

bowels assist in the disposal of the toxin. Probably a large portion is absorbed by the kidneys and excreted, in an allotropic form possibly. If in too large quantity for easy elimination by the kidneys, or perhaps from the direct effect of the substance in its passage or by its presence in the blood, albuminuria and pregnancy kidney occur, the albumin is not the toxin but an effect of the toxin; an alteration in venous pressure will produce albuminuria and the circulation of toxins of diphtheria and scarlatina will do likewise.

In exceptional instances the kidneys may excrete the toxin without evidence of disturbance. If from excess of production or inefficiency of the thyroid a gradual accumulation of toxic material occurs, the symptoms of toxemia slowly appear, with the usual signs of intoxication.

Persistent vomiting is the most constant of these and may be the only symptom exhibited throughout the pregnancy. In other cases the system reaches the point of saturation and a trivial incident may suddenly precipitate a maternal eclamptic attack, intra-uterine eclampsia or premature labor, as Olshauser observed in 40 per cent. of his cases.

It is interesting to compare the various periods of the eclamptic seizures with the periods of glandular hyperplasia. In pregnancy the eclamptic attack is most common from the seventh to the ninth month. The "pregnancy goiter" appears in primipara usually in the sixth month, and in multipara in the fifth, thus anticipating the possibility of attack by from two to three months, but the greater part of the attacks occur about the tenth month, when the uterine metabolism has reached its maximum.

In cases which occur postpartum, the cause may arise from the process of involution and the consequent increase in the system of cell products, or the toxic product of uterine metabolism locked up in the cells of the uterus may be released by involution, or suddenly by the pain activities, and thrown in large and unmanageable quantities upon the system.

Further observation and experimentation is necessary to confirm our belief in this hypothesis, but it is certainly a relief to turn from the numerous and unsatisfactory theories of the past to one with so promising an outlook.

ACUTE INFANTILE DIARRHEA.

ITS TREATMENT.

BY J. O. MALSBURY, M.D.

PERU, IND.

While, in a general way, the plan of treatment herein mapped out will apply to any form of diarrhea, it is intended more especially for the auto-infectious forms, such as are due to a process of fermentation, which may lead to putrefaction and decomposition of the contents of the alimentary tract; the auto-infection resulting from the absorption of the toxalbumins or ptomaines, a product of the particular fermentative or putrefactive process, and if allowed to continue will lead to pathologic changes in the alimentary mucosæ.

With the above facts in view we have already indicated the cause of the trouble, and the general plan of treatment all but suggests itself: *clear the alimentary tract and keep it clear, by withholding all food for twenty-four to forty-eight hours.* The clearing process is very efficiently accomplished in a child of

a few days or weeks old, by 1 grain of calomel, dry on the tongue, every half hour until three doses are taken; one-half hour following the last dose, two teaspoonfuls of equal parts of castor-oil and aromatic syrup of rhubarb should be given. If the child is several months to a year or more of age, two-grain doses of calomel should be given as above, to be followed by six teaspoonfuls of the above mixture, better in divided doses. Should there be persistent vomiting, as there will, when the acute process is confined to, or principally in, the stomach, it should be cleared by use of the stomach-tube and a weak salt solution. If the tube is not at hand and the child can be persuaded to drink freely of pure water, better with a little salt, until free emesis, the same purpose will be accomplished. After this is accomplished the lower tract should be cleared as above, for some offending portion will have already reached the intestine, and if allowed to remain will set up trouble there. In case the vomiting is persistent, after the stomach has been emptied, precluding further medication to free the lower tract, give a hypodermic of morphin sulphate 1/200 to 1/100 gr., and atropin sulphate 1/1000 to 1/500 gr. for the younger child above mentioned; for the older one, morphin sulphate 1/100 to 1/50 gr., and atropin sulphate 1/250 to 1/500 gr. This will quiet the stomach and at the same time give the child much needed rest, while the stomach will retain such medicines as may be indicated, as well as fluid, which the little sufferer is famishing for, but which has been rejected almost as soon as taken. Now that we have the stomach quieted and the clearing process well under way, and all food prohibited as above, we will look to the restoring of our little patient to his normal self.

When we note what our little patient has lost, and remember the congested and relaxed condition of the alimentary mucosæ, the indications for further treatment are plain. The lost fluid must be replenished; the flagging vitality must be bolstered up by a stimulant, since just at this time food can not be allowed; the condition of the alimentary mucosæ demands an astringent, while the famishing thirst of the little sufferer must be gratified. All of these indications are met admirably by a *weak infusion of cold tea, plain.* In this we have the *fluid, stimulant, and astringency.* If properly prepared, the water having been previously boiled, a slightly rounding teaspoonful of best quality tea steeped twenty minutes in two or three pints of water, is given cold but not iced; it may be given freely, in fact, the thirst fully satisfied, when, in some cases, we will have given two to six pints in twenty-four hours. The lack of animal magnetism, which probably detracts very materially from the store of resistive power of the bottle-fed infants, since they do not come in contact with the mother, as do the nursing children, is a feature not to be overlooked or underestimated, and should be supplied by nestling the child to the nude bosom of the mother or nurse as in imitation of nursing. This is, perhaps, more urgently needed in bottle-fed infants; in fact, if these little "bottle-feeders" were nestled as above with more or less regularity throughout their infancy, it is a question if they would succumb any more readily on properly prepared cow's milk, than the regularly nursed infants do, on human milk. Either class of food may come to the child poor in quality, and, perhaps, containing the elements of fermentation and putrefaction, when it becomes a ques-

tion of resistance, in which case, the regularly magnetized child, as occurs during nursing, has the best of it, and will hold out longer against the encroachment of disease, as well as make a better stand during its attack. During the last few hours of the fasting period, and perhaps for the first twenty-four hours following, albumin water should be given every two or three hours; this is prepared by compressing the white of one fresh egg through a napkin and adding to it twelve to sixteen times its quantity of cold, boiled water and a little salt. The whites of from two to six eggs may be allowed in twenty-four hours, and as the stomach becomes capable of digestion, the ordinary diet may be gradually resumed.

TETANUS TREATED WITH ANTITOXIN.*

BY HERMANN B. GESSNER, M.D.

NEW ORLEANS, LA.

At this time, when the serum therapy of disease is receiving close attention, it seems well to report all cases in which a test of this mode of treatment has been made. Tetanus is not the least important of the diseases in which antitoxic serum is employed as a curative means. Again, it appears especially desirable to report and consider carefully the fatal cases, knowing as we do the readiness with which good results are reported, while practitioners are not so apt to report the unsuccessful application of any therapeutic means. For these reasons the following case is reported as concisely as the bringing out of the necessary points will permit:

Victor C., aged 7 years, a compactly built boy, of Creole extraction, presented the first symptoms of the disease on the night of April 15, 1897, when he woke up with a painful stiffness of the muscles. Two weeks previously he had got a splinter into the plantar surface of the right foot; a small sinus persisted at the site from which the entire splinter was thought to have been removed.

When first seen, on the evening of the 16th, the boy could separate his teeth sufficiently to permit the insertion of the index finger; his head was strongly extended, his back markedly arched; the abdominal muscles were a little rigid. Liquid nourishment (milk, broths) was ordered, and perfect quiet enjoined: chloral hydrate, grs. v., and potassium bromid, grs. x., were directed to be given every hour until he should fall asleep.

April 17, A.M.: Temperature 98.6 F. in rectum. Clonic convulsions had occurred during the night, with biting of the tongue. The plantar sinus was laid open, chloroform being administered. A splinter was removed, the site well cleansed, and an iodoform gauze pack introduced. Twenty c.c. of the antitetanic serum of the Pasteur Institute, obtained from Dr. P. E. Archinard, demonstrator of microscopy and bacteriology in Tulane University of Louisiana, were injected hypodermatically, ten in each flank. Chloral and bromid were given every two hours.

P.M.: Pulse 126. The boy had had several clonic convulsions, with much pain. He was more rigid. The head and back formed a marked curve. The teeth could be separated one quarter of an inch. The bowels moved once on this day.

April 18, A.M.: Temperature 101, pulse 106, respiration 26. The patient was less rigid. Marked opisthotonos was observed only during the clonic contractions, which were not frequent, but could be brought on by any irritation, such as a touch, even the attempt to swallow a small dose of medicine. Ten c.c. of serum were given hypodermatically after the administration of a few whiffs of chloroform.

P.M. Temperature 102.4. Improvement was manifest. Another dose of 10 c.c. of antitetanic serum was given under chloroform anesthesia. Two bowel movements occurred during the twenty-four hours.

April 19, A.M.: Pulse 168, respirations 56. The boy was swallowing a little better, but was very weak. Liquid peptonoids were given. Frequent, slight, general muscular contrac-

tions were observed. The bowels moved twice. Death supervened in the afternoon, without any apparent change in the symptoms.

Comment: Death followed the administration of the last dose of serum, given at a time when the patient was improving. On the principle, *post hoc, ergo propter hoc*, we might attribute the fatal issue to the last dose. While we can not deny the possibility of giving an excess of the serum, yet, considering the fact that the instructions accompanying it tell us to give an adult as much as 50 to 100 c.c. in one or two doses, it is not probable that 40 c.c., given in the course of thirty-six hours, caused the *exitus letalis* in this case. Rather is the death to be attributed to exhaustion—a great danger in all tetanic patients; in the present instance unsatisfactory feeding and lack of the absolute quiet enjoined no doubt permitted dissipation of the boy's vital energy.

HYDROCHLORIC ACID.*

SIMPLE METHOD OF ADMINISTERING.

BY CHARLES D. AARON, M.D.

Consulting Gastro-Enterologist to Harper Hospital; Lecturer on Dietetics in the Detroit College of Medicine, etc.

DETROIT, MICH.

Some of the drugs which we prescribe are offensive to the taste, and some are destructive to the tissue while on their way to the stomach, but it is part of the practitioner's duty to guard his patients against possible injury and discomfort. Scrupulous thought has, therefore, been devoted to this phase of our practice, and a too-ready host of proprietary saviors have rushed to the rescue. We have aromatic this and elixir that, and all kinds of implausible and indefensible preparations to meet the embarrassment. Yet, all these have proved to be a sorry failure, and hydrochloric acid and other mineral acids are still a trial in administration.

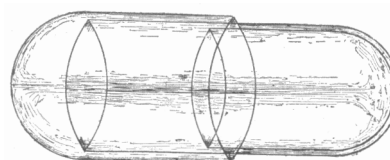


Fig. 1.—Double capsule—closed.

It is evident that we must try to reduce or make nugatory the irritating effect of hydrochloric acid on the mucous membrane of the mouth, the pharynx and the esophagus. The mineral acids decalcify the tooth substance, and this decalcification opens up a chance for bacterial propagation, for micro-organ-

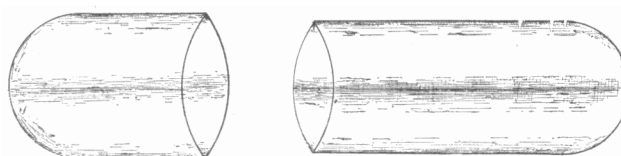


Fig. 2.—Single "00" capsule.

isms settle in the softened tissue and their proliferation is rapid, causing the destruction of the matrix and the disintegration of the tissue. This is the process of caries of the teeth, which is the principal danger in administering hydrochloric acid. We attempt to meet this difficulty by giving the drug through a glass tube, but this does little good, since

*Contributed to the Transactions of the Southern Surgical and Gynecological Association to qualify for membership.

* Presented at the Annual Meeting of the American Gastro-Enterological Association, Washington, D. C., May 2, 1899.