Morrill (F. G.)

THE TREATMENT OF TYPHOID FEVER IN CHILDREN.

By F. GORDON MORRILL, M.D.,

Visiting Physician, Children's Hospital, Boston.

E. B. Treat, Publisher, 5 Cooper Union, New York.

THE TREATMENT OF TYPHOID FEVER IN CHILDREN.

BY F. GORDON MORRILL, M.D.,

Visiting Physician, Children's Hospital, Boston.

In writing about the treatment of enteric fever in children, it seems hardly worth while to devote much time to the desirability of air space, ventilation, maintaining a moderate temperature (65°–70° F.), changing the patient's position in bed (children are apt to move about without much suggestion or assistance), strict cleanliness, and such other details as are matters of common knowledge and acceptance. I shall therefore confine my paper to questions of nourishment, drugs, and the best means of ensuring the safety of those who are exposed, directly or indirectly, to the infection.

There can be no doubt of the necessity of adequate feeding, whether the case is that of an adult or child; and experience has therefore proved that milk is the safest and most convenient form of nourishment, as well as the most grateful to the child, whose anorexia is complete, but whose thirst is, fortunately, great, during the acute stage of the fever. It should be given every two or three hours in three or four ounce portions (less to very young children), and it is seldom necessary to dilute it, unless during temporary attacks of nausea or vomiting (common enough in typhoid), when the addition of lime water or Vichy, and the administration in small but frequently repeated doses are indicated.

Sleep is often disturbed, and advantage should be taken of the fact to give milk during the night as well as the day. In this way a child five years old will take from eighteen to thirty ounces in twenty-four hours, and older ones in proportion, up to fifty ounces, which seems to be about the average limit of their capacity. Should nausea and vomiting be persistent, in spite of the measures described above, withdrawing the milk entirely, and substituting egg albumen water in teaspoonful doses (to which a few drops of brandy may be added), seldom fails to promptly relieve a trouble which, as a rule, lasts a day or two only at the most.

In cases where there is any marked degree of prostration, stimulants are of the greatest value, and their immediate effect on the pulse and general condition of the child, is pleasant to witness. Brandy in drachm doses *ter in die*, is often sufficient for a child, although I have known eight times this amount to children with typhoid fever are distinctly benefited by the ju-

be given in twenty-four hours. I believe that a majority of all dicious use of alcohol; and of forty odd cases which entered my wards during the past autumn, seventy per cent. were given brandy in amounts varying from one drachm three times a day to two drachms every two hours, at some period of the attack. The largest quantity was given during the acute stage of a second relapse, and the patient recovered.

Cold water is often craved and may be given pretty freely in cases where an ordinary quantity of milk fails to quench the thirst; but if there is the slightest difficulty in adequately nourishing the child, thirst must not be *wasted* in this way—the milk is to be insisted on.

During the acute stage of the fever there is less danger of digestive trouble if a milk diet is rigidly adhered to; but as soon as the temperature becomes normal, or assumes a low range, or sharp morning remissions, together with the patient's improved aspect signal the speedy attainment of convalescence, some predigested form of starchy food and Somatose (which I have used with beneficial results in a number of cases), should be added to the diet. The liability to reinfection must be borne in mind (seventeen per cent. of one hundred recorded cases at the Children's Hospital have had relapses), and whether the patient's improvement is followed by recovery, or merely precedes a few days which intervene between it and a relapse, an increase of nourishment in proper form will hasten the advent of health, or get the child in better condition to stand a fresh siege. When convalescence (slow and tedious in the mildest cases), is fairly established, a diet appropriate to the age of the child may be safely prescribed, and its ravenous appetite nearly, if not quite satisfied.

I have never seen the Brand method employed, and have had no experience in any special form of medication in the enteric fever of childhood, which tends to recovery, and runs a very close second to frank pneumonia, as a paradox, when its results are compared with those of the same disease in adults.

In the early stage, if there is constipation, calomel, both as a purge and intestinal disinfectant may be given. It can cause no mischief (even in the massive European dose), and may be safely used. One tenth of a grain every hour is usually enough to produce a result in eight or ten hours. Should the bowels remain inactive after a first thorough evacuation, glycerine enemata may be given every other day. If diarrhœa is present in the early

stage, calomel may still be given before employing other remedies to check the trouble, which, so far as I have observed, yields more readily to salicylate of bismuth in five or ten grain doses than to any other drug which does not contain opium.

To reduce a high temperature which is poorly borne, cool bathing may be employed; but the results are very temporary, and the average drop in the temperature (1.5° F.), hardly compensates for the extra work involved. Occasional doses of lactophenin or pepsol (three to eight grains) are very effective, and do no harm, so far as my experience goes, in any case where there are not obvious contra-indications to their use. Lactophenin will produce an average drop of 3.5° F. in four hours, and pepsol one of 4.5° F. in three hours, when given in similar amounts. These figures are taken from careful records of the temperature in sixty-five instances in which the drugs were used. Restful sleep may often be obtained in this way. Children vary widely in their ability to bear hyperpyrexia, and on several occasions I have observed one with a rectal temperature of 105° F. sitting up in bed and amusing itself with books or toys.

When the first sound of the heart is soft, and alcohol fails to regulate a weak or irregular pulse, digitalis is most useful. When disturbed sleep is not due to a high temperature, a five grain dose of trional acts admirably well as a hypnotic. Aside from the remedies above mentioned I have found little use for drugs in average cases.

The most frequent serious complication which one is called upon to treat, is that which results from the intestinal lesions failing to absorb as is customary. Hemorrhage in a child varies from very slight loss of blood with each discharge, which may continue for days, to copious and fatal bleeding of which the thermometer may give no warning whatever. In case of any considerable hemorrhage, the foot of the bed must be raised, ice-bags applied to the abdomen, and gallic acid, opium and lead given by the mouth, or ergotin by hypodermic injection. Injections of a normal salt solution into the cellular tissue may also be tried where marked prostration and anæmia are observed. Perforation, if in a position to cause general peritonitis, is fatal, and nothing more than a free exhibition of opium is indicated, unless some bold surgeon can be induced to do a laparotomy. Bed sores are rare and easily prevented. They would be far more common, as would hypostatic congestion of the lungs, if children did not frequently change position of their own accord.

Acute delirium is rare, but forcible restraint, or a "reminder" in the form of securing one or both hands to the frame of the bed, are occasionally required. Ominous nervous symptoms (strabismus, somnolence, retraction of the head, intense cephalalgia), appear in rare instances, and often vanish so promptly as to preclude the possibility of their having been due to organic changes. Mental disturbances almost invariably tend to entirely disappear, and call for no special advice or treatment. Retention of urine is rare, but daily percussion of the supra-pubic region should never be omitted in cases where there is any suspicion of a lack of intelligence or care on the part of the attendants.

Prophylaxis.—Diapers and bed linen must be carefully looked after. They should be soaked in a 1 to 40 solution of carbolic acid for six hours, then boiled, and washed in vessels kept especially for this purpose. Discharges which are received in bed pans, are to be covered with a 1 to 20 solution of carbolic acid, and after being thoroughly broken up, are to stand twenty minutes before being emptied. The hopper and bowl of the closet should be washed in 1 to 20 solution daily. The nates should be carefully wiped with a 1 to 40 solution after each discharge, and the cloths with which this is done treated in the same way as the diapers. Rubber covers should be placed under the sheet on which the patient lies, and carefully washed off with a 1 to 20 solution if it becomes soiled. Thermometers should be carefully disinfected as well as washed each time the temperature is taken. The attendants should refrain from eating or drinking while in the immediate vicinity of the patient, and should wash their hands and use a nail brush several times a day. The remains of food or drink which are brought from the sick room should be thrown away, and all eating utensils washed in a 1 to 40 solution of carbolic, then immersed in boiling water, before they are allowed to return to ordinary use. All articles of clothing which come in contact with the patient must be disinfected and washed apart from those of other members of the household. Mattresses should be aired in the sun for several hours daily, for a week after the patient recovers. When one reflects upon the infinite variety of ways in which typhoid bacilli may be carried (furniture, food, drink, utensils of all sorts, and in the air itself under certain conditions), it is a matter of surprise that the disease is not more prevalent—as it doubtless would be if the micro-organism (like that of diphtheria), did not require a special soil in which to flourish and prove its virulence.

181 BEACON STREET.