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FACTORS AFFECTING THE OUTCOME OF
TREATMENT OF PULMONARY TUBERCULOSIS
IN SUB-OPTIMAL CONDITIONS:

An 18-month Follow-up of 224 Patients

By

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Intestinal Obstruction Associated with Amoebic Colitis in Infancy

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Several non-surgical conditions are known with manifest intestinal obstruction as a complication in infancy. Amongst these, generalised sepsis, enteritis, adrenal insufficiency, hyperthyroidism, lactose intolerance, haemolytic jaundice and respiratory distress syndrome are not uncommon during the first few days after birth (Takashi *et al.*, 1968).

Abdominal distension, pain, absolute constipation and late vomiting in older infants usually indicates obstruction of the colon, especially if, on upright X-ray of the abdomen, there are multiple fluid levels. The passage of blood per rectum strongly indicates intussusception, but if toxæmia and pyrexia are present a non-surgical condition should be suspected. Nevertheless, intussusception may occur secondarily to infection (Raghavachari, 1969).

The following three cases presented primarily with abdominal distension, pain, vomiting as a late feature, constipation, failure of return of flatus or stool after an enema, and fluid levels on upright X-ray.

CASE 1

African female, Z, aged nine months, was admitted on the 15th September, 1969, with a three-day history of blood-stained diarrhoea. She was not vomiting and was taking feeds. On examination she appeared well nourished, but slightly dehydrated, with a temperature of 104°F. and a fast pulse. The chest was clinically clear. The abdomen was slightly distended but soft; no masses were felt; the liver was palpable but not noticeably tender, and the spleen was not enlarged.

In the stool no ova were found or amoeba seen, but a *Proteus* organism was grown. The urine was normal. Blood slides showed *P. falciparum* (ring forms). X-ray of chest was clear; C.S.F. clear.

A clinical diagnosis of malaria with bacillary dysentery was made. The patient was treated with chloroquin, tetracycline, kaolin and intravenous half strength Darrows.

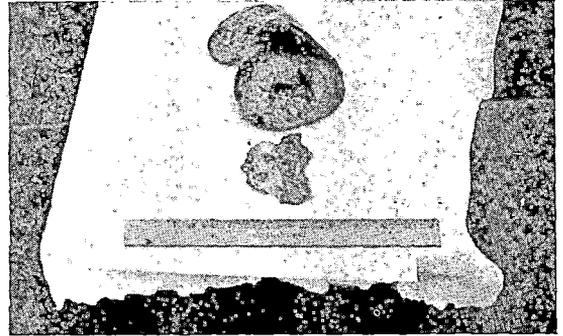


Fig. 1—Case 1—Large amoebic abscess of liver. The colon is congested. Several deep ulcers are present.

Progress

Over the first four days there was clinical improvement with a drop in temperature, cessation of the diarrhoea and a return to normal hydration. On the eighth day she looked ill with a distended abdomen and crepitations at the base of the left lung. There was no vomiting. X-ray of the chest showed a small consolidation at the base of the left lung. Two days later she vomited for the first time and passed a small watery, bloody stool.

The following day the crepitations and dullness had increased and at this stage her pulse rate was 160 per minute, with general deterioration of her condition. The abdomen was grossly distended with audible bowel sounds present. An enema yielded nothing and an X-ray of the abdomen showed multiple fluid levels (Fig. 2). Laparotomy was considered, but in view of the general condition of the patient it was decided to withhold surgery. Despite fluid, antibiotics and digoxin, the patient died on the 29th September.

At autopsy the significant findings were that the bowel was grossly distended as far as the transverse colon. The distal colon was collapsed. There were numerous fleshy mesenteric glands. The colonic mucosa was covered with typical deep amoebic ulcers (Fig. 1). There was a large liver abscess which had ruptured into the left pleural cavity (Fig. 1), yielding 150 c.c. of "anchovy sauce" pus.

On microscopy, the pathologist reported that "although amoeba are not demonstrated, the appearance is consistent with amoebic colitis and liver abscess. The lung shows interstitial pneumonitis."

CASE 2

African male, P, aged one year two months was transferred from Hartley District Hospital

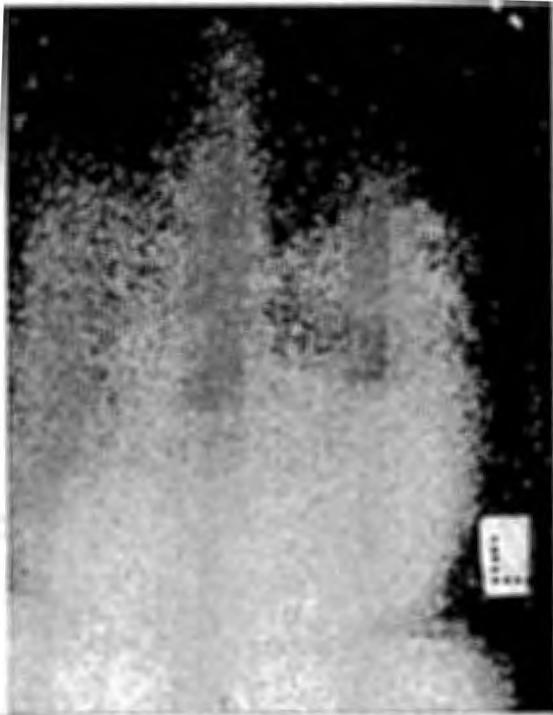


Fig. 2—Case 1—Abdomen grossly distended. Fluid levels present.

as a case of acute intestinal obstruction. The mother gave a history that he had been passing bloody stools for two days before admission, but had not vomited and was not coughing. On examination he was a dehydrated, slightly pyrexial, toxic-looking child with basal crepitations of both lungs and a rapid pulse. The abdomen was grossly distended and bowel sounds were present. Rectal examination revealed nil of note, but particularly no blood on the examining finger. Upright X-ray of the abdomen showed gross distension with multiple fluid levels (Fig. 3). A diagnosis of intussusception or other form of intestinal obstruction was made. Treatment: re-hydration with intravenous half strength Darrows, suction, and laparotomy under general anaesthesia was instituted. The baby died after the induction of anaesthesia and before the abdomen was entered.

At autopsy, the only significant findings were in the abdominal cavity. The small bowel and proximal portion of the colon were grossly distended. There were numerous fleshy mesenteric glands. No mechanical cause for obstruction and in particular no evidence of peritonitis could be found. The descending and sigmoid colon were collapsed. The whole of the large bowel mucosa

and that of the appendix appeared to be covered with small reddish patches of granulation tissue arising from a totally ulcerated bed. The liver appeared normal. The mucosal destruction was too great to be typically amoebic. On microscopy the large bowel mucosa had been destroyed, leaving granulation tissue alone. The lymph node sinuses contained quite numerous plasma cells and phagocytes, including erythrophagocytes. Amoeba were not seen.

CASE 3

African female, M, aged two months, was admitted on the 28th September. The mother complained that the infant had suffered from diarrhoea with no vomiting for four days before admission. The day before admission the abdomen had become very distended, and there was no further stool. On examination the infant was dehydrated and the abdomen was grossly distended. She died soon after admission before any further investigation could be initiated.

At autopsy, the only significant findings were in the grossly distended abdomen. The peritoneum was healthy, but the mesentery contained numerous large fleshy glands. The small bowel and the



Fig. 3—Case 2—Abdomen grossly distended. Multiple fluid levels.



Fig. 4—Case 3—Early necrotic changes in liver. Probably abscess formation. Congested colon contains several deep ulcers.

large bowel to the splenic flexure were enormously distended; the descending colon and sigmoid were collapsed. The descending colonic mucosa contained numerous deep red margined ulcers (Fig. 4). The liver was grossly enlarged, containing distinctive pale areas on cut section suggestive of early necrosis, and which we thought might be an early stage of amoebic abscess formation (Fig. 4).

Microscopically these findings were typical of amoebic ulceration of the bowel—with early liver involvement.

DISCUSSION

Andreason (1958) in his chapter on *Abdominal Emergencies in the Tropics* and Hamilton Bailey (1958), *Emergency Surgery*, discuss intestinal obstruction associated with colitis, but this is not mentioned by Davey (1968) in his *Companion to Surgery in Africa*. Andreason says that the condition is very common, but that frequently the sub-acute as opposed to the acute variety of the condition is presented; that most cases fall into the quasi emergency category, and there is ample time to investigate the large gut by means of stool examination, sigmoidoscopy and barium enema. In this way cases of colonic spasm, as opposed to an organic obstruction, can be segregated. He also states that the obstructive symptoms are occasionally due to spasm alone, but that more often the spasm is associated with organic partial obstruction due to extra-intestinal inflammation. This was not present in our cases.

Wangensteen (1942) states that entero-colitis may be mistaken for intussusception, but in the latter the passage of blood and mucus is usually small in amount and frequently has no faecal odour. He points out that both fever and constitutional disturbances are marked from the onset of the illness in entero-colitis, but that it is well

known that intussusception very often follows on inflammation of the bowel.

Ian Aird (1949) says that spastic ileus has a special and peculiar relationship to intussusception and that it may perhaps initiate intussusception. He believes that the term spastic ileus, used more commonly at the turn of the century, was nevertheless a valuable one, being more easily advanced as a reason for having operated. The effects of spastic ileus may be severe and the term fits an unquestionable basic disturbance in intestinal physiology, quite as real as that present in paralytic ileus.

These references are the only ones of value to us in describing a clinical picture of obstruction due to colitis without peritoneal involvement.

A point we wish to touch on is the aetiology of the obstructive symptoms. We wonder perhaps if deep ulceration in the colon caused irritation or damage to the autonomic control of the bowel, leading to spasm in its distal portion, and thus giving rise to obstruction. We are quite sure that this condition is not a paralytic ileus of the whole bowel, for clinically there were bowel sounds present before death; and at autopsy, although the small bowel and the proximal large bowel were distended, the distal large bowel was collapsed and presumably before death was in spasm, thus causing the obstruction.

Although we did not demonstrate amoeba in the stool in these cases, the macroscopic appearance in two was typical of amoebic deep ulceration (Montgomery, 1965; Blacklock and Southwell, 1958), and in one this was supported by the typical liver abscess. In the other case the colitis affected the whole of the mucosa and the end result was doubtless bacterial, though amoeba may have started the process, as the ulceration was so deep (Montgomery, 1965).

According to the authorities at our disposal, the demonstration of amoeba is a chancy business in the absence of a good laboratory close at hand, and often difficult even with this amenity (Elsdon-Dew, 1968).

Amoebiasis is said to be uncommon in infancy, but has been reported, particularly in regions where hygiene is minimal and the nutritional state of the population poor (Eaton, 1968). In all three of our cases there was acute intestinal obstruction due to colitis. In two of the cases, and probably in the third, the colitis was caused by amoebae, though amoebae had not been demonstrated in the stools.

The three cases were infants and were too ill to subject to barium enema or sigmoidoscopy. Whilst these procedures had been considered, they were discarded under the pressure of our belief

at the time that the primary requirement was to explore the abdomen and to correct a mechanical obstruction. The literature has been singularly unhelpful, and, in particular, we have been unable to find any reference to "intestinal obstruction due to amoebic colitis in infancy", which might have helped in our earlier understanding of the problem.

We would like, therefore, to take this opportunity of reporting an amoebic liver abscess in an infant of nine months old, and a possible further case of amoebic liver abscess in a child of two months with typical amoebic ulceration of the colon.

Amoebiasis in the Gatooma/Hartley area of Rhodesia is endemic. Cysts are often found in routine stool examinations, but more often than not it is extremely difficult to decide whether or not their presence bears any relation to the illness of the patient, who may harbour numerous other intestinal parasites. On the other hand, many patients present with chronic symptoms suggestive of amoebiasis, though no amoebae are found. In either case the exhibition of amoebicides very often cures the symptoms.

SUMMARY

Three cases of intestinal obstruction in infants are presented. The obstruction was, in each case, associated with colitis and appeared to be a consequence of it.

In two of the cases the colitis was due to amoebic ulceration, and in one a large liver abscess which had ruptured into the left pleural cavity was present.

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