

THE HÆMORRHAGIC DISEASE OF THE NEW-BORN*.

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The self-limited and definite character of certain forms of hæmorrhage among the new-born was impressed upon me by an analysis I made some three years ago of thirty-two cases of this affection.† Having observed eighteen cases of this disease since then, it seems to me of interest to class them all together under one head, which I have called the Hæmorrhagic Disease of the New-born.

Although, as I shall show later, the etiology of this disease may be very various, there are certain characteristics which pertain to all the cases, so that for practical purposes it is desirable to study the affection under one head.

Of the fifty cases, forty-five occurred in the Boston Lying-in Hospital, four in the out-patient department of the hospital, and one was seen in consultation practice. Thirty-one of these died and nineteen recovered—a mortality of 62%.

In speaking of hæmorrhage in the new-born, it is a common error to think only of bleeding from the navel. That the disease is in most cases a general disease, and not limited to one spot, as the navel, is shown by the fact that there were only three cases out of my fifty where the navel was alone found bleeding, and it is very possible that in these three cases there was some internal, undiscovered hæmorrhage. In other words, when bleeding occurs in the new-born it is apt to occur from various parts of the economy, the affection being a general and not a local one.

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†Hæmorrhages in the New-born. Boston Medical and Surgical Journal, August 27, 1891.

The following table gives the various sources of the hæmorrhage:

	CASES.
Intestines.....	20
Stomach.....	14
Mouth.....	14
Nose.....	12
Navel.....	18
Ecchymoses of skin.....	21
Scratch of skin.....	1
Cephalhæmatoma.....	3
Meningeal.....	4
Abdominal cavity.....	2
Pleural cavity.....	1
Pulmonary.....	1
Thymus gland.....	1
From the gastro-enteric tract, nose, navel and ecchymoses.....	3
From the gastro-enteric tract alone.....	19
From the navel alone.....	3
From the ecchymoses alone.....	6

Slight, uncomplicated hæmorrhage from the uterus or vagina, pseudo-menstruation, is not very uncommon in the first few days of life, and is not included in this list.

Another point which is of interest is that the disease runs a very definite course, either to death or to complete recovery, within a definite time. This self-limited nature is characteristic of acute infectious diseases and suggests a relationship to them.

Of the fifty cases the bleeding first showed itself, in all but three, within the first seven days of life, the exceptions being on the eighth, ninth and fourteenth days. The majority of cases began on the second or third day, thirteen starting up on the second, and sixteen on the third day, while only eight began on the fourth, and two on the first day. That the duration of the disease is brief is shown by both the fatal cases and by those that recovered. One half of the fatal cases lasted one day, or less;

all the others died within a week, except one case that died of the effects of the hæmorrhage on the eighth day, several days after the bleeding had ceased. Of the favorable cases, all recovered within nine days, two-thirds of these recovering within five days.

This self-limited character is widely different from that of hæmophilia in the true sense of the word, an inherited disease whose hæmorrhagic tendency continues as long as the patient lives. Yet it is a common mistake to speak of these cases of hæmorrhage in the new-born as cases of hæmophilia, and a very hurtful one from the point of view of prognosis and treatment. The fact is true hæmophilia in bleeder families is rarely seen before the end of the first year, while infants who bleed during the first days of life and recover are not apt to bleed in after-life. Moreover, a family history of bleeding is not found in these infantile cases. Instances have been recorded, one by Dr. Rotch, of circumcision being performed a few days after recovery from this hæmorrhagic disease of the new-born, without unusual hæmorrhage taking place.

In four of my cases hæmorrhage had taken place from the base of the cord as well as elsewhere, but the patients recovering the cords dropped off, one in two days, the other three in four days after the cessation of the disease, without starting up a fresh hæmorrhage.

Another point of difference between hæmophilia and the hæmorrhagic disease of the newborn is that the sexes are about equally represented among the new-born, the preponderance, if any, being among the males (thirty males to twenty females in my list), while among true bleeders females very largely predominate, the proportion being 13 to 1.

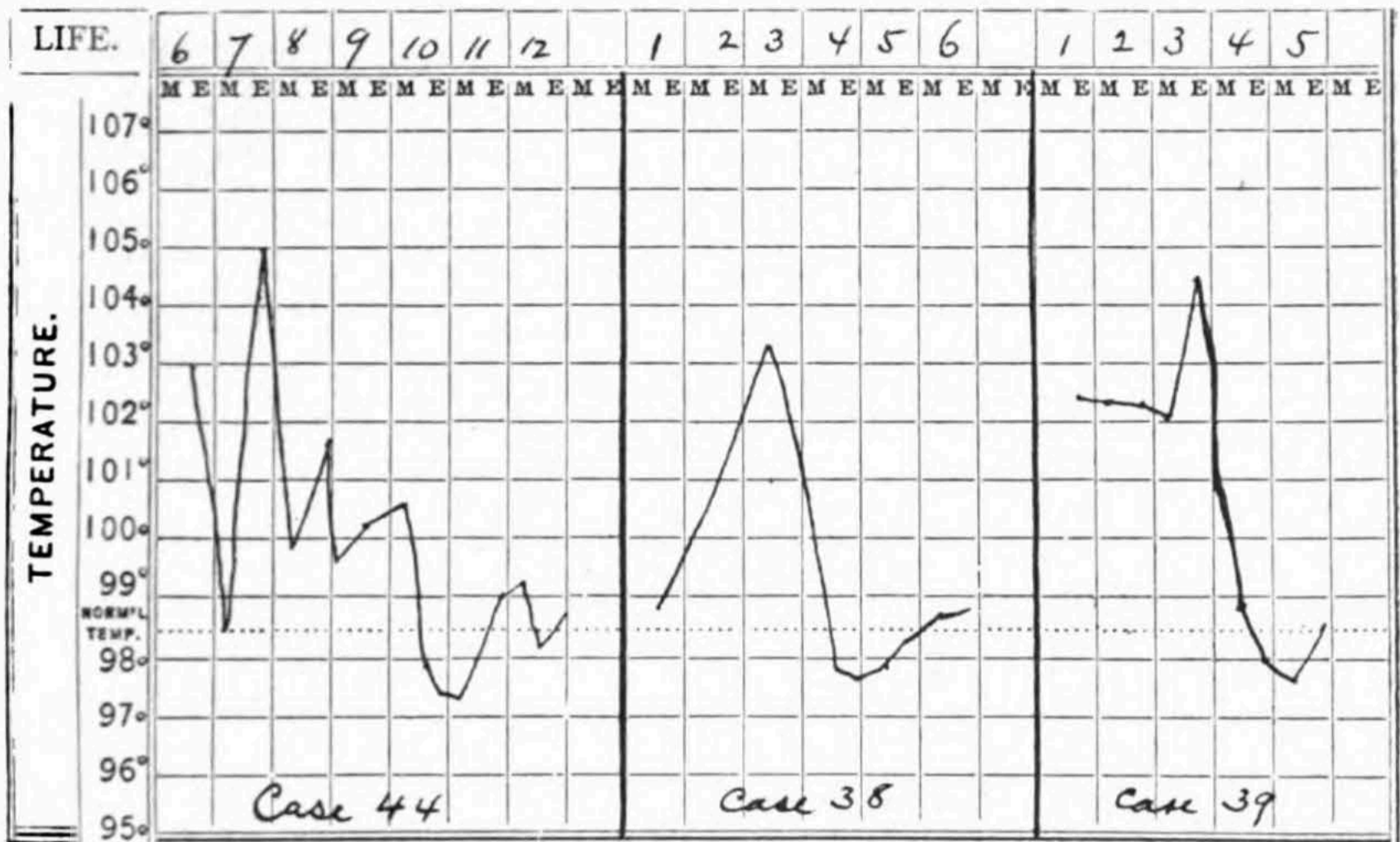
I have laid a good deal of stress on the distinction between cases of hæmorrhage in the new-born and true hæmophilia, and on the brief duration or self-limited course of the disease, as with this knowledge we can approach a case in a more hopeful spirit. My consultation case is one in point. A boy on the third day of his life developed ecchymoses on his head and groin and on one foot.

There was also bleeding from high up in the bowel on the fifth and sixth day, the dejections being tarry from altered blood and simulating meconium. I saw the child for the first time on the seventh day of its life, the fourth of the disease. The physician in charge said to me the child is of course a bleeder, has hæmophilia, and if it does not die now, will die from some cut or scratch later. He had given the family this gloomy prognosis. Two days later the child developed a marked paralysis of the left side of the face, and to a less degree of the left arm and leg, presumably from meningeal hæmorrhage. I still refused to give a fatal prognosis as the child had, from its color, evidently lost but little blood and continued to be well nourished. On the seventh day of the disease there was beginning improvement in the paralysis, and it was apparent that no more hæmorrhages occurred.

On the twelfth day the paralysis of the left arm and leg had disappeared although the face still remained paralyzed on the left side. On the fifteenth day the head began to swell, careful measurements having been taken every day, and it was believed that an external hydrocephalus had developed. The child eventually entirely recovered and is now nearly three years old and perfectly well. In this case the physician in charge believing that the case was a "bleeder" and hopeless might have let the child die by not insisting on great care in feeding. The belief that the disease was self-limited, with careful artificial and wet-nurse feeding, the mother's supply proving a failure, was what saved the baby.

Another point which links some of these cases together, and which, like the self-limited character, suggests an infectious nature, is the elevated temperature observed in some. In fourteen cases the temperature of these infants was studied and in all but two was found to be elevated at first from 101° to 103° , in one case to 106° , and later, on cessation of the hæmorrhages, to sink to normal, often becoming subnormal. The two exceptions to this rule were in reality not exceptions as the temperature was not taken until the second stage of depression was reached.

The following charts are given as representative of these cases.



The frequency of this affection in the hospital itself as compared with its frequency in the out-patient department is of interest and suggestive of the infectious nature. Thus forty-five cases occurred in the hospital out of a total of 6,700 deliveries, or a percentage of .67, about two thirds of one per cent.; while in the out-patient department, among 4,000 deliveries, there were four cases or one-tenth of one per cent. This prevalence in hospitals has been observed by others, notably Ritter, at the Prague Foundling Hospital. This comparative prevalence in the hospital has no connection with puerperal septicæmia, as this disease is practically eradicated from the Boston Lying-in Hospital, but it occurs independently of it, just as thrush may get a foothold and flourish in a hospital, although it is not common in outside practice.

The tarry or meconium character of the stools in the case related above from bleeding high up in the intestine with digestion or decomposition of the blood, leads me to say that this may sometimes cause the disease to be overlooked. Usually in these cases a slight pink halo surrounds the dejection on the napkin from the staining of the blood. Of course where the bleeding is lower down,

or soon voided, there is no mistaking it. Where the existence of blood in the stools is doubtful the corpuscles may be recognized under the microscope, or, where even this is impossible from disintegration, as was the case with two of my series, I succeeded in finding hæmine crystals by a simple test.

A drop of the semi-liquid stool is mixed with a little glacial acetic acid and a few crystals of common salt on a glass slide and heated to boiling. On drying, the dark-brown rhombic crystals of hæmine are easily recognized under the microscope if blood is present.

The post-mortem examination made in nine of these cases throws no additional light ; the source and position of the hæmorrhages were found, but in no case any gross lesion of the mucous membrane or blood vessels. In one case cultures were made by Dr. Councilman from the blood, with negative results. In looking up the literature of the subject I found the records of 81 autopsies. In the majority of cases nothing abnormal was found except the hæmorrhages and the resulting anæmia. In a very small number of cases the following diseased conditions were found : syphilis, enlarged spleen, enlarged liver, inflammation of the umbilical and portal veins, acute fatty degeneration.

As regards treatment, if we have in mind that the disease is self-limited, we will not give up a case as hopeless, but will do everything to tide it over the critical period. Perfect quiet, most careful and persistent feeding from spoon or dropper with milk drawn from the mother or wet-nurse, or careful artificial diet may be all that is necessary to prevent a fatal issue. Warmth in the stage of collapse and alcoholic stimulants even in the stage of bleeding seem to me to be beneficial. I am very sceptical as to the value of astringents, ergot or mineral acids for internal hæmorrhage in these cases. External bleeding from scratches or from the umbilicus are best checked by intelligent and persistent pressure. Styptics are unsatisfactory. The actual cautery is sometimes successful. The mortality in my cases was 62 per cent. In 709 cases col-

lected from various authors the mortality was 79 per cent., probably because many mild cases were overlooked.

In conclusion let me sum up briefly the various causes that have been given of this affection. True hæmophilia stands first; and this, as I have shown, is not a cause except possibly in rare instances. Prolonged and difficult labor: it is stated in the American Textbook of the Diseases of Children just published that "by far the most frequent cause, however, of hæmorrhage in the new-born is direct mechanical injury received during birth." This is certainly not the case. In only six was the labor difficult among my 50 cases (one version, one high forceps and four low forceps), and in many the labor was particularly easy. Early ligation of the cord, plethora, debility, retention of the meconium, difficulty in the establishment of the pulmonary circulation may possibly, one or all, act as exciting causes; but one or several of these conditions including difficult labor are so frequently met with, without such dire results to the child, that they can, it seems to me, be properly excluded from the true causes. Moreover, cases of hæmorrhage occur without these exciting causes. Syphilis is undoubtedly a cause in some instances, this being so in three of my cases.

Acute infectious diseases such as small-pox, typhus fever, etc., predispose to hæmorrhage. Septicæmia in severe form from infection of the umbilical wound is another possible cause. In none of my cases did it seem probable that this was the case. Only two of the mothers of these children suffered from puerperal septicæmia, and those only in a mild form.

The general and not local nature of the affection, its self-limited character, the presence of fever and the greater prevalence of the disease in hospitals would certainly suggest an infectious character, in some cases at least, of this hæmorrhagic disease of the new-born.