ON MARASMUS AS AN OCCASIONAL CONSEQUENCE OF ENTERIC FEVER.*

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WE not uncommonly meet in practice with cases of general wasting which do not tend quickly to death, but which, on the other hand, are almost incurable. We can find no organic disease, but the patient loses flesh and turns sallow, until, when stripped, he seems almost a living skeleton. In this state, he may survive many years, unfit for exertion; eating food and getting no good from it; spending his substance upon physicians, and growing thereby no better, but rather the worse. Such cases of wasted, sallow, feeble frames, without any definite disease, must have occurred in the practice of many or most of us. It was not until several of these cases had presented themselves to me as riddles which had to be given up, that I ventured to guess at a solution which may be true, at any rate, for some of them.

It so happened that, in more than one instance, on writing the notes of the patient's previous history, the symptoms seemed to date from a precedent attack of enteric fever. Up to the onset of this illness, the patient had enjoyed good health; but, after it had passed by, he remained feeble, his convalescence was protracted, and, although perhaps he did regain flesh and strength in some considerable degree, yet in a few months more this new flesh fell again from his bones, and left him wan, wasted, and spiritless. Thus my attention was drawn to the question of the connection between such a marasmus and a precedent attack of enteric fever; and this question once raised, the answer to it does not seem far to seek. I am rather surprised, on turning over the leading treatises on enteric fever, to find that the chance of so severe an abdominal disease permanently affecting nutrition, has not presented itself to the writers; nor do I ever remember to have heard this disease suspected of doing more than temporary mischief. But when we look at the parts affected by this fever, when we remember how severely it falls upon a large part of the absorbent surface of the intestine, and upon the glands of the mesentery, it would seem likely, *a priori*, that in some instances absorption might be permanently interfered with.

I shall now proceed to read short notes of five cases of this kind which have occurred in my practice since my opinions on the subject were formed, and in which careful and particular inquiry was made from the present point of view.

CASE I.—Miss H. R., aged 25, had always enjoyed good health until she had a severe attack of enteric fever about two years ago. Latterly, she was believed to be phthisical, and had consulted many medical men from that point of view. She came to me on May 6th, 1870. She had lost flesh greatly, so that her bones stood out in almost startling relief; the eyes were sunken, and the complexion sallow. She had no night-sweats, and the temperature, at 11.30 A.M., was only 97.6 deg. Fahr. The tongue was clean, and the appetite was fair. Meat agreed best with her, and mutton chops in particular; fatty substances disordered her stomach, and made her "bilious." She was very liable to flatulency, though the abdomen was rather sunken than prominent, and she was much annoyed by loud rumblings in the bowels. She was unable to give much account of the appearance of the motions, but these and the catamenia were regular. This wasting in spite of the ingestion of fair quantities of food had been coming on for about a year, or probably for a longer time. Her convalescence from the fever, in fact, was delusive. Slowly she seemed to improve for about six months, then she remained at a standstill for a while, and, a few months later, the wasting steadily set in. I examined this patient most minutely; during the time she was under my observation, I saw her at home in bed, and left no organ without investigation. Every part, however, seemed quite normal, so far as I could tell. I tried various remedies, including pancreatised fats, but without success; and she left me for another adviser.

CASE II.—On July 8th, 1870, Samuel Jennings came under my care at the Infirmary for a like train of symptoms. He was twelve years of age, of good family history, and himself had excellent health until two years previously. He then suffered from typhoid fever severely; he seemed to make a fair recovery at the time, but had scarcely realised his recovery when he began to fail again in flesh and strength. On admission, he was extremely wasted and sallow. No organic disease could be made out anywhere; his temperature was slightly below the normal, his appetite was fair, and he had no night-sweats. The urine was normal, and the bowels regular. He remained under treatment by

pancreatised oil, ox-gall, and other remedies for a month, when we lost sight of him.

CASE III.—Mr. Lewis C., aged 18, consulted me on October 11th, 1870. In the previous March, he was convalescent from a severe attack of enteric fever, and went to the sea-side, where for a while he recovered strength. In June, however, he was evidently falling off again in both flesh and strength. He gradually became, as he was when I saw him, extremely wasted and sallow, although his appetite remained fair. Meat seemed to agree best with him. Like Case I, he complained much to me of loud rumblings in the belly. The motions were reported to be natural, though somewhat confined; except that he was liable to occasional attacks of diarrhoea. The temperature was natural, or a little under the mark; and he had no night-sweats or cough. The pupils were dilated; the pulse slow and weak. No organic disease was to be discovered in the lungs or in any other organ. Treatment here failed, as in the preceding cases, and I lost sight of the patient.

CASE IV.—Mrs. S., aged 50, had always enjoyed good health, and had passed easily through the change of life eight years before. Three years ago, she had a severe attack of enteric fever, and really never picked up her flesh and strength as before. Latterly, she had lost flesh greatly, and appetite, also, in some degree. Sometimes she loathed all food, but not generally. She ate mutton chops better than anything else. The urine and all the organs were normal; temperature also normal. She was sallow and much wasted. The bowels were rather confined. Mrs. S. is still under my care, but remains in much the same state.

CASE V. I include with some hesitation, as the interval between the wasting and the attack of fever was a long one. Mr. Harry T. was brought to me by his father on December 17th, 1870, from a distance; he complained of wasting and loss of strength. His health was good until he had enteric fever, at the age of eleven. He is now eighteen. He apparently recovered from the fever, and remained well for three years. He then began to fall off; and, at the age of fifteen, his health had suffered very seriously, and he became wan and extremely wasted. Of late, his appetite had fallen off in some measure. After any error of diet, however slight, he suffered greatly from flatulence and rumbling in the bowels. He never had diarrhoea. His temperature, urine, and all organs were quite normal.

To these cases, I would add another. A lady, Mrs. L., has been long under my care for extreme marasmus, sallowness, and loss of strength. All her organs are healthy, and her temperature is normal. She has a fair appetite, but can only eat meat with comfort; any error from the plainest meat diet is visited upon her severely with so-called bilious symptoms, and occasional diarrhoea. The bowels are rather confined as a rule, and the motions large and pasty. All this wasting and debility date from a severe attack of diarrhoea, with blood and slime, which she calls dysentery. This attack occurred about ten years previously, when she was under homœopathic treatment. It was many weeks before she recovered; and she seems at that time to have found much benefit from fractional doses of corrosive sublimate. All her organs remain healthy up to the present date, so far as can be made out. Mrs. L.'s symptoms bear a strong resemblance to those observed in the preceding cases.

If we now look at these cases together, we find that they all agree in these points: (1) in wasting, which is not due apparently to febrile action or to organic disease, but—as it would seem—to defective nutrition; and (2) in the history of a previous illness, which fell with severity upon the intestinal canal. It appears, farther, that the innutrition consists rather in the lack of digestive power over fats. There is no tendency to absolute starvation; but, in the subcutaneous tissue, there is an utter absence of fat, and, so far as we can tell, all parts and organs have lost their adipose investment. Stomach or meat digestion, on the other hand, seems fair, and many starchy substances likewise seem to be fairly assimilated. In all cases, light puddings, corn-flour, arrow-root and the like, seem to have been digested, not only with impunity, but with advantage. In the cases where I could examine the stools, I found large pasty evacuations, but no separated fat—no diarrhoea adiposa; so that I assumed that the biliary and pancreatic secretions were duly poured into the intestine, and that they duly emulsified the fats. But the fats, nevertheless, if taken, turned rancid in the intestine, causing so-called biliousness, and, moreover, they failed to find their way into the circulation. It seemed, therefore, likely that the fault lay in the machinery of absorption. That surface of the tube which is devoted to this purpose, suffers greatly from the ulcerative process in enteric fever; and if this be partial in its distribution in the bowel, such cannot be the case at any rate with the associated system of mesenteric tubes and glands, all of which are involved in irritative action, and are likely, in extreme cases, to suffer permanent degeneration in their

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texture. If we feed a rat on tallow, and then open the abdomen, we shall see that the whole of the mesenteric system is full of finely separated and emulsified oil-particles on their way into the blood; and this simple experiment will demonstrate to us the probable result of blocking up this system by cicatrization or destroying it by inflammation. The slow and often incomplete convalescences from enteric fever, and the liability of its victims to subsequent disease, such as phthisis, is well known. Tubercle in these patients may arise from absorption of cheesy matter from the mesenteric glands into the blood-current; but catarrhal phthisis, and other like sequelæ, may be due to the imperfect restoration of the fat-collecting machinery. It is to this cause of incomplete convalescence, of marasmus, or of chronic disease as common consequences of enteric fever, that I wish to-day to call the attention of clinical observers. Pathologically, I am not in a position to offer any evidence; but I shall be much indebted to any of my hearers who will secure for me the intestine and mesentery from any case of chronic disease which may seem to have had such an origin as I have ventured to indicate.

ON CATHETERISM OF THE EUSTACHIAN CANAL.

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CATHETERISATION of the Eustachian canal is no new invention, but one which, like many others in medicine and the arts, was known and adopted in former times, fell into disuse, and has been again revived and practised in our own days.

Upwards of a century ago, a postmaster of Versailles, named Guyot, afflicted with deafness, and probably having some knowledge of anatomy, conceived the idea of treating it by the injection of fluids into the faucial orifice of the Eustachian canal. To effect this, he introduced a bent sound through the mouth, and by this means succeeded in at least washing the entrance of the canal, for it is not likely that he could do more by this method of proceeding, and so relieved his deafness. An account of this invention was submitted to the Academy of Sciences in Paris in the year 1724, but it does not appear to have led to any further result.

Twenty years later, an English surgeon named Cleland, who describes himself as "Surgeon to General Wade's Regiment of Horse", revived the practice, and gave it an important modification by introducing the catheter through the nasal passages instead of the mouth. The instrument which he employed, and which is figured in the *Philosophical Transactions* for 1741, p. 848, resembles a small catheter, and has this inconvenience, that it is pierced with lateral eyes at its distal extremity, which would give to any fluid injected through it a direction different from that of the Eustachian canal. Although Cleland describes this instrument and the mode of using it, and a syringe which is to be adapted to it, he does not state that he had used it himself with success. His statement regarding it is as follows. "If, upon trial, the Eustachian canal should be found to be obstructed, the passage is to be lubricated by throwing a little warm water into it by a syringe joined to a flexible silver tube, which is to be introduced through the nose into the oval opening of the duct, at the posterior opening of the nares, towards the arch of the palate. The pipes of the syringe are made small, and of silver, to admit of bending them as occasion offers, and for the most part resemble small catheters."

The surgeons of Montpellier, according to Itard, who wished, on the recommendation of Sauvages, to make use of Cleland's instruments, could not succeed in injecting the canal until they had made some modification in the catheter, probably by substituting a single opening at the extremity for the lateral eyes which Cleland describes. Antoine Petit, in the edition of Palfyn's *Anatomy* which he published in 1753, does not mention either the memoir or the operation of Cleland; and he criticises the instrument of Guyot as being incapable, as he employed it, of fulfilling the objects which he proposed.

In 1755, Mr. Jonathan Wathen, surgeon in Devonshire Square, London, published in the *Philosophical Transactions* a short memoir entitled "The Method proposed to restore the Hearing when injured from an Obstruction of the Tuba Eustachiana". In this communication, he remarks that Guyot's proposal to pass a catheter into the Eustachian canal by the mouth is impossible of execution, as any one may convince himself who takes the trouble to examine into the matter. "Convinced of this," he says, "M. Petit proposed, and that learned and skilled anatomist Mr. John Douglas demonstrated, the possibility of passing the probe, etc., through the nose into the Eustachian tube;

and this he has continually shown to those who have attended his public lectures; and to him I freely acknowledge myself indebted for the hint by which I was incited to make trial on the living subject of an operation of so much importance to mankind." Wathen made use of a silver pipe of about the size and length of a common probe, to which an ivory syringe was fitted when required. It is somewhat remarkable that Wathen in his paper makes no allusion to Cleland, whose memoir on the same subject was published in the same learned journal only fourteen years previously; but such oversights, whether by accident or intention, are not unknown even in our own times. Wathen appears to have had opportunities of confirming by his own observations those of Tulp, Valsalva, and Boerhaave, regarding deafness induced by enlargements of the tonsils. He had also noticed a form of deafness brought on by cold and congestion of the Eustachian canal; and further, in a *post mortem* examination of a man aged 35, who had been deaf during several years as a sequela of cold, and who died of variola, he could not discover any unhealthy condition of the ears, with the exception of obstructed Eustachian canals, induced by the presence of thickened mucus. Building upon these facts, he attempted to inject the Eustachian canals in cases of deafness generally; and of six persons upon whom the operation was practised, five are said to have received more or less benefit from the treatment. The details of one of the most remarkable are as follows. A. had been deaf for eighteen years, and had also an affection of the sight, which consisted in the appearance of a number of different colours floating continually before his eyes. The deafness was so great that he could hear only one person, with whose voice and appearance he had long been familiar. This patient had been subjected to a variety of treatment, more expensive than efficacious, which had induced salivation and profuse perspiration; but, excepting some slight changes, he had remained in the same condition till February 1st, 1754, when he placed himself under the care of Mr. Wathen. After the first injection made into the Eustachian tube, he heard his own voice, which he was previously unable to do. This injection was followed by four others, at intervals of one or two days. The progress towards amendment continued; and this remarkable phenomenon was induced: when the ear was subjected to sounds as loud as it was accustomed to bear before the deafness commenced, the organ experienced a jarring sensation, a sort of painful grating; and the same thing was observed when the patient spoke. However, he could now hear the voice when moderately elevated, and was able to take part in an ordinary conversation, provided that the room was quiet. It is worthy of remark, that the affection of the sight disappeared after the second injection of the Eustachian tube. This case is certainly remarkable, so far as it goes, considering the long duration and great amount of the deafness. The phenomenon adverted to, with regard to the jarring effect of ordinary sounds upon the restored organ, is one with which all are now familiar who have had frequent occasion to treat diseases of the ear.

The following case, taken from Itard's treatise on *Ear-Diseases*, is both interesting and instructive, although the treatment in this instance was not confined simply to injection of the Eustachian canal.

"Dorothy Paulet, a servant-girl in a farm near Paris, was sent to me by some charitable persons to be treated for deafness, which had reduced her to misery, and rendered her incapable of continuing her service. It was necessary to shout very loud and distinctly into her ears in order to be heard. She had been treated for a long time, and without benefit, by another practitioner. The external meatus was healthy; the membrane of the tympanum did not present any notable change; and the air, when passed into the Eustachian tube in the ordinary manner, entered the ear; for the patient was conscious of a painful sensation within the organ. In this state of things, the diagnosis was very obscure; and the more so, that there was nothing in the patient's constitution or in the history of her antecedents which could throw any light upon the cause of the deafness. It had commenced two years previously, and had continued to make rapid progress. However, it was necessary, as the girl said, either that she should be cured, or else die of hunger. A motive so urgent induced me to undertake, or rather to attempt, a very hazardous treatment. Moxas upon the head, galvanism, cupping upon the shoulders, strong purgatives, an otitis induced by irritating injections, had no other effect than to weaken and still further discourage this poor girl. At length I decided, almost against myself, to try perforation of the membrane of the tympanum; and I commenced with the right ear. The injection made the next day did not pass through; and it was in vain that I flooded the external meatus by means of a tube of the diameter of a writing-quill, to which a syringe was attached. Three days having been passed in these vain attempts, I then tried to press the injection in another direction—viz., from within outwards through the Eustachian canal. This effort succeeded, for at the second sitting the liquid came through the external