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NATURE AND TREATMENT

OF

ACUTE TROPICAL DYSENTERY.

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REMARKS ON THE NATURE AND TREATMENT OF ACUTE TROPICAL DYSENTERY.

It is not my intention, on the present occasion, to enter minutely into the medical history of acute dysentery. This has been done so ably and fully by systematic writers on the diseases of warm climates, that the recapitulation here would be a work of supererogation on my part. The slight sketch which I now give is necessary for the elucidation of some points in the treatment. Practical utility is my aim; and I shall endeavour to record the result of my experience, as an unprejudiced eye-witness of one of the most formidable diseases of the torrid zone.

Much discussion has arisen amongst medical writers as to the doctrine of the contagion or non-contagion of dysentery; and this much agitated question has, on many occasions, been discussed with an acrimony and party-feeling which augured ill for its solution. We have examples in typhoid fever, pertussis, influenza, and other analogous affections of mucous membranes, that diseases of this nature are occasionally infectious, and the same may unquestionably be said of the asthenic forms of dysentery which prevail, where large bodies of men are congregated together; but I believe there can be as little doubt that the sthenic forms of the disease, to which at present my attention is solely directed, have been rarely if ever observed to be of an infectious character. Personally I have seen no instance where I had reason to believe that the malady had been propagated by infection. The cases which fell under my observation were all isolated, and could often be traced to some imprudence on the part of the patients, the predisposing causes of sthenic dysentery being high ranges of temperature, conjoined with all causes which produce disorder of the functions of the intestinal canal and chylo-poietic viscera.

The exciting causes are suppression of the cuticular secretion, cold and moisture, the use of bad water, tainted meat, drunkenness, and above all, errors of diet. Amongst the articles of food most injurious, I would certainly include the too free indulgence in fruit. This has been called in question by some, but I think with injustice. Amongst merchant seamen in particular, I am convinced that it is a most fertile source of the disease. A ship which has been several months at sea, where the men live principally

on salt provisions, arrives in port, and is immediately surrounded by boat loads of natives, with the most delicious fruits, upon which the seamen gorge themselves *ad nauseam*, the consequence of which is, that those who have indulged most freely suffer from diarrhœa, and probably, in the course of twenty-four hours, several are attacked with dysentery—those who are more prudent escaping entirely. Another exciting cause of this, and all other diseases amongst this class of men, is the large quantity of stimulating food and liquors allowed to them in these latitudes; besides which, as they are liberally supplied with money when in port, they procure from the natives the most improper articles of diet.

Mr Annesley, in his excellent Sketches of the Diseases of India, states that dysentery was at one time very prevalent among the troops under his care, arising from their eating fat pork to breakfast; and the same substance, I have no doubt, proves very deleterious on board ship, from the custom which prevails, of the refuse of the cabin table being used by the seamen to breakfast and supper. Another article of diet which an European first arriving in a tropical climate should use in great moderation, is fresh cocoa nut oil, which is much employed in the compounding of curries, and as a sauce for fish. These last should also be cautiously used, as some varieties, which are eaten with perfect impunity by the natives, produce the most serious effects on newly arrived Europeans.

I had on one occasion an opportunity of seeing nineteen fine strong English seamen nearly poisoned by partaking of a meal of this kind. Violent symptoms of cholera manifested themselves, accompanied by intense spasms, and excessive prostration of strength. In the course of an incredibly short time, several had the contracted sharp countenance, glassy sunken eye, præcordial oppression, feeling of debility and anxiety, with coldness of the surface, which seemed to threaten speedy dissolution. Never in my life did I witness such sufferings. They writhed about on the deck, which was literally deluged with their evacuations, suffering frightful agony, which was however soon removed by appropriate remedies, but in several, dysenteric symptoms supervened. Another common exciting cause of dysentery amongst Europeans, but more especially amongst seamen, is exposure to currents of air when in a state of perspiration. Sailors bathed in moisture, from working during the intense heat of the day, are accustomed, at the approach of night, to expose themselves almost in a state of nudity to the cool and refreshing breeze, and generally spend the night on deck, exposed to the chilling influence of the heavy dew. In tropical climates there is a great tendency to engorgement of the abdominal viscera; and therefore those causes which in Europe affect the pulmonary mucous membrane, producing catarrh, coryza, cynanche, &c.,

are apt to produce dysentery, which, to a newly arrived European, is the most common serious abdominal disorder; and in this respect, the custom of washing decks is much to be deprecated, as the evaporation which goes on for some hours afterwards, renders the atmosphere damp, chills the men, and, when conjoined with other deleterious agencies, may prove an exciting cause of the disease.

Having made these preliminary remarks, I now proceed to speak of the symptoms of acute dysentery; and here I shall be brief, confining my observations solely to the result of my own experience, and I trust that the descriptions which I give will be recognized as true to nature by those who have had an opportunity of marking the progress of this malady within the tropics.

Acute dysentery has been considered by many as a purely inflammatory disease, the more modern French writers conceiving it to be the most intense form of colitis. That this is a sound pathological view, I am inclined to doubt, at least the doctrine must admit of some modification. No one can deny that an inflammatory condition is induced during the course of the disease; but in the earlier stage I conceive that there is merely irritation in the intestines, produced by vitiated secretions, as we see in diarrhœa, cholera morbus, and other forms of disease, and which, if not relieved in dysentery, terminates in inflammation. This opinion is strengthened by the absence of many phenomena in this stage, which usually accompany extensive inflammation of any important viscus. The disease is in general not ushered in by pyrexia. The tongue does not indicate abdominal inflammation. There is not a constant pain increased on pressure, but wandering pains, with tormina and borborygmus, which come on at intervals, and are momentarily relieved by going to stool. The remedies most useful in inflammatory states are not immediately so beneficial as we might expect; and lastly, there is not that concentration of heat over the abdomen which is generally found in inflammation, and which is a prominent symptom in a later stage of dysentery.

The morbid appearances on dissection certainly favour the opinion, that inflammatory action has existed; nor do I question that such has been the case, as the stage of irritation inevitably terminates in inflammation if unrelieved; but even the morbid lesions, striking though they be, do not positively testify as to the intensity of this action, as in few diseases do we observe so extensive a disorganization of the mucous membrane of the intestinal tube, as in the typhus abdominalis of the Germans, the misnamed dothin enterite of the French pathologists; and yet there are, I believe, few who will assert, (notwithstanding the

miracles of Bouillaud,) that the latter disease is the effect of pure inflammation, or amenable to the same curative treatment.

The symptoms of dysentery, even in its most acute form, do not become violent all at once; on the contrary, particularly when the bowels are loaded, the patient may have several stools with little pain. Accompanying these, there are slight tormina, which, however, at the commencement, are not severe, the first thing complained of being the tenesmus and heat at the anus. Shortly after the tenesmus has become troublesome, which rarely happens till the bowels are emptied, violent tormina supervene, followed by the most intense suffering. Thirst becomes urgent, and the poor invalid is afraid to drink, as it increases the pain. Whenever any thing cold is taken into the stomach, the tormina are very much increased, and he is forced instantly to go to stool, to prevent the evacuations being discharged in bed. The mere placing the foot on any cold substance, and the exposure of the body during this operation, increases the agony. The poor fellow strains at stool for a quarter of an hour, and longer if permitted, and can scarcely be prevailed upon to return to bed. He rises frequently, and sits down again immediately, passing nothing but serum and mucus, which is soon tinged with blood. The evacuations have at this stage no peculiar fetor. In acute dysentery, the quantity of blood passed, in proportion to the serum and mucus, is not great, merely sufficient to streak the fluid, in which there are occasionally drops of a bright vermilion color suspended. After the patient has returned to bed, he has rest for a longer or shorter interval; but in severe cases this respite is never of long duration, the tenesmus remaining stationary, even when the other symptoms have disappeared for a time. Soon tormina and borborygmus recommence, and he is again compelled to rise. The tenesmus has now become perfectly excruciating. All the symptoms are increased when out of bed. The patient sits straining at stool as before, and every time this is repeated, the sufferings become more and more insupportable. The rectum is in a state of the most acute sensibility. There is almost total suppression of urine and of bile. When this state has continued for a longer or shorter period, unequivocal signs of inflammation succeed. The tongue becomes covered with a white fur. The pulse is often thrilling. There is a constant pain in the abdomen, increased on pressure, though by no means severe. The heat is greater over the abdomen, while the extremities, and especially the nose, feel cool. By and bye, if the disease is unchecked, the face becomes sharp and collapsed, the eyes hollow, and a high degree of anxiety is impressed upon every feature. There is likewise great despondency and depression of spirits, perhaps more than in any other disease. At length the patient

sinks down in bed, and is unable to rise to go to stool. The discharges, which have now become horridly fetid, mixed with shreds and sloughs of the mucous membrane, are passed in bed. Prolapsus ani takes place. Vomiting of a darkish fluid is said to be a frequent occurrence towards the latter end of dysentery in the West Indies; and I believe it may be received as an acknowledged fact, that irritability of stomach is a more marked symptom of the diseases of the tropical regions of the western than of the eastern hemisphere. Sometimes acute dysentery proves fatal in a very few days; sometimes, however, it becomes chronic, particularly when inadequate measures have been employed. The tormina and tenesmus gradually diminish, but always remain troublesome. Bloody diarrhœa still continues; digestion is imperfectly performed; the face acquires an unnatural sallow complexion. An acute attack of obscure muco-enteritis, of which intractable singultus is the most marked symptom, may close the scene in a very short time, or the patient may die at a subsequent period in a hectic condition. Occasionally, with great care, when the ulcerations have not been extensive, the patient may slowly recover. Should perforation of the coats of the intestine occur, an effusion of the visceral contents takes place into the sac of the peritoneum; the patient is seized suddenly with a burning pain in the abdomen, which rapidly spreads, and in a few hours he is no more.

Such, then, is a hurried sketch of the progress of this formidable disease, when left to the unaided efforts of nature, or what is at least as bad, if treated in an improper manner by the physician. It is the principal intention of this paper to point out a method of procedure, by which it may often be arrested in mid-career, and by which, if its virulence cannot in all cases be subdued, it may nevertheless be rendered comparatively innocuous.

On a post mortem examination, the body is generally found emaciated, the countenance yellow, the abdomen flattened, and a peculiar expression, indicative of former suffering, is stamped on the features, which cannot be removed even by the hand of death. The principal pathological appearances are observed about the ileo-cœcal valve, the upper part of the large intestine, and the lower portion of the ileum. The inferior division of the colon and the rectum are in general very vascular, and lined with mucus and bloody fluid. On the upper part of the colon are large dark-coloured patches of ulceration, involving the whole calibre of the tube, and the edges raised above the surface of the mucous membrane, shreds of which are in many places detached, and hanging into the cavity of the bowel. The intestines are vascular, sometimes contracted and thickened, at other times dilated. It has been said, that when the disease is acute, the intestinal canal will be found contracted, but if the malady become chronic, it will be dilated. This however is incorrect, as the condition of the tube de-

pends upon the immediate cause of death. If the patients die soon, from the direct effects of the acute inflammation, the intestines will be found in a state of contraction; if, on the contrary, hectic fever supervene, they will be found dilated. Scybala are never discovered in the colon, though worms, which are extremely common in hot climates, are often present. Ecchymosed spots are sometimes seen beneath the mucous membrane, but this will be the case to a greater degree when dysentery is complicated with scorbutus. The mucous membrane of the small intestine is vascular, and in the ileum the follicles are enlarged, though never so much so as in the first stage of typhus abdominalis, and are of a browner colour.

The second stage of typhoid fever, when the mucous membrane over the follicle is in a state of gangrene, and commencing to slough, is liable in some cases to be mistaken for the ulceration of dysentery. When no history of the phenomena during life has been obtained, by attention to the situation of the morbid appearances, the absence of vascularity in the vicinity of the ulcer, and the different stages in which we have always an opportunity of seeing the typhoid ulcerations,[1] will in all instances suffice to distinguish it from dysentery, were even only a few inches of the intestine examined. With regard to the morbid appearances connected with the intractable vomiting, often seen in the dysentery of the West Indies, I had an opportunity at Vienna of examining the bodies of several who had this symptom in different diseases, medical and surgical. The pathological appearances were pointed out by the prosector, Dr Kolletska, and all present had an opportunity of convincing themselves by ocular demonstration, that the source of this inauspicious discharge has been overlooked. In most of these cases, I am convinced numerous minute abrasions would be found scattered over the mucous membrane of the stomach. These ulcerations are very small, but perfectly distinct, of a somewhat triangular shape, with well defined margins, but we are unable to detect them, unless the surface of the mucous membrane be perfectly well cleansed, which may account for the fact of their having as yet been overlooked by observers. I have little doubt that in the malignant fevers of hot climates, where the black vomit supervenes, this lesion is also present.

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[1] German pathologists are accustomed to divide the morbid appearances observed in typhus abdominalis into four stages, each of which presents physical characters peculiar to itself, and differing widely from each other. The first stage, or that of infiltration, is marked by the enlargement and induration of the mucous follicle. The second stage is that of gangrene of the membrane of the follicle (Schorf. bildung,) by which an eschar is formed. The third stage is termed ulceration, when the eschar has separated, by which the muscular coat of the intestine is exposed, as if cleanly dissected. The fourth stage is that of cicatrization, where the ulcer is closed, by the puckering in and adhesion of the mucous coat, or when it is covered by the formation of a false membrane.

The mesenteric glands, and other abdominal organs, are incidentally affected in this disease, but upon these occasional circumstances, I do not intend on the present occasion to dwell.

I come now to examine the treatment of acute dysentery; and in the first place, I shall briefly allude to the mode which has generally been adopted, before describing the plan I am anxious to inculcate, from a conviction of its decided superiority. The greater number of modern writers on the diseases of warm climates, including the names of men respected wherever science is cultivated, regarding dysentery at its very outset as an essentially inflammatory disease, have had recourse to the usual methods for subduing abdominal inflammation. General and local depletion consequently stand pre-eminent in the list of remedies. I have endeavoured to show, in an earlier part of this paper, that in dysentery there is a stage antecedent to that of inflammation, and from the violent physiological phenomena attendant upon it, the patient is prostrated, and compelled to apply for medical aid at a very early period, before the inflammation has had time to develope itself. If, however, from any circumstances, the symptoms at their outset have been neglected, blood-letting, topical and general, is most imperatively called for. If pain increased on pressure, furred tongue, and other evidences of inflammation exist, no more potent remedial measures can be employed, but if such symptoms be absent, as they will be in the great majority of instances in the early stage, they are unnecessary, and will generally be found to produce no decided immediate relief to the tormina, tenesmus, and diarrhœa, the three most distressing symptoms. After blood-letting, three grains of opium, combined with large doses of calomel, are usually administered, and small opiates and starch injections are frequently employed. Of these, and particularly of the enemata, I can speak in terms of the highest praise, having found them to produce much greater relief than the blood-letting. Occasionally it relieved for some hours the urgent symptoms, and even where such success did not attend its employment, and where, from the irritability of the rectum, it was soon discharged, the tenesmus was often considerably mitigated. The introduction of the pipe sometimes however produced irritation, and occasionally forced the patient to stool. And here I cannot but reprobate, in the most severe terms, the custom of Italian and German practitioners throwing large mucilaginous injections into the bowels, for the alleged purpose of sheathing the mucous membrane from the acrid contents irritating it; or, as some assert, mechanically to prevent the discharge. The rectum is so irritable, that the slightest movement of the abdominal muscles is sufficient to call it into uncontrollable action, and such a mode of treatment must inevitably produce, in that condition of the organ, disastrous consequences. I still retain the most painful recollection of the inefficiency and cruelty of this practice, in the case of

a valued and intimate friend, beside whose couch I watched at Rome in 1835, while subjected to this treatment, under several of the best physicians of that city.

Some of the most distinguished writers on Indian diseases recommend, after large doses of mercury, full purgative doses of sulphate of magnesia, or castor oil, for the purpose of evacuating the disordered and acrid secretions, but this practice must necessarily be often hazardous and inexpedient, though at a later period its propriety is unquestionable. In the dysentery of hot climates, there are rarely scybala accumulated in the colon, requiring removal, as we find in the milder form of the disease, which prevails in temperate latitudes. The diet should be strictly antiphlogistic; rice water used lukewarm is perhaps the best thing the patient can take. If leeches be applied, either for inflammation in the liver or intestines, the patient should be strictly protected from cold during the operation. The entire class of astringent remedies, so useful in the diarrhœa of Europe, act as irritants, and are wholly inadmissible. Ipecacuan and various other remedies have been much lauded by men of the greatest experience. Dover's powder is undoubtedly serviceable, particularly if the disease becomes chronic, and the same remarks apply to the terebinthinate liniments. A warm and equable temperature is of great importance in the cure of this affection, and warmth to the belly ought constantly to be applied. This treatment, which was the one I first adopted, proved tolerably successful. The pain was lessened, inflammation warded off, the tenesmus and tormina were relieved, and the stools became less frequent. The quantity of opium and calomel used during the progress of the disease is sometimes very considerable, though it is by no means necessary to induce salivation to effect a cure. During the early part of his convalescence, the patient is very desponding, haggard, hypochondriacal, and very weak. He is very restless, there is great want of tone in the digestive organs, and an aching void is complained of in the abdomen, to relieve which, Battley's sedative liquor at bedtime is a most excellent remedy. It calms the nervous system, procures undisturbed sleep, and acts as a tonic, and is unquestionably to be preferred to any other preparation of opium. The diet should at first be strictly farinaceous. Laxatives are now required, and as castor oil even in small doses sometimes acts violently, and always increases the derangement of stomach, rhubarb is a preferable medicine. The improvement is frequently very slow, the greatest care being requisite to prevent errors of diet, and the abdomen should be well protected by clothing from vicissitudes of temperature. If at this stage there should be signs of subacute inflammation in the abdomen, leeches must be perseveringly applied, and subsequently, as a safeguard, an eruption should be excited by an ointment composed of one ounce of axunge, half a drachm of the tartrate of

antimony, and five grains of the bichloride of mercury,—the eruption being kept out for several weeks. In severe cases of dysentery, complete recovery often takes place very slowly; the digestive organs are much weakened, diarrhœa comes on from the slightest causes, and occasionally for months there is a slight discharge of blood along with the stools, which all the remedial measures you may employ are unable to check, and which is at length cured by change of air. The rapid recovery which takes place when the patient is restored to his native climate, is frequently most surprising and gratifying.

But the method above referred to of treating dysentery, which I would most earnestly recommend, is that which I have seen extensively practised, during a residence in the island of Java, in a large military hospital, where the disease frequently raged with peculiar virulence. At a former period, under the inert practice of Dutch and German physicians, the mortality was very great, but under the active management of Dr Heyn, an intelligent Englishman, the results had been so remarkably successful, that the dysentery wards were placed by the Dutch government exclusively under his care. His treatment consisted in administering at the very outset of the disease, a scruple of the chloride of mercury. According to his experience, this powerful pharmaceutical agent, when employed in small doses, acts as an irritant, but when given in large quantities, has so decided and immediate an effect, as to merit the name of a direct sedative. I have seen soldiers brought into hospital in the most severe agony, discharging mucus and blood at very short intervals, and labouring under the most aggravated form of the disease. On administering a scruple dose of calomel, the most marked and gratifying amelioration took place. The tormina, tenesmus, and diarrhœa almost instantaneously cease, a feeling of comfort takes the place of the most intense suffering, the countenance brightens up, the pulse, heat of tongue, and thirst, when present, are diminished, and in short all the distressing symptoms are much alleviated. This remission is, however, often followed by an exacerbation at the end of six or eight hours. Reaction is established, the pulse beginning to rise, and if no steps are taken to prevent it, the whole train of symptoms return with almost undiminished violence. If the diarrhœa and tenesmus come on, no hesitation need be felt in repeating the scruple dose of calomel, but if the physician be on his guard, he may often prevent this, by active measures whenever the tormina and borborygmus are apparent. This is the critical moment, and a scruple of calomel divided into four doses, administered every three hours, will often prove sufficient to prevent reaction, and overcome the disease. If the malady be obstinate, five grains of calomel should be given boldly every three or four hours, and under this treatment the medical man will seldom be disappointed. When the

bowels have been quiet for thirty-six hours, a scruple of the powder of rhubarb was found to be most serviceable. The stools which followed were fetid, dark-colored, fluid, sometimes bloody, but voided with little or no pain. If symptoms of inflammation appeared in any of the abdominal viscera, which rarely happened, leeches were used; but a blister was almost invariably applied to act as a safeguard, and to relieve the remaining irritation in the intestines. The superiority of this treatment over the other is I think unquestionable. The patient is often almost immediately relieved, and is discharged before the acute disease is overcome by other management. Convalescence is very rapid, the debility which strikes the observer as great in the early stage of dysentery being almost entirely fictitious, arising from the patient's instinctive dread of exertion; while on the contrary, if the disease be allowed to proceed unchecked, until even a very slight degree of disorganization has occurred, the process of recovery is most tedious and discouraging. Salivation comes on occasionally under this treatment, but is by no means necessary for the cure of the disease.

Great care is requisite in the treatment of dysentery, that the patient be confined to an equable temperature; and it may be remarked, that seamen on board ship are very severely affected by small doses of mercury, owing to the exposure to which they are necessarily subjected, from the dampness of the atmosphere, occasioned by the evaporation from the surface of the vast expanse of water by which they are surrounded, and possibly in some degree, from the nature of their aliment. Mercurial pains are in these circumstances a common occurrence after the mildest course of mercury for syphilis, or any other affection, and from their unmanageable character, prove a source of incalculable annoyance both to the practitioner and his patient.

I have only to add, that I am totally unable to explain the rationale of the treatment recommended. Whether its good effect is to be ascribed to the power which mercury possesses over the biliary secretion, to its contra-stimulant virtues, or to some specific effect in diminishing irritation in the internal surface of the alimentary canal, I do not pretend to determine. I feel myself, however, fully warranted in stating, that experience, the grand criterion of the comparative value of remedies, has proved this treatment to be most efficacious. I am persuaded that if generally adopted, it would in the majority of instances lead to a satisfactory and speedy termination of this most distressing disease.

Leith, July 1841.