

TYPHOID FEVER ATTENDED WITH EXTENSIVE ULCERATION AND PERFORATION OF THE LARGE INTESTINE (RECTUM).

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(Notes by R. BROOKES, M.R.C.S., *House-Physician.*)

SARAH L—, aged twenty-eight, was admitted into the Boys' ward on Oct. 17th, 1881, suffering from typhoid fever. The patient was a general servant at a public-house; never had any previous illness, but was always strong and healthy. Two weeks previously her mistress noticed that "she was not quite right in her head," forgetting everything told her, and labouring under strange delusions. A week previous she had an attack of diarrhoea (five or six watery stools a day). The attack commenced with rigors and vomiting. The patient, a healthy-looking woman, was excited in manner, and complained of headache and a general feeling of lassitude. Tongue furred and dry; temperature 101.6° F., going up in the evening to 103°. No spots, no enlargement of the liver or spleen; slight tenderness on pressure over the whole of the abdomen below the umbilicus. Motions pale-yellow, watery, and very offensive. Fluid diet.

Oct. 18th.—Passed a very restless night, talking in her sleep; complained of sore-throat; tongue very dry, beginning to crack; breath very fetid. Temperature: 100.2° in morning, 103.6° in the evening. From this date to the 21st there was very little change in her general condition. The temperature on the evening of the 21st reached 105°, gaining that altitude by the ordinary gradations. Bowels open once a day; very little sleep; more delirium at night.—23rd: Temperature 104.2°, not having been below that for three days; the highest it reached was 105.6°. Tongue very thickly coated, dry, and fissured; delirium very violent, causing great difficulty in keeping her in bed. Motions and urine passed unconsciously. From this date to the 29th there was very little change, except increasing exhaustion, the temperature falling as it rose, step by step, to 101°. Pulse weak, marked micotism, respiration hurried, mucous râles at both bases.—31st: Temperature fell to 99°; exhaustion extreme, pulse barely perceptible at the wrist; marked floccitation; low muttering delirium. Ordered sulphuric ether, fifteen minims, and castor tincture, twenty minims, every hour; an ounce and a half of champagne every hour, and milk and Brand's extract every quarter of an hour.

November 2nd: Temperature suddenly went up to 105°, but fell again two hours after to 100°. Pulse stronger, takes her nourishment well. Slight twitchings of hands; conscious at intervals.—3rd: Temperature 103°; feeling much stronger; pulse fallen, marked meteorism; ordered turpentine stupes; slight nausea, no sickness.—5th: Temperature kept between 102.6° and 101°; slept two or three hours, woke very much refreshed, feeling stronger.—7th: Passed a few small clots in the motions for the first and only time; very slight pain in the lower part of the abdomen; meteorism disappeared. Temperature fell steadily to 99°.—9th: Much improved in appearance. Sleeps well, takes nourishment (champagne, milk, and Brand's extract) very well; conscious, and talks rationally; slight sickness after medicine, so it was stopped.—10th: Temperature shot up to 102°. Bowels open three times a day; motions very loose and offensive.—12th: Diarrhoea more severe, six times in twelve hours; ordered enema of opium, B.P. Very restless all night.—13th: Diarrhoea relieved by enema. In the evening she complained of very severe pain in the abdomen, chiefly at the lower part, which came on immediately after a severe fit of coughing. She was completely collapsed, and, in spite of every effort to rouse her, she sank into a comatose state and died at 1.30 A.M. on Nov. 14th.

Autopsy, thirty-six hours after death.—Marked emaciation; rigor mortis well marked. Abdomen distended, chiefly post mortem. On opening the abdomen a small quantity of gas escaped. The intestines, as they lay, appeared normal. The peritoneum of the pelvis was covered with pus, and the intestines were slightly adherent to it; no free pus found at the bottom of the cavity. There were two small perforations on the anterior surface of the rectum about nine inches from

the anus. On opening the intestines, and examining them from above downwards, the small intestine was seen to be healthy, until about three feet from the ileo-cæcal valve, where there was a healed ulcer (typhoid?) with pigmented edges, not swollen, exposing the muscular coat. Several ulcerations a little lower down occupied the position of Peyer's patches; three inches above the valve was one much larger, three-quarters of an inch long. The whole colon was slate-coloured from pigmentation; there were a great many ulcers, small in the ascending, but becoming from two to three inches in length in the descending colon, chiefly transverse, affecting the edges of the sacculi. The muscular coat was so brittle that it was unavoidably torn in several places whilst removing the intestines. In the sigmoid flexure the ulcers were smaller but more numerous. The ulcer that had perforated was one inch long by half an inch broad looking at it from the mucous surface; the openings in the peritoneal surface were about one line across. The mucous membrane of the rectum for an inch and a half up was ulcerated away, except a few bands, which extended to the anus; there were some old piles. The mesenteric glands were much enlarged, some being in a state of puriform detritus. The kidneys were in an advanced state of cystic degeneration, the contents of the cysts in some few cases being clear, in the majority turbid, some dark in colour, others yellow, containing altered epithelium, the two weighed twelve ounces and a half. The liver was rather large; there were numerous minute hæmorrhages immediately beneath the capsules, chiefly on the under surfaces of the left lobe. The spleen was firm, weighing six ounces and a half. The lungs were congested (hypostatic); two or three small calcareous nodules in the apex of the left; other organs healthy.

Remarks.—The subject of the case detailed, when first seen by me, manifested signs of intense nervous excitement, almost incessant twitchings of the muscles of the face, and very extraordinary hallucinations. The nervous symptoms continued in a greater or less degree throughout the entire progress of the disease. The very extensive tract of ulceration of the large intestine and the site of perforation seemed to suggest the possibility of co-existing dysenteric disease. But opposed to such a view, it was stated that the patient was in perfect health up to the time of the attack of fever (though considering the account of renal degeneration, this statement must be received with some distrust). Again, there existed throughout none of the symptoms that ordinarily characterise dysentery, so that the typhoid disease might be regarded as chiefly affecting the large intestine. The site of the perforation merits particular notice, occurring as it did on the anterior face of the rectum at a height of nine inches. Perforation here must be singularly rare in typhoid fever, confessedly greatly more so than in dysenteric disease. But whatever view be taken, the laceration may be presumed to have occurred during a violent paroxysm of cough.

THE RÔLE OF ALBUMINOIDS IN THE ANIMAL ECONOMY.

BY BARON H. VON LIEBIG.

THE views of Frankland, attributing to the carbohydrates a greater importance as force-producers than to the albuminoids, have found favour with physiologists not only in England but also in Germany. Moreover, in opposition to Liebig, Professor Voit formerly believed that the albuminoids and not the carbohydrates were the source of fat in animals. This fat-generating theory has, I fear, not been of much gain in practical medicine, and has been pushed to its furthest limits in Professor Ziemssen's (Munich) recent work, "Pathologie et Therapie." In that work the carbohydrates are denied all direct participation in fat formation.

Liebig showed the weakness of such theories so recently as 1870 in an academical essay on "Fermentation and Muscular Force." He further reduced the partial application of the mechanical heat theory in the animal body to its proper value by a series of practical demonstrations. In every transformation of atoms force is generated, and therefore it is evident that side by side with every transformation of the atoms of the body, whether it be a process of combustion or