Clinical and other Notes.

A CHRONIC TYPHOID CARRIER APPARENTLY CURED BY BILIARY DRAINAGE.

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The latest work on the treatment of typhoid carriers, Medical Research Council, Special Report Series 179, 1933, states:—

"As regards non-surgical treatment of intestinal excreters, the conclusion is reached that drug treatment, chemotherapy, physiotherapy, measures aimed at alteration of the reaction and flora of the intestine and vaccine therapy have all proved ineffective."

Lyon, 1932, has lately reported a highly satisfactory result in a chronic biliary carrier after a course of biliary drainage extending over eight months. No confirmatory reports, however, on Lyon's method have so far been published.

The report of the following case of a chronic typhoid carrier biliary type treated by Lyon's method of biliary drainage appears worthy of record.

In this method a sterilized Ryle's tube is swallowed as for a fractional test meal up to the 23-inch mark first thing in the morning before the patient has had anything to eat. (In our case the patient swallowed the tube at 6 a.m., and kept it in until 9.30 each morning.) The tube is then paid out to the 28½-inch mark which allows sufficient for the duodenum to be reached. The patient lies on his right side or if able to get up he may do so and walk about.

Samples are aspirated every quarter of an hour until the fluid drawn off is definitely alkaline to litmus.

The pylorus is generally passed in less than half an hour. If delay occurs, ¼ grain of atropine may be given or a syringe full of 25 per cent solution of magnesium sulphate injected through the tube, either of which may relax the pyloric sphincter.

When the fluid withdrawn is definitely alkaline, 60 cubic centimetres (3 syringes full) of 25 per cent solution of mag. sulph. are given. This causes the gall-bladder and bile-ducts to contract, and the sphincter of the common bile-duct (Oddi's sphincter) to relax.

An abundant flow of pure bile rapidly appears. A small glass connection is attached to the Ryle's tube and a further piece of tubing; the bile is then allowed to siphon into a receptacle.
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The drainage may be repeated during the day if necessary but the best results are obtained after eight hours fasting.

Major R., aged 56, with thirty-eight years' service was admitted to the Queen Alexandra Military Hospital on February 25, 1935, complaining of fever, abdominal pain and jaundice which had started one week previously.

He thought his illness was due to malaria and had treated himself with quinine and felt that he had got over the worst of his attack before admission.

Examination.—An obese florid individual, slightly jaundiced. Except for a little tenderness over the gall-bladder area, no abnormal physical signs were found in any system. The spleen was not palpable, and the liver was not enlarged. Temperature, pulse, and respirations were normal. There was no diarrhoea, urinary symptoms, nor indigestion.

Previous History.—Patient during his service had served in South Africa, China, and Egypt, from the last place he had returned in July, 1934. He had been in the United Kingdom since then.

He had been remarkably free from illnesses all his life and had never been in hospital nor reported sick until the end of September, 1933, when he had an attack of fever lasting fourteen days for which he was treated in quarters. The diagnosis was at first influenza, but later it was changed to clinical malaria. He was kept in quarters for a further seven days after the fever had stopped, and was in all about three weeks off duty.

Immediately on his return to work he developed an attack of diarrhoea with blood and mucus in his stools and was in hospital one week (October 14 to 21, 1933), the diagnosis then made being acute enteritis.

At the beginning of February, 1934, he felt ill but did not report sick until fourteen days later when he felt feverish. He was treated in quarters for a further eight days (February 19 to 26, 1934) and then admitted to hospital on February 26 as N.Y.D. fever.

For seven days after admission he had an irregular fever, 99° to 101° F., with mild constitutional symptoms. The liver and spleen were not palpable at first, but two days after admission the liver was noted to be two fingers below the costal margin. A leucopenia was present, 3,800 per cubic millimetre, polymorphs 60 per cent. A series of four Widal tests gave no indication of enteric infection. There was no record that a blood culture or culture of his stools had been made.

After having been afebrile for 14 days he had a recurrence of fever lasting six days with epigastric pain and vomiting. The liver was then enlarged and tender along its edge. There was tenderness over the gall-bladder, slight jaundice was evident, and the urine contained bile.

The cause of the condition was not satisfactorily explained. He was treated with emetine and finally left hospital on April 6, 1934, the condition having been diagnosed as hepatitis and cholecystitis.

He remained well after this until July, 1934, when he had another attack of fever and pain over the gall-bladder which lasted seven days.
Since then he has been doing full duty in England and has been quite well until the onset of his present illness on February 19, 1935.

**Progress of the Case.**

After a few days in hospital the jaundice disappeared and patient felt quite fit in every way. Routine examination of the faeces on the day after admission, February 26, 1935, however, showed a profuse growth of *B. typhosus*. This was confirmed by daily examinations for seven days. The susceptibility of the organism to "O" sera at 37° C. was tested by the method of Felix. The organism was intermediate in susceptibility between TY2 and 901 and was therefore moderately virulent.

On March 3 duodenal intubation showed the same organism. The urine was sterile; blood culture was sterile. Patient was put on hexamine 300 grains with pot. cit. and sodii bicarb. 300 grains of each daily.

On March 6 intermittent biliary drainage by the Lyon method was started. Patient soon learned to do this himself. He passed the tube at 6 a.m. and drained into a receptacle for three hours daily. The usual amount drained was from 6 to 16 ounces a day.

Weekly examinations of stools and the contents of the duodenum were made and typhoid bacilli in large numbers were invariably found.

The ease with which the organism was isolated both from the faeces and the bile was remarkable. This was particularly noticeable about a fortnight after biliary drainage was started, when some of the plates showed a majority of blue colonies on L.L.B.S.A. The robust health of the patient when he appeared in the laboratory was almost startling, so incongruous was it. Later the number of blue colonies tailed off and isolation became more difficult.

On April 15, 1935, he was feeling extremely fit having lost 40 pounds in weight (he originally weighed 14 stone). Whether this loss was due to his diet or the daily injection of 100 cubic centimetres of 25 per cent mag. sulph. into the duodenum is not clear.

He had drained over 300 ounces of bile, but both faeces and duodenal contents contained *B. typhosus* in large numbers, though by rough methods the number of bacilli per cubic centimetre of bile appeared to be decreasing. At no time were any abnormal constituents found in the bile except typhoid bacilli.

On April 17 he was given six months leave and instructed how to carry on his biliary drainage at home and to report every fourteen days.

By May 16 he had drained another 260 ounces of bile with daily drainage and felt better than he had done for years, weighing 11 stone 13 pounds, the lowest weight for twenty-two years.

On May 23 the faeces were negative for *B. typhosus*. Duodenal contents were sterile. Since then 30 consecutive examinations of his stools have been negative, also 7 examinations of duodenal contents of which 4 have been consecutive.
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Hexamine was stopped on June 10. Duodenal drainage on June 15.
Patient had drained in all 800 ounces of bile since the commencement of treatment.

Summary.

The patient presumably had a mild attack of typhoid fever in September, 1933. In 1934 he apparently had an attack of typhoid hepatitis and cholecystitis for which he was in hospital in March for forty days.
Agglutination tests made in 1934 when he was in hospital suffering from hepatitis and cholecystitis gave the following results:—

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The results of tests at Millbank were as follows:—

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There is no significant difference.
He had a second attack of cholecystitis in July, 1934, and the third for which he was admitted to the Queen Alexandra Military Hospital in February this year.
Typhoid bacilli were found in the faces and duodenal contents on admission on February 22, 1935, and were constantly present until April 17, the last positive record.
With duodenal drainage and hexamine the condition completely cleared up. Although for all practical purposes he is now fit for duty, further examinations should be made in one year's time.
It would have been interesting to find the exact date on which the typhoid bacilli disappeared, but it was not possible to keep the patient in hospital.
On May 23, 1935, however, they had disappeared and none have been found since.

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References.

Browning. Medical Research Council Special Report Series, No. 179, p. 54.