

HEMORRHAGIC DISEASES OF THE NEWBORN.

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Newborn babies are specially prone to develop hemorrhages, and because of the indefinite knowledge to-day of the true pathology of the condition, the symptom-complex is now called in general terms, "hemorrhages of the newborn." Formerly an attempt was made to describe each case according to the location of the hemorrhage, in this way having a number of terms descriptive of the same general underlying disease. King, Genrich and Runge, quoted by Koplik, state that hemorrhagic disease in the newborn occurs about once in a thousand cases. Shukowsky's estimate of twenty-nine in thirty thousand agrees with this statement.

ETIOLOGY.

The etiology of the condition is obscure; but in view of the fact that fever is a prominent symptom in most cases, the general consensus is that the most frequent causative factor is a general septic infection. The newborn develop sepsis easily and the entrance of the offending organisms to the system may be at many points, the gastrointestinal tract, the mouth, the genito-urinary tract and the umbilicus being the most frequent portals. Gartner asserts that he has found bacilli in the feces in cases of melena, proving his theory that this form of hemorrhage is a coccal sepsis. In Winckel's disease, a condition closely similar, streptococci and bacilli have been found in various organs and the blood. The changes which occur in syphilis, which has been named as a cause, are in the blood vessels, rather than in the blood itself.

Lambert, in the report of his most interesting case, gives the following bacteria which have been isolated in reported cases: *Staphylococcus*, *Pneumococcus*, *Bacillus pyocyaneus*, *Bacillus coli*, *Bacillus typhosus* and *Bacillus diphtheriae*.

Among the other causative factors have been mentioned prematurity, atelectasis, deformity of the heart, persistent foramen ovale or ductus arteriosus, ulcer of the stomach and intestine, the latter due to a venous stasis, followed by a thrombosis; fatty degeneration of the arterioles; extreme delicacy of the blood vessels; congenital obstruction of the portal venous system; congestion from pulmonary, cardiac or hepatic disease; excessive secretion of gastric juice resulting in partial digestion of the mucosa of stomach and intestine, congenital hemophilia and the great changes taking place in the circulation incident to birth.

LOCATION.

Hemorrhages in the newborn may take place from any organ and the hemorrhage may occur before birth or subsequently. When postnatal, it usually occurs within the first three days after birth.

In Dr. Townsend's fifty cases, quoted by Rotch, he gives the following location of the hemorrhages:

Intestine	20	Pleural cavity.....	2
Stomach	14	Lung	1
Nose	12	Thymus gland	1
Mouth	14	Gastroenteric tract, nose,	
Umbilicus	16	and umbilicus accompanied	
Ecchymosis in skin.....	21	by ecchymosis of skin....	3
Scratch of skin.....	1	Gastroenteric tract alone....	19
Cephalic hematoma.....	3	Umbilicus alone	3
Meninges	4	Ecchymosis of skin alone... 6	
Abdominal cavity	2		

Holt gives Ritter's statistics in 190 cases as follows: Hemorrhage from the umbilicus, 138 (umbilicus alone, 97); intestines, 39; mouth, 28; stomach, 20; conjunctivæ, 20; ears, 9.

I have seen one case of hemorrhage into the suprarenal gland,¹ a number of cases of cephalic hematoma, both single and double, and the case shortly to be reported, of melena, or hemorrhage from the stomach and intestine. In the case of hemorrhage in the suprarenal capsule, the right suprarenal gland was distended to the size of an orange, with blood, and blood-clots were found behind the kidney and in the free peritoneal cavity. The diagnosis was not made in this case during life, the most prominent symptom being a profound jaundice. The hemorrhage was found postmortem.

Hemorrhage from the gastrointestinal tract may occur independently of bleeding from any other organ, and is called melena. If from the mouth alone, the quantity of blood lost is usually small; if from the stomach, large quantities may be vomited or passed from the bowel in form of clots. As stated, it has been thought by different observers to be due to an ulceration of the mucous membrane, following septic emboli of its vessels, or digestion of the membrane by a hyperacid gastric juice, or to a general pyogenic septic condition.

Like the other forms, it usually occurs during the first three days, and with great variety as late as the ninth day. The child may first vomit some red blood, followed soon afterward by a coffee-ground vomit; or blood may first be noticed in the discharges from the bowel. The fact that the meconium is very dark in color may cause blood in the actions to be overlooked, unless it is passed in large clots. If passed in considerable quantity the napkin at the edge of the mass will be stained a reddish color; if blood is suspected, a microscopic examination will reveal the blood corpuscles. It should be borne in mind, before a diagnosis of hemorrhagic disease is made, that the source of the blood may have been a fissured nipple, or blood from the nose which had been swallowed. I have seen one case which caused considerable uneasiness until it was finally decided that the source of the blood was a cracked nipple.

PROGNOSIS.

The prognosis in hemorrhagic diseases of the newborn varies according to the site of the bleeding. Taken as a whole the mortality is given by various authors differently; in Townsend's cases 62 per cent., and in another series of 709 cases 79 per cent.; Williams places it at 60 per cent. Holt states no observer has seen more than one-third of his patients recover.

The following history is given as illustrative of that form of hemorrhage known as melena:

Patient.—Child, iii-gravida. (First labor instrumental, occiput posterior, forceps rotation. Second labor normal but prolonged.) Third labor began at 12 midnight; birth at 1 p. m. following day. Vertex presentation; first position; mechanism and labor normal. Child female, weight 9 pounds 8 ounces; normal in every way; primary respiration prompt and normal; no cyanosis; nursed vigorously when put to the breast. An abundant supply of milk appeared on the third day.

Hemorrhage.—On the third day at noon the child vomited red blood, sufficient in quantity to stain its clothes through and through. Shortly after this a very large movement of meconium was passed containing red blood, very easily distinguished in the black meconium mass. The child was

1. Arch. of Pediat., November, 1892.

pale and blue around the nose; the pulse was weak and rapid; the child refused to nurse after vomiting blood, the nursing being discontinued after hemorrhage was reported. For two days vomiting of blood and hemorrhage from the bowels occurred, the latter profuse and passed in masses of clots.

Treatment.—After treatment with subcutaneous injection of gelatin solution, 2 per cent., described below, the child made a good recovery; at the end of the second week it had regained its birth weight and continued to thrive.

TREATMENT.

Different methods of treatment have been suggested by various authors. Koplik suggests the cold coil; ergotin, $\frac{1}{2}$ to $\frac{3}{4}$ grain subcutaneously; Hensch suggests one drop of liquor ferri sesquichloridi in barley water, every hour; Williams suggests gallic acid, gr. 1, every three hours, oil of turpentine, m. 1, in mucilage every hour; extract of krameria, grains 2, every two or three hours, or an injection into the bowel of an infusion 4 to 5 ounces, and calcium chlorid to increase the coagulability of the blood.

The subcutaneous injection of gelatin employed in the case reported was followed by very prompt recovery. The English gelatin was used in this case, as the ordinary commercial gelatin has been found contaminated with the tetanus bacillus.

Two sterilizations of the gelatin are made in order to be sure that this organism is destroyed. An ordinary antitoxin syringe or aspirator, without too large a needle, can be used for the injection. The cellular tissue of the back can be used, the solution warmed and 20 c.c. can be slowly injected.

Weil² of Paris experimented in patients with hemophilia, in whom he was able to control the tendency to bleed for a certain time with the injections of fresh serum. He states that the "sera of man, the rabbit, horse and cattle have been found equally efficacious, although *in vitro*, the action of the human serum is more evident in correcting the disorder." He injects 30 c.c. under the skin, and suggests the use of diphtheritic serum, if fresh.

As long as there is any bleeding from the stomach food can not be given in this way, but it can be given by nutrient enemata.

After writing this paper I saw another case, very similar to the one reported, except that the hemorrhages began on the second day and were more profuse and frequent. The gelatin solution was used subcutaneously every three hours and this child recovered, although a very grave prognosis was given.

This treatment was advised in a third case, the attending physician consulting with me in regard to it over the telephone, and this patient also recovered, though the physician thought that the child would die.

2. Internat. Clin., series 17, iv.

Tuberculosis and Discharged Prisoners.—Dr. J. B. Ranson, physician at Clinton Prison, at the recent meeting of the New York state conference of charities and correction, spoke of the danger of discharged prisoners infecting others with tuberculosis. He says that there are annually discharged from the penal institutions of the United States over 100,000 prisoners, and from the penal institutions of the State of New York 12,000. Of this number a large percentage are in some degree infected. These become scattered throughout the country, living under unsanitary conditions, regardless of the care of their person, and often indulging a feeling of hostility to society. The possibility of infection which this vast army may possess and its responsibility for the prevalence of this disease in our large cities and towns can not be estimated.

Clinical Notes

DOUBLE SUPPURATIVE PAROTITIS COMPLICATING TYPHOID IN A BOY ELEVEN YEARS OLD.*

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Patient.—T. P., aged 11, an Italian, was admitted to the University Hospital on Aug. 15, 1908. His father, mother and one brother were living and well. One sister had died, aged 15, cause unknown. The patient had never been sick before his present illness.

Present Illness.—He had been sick ten days, and in bed seven days before coming to the hospital. At first it was noticed that he stopped playing and would lie around the house most of the day. Later he complained of headache and general pains all through his body. He developed a severe diarrhea and became so weak he could scarcely move. He had no hemorrhage from the nose.

Physical Examination.—General: The patient was a well-developed boy with moderate wasting of the muscles and subcutaneous adipose tissue. The bony skeleton was well proportioned and the chest normal in shape. The patient's mental condition was decidedly dull; he was semistuporous but could be roused with some difficulty. His eyes were sunken and surrounded by dark rings. There was some ptosis of the upper lids, and the conjunctivæ were somewhat dry. The pupils were slightly dilated, equal, and reacted to light. The lips were dry and cracked; the mouth was kept open and the teeth were dry. The tongue was thickened, dry, fissured with a brownish-yellow coating, and the breath was offensive. The external lymphatic glands were not enlarged. There were no rose spots on arms, chest or abdomen. A slight Kernig's sign was present on both sides. The knee-jerks were absent. There was no ankle clonus, or Babinski. The leucocyte count was 9,600.

Heart: The apex beat was visible in the fourth interspace, 0.5 cm. to the right of the midclavicular line; there was also a diffuse impulse seen all over the precordium. Cardiac dullness extended from the right parasternal line to the left midclavicular line, and began above at the lower border of the second rib. The first sound at the apex was feeble. The heart's action was regular and slightly rapid, but no murmurs were audible. The second sound at the pulmonary area was moderately accentuated.

Lungs: The type of breathing was principally thoracic. Expansion was good, and slightly more marked on the right side than the left. Tactile fremitus could be felt normally over both lungs, and was more marked on the right side. Over both lungs breath sounds were normal, and vocal resonance was heard well everywhere. No râles were present. There was normal pulmonary resonance both anteriorly and posteriorly.

Abdomen: The abdomen was distended, particularly the lower half. There was some resistance to palpation, more on the right side than on the left. Slight tenderness was present in the region of the gall bladder. To percussion the abdomen was everywhere tympanitic. The spleen extended above from the eighth rib in the mid-axillary line to the edge of the ribs; and anteriorly as far as the anterior axillary line. It was not palpable. The liver reached from the fourth rib to the costal margin, in the mid-clavicular line. It could not be palpated.

Clinical Course.—Thirteenth day of illness: Forty-eight hours after admission there was no change in the patient's condition except in the right upper quadrant of the abdomen. Here there was localized rigidity of the abdominal walls, with marked tenderness. There was a palpable mass, dull on percussion, in the region of the gall bladder, extending in length 6 cm. beyond the edge of the ribs in the mid-clavicular line,

* Presented at the Philadelphia Pediatric Society, Oct. 13, 1908.
* From the Service of Dr. J. P. Crozer Griffith.