton’s line posteriorly and which therefore must be distinguished from a fissure in ano and a larger linear ulcer situated in any quadrant of the anal canal. The base of these ulcers bleeds on manipulation and while, in the small type, the edges are thin and well defined yet, in the large, the edges are oedematous and overhanging.

Sigmoidoscopy is essential in the investigation of these cases and nearly always a granular proctitis or sigmoid ulceration will be found. Repeated examination of the stools for E. histolytica in most cases reveals its presence.

Operation on these ulcers leads to considerable morbidity and local anaesthetic ointments are the only permissible therapy during the time the general treatment is being given for the amoebic infection.

Anal Polyp.

Hypertrophy of an anal papilla forms a polyp which causes anal spasm and prolapses on defaecation (figs. 1 and 2b). Its origin from the region of the dentate line distinguishes it from a polypoidal organized pile. Treatment is removal.
ANORECTAL ABSCESS.

The site of origin of the abscess is almost invariably one of the crypts of Morgagni, probably so determined by infection of the vestigial sex glands, which drain into this region (fig. 2A). The abscess may abort by spontaneous drainage into the rectum but more often it spreads laterally along the lines of cleavage provided by the tendinous terminations of the longitudinal muscle of the rectum (fig. 1). The main portion of this tendon is inserted into the region of the pecten band forming a dense collar of tissue around the anus. Rupture of the abscess into the canal is therefore almost impossible and it presents on the perianal skin finally bursting to form a fistula in ano.

It will be recalled that the dentate line which is the level of the crypts marks the upper limit of ordinary pain sensibility. The first clinical evidence of an anorectal abscess is discomfort or pain on defecation, which precedes, by a day or two, the symptoms and signs of inflammation which are evident as the abscess approaches the perianal skin. In the earliest stages, when the only physical sign is anal spasm, the condition must be distinguished from an acute fissure in ano and anal polyp. Later when a perianal swelling is present the differential diagnosis involves perianal boils, infected scabies and a suppurating thrombosed external pile.

Operative treatment for a large anorectal abscess presenting under the skin is best limited to a wide cruciform incision without exploration of the track but, when the abscess is small and the track passes superficial to the external sphincter, it is better to prolong the appropriate line of the cruciform incision and so lay open the whole area from the infected crypt into the anal canal. When there is no external redness of the skin, external drainage to the perianal skin must nevertheless be provided for simple incision of the abscess into the anorectal canal does not give adequate drainage and the anorectal wall remains chronically indurated.

FISTULA IN ANO.

The external opening of a fistula is most commonly within 1½ inches of the anal margin while the internal opening is in some quadrant of the dentate line as an anorectal abscess developing from cryptitis is the precursor of fistula. The connecting track between the two openings runs deep to various parts of the external sphincter following the track of the tendinous termination of the longitudinal muscle of the rectum (fig. 1). Goodsall's law gives some idea of the site of the internal opening in the canal when the external orifice is situated at a distance of 1 to 1½ inches from the anal margin. Briefly, the law states that if a line be drawn in the coronal plane across the mid-point of the anus, then in cases where the external orifice is in front of this line the internal orifice is radially opposite, but when the external orifice is behind this imaginary line the internal opening is in the mid-line posteriorly. The causative crypt can be identified at operation by careful inspection, palpation, probing with a blunt hook and traction on the track.

In view of the cryptogenic origin of the fistula it is interesting to speculate on the reason for its running superficial to the external sphincter in some cases,
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depth to the subcutaneous or superficial components in others. Fansler gives an explanation which appears eminently reasonable. It is noticed on digital examination that in many cases there is a distinct separation between the external and the internal components of the sphincter and also that the length of the anal canal varies. The dentate line, which marks the upper limit of the anal canal, bears a different relationship to the components of the sphincter in different individuals. This is shown diagrammatically in figs. 3A and 3B. When the dentate line is distally placed in the anorectal canal then an abscess arising in a crypt and extending laterally ruptures through the skin passing entirely superficial to the sphincter or deep merely to the superficial component (fig. 3A). On the other hand, a proximate dentate line will result in a fistula running deep to the whole external sphincter or through portions of the internal sphincter and pubo rectalis (fig. 3B).

Fistulae which have an external opening more than 1½ inches from the anal margin often pass through the levator ani. Multiple fistulae and horseshoe formations occur.

It is essential to remember the high incidence of pulmonary tuberculosis in patients with fistula and also the tuberculous nature of many fistulae, which can only be shown on histology. In some cases the fistula may show typical features of tuberculous ulceration, single or multiple openings with bluish undermined edges, but more often there is no characteristic appearance.

Treatment of a fistula which passes superficially through a part of or deep to the whole external sphincter is relatively simple, provided the whole track, which should be identified by its different appearance from the surrounding tissue rather than by injection of methylene blue, be laid open, the edges excised and a flat wound with a broad base be produced. It is not necessary actually to excise the internal opening. The whole of the external sphincter can be divided with impunity. Division of any part of the internal sphincter or pubo rectalis, which would be necessary to lay open a fistula passing through the levator ani, is liable to the complication of incontinence, whether the operation is carried out in one or two stages. Such a fistula may respond to the injection of 10 per cent carbolic along its track but, should this not lead to healing, partial excision of the fistula should be performed and complete rest to the part established by means of a temporary colostomy. Such a procedure is much better tolerated by a patient than incontinence subsequent to a radical operation.
The clinical manifestations of amoebic dysentery may be most variable. Two chief types are encountered, one commencing with griping pains and diarrhoea and the other less acute in its onset with slight abdominal discomfort, distension and looseness of the bowels after meals. Constipation is a common sequel in both these types and in some patients it is the only general feature in the history when sigmoidoscopy demonstrates proctitis as the source of rectal bleeding. The efficiency with which sigmoidoscopy is carried out depends mainly on adequate preparation of the bowels. The following is an effective method of preparation: first day, castor oil—2 ounces ; second day, fluid diet and pil. opii gr. iii at night ; third day, a simple enema.

The operation is much more comfortable for the patient if caudal anaesthesia be used and the examination is carried out with the patient lying on his left side. Passage of the instrument to its full length is facilitated if, under direct vision, it is pushed rapidly along the sinuous curves to the limit of the instrument and the detailed examination of the mucosa is made during a slow withdrawal.

The mucosa varies enormously in its degree of redness and, unless bleeding points are seen, which is facilitated by air distension, little reliance can be placed on its interpretation. An abundant turgid mucosa is pathological and should it be granular an inflammatory condition is definitely present. The term "granular proctitis" has never had much aetiological significance but should be considered merely as a sign that painstaking search must be made for the dysentery bacillus and the E. histolytica.

Small ulcers, seen in the cases in which E. histolytica had been isolated, were sited maximally in the bowel 7 to 10 inches from the anal orifice. The ulcers vary from a small pin-head size bleeding point to an ulcer the size of a wheat grain with a well-defined, yellow basal sphacelus, with its long axis transversely placed and little surrounding congestion of the mucous membrane. Occasionally two small ulcers were seen joined together by a bridge of mucous membrane.

In many cases referred for bleeding piles and some referred for anal spasm bleeding points in the rectum have been found on sigmoidoscopy which has led to the identification of the E. histolytica as the causal agent by repeated examinations of the warm stool.

Condylomata.

Syphilitic lesions are uncommon but do exist; any patch of moist sodden skin around the anus demands serological investigation. A recent case showed a thrombosed external pile perched on a patch of sodden skin; the Kahn reaction was positive.

Condylomata acuminata are frequent. They appear as multiple seedlings confined usually to the perianal skin but in one case they extended the whole length of the anal canal; occasionally they may be large and appear like a cornified cockscomb. Penile condylomata are often present and these, more often than not, are associated with a gonococcal urethritis which has stopped discharging about ten to fourteen days before the warts appear. Small condylomata disappear
after the application of glacial acetic acid, the surrounding skin being protected with vaseline, but this treatment takes considerable time. Removal with a curette or snipping off the warts at the junction with normal skin and the application of pure carbolic to the base does not lead to seedling growth and is expeditious.

Pruritus Ani.

The incidence is notably low. Most of the cases have an advanced flexural dermatitis which is particularly noticeable amongst the Maltese troops. A few present local anorectal lesions but others have no abnormal local or general physical signs.

Toilet with water and wool followed by the application of calamine lotion containing 1 per cent carbolic is helpful. Flexural dermatitis responds well to the local application of 1 per cent silver nitrate alternating either with 1 per cent gentian violet or ½ per cent brilliant green in aqueous solution. Suitable treatment should be adopted for any specific anorectal lesion. If, in spite of local applications and in the absence of abnormal local physical signs, the condition remains unchanged a course of injections as for clinical haemorrhoids sometimes provides relief. The rationale for this therapy is based on a suggestion made that, as
the symptom of itching is always present where there is oedema of the skin, pruritus ani may be caused by a subclinical oedema of the anal skin produced by a failure in the venous circulation of the haemorrhoidal plexuses. The introduction of sclerosing solutions above the pile-bearing area is followed frequently by symptomatic improvement.

**Anæsthesia.**

Caudal anæsthesia was almost invariably used in investigation of cases of anal spasms, in operative measures for fissure, haemorrhoids, anorectal abscess and fistula and for sigmoidoscopy.

30 c.c. of 2 per cent Novutox are introduced into the sacral canal through the fibrous tissue diaphragm which covers the bony deficiency between the palpable sacral cornua.

Anæsthesia is produced in twenty minutes and a sign of its effectiveness is the production of slight turgidity of the penis.

Fig. 4 shows the anatomical details of this method of sacral nerve block.

**Summary.**

1. External and internal piles are described. Spontaneous resolution in the former and the universal presence of the latter in subjects aged 20 to 40 are noted. It is essential that the haemorrhoids be established as the cause of symptoms before sclerosing therapy is adopted. The indications for operative removal are given and it is pointed out that such is seldom necessary.

2. The lesions which cause anorectal spasm are described. The importance of recognizing anal ulceration in association with protozoal proctitis is stressed.

3. Sigmoidoscopic examination is considered essential as a pre-operative measure in many cases of anal ulceration and rectal bleeding as operative treatment of local lesions in the presence of rectal or sigmoid ulcers leads to considerable morbidity.

4. The anal consciousness of the soldier allows anorectal abscess to be seen at its earliest stages; its pathology together with that of fistula in ano is described.

5. The frequent association of condylomata acuminata with gonococcal urethritis is confirmed.

6. The incidence of pruritus ani is notably low.

7. The value of caudal anæsthesia in anorectal manoeuvres cannot be overstressed. The method is described.

I am indebted to Surgeon Captain J. Sammut, R.M.A., for his great care with the diagrams and to Colonel F. Whalley, D.S.O., T.D., K.H.P., for permission to submit this article for publication.

**References.**


