

The discrepancies seen in the pathological findings of Carbone and Kyber, Ballantyne explains by assuming that the case of Kyber was a more marked one than that of Carbone.

A. Wassmuth⁴ in 1899 described the microscopic appearances in the skin of a case of congenital ichthyosis born at term. He notes thickening of the layers of the epidermis; in places he finds nucleated cells containing granules of keratohyalin, but he accentuates the fact that a proper stratum granulosum was not demonstrated anywhere save in sections of the scalp. The stratum corneum he found to be thickest in the scalp, palms and soles, and thinnest in the skin of the chest and abdomen.

Wassmuth found that different lamellæ of the stratum corneum respond variously to stains; he employed Gram's stain, recommended by Paul Ernst, for the detection of keratin, staining sections of the skin of fetuses of various ages as a control. He reached the conclusion that a differentiation of a stratum granulosum, stratum lucidum and stratum corneum in the integument in congenital ichthyosis is not possible, the early stages of keratinization occurring throughout the entire epidermis. Wassmuth emphasizes the fact that a fully developed stratum corneum does not exist, explaining in this way the abnormal breadth of the epidermis.

The stratum corneum is relatively thin in embryos as a result of maceration, which causes desquamation of the superficial layers. In cases of fetal ichthyosis exfoliation occurs only in moderate degree or not at all, and Wassmuth believes imperfect keratinization to be the cause.

Thickening of the stratum Malpighii, he thinks, accounts in part for the hyperplasia of the horny layer; furthermore the enlarged and numerically increased papillæ with their proportionately more complex capillary networks aid the increased development of the epidermis. He describes the papillæ of the corium as very high and numerous, "enormously increased in all parts of the body" and containing rich networks of distended capillaries. The sweat glands are described as everywhere increased in number and normal in structure. The sebaceous glands are increased in number everywhere save in the scalp; they are frequently somewhat enlarged and their ducts are at times distorted, being dilated and lined with a horny layer. The elastic tissue of the corium is diminished in amount and the panniculus adiposus he describes as well developed in skin removal from the back of the neck.

Recently G. Finizio⁵ reported a case of fatal fetal ichthyosis.

A microscopical examination of the the skin of this fetus showed the stratum Malpighii to be of variable depth; in some places thicker, in others, especially on the plantar surfaces, thinner than normal. Mitotic figures are not more numerous than in the skin of a normal fetus of the same age.

Finizio questions the presence of a true stratum granulosum, but finds numerous cells with protoplasm containing deeply staining basophilic granules.

A well-defined stratum lucidum was not found; the layers of the stratum corneum are wavy in outline and have a reticular appearance. The connective tissue of the corium is infiltrated with lymphoid cells, the elastic tissue being normal.

The papillæ are numerous, large and richly vascular.

The sebaceous glands are well developed, some acini showing dilatation and degenerative changes. The sudoriparous glands and the arrectores pilorum muscles are well developed, the former especially on the plantar and palmar surfaces.

It will be seen that the microscopic appearances of the case described in this paper resemble in many respects those noted by Kyber and Wassmuth.

As a result of some influence not understood, the epithelial elements of the skin in this disease are apparently stimulated to active growth, the rete Malpighii sharing the general tendency to cell proliferation. Consequent upon this proliferation, the glands which are offshoots from the stratum Malpighii are increased in number. To meet the increased nutritional needs of the rapidly-growing epidermis the papillæ of the corium enlarge and multiply.

Discussion will appear next week.

⁴ Beitrag zur Lehre von der Hyperkeratosis diffusa congenita. Beiträge zur path. Anat. und Allgem. Path., 1899, p. 19.

⁵ Su di un caso di ittiosi fetale grave. La Pediatria, Anno viii, N. 3. Marzo, 1900.

GASTROINTESTINAL HEMORRHAGE IN THE NEW-BORN.*

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On Sept. 18, 1899, a fine, plump baby girl, eight pounds in weight, was born. The mother was a primipara, and her period of gestation 290 days. The family history on both sides was good.

Labor pains came on strong at 12 a. m., and as they continued, but with little advance of the child, forceps were applied at 5 p. m., delivery being quite difficult. The cord was cut in about five minutes after birth. The child was somewhat asphyxiated, but in a few minutes was breathing nicely. She was put to the breast in about one-half hour, when she sucked finely. All the next day she nursed well, as all healthy babies should do. Her bowels were moved and she passed water freely.

On September 20, at midnight, when the baby was 31 hours old, she vomited and passed by the rectum some material which looked much like meconium. I saw the child in twenty minutes, when she seemed all right, but the nurse said that she had been cold and somewhat collapsed just after the hemorrhage. The material she had passed both by the mouth and rectum, looked like meconium mixed with blood. At 2:15 a. m. she passed some more material by the rectum, but none by the mouth. This was almost pure blood and quite profuse. It looked like the hemorrhage of typhoid fever. At 4 a. m. she had another hemorrhage per rectum. This was of pure blood, very profuse, saturating the napkin. She was in a state of great collapse, extremities cold, pulse scarcely perceptible, and I gave her 1/150 gr. of the sulphate of morphia and 1/5000 gr. of atropia hypodermically, applying warmth to the extremities. Albumin water and brandy were given by the mouth, and the child was enveloped in absorbent cotton, especially about the pelvis.

At 8 a. m. still another abdominal hemorrhage of pure blood occurred, and saturated the cotton; this left the baby practically bloodless, and the pulse imperceptible. She seemed to have lost all her fat, was all shriveled up, and looked like a child after an attack of cholera infantum. At 2 p. m. she passed a few dark clots. Her condition was now desperate, and she was very restless and irritable, with temperature 104 F. An ice-cap was put to the abdomen, hot-water bottles to the extremities, and albumin water and brandy given as before. One minim of aseptic ergot was given hypodermically. At 7:30 p. m. she was quieter, her pulse perceptible, temperature 99 F., and at 11 p. m. she was resting fairly well.

On September 21 she was crying, had slept some during the night, and had passed a normal stool. At 8 a. m. her temperature was 99 F., and pulse stronger. At noon it was still stronger, and she took nourishment better. At 5 p. m. I ordered milk from the Walker-Gordon laboratory, as she would not nurse.

September 22, at 8 a. m., reports showed she did not rest well during the night, and refused all nourishment. At 4 p. m. she nursed for the first time since she had the hemorrhage.

On September 23 reports showed that she slept well during the night and was nursing well.

From this time on the baby continued to improve, though very weak and thin for several weeks. In about one month she was doing as well as though nothing had happened, and is now healthy. The umbilical cord did not separate until October 6, eighteen days after birth.

A great many causes have been given for this affection: infection; sepsis; hereditary syphilis; tuberculosis; hemophilia; purpura hemorrhagica; fatty degeneration of the fetus; plethora; general feeble state; atelectasis; cyanosis; asphyxia; tardy establishment of the respiratory and circulatory functions; congenital malformations of the heart; enlargement of liver and spleen; acute infectious disease, as smallpox, measles, etc.; change in the blood or blood-vessels; too speedy

*Presented to the Section on Diseases of Children, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

ligature of the cord; slow and difficult labor; external violence; irritant matter in the gastrointestinal canal, as worms or retained meconium; ulcers on the gastrointestinal surface, and hyperemia of the mucous membrane of the alimentary tract. Of all these causes but few were present in my case: asphyxia, tardy establishment of the respiratory and circulatory functions, and slow and difficult labor.

It is probable that one or more of the above etiologic factors are present in most of the cases and may possibly act as exciting causes, but these are so often present in thousands of births, in which no hemorrhage is seen, that it is difficult to assign one cause for many cases.

The fact that so many more of these cases occur in institutions than in private practice would point to an infectious nature. Drs. Kilham and Marcellis¹ report ten cases of hemorrhagic disease in the new-born as occurring in 54 births between Feb. 19 and May 11, 1897, in a New York Maternity, or 18 per cent., of which 5 had hemorrhage from the bowels and 2 from the mouth. The ward was entirely free from sepsis, there was no apparent cause for the hemorrhage, and the cases followed one another in quick succession, often overlapping, and ceased when proper measures were taken for isolation. Dr. Townsend² reports, in 6700 births in the Boston Lying-in-Hospital, 45 cases, or .67 per cent.; while in the out-patient department there were but 4 cases, or .1 per cent. This comparative prevalence in the hospital has no connection with septicemia, as the disease is practically eradicated from that institution, but occurs independently of it, just as thrush may get a foothold and flourish in a hospital, although it is not common in private practice.

Drs. Kilham and Marcellis made bacteriologic examinations in two of their cases and found an organism suggesting the diplococcus of pneumonia and probably belonging to the pneumococcus group. Gaertner found, in two cases, a short bacillus much like the bacterium coli commune. This bacillus, injected into the peritoneal cavity of young animals, chiefly dogs a few days old, produced a disease accompanied by hemorrhages resembling that seen in the newly born. (Holt.) Other observers have found various organisms: the streptococcus alone or associated with an organism having all the characters of the diplococcus of pneumonia; bacillus pyocyaneus alone or associated with the staphylococcus; bacillus lactis aerogenes; an organism with the characters of Friedlaender's bacillus. At present the results of bacteriologic examinations are very much confused, but they all seem to point to a specific cause.

The very definite course of this disease, soon ending in death or complete recovery; its self-limited nature; its greater prevalence in institutions; the elevated temperature, as in my case; the fact that it is in most cases a general and not a local disease, not limited to one spot, and the bacteriologic findings, all point to its infectious nature and suggest its relationship to the acute infectious diseases.

Hereditary syphilis is present in a small proportion of cases. Sepsis seems to be associated with a large number. Hemophilia is a different disease from this. It is an inherited one whose hemorrhagic tendency continues as long as the patient lives. Bleeding in hemophilia rarely occurs before the end of the first year of life. In hemorrhagic disease the sexes are about equally represented; while in hemophilia the proportion of females is 13 to 1. Circumcision has been done within

a few days after recovery from the bleeding of gastrointestinal disease without any unusual hemorrhage.

Holt says that there is a class of cases in which the hemorrhages are not associated with any known process. These are characterized by the fact that they are spontaneous in origin, having no connection with delivery. They are most often from the umbilicus, the mucous membrane of the stomach and intestines, or beneath the skin, but they may be from almost any mucous surface or into any organ of the body. These hemorrhages probably arise from changes in the blood or in the blood-vessels, or in both, whereby the vessels are no longer able to hold their contents. The predisposing causes of bleeding in early life must be emphasized, viz: the fragile condition of the blood-vessels and the great changes taking place soon after birth in the circulation and in the blood itself.

Jacobi³ says that the round perforating ulcer in children is more frequently met with in the newly-born and quite young than in advanced childhood. The causes of gastric and duodenal ulcers are very numerous. Some enumerate among these arterial anemia, others venous hyperemia or stasis in the hepatic vessels; or circumscribed hemorrhages into the tissue. Others assign thrombosis as the cause; others emboli, or lessened alkalinity of the blood, or hemoglobinuria. In this way hemorrhages and ulcers frequently go hand in hand, and often are the cause of each other. In the newly born, hemorrhages from the digestive tract are known by the name of melena. In the majority of cases melena occurs from localized and circumscribed ulcers, or from rupture of blood-vessels between the first and third day of life, rarely after the first week. It is caused by the sudden changes in the circulation occurring at and after birth. At that time, and from the same causes, is hyperemia of the mucous membrane found extensively, even in healthy babies. Hyperemia results in hemorrhage very much more frequently in the newly-born and in infants, because of the thinness and permeability of the walls of the blood-vessels.

This is a very serious disease. Probably one-half of the patients die. The mortality, according to a number of writers, varies from 35 to 79 per cent. Townsend collected 709 cases showing a mortality of the latter figure. The prognosis in an individual case depends on the physical condition of the child, on its ability to take nourishment, and on the amount of blood lost. That the most desperate cases may recover is shown by mine, seen by several medical friends, none of whom would venture a favorable prognosis.

Townsend says: As regards treatment, if we have in mind that the disease is self-limited, we will not give up the 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 be beneficial.

Holt says that the administration of drugs internally for the control of hemorrhage is entirely without influence on the disease.

Others recommend cold drinks, ice, ergotin, gallic acid, perchlorid of iron. If collapse is present, inhalations of oxygen, counterirritation, hypodermoclysis of normal salt solution are of use. Some recommend large rectal

¹ Arch. Ped., March, 1899. ² Ibid., August, 1894.

³ Intestinal Diseases of Infancy and Childhood, pp. 151-2.

injections of astringent solutions, with the idea of reaching the site of the bleeding. This, however, is scarcely practicable.

The most recent mode of treatment is the use of a solution of gelatin, both by the mouth and by the rectum, with a favorable result in one case. My use of morphia hypodermically seemed to do more good than anything else. I looked upon this case as somewhat akin to the abdominal hemorrhage of typhoid fever, in which I use morphia similarly.

Discussion will appear next week.

CHRONIC INFLAMMATION OF THE TEAR PASSAGES.*

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Lachrymal disease constitutes from 2 to 3 per cent. of all eye cases. Of 95,596 patients treated in the eye department of the Illinois Charitable Eye and Ear Infirmary between the years 1859 and 1898, 2147, or about 2.25 per cent., suffered from disturbance of the tear-conducting apparatus. Females seem more liable to be affected than do males, in the proportion of at least 2 to 1. This statement seems somewhat strange from the fact that the latter suffer much more from atmospheric exposure, undoubtedly an indirect etiological factor of considerable importance. Fuchs explains this predisposition on the part of women to the "zealous use which the female makes of the lachrymal apparatus." We find the disease occurring in all ages. C. W. Hawley¹ has recently reported five cases of mucocele in the new-born, and clinical experience demonstrates that infants are frequently sufferers from lachrymal disease.

Any obstacle to the performance of the physiological function of the ocular drainage apparatus may bring about the condition commonly known as "watery eye." The normal overflow of tears may be impeded by malposition of the lids, stenosis or occlusion of the punctum, canaliculus, or nasal duct.

In order to thoroughly appreciate the pathologic conditions present, some knowledge of the anatomy and physiology of the parts is necessary. The conducting apparatus begins with two minute orifices, the puncta lachrymalia, situated on the free borders of the lids, and lying in contact with the eyeball, about two lines from the inner canthus. These openings lead into minute canals, the canaliculi, which pass inward and empty into a reservoir, ovoid in shape, the lachrymal sac. The dilated lower extremity of this sac forms the upper part of the nasal duct, which extends downward to its exit in the inferior meatus of the nose, the membranous walls forming valve-like folds at close intervals. Anatomically, there exists an intimate relationship between the lining membrane of the nasal duct and that of the turbinate bodies of the nose, this condition being of importance in view of the statement to be made later on concerning the etiology of dacryocystitis.

The normal function of lachrymal conduction is vested in a delicate mechanism in which the act of winking, capillary attraction of the canaliculi, muscular contraction of the sac, and valvular suction of the nasal duct undoubtedly play important parts.

The lachrymal sac is subject to both acute and chronic

inflammatory attacks; the one occurring with all the usual symptoms of suppurative disorganization, the other, a sequel of an acute attack of severe inflammation, or often a quiescent inflammatory condition without previous subjective manifestations. The patient complains of a flowing of tears over the cheek. The eye is said to be "watery," and at the least exposure to wind or dust, fairly "swims" in tears. The vision is more or less interfered with, a frequent wiping of the eye is necessary to bring about a clear image. There may be present a blepharitis or an eczematous excoriation on the cheek in the region of the inner canthus, the result of irritation from the continuous overflow. There is generally present a distension of the tissue over the lachrymal sac, which may or may not have received the notice of the patient. The more observant will have discovered that pressure in this locality has caused a flow of viscid matter to enter the eye, or in exceptional cases to flow into the nostril. In a minority of cases, where there has not been sufficient retention of fluid in the lachrymal sac to distend the walls, mucocele may not be present.

The question often arises in a case presenting manifestations of epiphora, whether the excess of tears does not arise from some other cause than that of interference with the normal outflow. We all know that exposure, at times, to the elements, offending particles of dust, obnoxious gases, refractive asthenopia, photophobia from inflammatory conditions of the eye, atony of the muscles of the lower lid without noticeable malposition of the punctum, senility, violent outbursts of emotion, sneezing and vomiting, may cause an overflow of lachrymal secretion. In a suspected case, then, we have two methods to aid us in a clear determination of the case: 1. In a case of lachrymal blennorrhea, on making direct pressure over the lachrymal sac, the swelling will be felt to give way under the manipulation, and in most cases the viscous discharge already spoken of will be seen to exude from one or both the puncta on the margins of the lids. 2. The forcing of fluid through the passages into the nose will be found to be exceedingly difficult in chronic inflammation of the tear sac, the swollen and thickened walls or strictured lumen of the duct preventing free patency. Besides, a careful examination of the lids and eyeball for inflammatory manifestations and a thorough research into the refractive condition of the eye will, in many cases, tend to clear up any doubt concerning this symptom.

Inflammation of the lachrymal sac is, in most cases, undoubtedly an extension of a similar process from the nasal mucous membrane. The similarity of anatomical construction between the lining membrane of the nose and the nasolachrymal duct renders this extension easy of consummation. One would naturally expect, also, an extension of inflammatory process from the other end of the lachrymal tube, from the conjunctival surface as well, but it seems that this source of infection does not play an important part. In proof of this statement, it may be said that we very rarely encounter dacryocystitis as a complication of gonorrheal conjunctivitis or other severe ocular inflammation. On the other hand, it must not be forgotten that the conjunctiva and cornea are extremely susceptible to infection from perverse lachrymal discharge, especially if there be present an abrasion of the tissues. This matter is of extreme import to the surgeon, who should undertake no operative procedure on an eye thus exposed without at first removing or modifying the conditions present, and to the patient, whose chief danger from dacryocystitis lies in

* Read before the Illinois State Medical Society, held at Springfield May 15-17, 1900.

¹ THE JOURNAL, 1900, Vol. xxxiv, p. 401.