Respiratory

The identification of specific air-borne allergens by means of the protein skin tests presents similar practical difficulties. Dust in any form, whether the result of high winds in dry weather, spring cleaning, or any domestic or industrial activity that results in a dust-laden atmosphere, is a frequent cause of asthma attacks, many of which can be prevented by a little forethought in the home. On the other hand, the child with the lung-damage type of asthma seems to be more sensitive to damp weather, and particularly to sudden changes in atmospheric conditions.

A healthy, unobstructed upper air passage and correct breathing habits are of primary importance. Without trespassing too deeply into the realm of the ear-nose-and-throat surgeon, one may venture to express the opinion that operation should seldom be undertaken except for the elimination of infection or the relief of obstruction secondary to chronic infection. A careful distinction has, of course, to be made between the latter and the intermittent obstruction due to oedema of the pallid mucous membranes of the nasopharynx and sinuses which is a feature of allergic disease.

It is certainly most unwise to make any optimistic promises of permanent relief from the asthma symptoms as a result of any operative procedure. Fifty-seven children under my care have had their tonsils and adenoids removed. The results, noted at least six months after operation, were: in 12 marked improvement was reported; in 36 no change in the incidence or severity of the attacks; in 6 the asthma was said to have been worse; and in 3 the operation was blamed for the onset of the disease.

Having ensured a free and unobstructed upper air passage, breathing exercises, based on the suggestions contained in the handbook published by the Asthma Research Council (1944), undoubtedly supply one of the most beneficial forms of therapy in this disease.

The child suffering from the lung-damage type of asthma presents a particularly difficult problem. Prevention, by treating those twin menaces to the organic structure of the lung, measles and whooping-cough, with even greater respect than usual in a potential asthma subject, and insisting upon protracted convalescence until the symptoms and physical signs of any respiratory infection in his early years have cleared completely, must be our first aim. When this type of asthma is already established it demands most careful investigation of the whole respiratory tract, with the co-operation of the bacteriologist, radiologist, and ear-nose-and-throat surgeon, in addition to the general measures of treatment.

Conclusion

A steady tendency to diminution in the severity of the attacks and cessation of symptoms for increasingly long periods as the child grows older was noted in the majority of these children. Those who develop symptoms in infancy and present the most uncomplicated form of the disease yield the most promising results, provided the diagnosis is prompt and the parents are intelligent and co-operative. Those suffering from the lung-damage type of the disease did not show the same promising progress. A follow-up has not been attempted. To be of any value a survey in ten or twenty years' time, noting the effects of adolescence and, in females, the events of the reproductive cycle, would be the only satisfactory way of pursuing the inquiry.

As has been emphasized, prognosis is vastly influenced by the character of the parents and the home circumstances. A temporary change of surroundings, various combinations of drugs, or specific or non-specific protein injection therapy may bring about an improvement of variable duration, often a most satisfactory and sustained remission. It may be added that the incidence of an acute illness, an operation, or indeed any abrupt change in the normal routine of life may bring about the same happy though often temporary alleviation. One or other of the former methods will often help to steer the child through a particularly severe phase of the disease, and a remission brought about by one of the latter events should be exploited to the full by insisting on prolonged convalescence. A subsequent relapse will, however, cause serious loss of confidence in both child and parent if the importance of taking the long-term view is not constantly inculcated into all concerned.

No rapid results, but a steady improvement in the later years of childhood, can be promised, and must be tacitly assumed by all as an integral part in the treatment and management of the disease.

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PERFORATION OF THE ILEUM IN ENTERIC FEVER

NOTES ON 22 CONSECUTIVE CASES

BY

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Few diagnostic problems are more urgent and yet more difficult to solve than those encountered in perforated typhoid ulcer. A recent analysis of the cases which have occurred during the last eleven years at the Kolar Gold Field Hospital, South India, has confirmed the belief, based on clinical experience, that the picture and subsequent course of perforated typhoid ulcer in this locality differ in certain respects from the accounts generally presented in textbooks. The information obtained from the records of 22 ileal perforations treated in this hospital between 1935 and 1945 is thought to be interesting enough to form the subject of a short paper.

Textbook Description

Perforation of the ileum occurs in a little under 5% of all cases and causes 30% of all deaths in enteric fever. It is said to be especially common in cases characterized by diarrhoea, meteorism, or haemorrhage from the bowel, and is most frequent towards the end of the third week, but may occur at any time after the second week. Diagnosis is difficult, for few of the classical signs and symptoms of perforation occur in the late stages of fever, when toxaemia is severe and the patient may be almost moribund. Authorities state that the first sign is often a rigor, sharp or sudden pain in the right iliac fossa or lower abdomen, with unusual tenderness and rigidity. One source of information suggests that collapse is unusual, but another gives sudden collapse as a common initial symptom. The temperature may fall temporarily or may be unaffected, while the pulse rises. After perforation a deceptive improvement may occur. The onset is so insidious in some cases that at necropsy unsuspected general peritonitis is found. If the affected loop lies in the pelvis, frequent and painful micturition or rectal tenesmus, and tenderness on digital examination, may be prominent symptoms. The pain in the abdomen is severe and persistent, increasing distension appears with early rigidity, and liver dullness may be obliterated. Opinions concur that an early polymorphonuclear leucocytosis generally accompanies the perforation but is an inconstant sign, while general leucocytosis does not appear early enough to be of value. The perforation generally lies within 12 in. (30 cm.) of the caecum, but may be elsewhere. Two or more perforations occur in 10% of cases. The mortality is admitted to vary from 75 to 95%, while perforation in ambulant cases is thought to be particularly high.

Incidence in Present Series

The series of cases to be described varies in some respects from the above clinical picture. During the eleven years 1935–45, 1,077 cases of enteric fever were treated in the Kolar Gold Field Hospital, and a total of 11 perforations occurred in patients under treatment—an incidence of 1%. Of these cases 10 were in hospital at the time of perforation and 1 was in bed at home. A further 11 perforations took place among patients with ambulant enteric fever, and these already had perforation with general peritonitis on admission. Twenty-two cases of perforated typhoid ulcer have thus been operated upon in this hospital in the period under review. Though the

incidence of perforation in ambulant cases cannot be estimated, the occurrence of the same number of perforations in ambulant as in non-ambulant cases is evidence of the prevalence of such mild enteric fever that the sufferers do not seek medical attention.

The hospital treats Indian mining employees (25,000), and Anglo-Indian and European employees and their families (3,000). The employees are almost all male, their ages varying from 15 to 65 years. All 22 cases were in males; the eldest was 50 and the youngest 6, the average age being 28, which is probably a little lower than the average age of employees. Seven were employed on surface work, and the remainder were underground workers. Two children aged 6 and 13 years are included. The younger was a schoolboy, a non-ambulant patient who spent eight days in bed at home before perforation; the elder was ambulant; both recovered.

Trauma.—One patient received a contusion of the abdominal wall while at work on the day of admission. It was conceded that the accident was a possible factor in causation of his perforation.

Preliminary Course

The length of history before perforation in non-ambulant cases, including illness before admission, was 9, 5, 8, 13, 11, 9, 12, 12, 8, and 18 days; average, 11 days. In two cases the length of history was not obtainable from the records. In ambulant cases symptoms of various kinds were experienced for 0, 3, 0, 15, 2, 3, 7 days before perforation. The average in these cases was 4 days, but in four cases no mention of this detail was recorded. Haemorrhage did not occur in any case prior to perforation. Diarrhoea was a preliminary feature in only one case of the series, and the occurrence of meteorism was not a prominent sign in any case before peritonitis.

Symptoms and Signs

Symptoms at Onset.—(*a*) Pain: In every case in which the symptoms at onset were recorded abdominal pain occurred. It was described as of sudden or shock-like onset in 4 cases, and in 6 it was severe when it began. In 4 the pain was chiefly in the lower abdomen; in the remainder it was general or referred to the vicinity of the umbilicus. (*b*) Irritation of Pelvic Viscera: Pain was the first symptom in all but one case, in which a desire to micturate preceded it. One other case had urinary symptoms or pain on micturition soon after the onset of abdominal pain. Two patients had symptoms of rectal irritation in the form of several loose motions after abdominal pain had started. In one of these a little blood was present in the faeces. (*c*) Vomiting: This was present at the onset in 5 cases, and had occurred a day or two before perforation in one other case (ambulant). Only two patients vomited more than once; one of whom vomited twice, another five times. (*d*) Rigor: Two patients had a rigor at or soon after perforation. (*e*) Temperature and Pulse: The average temperature and pulse rate on admission in ambulant cases were 100.2° F. (37.9° C.) and 110, with extremes of temperature of 97° and 102.6° F. (36.1° and 39.2° C.), and of pulse rate of 80 and 152. The patient whose temperature was 97° was the only one in the series who was afebrile on diagnosis. In the non-ambulant group the average temperature and pulse rate on diagnosis were 102° F. (38.9° C.) and 109, with extremes of 99.6° and 103.6° F. (37.55° and 39.8° C.) and of 88 and 130. (*f*) General Conditions: In 13 cases this was recorded or could be deduced from the records as follows:

General Condition	No. of Cases	Result	
		Recovered	Died
Good	1	1	0
Fair	7	3	4
Poor	4	0	4
Collapsed	1	1	0

Later Symptoms and Signs.—Careful notes of the degree of pain, tenderness, and rigidity at the time of examination were present in the records of 16 cases. (*a*) Pain: Severe in 8, and of moderate intensity in 8. It was general or around the umbilicus in all except one, in which it was worst in the iliac fossae. (*b*) Rigidity: This was severe in 4, moderate in 8, mild in 2, and absent in 2. It was greater in the lower abdomen in 3. (*c*) Tenderness: This symptom was severe in 5, moderate in 8, and mild in 3. It was greater in the right iliac fossa in 2, in the left iliac fossa in 1, in the lower abdomen in 2, and in the epigastrium in only 1 case. (*d*) Liver dullness was mentioned in only 5 case notes; it was present in 2, diminished in 2, and absent in 1. In 1 case shifting dullness was detected.

Blood Examination

Early total white blood cell counts were recorded in 5 cases, with a maximum of 12,000 leucocytes per c.mm., a minimum of 2,400, and an average of 7,500. The differential count was recorded in 4 cases as follows:

	Maximum %	Minimum %	Average %
Polymorphs	80	65	76
Lymphocytes	30	15	21
Mononuclears ..	5	2	3
Eosinophils	0	0	0

Blood was taken for a Widal test on the day of operation or within the next two or three days in 13 cases, and proved negative in 5. Haemagglutinins were employed, as the native community among which these cases occurred is not protected by T.A.B. inoculation. The results are:

Dilution:	1/50	1/100	1/125	1/150	1/250
No. of cases ..	2	1	2	1	2

Agglutination was highest against *B. typhosus* antigen in all but one case, in which *B. paratyphosus* A was agglutinated 1/50.

Surgical Procedure

In non-ambulant cases the time interval between perforation and operation averaged 11 hours, with extremes of 2 and 20 hours. In ambulant cases the exact period could be ascertained only in 4, with extremes of 7 and 26 hours, and an average of 13 hours. Among those with accurate records of time intervals, of 6 cases repaired within 12 hours 4 recovered; of 3 repaired from 12 to 24 hours after onset 2 recovered; and of 2 operated on from 24 to 36 hours after operation 1 recovered.

In all cases anaesthesia was induced either by nitrous oxide and oxygen or by chloroform–ether mixture 1 : 12, and was followed by open ether. A right paramedian incision was used in every case. When the correct diagnosis was established before operation a small low incision was made—low for convenience of access, and small to minimize the risks or extent of subsequent ventral hernia. The latter complication was a distinct hazard in cases of typhoid perforation, as many wounds in those who recovered became infected. The perforation was repaired with interrupted sutures through all coats transversely and buried by a continuous seromuscular stitch. Omentum was sewn over the repaired site. Later cases had 10 g. of sterile sulphanilamide powder intraperitoneally without any apparent influence on mortality. All were drained by separate suprapubic stab wound and rubber tube to the pelvis. The site of perforation was recorded in the notes of 13 cases. In 8 the following estimated distances from the ileo-caecal junction were observed: 12, 6, 9, 18, 3, 12, 15, 10 in. (30, 15, 22.5, 45, 7.5, 30, 37.5, 25 cm.). The average distance between a perforation and the ileo-caecal valve was thus 11 in. (27.5 cm.). In the 5 remaining cases the perforations were described as being in the lower ileum.

Post-operative Course and Mortality

Wound infection was a troublesome sequel in 8 cases, and was classified as severe in 5, moderate in 1, and mild in 3. One case had no wound infection, and most of the remainder died before definite evidence on this point was obtainable. Among those who died the period of survival after operation varied from 2 hours to 6 weeks; average, 7 days. Excluding the individual who survived 6 weeks the average period of survival was 4 days. Including those who died the average duration of fever after operation was 12 days; excluding deaths it was 18 days.

There were 5 deaths in the 11 ambulant cases, and 7 deaths in non-ambulant cases. The total mortality was therefore 55%; that in ambulant cases was 45%, and in non-ambulant cases 64%. The 7 deaths in non-ambulant cases represent the mortality from ileal perforation among the 84 deaths in 1,077 cases of enteric fever—i.e., 8% of all deaths. Mortality from all causes in enteric fever was 8%, and from perforation 0.7%.

Necropsy was not performed on patients dying from enteric fever. As it is possible that some died with unsuspected ileal perforation and general peritonitis the figure of 1% for the incidence of perforation in 1,077 cases may be somewhat low.

Table showing Mortality from Enteric Fever during the Period 1935–45

Year	All Cases Treated in Hospital			Cases with Perforation (Ambulant and Non-ambulant)	
	No.	Deaths	Mortality %	No.	Deaths
1935	21	2	10	1	—
1936	20	2	10	1	1
1937	59	5	8	2	1
1938	144	10	7	4	2
1939	48	9	19	1	—
1940	119	12	10	6	5
1941	122	6	5	1	—
1942	175	13	7	1	—
1943	148	10	7	—	—
1944	142	9	6	5	3
1945	79	6	8	—	—
Total ..	1,077	84	9	22	12

Discussion

Haemorrhage from the bowel did not occur in any case before perforation; persistent diarrhoea occurred only once, and meteorism severe enough to find special mention in the notes not at all. Rigor was an initial sign in only two cases. Four of the series conformed to the recognized description of irritation of the pelvic viscera by proximity of the perforated loop; dysuria and rectal tenesmus were present. Pain was the predominant initial symptom, and it was usually general or situated around the umbilicus. In only a small proportion was the first pain described as low, and it was never referred to the right iliac fossa.

When a clearer clinical picture had had time to develop, the symptoms and signs remained chiefly general, and reference to the iliac fossae was not the rule. Rigidity was greater in the lower abdomen in only 3 cases; and tenderness was greater in the right iliac fossa in 2, in the left iliac fossa in 1, in the lower abdomen in 2, and in the epigastrium in 1. It is clear that localization of symptoms and signs to the right iliac fossa in these cases was unusual. This is not unexpected. If the perforation occurred at the ileo-caecal junction pain in the right iliac fossa might logically be expected, but as the perforation was an average of 11 in. (27.5 cm.) from the junction—that is, about as far away as the average width of the abdomen—it is obvious that localized signs, if any, may appear anywhere in the abdomen. Some patients had no rigidity, slight pain, and mild tenderness—symptoms associated with some cases of enteric fever without perforation.

Fall of temperature to below normal was present in only one case—an ambulant one. A relative fall doubtless occurred in some cases, but was certainly not great, as the average temperature when diagnosis was made was 101° F. (38.3° C.). Increase in pulse rate takes place at the onset, and, as in other forms of peritonitis, the rate increases progressively unless a response is obtained by specific treatment. It seems that the general condition at the time of diagnosis is a useful prognostic sign.

The average time interval between perforation and operation was 11 hours. This long period is evidence that the onset was dissimilar to the catastrophic nature of perforation of a gastric or duodenal ulcer. In several cases the onset was particularly insidious; the patient was examined either as the result of some mild deterioration in condition noticed by the nurse, or during the routine daily round, and found to have signs of general peritonitis. Questioning did not reveal any outstanding symptoms indicating beyond doubt the actual time of perforation. Thus in four cases the interval between perforation and operation was doubtful.

The figures given of recovery rate in relation to time lapse do not illustrate the advantage of early operation, and are to be disregarded as not representative of the whole series. Blood counts were performed shortly after clinical examination had suggested the presence of peritonitis: although the total leucocyte count was within normal limits, the polymorphonuclear leucocytosis is considered to be of diagnostic value.

The early occurrence of perforation is noteworthy. Excluding ambulant cases (date of onset unknown), the average interval between commencement of illness and perforation was 11 days. This is widely at variance with the usual belief that the commonest time for perforation is the end of the third week. The fact that perforations do occur at this early period is substantiated by the average duration of fever after operation. Excluding deaths it was 18 days: even including deaths (average survival period 7 days) it was 12 days.

In the whole series of 1,077 cases of enteric fever 1% developed perforation of the ileum, in contrast with the usual expectation of 5%. This complication accounted for 8% of the total deaths, against the usual total of 30%. Perforation is five times less frequent than is mentioned in textbooks, and peritonitis as a cause of death four times less frequent; subject to the proviso that this conclusion has not been verified post mortem.

The mortality from perforation in this series is low when compared with the usual figures published, being 55% for the whole series and even lower in ambulant cases—namely, 45%. This is at variance with the impression that perforation of a typhoid ulcer in an ambulant patient is of particularly grave prognosis, and is no doubt associated with the absence of severe toxaemia preceding perforation in the local type of case.

To sum up, the most striking features emerging are:

1. Low mortality rate in a long series of cases of enteric fever.
2. Low incidence of perforation of the ileum.
3. Low mortality among those which did perforate.
4. The early period in the disease at which perforation took place.
5. Other variations from normal of subsidiary importance are the infrequency of diarrhoea, haemorrhage, or meteorism before perforation, and infrequency of rigors at onset.

The explanation of the first three factors must be either that enteric fever contracted in this part of Southern India is of a relatively benign variety, or that the type of treatment the patients received was attended with more success than usual. It is true that diarrhoea, haemorrhage, and meteorism—signs of a severe attack—were infrequent. Moreover, in my experience the recurrence rate is much less than the usually accepted 10%. On the other hand, it is to be expected that perforation would occur later in the course in milder cases, and an adequate explanation of its early appearance cannot be offered.

The treatment of enteric fever has been symptomatic, but a radical departure from common practice has been made in the abandonment of a liquid diet. Perforation of the intestine in enteric fever almost always takes place in the last 3 ft. (91.5 cm.) of the ileum, usually in the last foot (30.5 cm.), and ordinarily digestible food has been reduced to the physical characteristics of a liquid when it reaches this situation. It therefore appears to be not only unobjectionable but probably beneficial to permit patients with enteric fever to indulge their appetite for suitable solid food without restriction.

No attempt has been made to enforce any particular diet, but the usual dietary habits of the workmen have been followed according to their desires. In health the workman partakes of coffee, bread, or conjee (cereal boiled to a paste in water) in the early morning, and large meals of curry (highly flavoured and coloured spiced meat) and rice at midday and in the early evening. When sick the patient resorts to milk, conjee, coffee, and bread. On admission to hospital cases of enteric fever are at first given a diet of milk, coffee, conjee, and bread-and-butter. When appetite improves or the patient can comfortably take extras, eggs, milk puddings, soup, fruit, fish, and mince are added, and if the patient desires it he is given curry and rice once or twice a day according to his requirements. Patients

are always eager to take a full diet as soon as they are able, and this attitude is encouraged. Constipation is the rule, and diarrhoea is uncommon. Purgatives are never given; enemas only infrequently.

It may be that enteric fever in Kolar is comparatively mild, but it is thought that the dietary treatment has perhaps influenced prognosis for the better. At any rate, the patients have only enteric fever to contend with—the additional factor of semi-starvation has been eliminated. There is room for argument as to whether this form of diet has had a beneficial influence, but mortality statistics suggest that it has not had a deleterious effect.

Summary

A series of 22 consecutive cases of perforation of the ileum in enteric fever is described.

Perforation occurred unusually early—in the middle of the second week.

In 1,077 cases of enteric fever in hospital 11 perforations were detected. An equal number were met with in ambulant patients, indicating the existence of widespread ambulant enteric fever in this community.

The low mortality from enteric fever, the low incidence of perforation, and the comparatively low mortality from this complication are discussed with reference to the virulence of the infection met with and the possible effect of the treatment given.

I have much pleasure in expressing my thanks to Dr. W. B. Roantree, Chief Medical Officer, Kolar Gold Field, for his invaluable help in the preparation of this article, and I acknowledge my indebtedness to him and to Dr. J. M. Daly for allowing me to use the records of the cases which they treated.

AMOEBIASIS IN ITALY

BY

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Recent accounts of amoebiasis occurring in India and Burma (Leishman and Kelsall, 1944; Payne, 1945) have described the difficulties of treatment and the high relapse rate, while treatment in the United Kingdom of men invalided from these theatres has again given poor results (Lamb and Royston, 1945; Bomford, 1944). The clinical picture of amoebiasis in Italy is different. Here the more obvious dysenteric symptoms are usually absent, and the chief difficulty is in the diagnosis of the chronic or the latent case. Once diagnosed the response to treatment is good and the relapse rate low. The present paper gives an account of the disease as it has been encountered in a New Zealand General Hospital, C.M.F., during the past year.

During the period July, 1944, to June, 1945, 4,601 patients were admitted to the Medical Division, and the relative frequency of "tropical" diseases is shown in Table I. It will be seen that amoebiasis accounts for over half the admissions in the diarrhoea–dysentery group and was 2½ times as common as malaria. This article is based on the 258 cases of amoebiasis seen during this period.

TABLE I.—*Total Admissions July, 1944, to June, 1945 (4,601)*

Infective hepatitis	2,016	Dysentery, bacillary	104
Amoebiasis, intestinal	252	Malaria	108
Amoebiasis, acute hepatic	6	Other diseases	2,006
Diarrhoea	109		

The duration of symptoms before admission varied from a few days to 18 months, with an average of 3–4 months. Of the 252 cases of intestinal amoebiasis, 82 were admitted primarily for other diseases, such as infective hepatitis, peptic ulcer, ascariasis, or anxiety neurosis, and the disease was in a latent or a chronic stage.

Symptoms

Diarrhoea.—A history of diarrhoea was given by 204 cases (81%). Of these, 70 were admitted with an acute attack, and 134 gave a history of mild recurrent attacks lasting 1 to 3 days and subsiding readily with R.A.P. (Regional Aid Post) treatment. True dysenteric symptoms of blood and mucus in the stools were seen in only 28 cases, and of these 16 had an associated bacillary infection. Forty-eight cases (19%) had had no attacks of diarrhoea since coming overseas.

Pain.—Complaints of abdominal pain were made by 106 (42%) patients. This was of three main types: (*a*) Recurrent attacks of aching, lower abdominal pain, particularly situated in the right iliac fossa and often associated with looseness of the bowels. (*b*) Epigastric pain or discomfort, related to food and resembling the pain of a peptic ulcer. Associated with this type of pain were often dyspeptic symptoms—anorexia, flatulence and nausea—and many patients were admitted with a tentative diagnosis of peptic ulcer or functional dyspepsia. Four cases had a radiologically proved duodenal ulcer in association with amoebiasis. (*c*) Aching pain in the right subcostal region, worse on lying on the right side, and often associated with a flatulent type of dyspepsia.

General Symptoms.—Vague general symptoms of lassitude, malaise, anorexia, and slight loss of weight were common, and in these cases a history of diarrhoea was usually obtained only by direct questioning. Weight loss was never severe, and no cases showed any marked evidence of toxaemia or debility.

Physical Examination

The most valuable physical sign in the diagnosis of intestinal amoebiasis is tenderness or thickening in the region of the caecum, and this was present in 63% of cases. There was often tenderness over both the ascending and the descending colon. Liver enlargement was found in 103 cases (41%), of which 37 had a coexisting infective hepatitis. This group will be discussed later. No help in the diagnosis of the uncomplicated case of amoebic dysentery was obtained from either the blood count or the sedimentation rate.

Sigmoidoscopy

This is a most valuable aid to diagnosis, and its routine use in all cases with a history of chronic diarrhoea or of vague dyspeptic symptoms occurring in a country where amoebiasis is prevalent would prevent many cases being missed. In the present series of 252 cases with positive stools, the majority of which were of the mild chronic type, 70% showed abnormal findings on sigmoidoscopy. This figure would have been higher had it been realized earlier that the type and extent of the ulceration seen in Syria and North Africa were uncommon in Italy and that the changes here were much less marked but none the less characteristic. The following changes have been observed:

(*a*) *Small superficial ulcers,* about 1–2 mm. in diameter, but seen on the valves and very easy to miss because of the frequent absence of a surrounding area of hyperaemia. In most cases, ulcers, if present, will be found on the lower four inches (10 cm.) of the bowel.

(*b*) *Pitting of the Mucosa.*—The treated case of amoebiasis may show pitting of the mucosa at the site of ulceration for several weeks afterwards. This appearance occurring in an untreated case, giving a history of intermittent diarrhoea (often admitted to hospital when the bowels have returned to normal), is highly suggestive of amoebiasis, and stool examination after purgation will show the *Entamoeba histolytica* in nearly all of these cases.

(*c*) *Granular proctitis* or patchy areas of granularity, often extending upwards into the colon, associated with excess of mucus on the bowel wall and often scattered submucosal haemorrhages. These changes are non-specific, but are often associated with an amoebic infection of the bowel. Amoebae may sometimes be found in mucosal scrapings from the ulcerated and pitted areas, but in the latent or chronic cases the percentage of positive findings obtained has not been high.

Stool Examination

The most certain method of diagnosing amoebiasis is the demonstration of the typical vegetative forms of *E. histolytica* in the stools. In the rare acute type of case passing blood and mucus in the stools, the finding of the entamoeba is a matter of no great difficulty if a fresh warm stool is examined. In the mild chronic type of case, which provided 72% of the total, considerable difficulty has been found in demonstrating amoebae, even when on clinical and sigmoidoscopic examination the diagnosis seemed certain. The usually advocated policy of examining six daily stools produced negative results in most