THE TREATMENT OF ENTERIC FEVER BY CARBOLIC ACID.

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HAVING arrived at Poona towards the close of July, 1896, and being placed in medical charge of the enteric wards, my interest was naturally aroused as to the results of previous treatment. I found that during the year 1895, 46 cases occurred in the cantonment, and were treated in the Station Hospital, with 13 deaths, giving a mortality of 28.2 per cent. I found that for the first seven months of 1896, 14 cases were treated, including three officers, with 11 deaths—a mortality of 78.5 per cent.

I determined on adopting an old treatment of intestinal antiseptics, which had previously afforded me most excellent results, and was originally taught me in the Dublin School of Medicine, the treatment by carbolic acid, which has lately been strongly advocated by Professor Charteris and Brigade-Surgeon-Lieutenant-Colonel Quill, A.M.S. The latter prescribes a mixture of mij of Calvert's pure carbolic acid in combination with chloroform, and gives the medicine for five doses on the first day, seven on the second, and so on till he reaches ten or twelve doses in the 24 hours.

List of Enteric Cases Treated by Carbolic Acid.

No.	Regimental Number and Rank and Name.	Complications.	Relapses.	No. of Days in Hospital.	Remarks.
1	4379 Private C., D.L.I.	Severe bronchitis	Two	108	Excellent recovery.
2	4555 Private C.	Hæmorrhage	Nil	50	R.
3	3765 Private B.	—	—	32	Mild and uncomplicated.
4	4557 Private R.	Hæmorrhage	One	41	Severe. R.
5	5154 Private R.	—	Nil	44	Mild. R.
6	4515 Private C.	—	—	62	Severe. R.
7	3945 Private C.	—	—	48	Mild. R.
8	2310 Private C., R.I.R.	—	—	50	—
9	9775 Gr. D., R.A.	Hæmorrhage	One	52	Severe. R.
10	752 Sergeant W., R.I.R.	—	—	62	—
11	2221 Private L.	—	—	82	—
12	4918 Private M., D.L.I.	—	Nil	72	—
13	4249 Private C.	Hæmorrhage	—	50	Mild. R.
14	4736 Private M.	—	—	19	Died.
15	5097 Private Ch.	—	—	50	Mild. R.
16	4413 Corporal B.	—	—	72	Severe. R.
17	4576 Private B.	—	—	75	—
18	82612 Gunner R., R.A.	Hæmorrhage	One	75	—
19	3308 Corpl. S., 21st Hussars	—	Nil	56	Mild. R.
20	3641 Private R., 2nd Mid. R.	—	—	73	Severe. R.
21	5224 Private O.B., D.L.I.	—	One	97	—
22	Lieutenant C., D.L.I.	—	Nil	73	Mild. R.
23	Lieutenant T., R.H.A.	—	One	75	Severe. R.

I am convinced that some patients are much more readily affected than others, and serious symptoms may be produced, including wild delirium, tendency to collapse, and in one case (seen *post mortem*) a condition of acute congestion of the whole intestinal tract, unexampled in my experience of ten years in close association with the malady. I adopt a more guarded administration of the acid: xxij are given in four doses in 3 viij of water, to which is added a little syrup and spirits of chloroform, and supplemented at night, if the patient is awake, with a couple of doses of ordinary diaphoretic mixture. This plan of treatment, combined with careful nursing and suitable dietary, has afforded fairly satisfactory results.

In all, 23 cases, including 2 officers, were treated with 1 death, a mortality of 4.3 per cent., and this loss I attribute solely to the weak, nervous, and prostrate condition of the patient, as he was only recently convalescent from a severe and malignant attack of acute dysentery.

Hæmorrhage occurred in 8 cases, but was easily controlled by that admirable method recommended by Dr. I. Burney Yeo (*Manual of Medical Treatment*): enemata of Dover's powder and tannin, 10 grains of each, with gallic acid, aromatic sulphuric acid, and liquor opii sedativus internally. In every case it acted promptly, and I can quite concur in his remark that "lives have been saved by the precaution of

having it kept ready at hand in case of emergency." In this hospital it always is, and with no uncertain result.

Cardiac asthenia was generally treated by stimulation, strychnine hypodermically, or caffeine in gr. iij doses every sixth hour.

Hyperpyrexia in three instances caused apprehension, but yielded to ice sponging, ice pack, etc. In one case a layer of ice was suspended about a foot from the body, along the whole length of the patient, the cradle being covered with thick blankets. The plan acted splendidly, as it kept the temperature at a moderate level, under 103°F .

I claim for carbolic acid, judiciously administered in enteric fever, that in the majority of cases it modifies favourably the duration and height of the pyrexia. The tongue rapidly shows a remarkable tendency to clean and become moist. The evacuations become odourless and inoffensive, and tympanitis is held in check. The mental clearness and physical vigour of the patient are well maintained, with frequently a rapid and complete recovery.

I present a tabulated statement giving the names, complications, relapses, and number of days in hospital of the 23 cases treated by the acid. Perhaps I might add that all the cases were most carefully diagnosed with the sanction and concurrence of the senior medical officer and the other medical officers serving here at the time, and in almost every instance they were of a severe and grave type.

DOUBLE OPTIC NEURITIS IN ENTERIC FEVER.

By C. BRAINE-HARTNELL, M.R.C.S., L.R.C.P.,
London.

THE well-known difficulties of making a diagnosis in children between enteric fever and meningitis were strikingly illustrated in the following case:

E. W., aged 11, a boy of weak intellectual development, "ailed" for a few days without presenting any definite symptoms. On the third day the temperature was 103.4°F , and he was purged five times. For the next four days he was purged twice daily. He was restless and noisy, and could with difficulty be kept in bed. Photophobia and signs of cerebral irritation developed. The face was pale, the pupils were equal, the tongue dry, and sordes formed on the lips. There was no purging from the seventh day until he died upon the eighteenth day of his illness, but formed motions were constantly passed. The abdomen was, if anything, somewhat retracted. There were no spots; the spleen could not be felt, nor could an enlarged area be percussed out. The temperature fell on the tenth day to normal, but rose again on the fifteenth, and on the eighteenth day, just before death, it reached 105.2° . The pulse-rate varied from 120 to 160. The left knee-jerk could not be elicited; the right was present. Plantar, cremasteric, and abdominal reflexes were all present. There was no impairment of sensation; no retention of urine. There was never any strabismus, and no convulsions were noticed. Two days before death there was slight inequality of the pupils and well-marked double optic neuritis, more pronounced upon the right side. There was no nasal or aural discharge, and nothing could be heard in the lungs.

The difficulty of diagnosing enteric fever, in the absence of spots, distension of the abdomen, and enlargement of the spleen, was extreme. The temperature was by no means suggestive, and there was no bronchial catarrh. The motions after the seventh day were always formed, but there was no constipation. Before the discovery of optic neuritis the diagnosis was uncertain, but after that distinctly in favour of meningitis. The nervous symptoms themselves were regarded with great caution, for, as Latham¹ has said, "the nervous system will run on to such an excess of sympathy as to seem to engross all living action and suffering, and allow nothing to appear in the body but what directly proceeds from itself." Of no disease is this more true than enteric fever, especially in children. I regret that in this case the urine was not tested for Erlich's reaction.

The *post-mortem* examination (by Dr. Goodliffe) revealed distinct inflammation of Peyer's patches, with decided enlargement of the mesenteric glands and solitary follicles. There was nothing in the brain to give rise to the optic

neuritis. It is interesting to note that optic neuritis is not mentioned as occurring in enteric fever by either Fagge, Osler, or Strümpell, while Sir William Broadbent, in *Quain's Dictionary*, mentions it only as an almost pathognomonic sign of meningitis. On the other hand, Gowers speaks of it as being not uncommon in both enteric and scarlet fevers; and Taylor records a similar case that has come under his notice.

REFERENCE.
1 *Diseases of the Heart.*

A CASE ILLUSTRATING THE DIFFICULTY OF DIAGNOSIS IN GASTRIC ULCER.

By W. CLARK ALEXANDER, L.R.C.P. and S. EDIN.,
Bowdon.

X. Y., aged 35, had suffered from dyspepsia since boyhood. The pain, seldom acute, occurred two or three hours after meals. He suffered also from flatulence and constipation, seldom vomited, and had had no hæmatemesis. For a fortnight before the present attack he had been very constipated, and the feeling of nausea and discomfort after food had increased. The pain was slight.

On February 23rd I found the patient, who had just returned from a long railway journey, in acute pain over the epigastrium. At night he vomited about a pint of bile and mucus, and felt relieved. Next day the acute pain was better, but there was tenderness over a small area, 2 to 3 inches above the umbilicus. Milk diet was ordered and a purgative prescribed. As it did not act, enemata were ordered, but with no result. On the fourth day small doses of castor oil were given, and the bowels moved twice; the motions soft, with some hard pieces. The feeling of soreness was not relieved, and at times the pain was fairly acute. There was now some distension of the abdomen and epigastrium, and a feeling of resistance on palpation over the latter.

On March 3rd, as the pain was constant, the patient was seen by Dr. Dreschfeld, who diagnosed some slight intestinal obstruction, probably due to adhesions. He advised opium and belladonna pills, and a continuance of fluid diet and enemata. As the latter wholly failed to relieve, I returned to small doses of castor oil. The bowels acted on several occasions, and some quite large hard pieces were passed. After a motion the patient felt that something had moved from the tender area, and the pain got somewhat better, but it gradually came back. I then resorted to large enemata of olive oil (with the foot of the bed raised) which relieved wonderfully for a time, but after some hours the pain returned.

On March 17th, Dr. Dreschfeld again saw the patient, and advised a surgical opinion.

On March 20th, Mr. T. Jones saw the patient, and coincided with the theory of adhesions causing obstruction, and advised laparotomy. After the day I first saw the patient the symptoms, subjective and objective, pointed to some intestinal lesion. There had been no vomiting, no pain referred to the ingestion of food, and the pulse and temperature had been practically normal.

OPERATION.

An incision was made in the middle line 4 inches long, extending upwards from 1 inch above the umbilicus. Colon presented at the lower angle of the wound; it seemed quite healthy and free from adhesions. The liver was much adherent to the abdominal wall, and on careful separation a small escape of gas was noted, having the odour of sulphuretted hydrogen. On further exploration by the probe and sinus forceps about 3j of pus escaped. The peritoneum at the lower angle of the wound was sutured, a large drainage tube inserted into the abscess cavity, the wound in the abdominal wall packed with iodoform gauze, and then left to granulate. The patient had a good night but the wound discharged very freely, and in the morning the dressings, sheets, and nightclothes were saturated. On removal of the dressings a great rush of discharge came through the drainage tube which seemed like stomach contents; this was verified by further examination.

The diagnosis now was gastric ulcer, localised peritonitis, perigastric abscess. This diagnosis Mr. Jones supported on

seeing the patient next day. Nutrient enemata were now given every three hours (3ij peptonised milk with half an egg and a little brandy, alternating with a suppository of peptonised beef). After the first twelve hours the flow of stomach contents ceased, and a viscid bile-stained fluid was freely discharged.

Despite the greatest attention to nursing and feeding, the patient gradually sank, and died five days after the operation, apparently from rapid emaciation through pure lack of nourishment. The temperature rose a little from the time of the operation till death, its greatest height being 100.6° C.

At the necropsy (at which I was assisted by Dr. Gardner, of Manchester) an ulcer, evidently, from the condition of its edges, of long standing and of about the size of a crown piece, was found on the anterior stomach wall in the lesser curvature and close to the pylorus. The site of the ulcer corresponded on the outer side of the stomach with an abscess cavity which would hold about 3iv of fluid, and was in the midst of dense and strong adhesions binding liver and stomach together. The floor of the ulcer had practically been formed by cicatricial tissue and adhesions, and an abscess having formed at the expense of these, the stomach wall had given way at the point of least resistance.

As to the cause of the rapidly fatal issue, even after the establishment of the gastric fistula, there was no evidence of shock; there was no peritonitis or further pus formation; but the fact of the very free exit for the digestive juices externally would lead one to believe that the nutrient enemata could not be prepared for assimilation.

The points of interest in the case are: The occurrence of a gastric ulcer of this size with only the ordinary symptoms of dyspepsia. (The pain had no reference to the ingestion of food, and at no time had there been any hæmatemesis.) The pain being relieved so much by the olive oil injections—a fact which made the diagnosis of ulcer still more difficult. The absence of vomiting during the month he was in bed prior to the operation. The absence of any connection between the ingestion of food and the occurrence of pain in this acute attack, although one would think the ulcer during this period would be easily irritated; and the extreme and rapid emaciation which obtained after commencing the nutritive enemata.

Reasoning from analogy it may be assumed that the correspondence of the pain to the ingestion of food in gastric ulcer must vary greatly according to the position of the ulcer, as in this case the site of the ulcer on the anterior wall and close to lesser curvature would lend itself to escape irritation, either by food passing over it or being deposited in its floor.

A CASE OF ABSCESS OF ABDOMINAL WALL FOLLOWING TYPHOID FEVER: INCISION: RECOVERY.

By GEORGE WESTBY, L.R.C.S.I., M.R.C.P.I.,
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MR. R., aged 21, was under the care of Surgeon-Lieutenant Steel, A.M.D., from February, 1896, to the end of May, 1896, as reported by him in the *BRITISH MEDICAL JOURNAL* of January 2nd, 1897. The particulars of the case prior to coming under my charge, are briefly these: Mr. R., in February, 1896, was found to have developed typhoid fever, complicated with peritonitis, passing on to abscess of the abdominal wall, which was incised; it was not considered advisable to do more at that time, owing to the excessively weak state he was in. This abscess apparently healed, and he returned home to Liverpool at the end of May; he was still weak, but improving, while the aperture in the abdominal wall to the right of and below the level of the umbilicus had apparently closed.

I was summoned to see him at 4.30 A.M. on June 18th, and found that he had had a sharp rigor, followed by pain in the back, and afterwards by pains all over the body, comparable with those from which he had suffered during an attack of influenza. Around the situation of the former wound there was no special pain or tenderness on pressure, but the cicatrix