Original Articles.

ABDOMINAL TUBERCULOSIS IN INDIAN PRACTICE.*

By E. W. C. BRADFIELD, M.S., F.R.C.S.,
LIEUT.-COLONEL, I.M.S.,
General Hospital, Madras.

TUBERCULOSIS amongst cattle appears to be unknown in the Madras Presidency, and although no bacteriological investigations have been made, it is more than probable that this absence of bovine tuberculosis influences the incidence and character of the disease in South India. Tuberculous diseases of bones and joints, though not so commonly seen as in European hospitals, pursue a much more intractable course and are less amenable to non-operative forms of treatment. The economic problems of this country and the ignorance of people of the hospital class are contributory factors, but multiple lesions are more common and the surgical forms more frequently complicated by the presence of lesions in the lungs.

In 1924, 205 patients were admitted to the General Hospital, Madras, for surgical forms of tuberculosis or 2.1 per cent. of the total admissions. The sites of the disease were as follows:—

Abdomen	95
Lymphatic glands	39
Bones	35
Joints	28
Abscess (not classified)	3
Skin	2
Testis	1
Kidney	1
Larynx	1
Total	205

Abdominal tuberculosis (including enteritis 20) accounted for 95 of these patients or 0.97 per cent. of the total admissions to the hospital—a very much higher percentage than is found in European general hospitals, and a figure approximating to that of children's hospitals, where it generally averages from 0.05 to 2 per cent. of the total admissions.

The admissions to the medical and surgical wards were as follows:—

Tuberculous peritonitis	55
Tuberculous enteritis	20
Tuberculous cæcum	20

I have endeavoured to estimate the value of surgical treatment in what is undoubtedly a common form of tuberculosis in South India by a study of the First Surgeon's operation registers of the General Hospital for the past 6 years. These researches only show the type of disease found and the immediate results of operation. The difficulty of tracing Indian patients is very great, but some idea of the ultimate results can be obtained from my personal notes. Most of our enquiries remained unanswered. One patient who replied some months after the notices had been sent, had been so alarmed at the receipt of a letter that he had only opened it when he considered a safe period had elapsed.

The results of operation have been as follows:—

	Total.	Mortality.	Ratio.
Tuberculous peritonitis	43	14*	32·5%
Tuberculous cæcum—			
Excision of cæcum	14	2	14·2%
Ileo-colostomy	6	0	0
Simple laparotomy	7	0	0
Cæcostomy	1	1	

* 3 died within three months of leaving hospital.

I. Tuberculous Peritonitis.—1. *Ascitic Variety.* Of 3 patients operated upon, one with extensive involvement in the pelvis died after 2 months. This variety in its true form is comparatively rare, and not enough cases have been recorded to test the value of simple laparotomy, the treatment usually advocated. Operation, when fluid in the abdomen has been diagnosed, has generally revealed the presence of the numerous adhesions which characterise the next type

PLATE I.

Tuberculous disease of cæcum showing extensive polypoid formation of the mucous membrane, also thickening with stenosis at the junction of ileum and cæcum.

* Being part of the Annual Surgical Report, Madras General Hospital, 1924.

and in which the results of operative interference are very poor.

2. *Fibrous and Adhesive Variety.*—Of 40 patients submitted to operation, 11 died, a mortality of 27.5 per cent. Many of these patients were operated upon for acute complications. Perforation of tuberculous ulcers with resulting acute peritonitis accounts for 4 with 4 deaths, intestinal obstruction 5 with 3 deaths, infected tuberculous abscess 4 with 3 deaths. In 6 patients enlarged tuberculous glands were a prominent feature, and in two of these infection had taken place in chronic abscesses with fatal result.

PLATE II.

Tuberculous disease of cæcum showing tuberculous fibroid infiltration of the wall with stenosis.

The average age of the majority of these patients (22 out of 39) was between 20 and 30 years. In typical cases diagnosis is not difficult. Abdominal pain, sometimes with definite relation to taking food, and fever are complained of, while a doughy, distended abdomen, often with evidence of free fluid in the peritoneal cavity, sometimes with a tumour mass or with peristalsis due to chronic obstruction are signs which cannot be mistaken. In the early stages a chronic dyspepsia, resistant to treatment and combined with tenderness in the right abdomen, may render diagnosis difficult, but the pain never has the relapsing character of that of a duodenal or gastric ulcer. A tumour mass may call for an exploratory laparotomy, but the results, immediate and remote, with these patients are very poor.

II. Tuberculous Diseases of the Cæcum.—Ileo-cæcal tuberculosis as described by Hartman (to whom we owe the best description of this disease) is a form of tuberculosis very amenable to operative interference and more common than is generally recognised. A record of 20 cases in one year is evidence that the disease is very common in South India, though it is probable that many of these patients, who were not submitted to operation, were really extensive examples of fibrous peritonitis. The disease

PLATE III.

Tuberculous cæcum showing stenosis and fibroid thickening.

occurs in two forms, in both of which a mass is found in the right iliac fossa. *The entero-peritoneal form* is an ulcerative caseous tuberculosis not confined to the cæcum but attacking also the ileum and the appendix. The ileo-cæcal region becomes lost in a mass of adhesions, among which caseating cavities, often forming in the later stages pyo-stercoral fistulæ, are found. This variety may simulate an appendicitis and the signs are those of an enteritis, never of obstruction. The lungs are frequently involved. Actinomycosis has never been seen in South India, but in other countries may produce similar symptoms. *The hyperplastic variety* simulates a

PLATE IV.

Ileocæcal tuberculosis. Hyperplastic variety.

neoplasm in the right iliac fossa and after a very vague, insidious onset, the symptoms are those of a chronic intestinal obstruction. Tuberculous foci are scanty, surrounded by a dense fibrous tissue mass and associated with other purely inflammatory lesions, as for example, dense sclero-adipose-thickening and the production of numerous polypi and vegetations in the mucous membrane. The disease in this variety is confined until late to the cæcum, the walls of which are converted into a hard, rigid mass associated often with very extreme stenosis. Ulcers are sometimes found in the ileum and a similar hyperplastic condition

PLATE V.

Tuberculous cæcum with extensive thickening of the wall of the cæcum, and stenosis. Necrotic condition of mucous membrane.

may occur in other parts of the larger intestine. The lymphatic glands are often markedly infected.

The disease, as we have seen it at operation, has had the characters of the hyperplastic variety rather than of the ulcerating caseous entero-peritoneal form. There are a number of specimens of the disease preserved in the Medical College Museum, all of which show massive fibrous formation in the walls of the cæcum. Of 28 patients, whose operations were recorded, 6 were too ill or had too extensive mischief to allow of more than an exploratory laparotomy and cannot be classified. Five appeared to have been enteroperitoneal in character, 17 were hyperplastic, one with involvement of the sigmoid flexure. An interesting point about all these patients is that the ages noted were from 25 to 35, except four aged 43, 45, 19 and 17. This agrees with Hartman's description that the disease presents its maximum frequency between the ages of 20 and 40.

My own records suggest that the hyperplastic variety is not so entirely confined to the cæcum as the original description would suggest, and this is borne out by the brief notes of the other surgeons. The reason, of course, may be that our patients are seen at a later stage than in a more educated European community. In 6 patients the disease was entirely confined to the cæcum, in two there were scattered ulcers on the lower part of the ileum, and in two, in addition to ulcers on the ileum, there were miliary tubercles distributed over the peritoneum of the small intestine. In the patient on whom a cæcostomy was done, the tuberculous mass was entirely confined to the splenic flexure, but on account of his poor general condition and the presence of a sub-acute obstruction no radical treatment could be attempted. In only 3 of these 11 patients was there obvious disease in the lungs. Colonel Niblock reported 1 patient in the entero-peritoneal variety, on whom a lateral anastomosis was completed with complete success. A further operation was performed on this patient some months after the original one, and the tuberculous mass was found to be entirely healed, no evidence of tubercle remained.

Of my 11 patients one died 5 days after cæcostomy, another patient, with extensive disease in the lungs, died on the 5th day after an ileo-colostomy. Of the remaining 9 patients (excision of cæcum) seven left hospital with apparently an excellent result. All the 9 patients were discharged from the hospital, and we have been able to trace the after-history of 5 of them up to 2 years.

Case 1.—Male, aged 36. Tuberculous cæcum, entero-peritoneal. There were several scattered ulcers on the ileum and miliary tuberculous nodules on the peritoneum. Tuberculous infection present in both lungs. The chief signs were pain in the abdomen, chronic diarrhœa, and a tumour in the right iliac fossa.

Operation.—Excision of cæcum with lateral anastomosis. The patient developed a fæcal fistula at the site of operation and was discharged with this still not healed. He died 6 months after operation as a result of general tuberculosis.

Case 2.—Female, aged 38. Had been treated at a sanatorium for tuberculosis of the lung with improvement. History of a hard, fixed mass in the right iliac fossa for several years. Lately she has been subject to attacks of pain which commenced 1½ hours after food and were relieved by vomiting.

Operation.—Excision of cæcum with lateral anastomosis of ileum to transverse colon. Hyperplastic disease of the cæcum, but the coils of the

ileum in the pelvis were studded with tubercles and matted together. The pathologist's report says that the ileo-cæcal valve was stenosed to almost complete obstruction by hyperplastic tuberculosis. Following the operation she had a severe broncho-pneumonia, which caused considerable anxiety for some time but eventually cleared. A fæcal fistula developed at the wound, but this healed with careful dressing 2 months after the operation. This patient is still at the sanatorium, 18 months after the operation. Her general condition is slowly improving but she still gets fever after over-exertion.

3. Remaining cases; girl, aged 20, man, aged 45, and girl, aged 18, with typical hyperplastic tuberculosis 2½, 2 and 1 year after the operation. They all appear to be in excellent health and free from tuberculosis.

The treatment of these forms of ileo-cæcal tuberculosis should be surgical; if seen at a reasonably early period, the results will be very satisfactory, and the dangers of the patient developing further tuberculous lesions remote. Simple laparotomy is, of course, useless, and short circuiting or ileo-colostomy should be reserved for advanced degrees of the disease or for the entero-peritoneal variety which presents many difficulties, both on account of the adhesions in the abdomen, and the often extensive distribution of the tuberculous infection. Excision of the cæcum, including any involved area of ileum or ascending colon, is not a very difficult operation, and the divided ileum is joined either to the transverse colon or to the sigmoid loop. The average reported mortality from the operation varies from 12 to 25 per cent., and though we have had no mortality in our last 7 operations, 2 of these patients developed very alarming symptoms of severe toxæmia and were acutely ill for 48 hours. Handling of the tuberculous mass probably accounted for this condition, but recovery from the operation was otherwise very rapid and satisfactory. A two-stage operation does not appear to be necessary except for very feeble patients. Two of our patients developed fæcal fistulæ, an accident which I attribute to the drainage employed, and which I now endeavour, if possible, to avoid.

III. Two other unusual forms of abdominal tuberculosis in the period under review are worthy of note here. One patient with typical tuberculous ulcers in the upper part of the jejunum was operated upon under the mistaken diagnosis of duodenal ulcer. Another patient with symptoms mainly gastric was found to have a complete fibrous stricture at the ileo-cæcal valve. No evidence of tuberculosis could be found and the patient made a complete recovery after excision of the cæcum. We have not been able to trace the further history of this patient, but the condition as in 2 similar cases reported by Hartman, may have been tuberculous in origin.

I am indebted to Captain Bernard, Radiologist, Madras General Hospital, for photographs of specimens which are preserved in the Medical College Museum.

REFERENCE.

Dr. Henri Hartman. *British Medical Journal,* April 1907.

SUB-PERIOSTEAL EXCISION OF JOINTS.

By H. HALLILAY,
LIEUT.-COLONEL, I.M.S.

THE case, which is the text of this article, appears to be worthy of publication because it illustrates a principle and bears on a procedure on which surgical opinion is by no means unanimous.

Briefly the case history is as follows:—

The patient, a follower in the Mule Corps, was admitted to hospital as soon as he arrived in Bushire for an irreducible dislocation of the right elbow-joint, which he stated had occurred some six months before and three months previous to his enlistment. It was towards the end of the Great War, and in the dearth of men then prevailing, medical officers did not scrutinise the physical defects of recruits too closely. At any rate this man had been enlisted with an irreducible dislocation of the right elbow-joint, and his martial ardour having subsided by the time of his arrival in the Gulf, he recognised in his disability the finger of Providence, and sought an asylum in the nearest hospital.

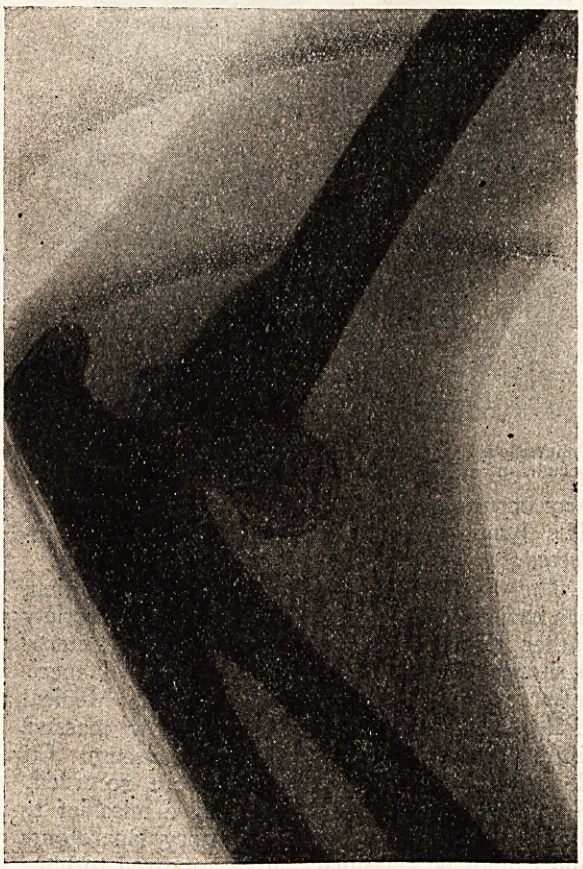

Fig. 1.