

AMOEBIASIS: SOME DIFFICULTIES OF DIAGNOSIS*

BY

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Amoebic Dysentery

Amoebiasis is a disease of military importance and, as an aftermath of the war, may well produce diagnostic pitfalls and surprises. Colonic and rectal tumours, anal and perianal ulceration, recurrent colitis, enigmatic and insidious liver abscess, are among its sequelae. The early diagnosis of amoebic dysentery is not always easy, and, furthermore, no treatment at present known is a guarantee against recurrence. There is evidence that the chance of cure bears an inverse relation to the duration of the symptoms before emetine treatment is started. Even in countries where amoebiasis is common its manifestations are protean, and the disease may exist for long periods before diagnosis is made and treatment begun.

Sigmoidoscopic Appearances.—These are varied and the lesions are often minute and easily missed. In addition to the typical discrete ulcers, which, owing to their usual position on a mound of oedematous mucous membrane, resemble a tiny pouting mouth, other changes are seen in the bowel wall. Briefly these are: scattered discrete petechial haemorrhages with no ulceration; a patch of deep-red inflamed hypertrophic oedematous mucous membrane which may be nodular to the touch; a large solitary irregular indurated ulcer infiltrating the rectal wall; diffuse proctitis with no particular characteristics except that it is usually sharply limited to the rectum.

The association of bacillary with amoebic dysentery has to be remembered. The diffuse inflammation of bacillary dysentery, with or without irregular erosions, or, in the healing stage, large irregular flame-shaped submucous haemorrhages, may overshadow amoebic lesions, which become obvious only when the former is cured. Discrete clean-cut ulcers, identical in appearance with those of amoebiasis, may sometimes be seen in bacillary dysentery. Not infrequently the sigmoidoscopic findings are indefinite and scrapings are negative, so that re-sigmoidoscopy after a course of sulphaguandine and/or emetine may be necessary.

In amoebiasis, dysenteric symptoms may be slight or absent, and amoebae may not be found in the stools on direct examination; in fact, secondary manifestations of the disease may be the first indication of infection.

Six weeks before admission a soldier developed pain in the right lumbar region, was treated, and returned to duty. Three weeks later he had persistent pain in the right chest accompanied with high fever, and was admitted to hospital. Sterile pus was aspirated from the right chest on several occasions; sulphathiazole was given. Three weeks after the first aspiration a total right empyema was treated by rib resection. Six days after the latter operation he had diarrhoea for two days, during which time the stools contained no blood, mucus, amoebae, or cysts. After drainage of the empyema the patient remained ill and febrile. Twenty-two days later (11 weeks after the first symptom) rectal examination revealed an indurated and somewhat hypertrophic ulcer, 2½ in. by 2 in., on the posterior wall of the ampulla—diagnosed as an amoeboma, though repeated stool examination had revealed no amoebae; amoebae were, however, cultured later from the stool. He was put on emetine: discharge from the empyema quickly diminished, and recovery was rapid.

Amoeboma (Amoebic Granuloma)

Medical officers working in the East are fully alive to the occasional development of a tumour of the colon or rectum resulting from amoebiasis. Repeated amoebic invasion of the colon, together with superadded pyogenic infection, may produce a progressive inflammatory lesion leading to tumour formation. The inflammatory process spreads through the bowel wall into the pericolic and perirectal fat and infiltrates surrounding structures. The tumour consists of fibrous tissue, overgrowth of granulation tissue, and varying degrees of ulceration.

The wall of the gut is destroyed and small abscesses may be present in the centre of the mass. There is considerable round-cell infiltration; lymphocytes and eosinophils are present in large numbers.

Typical amoebic ulcers may be present or, on the other hand, no evidence of amoebiasis may be forthcoming. It is likely, in the latter case, that the parasite is dwelling comfortably in the depths of the gradually growing tumour.

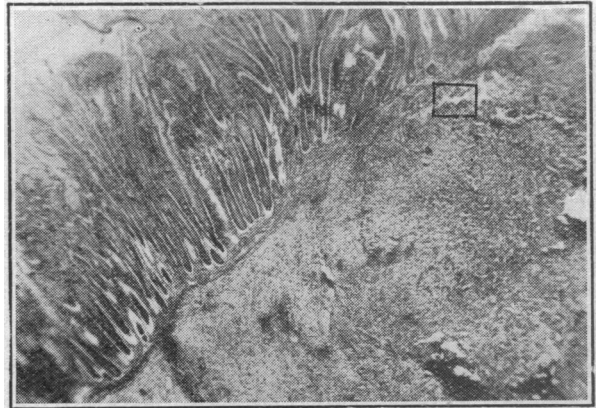


FIG. 1.—Amoebic granuloma, showing *E. histolytica* inside a blood vessel.

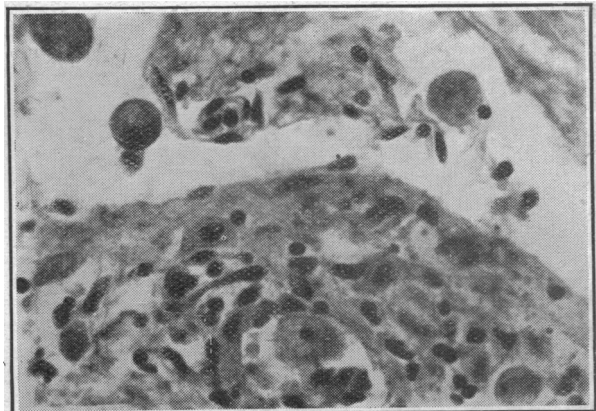


FIG. 2.—Higher magnification of area marked in Fig. 1, showing *E. histolytica* lying in a small vein.

The usual sites for a granuloma are the rectum, recto-sigmoid junction, and caecum. When the mass is situated at the recto-sigmoid junction or in the ampulla of the rectum the patient complains of tenesmus and may pass blood and slime with or without faeces. An amoeboma of the rectum may be submucous and nodular, protruding into the lumen, or may take the form of a deeply indurated ulcer. The surface of the bulk of the tumour is usually smooth, but it may be irregular, friable, and infiltrating. Diagnosis from carcinoma of the rectum is difficult, and often impossible, by digital examination or by sigmoidoscopy. The dark-red nodular and ulcerated lesion looks like a carcinoma. Further, a smooth rounded non-ulcerated mass cannot be distinguished from submucous spread of a carcinoma. Even when amoebae are isolated from the stools the coincidence of a carcinoma cannot be excluded until a biopsy has been made.

A gunner aged 28 had been operated upon 10 months previously for haemorrhoids. 2½ months later he had pain on defaecation and rectal bleeding. On admission to hospital a large craggy mass was felt in the lower rectum, and *Entamoeba histolytica* was found in the stools. Emetine 12 gr. and carbarsone 0.5 g. daily for 7 days had no effect. Transferred to rectal centre: biopsy—carcinoma of the rectum; removed by combined excision.

The symptomatology of amoeboma in the colon and caecum, together with a palpable tumour, the chronicity of the disease, ill-health, loss of weight, and a filling defect demonstrated by barium enema radiograph, make the differential diagnosis from carcinoma difficult. The history of previous amoebic dysentery

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or the finding of amoebae in the stools will suggest amoebiasis, but it should be remembered that carcinoma and amoeboma may coexist in the colon just as in the rectum.

In the early stages of the tumour formation the whole mass will melt away miraculously after emetine treatment.

A soldier had a history of dysentery 13 months ago; now pain in the anal region and retention of urine. Sigmoidoscopy showed a firm irregular tumour on the posterior rectal wall covered with mucopus. Examination of the stools and mucopus showed no amoebae or cysts. After a course of injections of emetine the tumour totally disappeared within one month.

When the amoebic lesion has been present for a long period, however, the superadded result of chronic secondary infection, fibrosis, and distortion of the colon may prevent the mass disappearing with anti-amoebic treatment. In such cases excision of the tumour may be necessary not only to treat the ill-health, recurrent diarrhoea, and obstructive symptoms, but also because it is impossible to exclude carcinoma.

Squad. Ldr. X., aged 44, had diarrhoea in Mombasa 17 months ago and recurrent attacks since. During the past 6 months he had increasing and recurrent abdominal colic with pain in the right iliac fossa, anorexia, loss of weight, and slight fever. A large tender mass was palpable in the right iliac fossa; w.b.c. 17,000; sigmoidoscopy—amoebic ulcers in rectum; active *E. histolytica* in stools. Given two courses of emetine and one of carbarsone; after each course the mass was much smaller, the patient improved in health, became apyrexial, and was allowed up and about. (Seen by Gp. Capt. C. W. Flemming.) Barium meal and enema showed a large tumour bulging into the caecum and pushing it upwards. The ileo-caecal junction could not be demonstrated with certainty, though it was thought to be above the main mass. The intraluminal projection was quite smooth. Diagnosis: ? amoeboma—unlike a carcinoma. Two months later the mass again became larger and the patient was not so well; he was transferred to the M.E. Rectal Centre. The tumour was thought to be an amoeboma, which as a result of prolonged secondary infection did not subside completely with emetine. Pre-operative blood transfusion, sulphasuxidine, and a few grains of emetine were given.

Operation.—A huge inflamed mass was present in the caecum, attached to the anterior and posterior abdominal walls; many adherent coils of small intestine were separated; one loop formed a fistula with the mass (this was where the x rays suggested the ileo-caecal junction); mobilized with difficulty. Ileo-caecal resection—lateral ileo-colic anastomosis—sulphathiazole powder locally—drainage of retroperitoneal tissues—abdomen closed. Emetine 8 gr. was given after operation. Uneventful recovery; secondary anaemia treated with blood transfusion and iron.

Even after its removal and macroscopic examination the tumour was thought to be an amoeboma until examined microscopically.

Pathological Report (Capt. A. W. Morgan, R.A.M.C.)—"Specimen consists of 8 in. of terminal ileum, a caecal tumour, and the ascending colon. The terminal ileum disappears into the tumour and there is a fistula between the ileum and the mass. On section the tumour is pale white, mottled with areas of fat, haemorrhage, and necrosis. The last 2 in. or so of ileum winds through its substance. The tumour has pushed upwards into the lumen of the ascending colon, terminating in a valvular opening (? site of ileo-caecal valve)."

Histology.—Adenocarcinoma, Grade II, with mucoid degeneration. One gland examined was not invaded. No evidence of amoebiasis.

The marked decrease in size of this tumour following the use of emetine, the finding of amoebae in the stools, and amoebic ulceration in the rectum, make it probable that this patient originally had both a carcinoma and an amoeboma, and the latter disease had reacted to the emetine.

Amoebic Typhlitis and Appendicitis

The differential diagnosis between amoebic typhlitis, acute appendicitis, and appendix abscess often presents difficulty, since the most important diagnostic fact—the typical history of acute appendicitis—may not be forthcoming, and, further, obstruction to the lumen of the appendix may result from amoebic infection.

Operation is undesirable in the presence of uncomplicated active amoebiasis of the caecum and appendix: a high mortality rate was reported in the Chicago epidemic. Surgical treatment, however, must not be delayed when the typical history, symptoms, and signs of acute "obstructive" appendicitis are encountered within the first 24 to 36 hours, whether or not the patient has amoebic dysentery. If at operation both the caecal wall and the appendix are found to be uniformly inflamed

and the case is likely to be dysenteric, it is best not to remove the appendix unless it is obstructed and/or its blood supply is in jeopardy. Further, when there is typhlitis only, a normal appendix should be left. When appendicectomy is necessary in the presence of inflammation of the caecal wall at the appendix base, sulphathiazole or sulphanilamide powder should be sprinkled locally and adequate drainage instituted. Immediate post-operative specific treatment of amoebiasis will prevent local complications, such as skin ulceration or persistent faecal fistula.

When a mass is palpable in the right iliac fossa, though it may be impossible to distinguish between an appendix abscess and amoebiasis, its treatment, however, is the same—namely, observation of the patient and of the mass and a strict Ochsner-Sherren regimen. If indications for surgical intervention arise, treatment should be limited to simple drainage with minimal disturbance of the inflamed mass.

When amoebic infection is proved or suspected emetine should be administered. It may be assumed that a mass resolving spontaneously without emetine treatment is undoubtedly not due to amoebiasis.

Amoebic Ulceration of Anal Skin: Amoebic Fissure in Ano

Painful fissures are sometimes due to amoebiasis of the skin. They are usually multiple, but may be single. The edge of the ulcer is sharply defined and irregular, with undermining or sometimes slight heaping-up. The base has a dirty yellow and unhealthy appearance, with no surrounding induration and little inflammatory reaction, somewhat resembling synergic gangrene of the skin. Cutaneous amoebic ulceration vanishes in a dramatic way soon after the administration of emetine. One case undergoing treatment with carbarsone developed a typical amoebic anal ulcer: emetine produced an immediate improvement.

Operations on the Anal Canal and Rectum in the Presence of Amoebic and Bacillary Infection

The danger of operating upon haemorrhoids, fissure, etc., in a patient with recurrent diarrhoea soon became known. Painful, unhealthy, non-healing ulceration of the anal canal and rectum was seen in cases referred to the Centre for opinion. The cases had active bacillary or amoebic infection, or, when no specific cause could be found, sigmoidoscopy always revealed proctitis of varying degrees. One officer had been in a hospital for 2½ months with ulceration of the anus following haemorrhoidectomy performed soon after an attack of diarrhoea. The appropriate medical treatment and simple local irrigations soon produced a cure.

An instruction was circulated pointing out these dangers, and sigmoidoscopy was carried out before every rectal operation. It is unwise to do even a minor rectal operation within 6 weeks of an attack of diarrhoea, and dysenteric infection must always be excluded before operation.

The accompanying photomicrographs are reproduced by the courtesy of Dr. Habibi, pathologist, the Faculty of Medicine, Iran.

AN INVESTIGATION INTO THE USE OF SULPHASUXIDINE IN OPERATIONS ON THE RECTUM AND COLON

BY

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It has been shown by previous workers that administration of succinyl sulphathiazole (sulphasuxidine) causes profound changes in the stools of the recipient, the change most relevant to the present discussion being the decrease in the number of Gram-negative organisms. Prior to the work described here in connexion with the surgery of the rectum and colon, some investigations were carried out to study the action upon the intestinal organisms of sulphasuxidine, sulphaguanidine, and sulphathiazole. The technique used was that of Holt and Wright (*J. Path. Bact.*, 1942, 54, 248). 0.5 g. of faeces was thoroughly mixed with 4.5 c.cm. of nutrient broth, and serial