

room the windows should be kept open one half or one hour daily, during which time the child, of course, is to be removed to another room. Fresh air is undoubtedly an absolute necessity for a robust development. Children born in summer should be taken out in the air from the second or third day on; in winter, however, eight or ten weeks at least should be allowed to pass by before they can be carried out on a sunny noontday. Older children can never be out too much in the fresh air; the earlier they are sent out, and the later in the day they are called in, all the better do they develop. In cities, the physician therefore finds it necessary to insist with the utmost energy that families should hire themselves gardens or shady grass-plots, where children may remain undisturbed the entire day. The promenades in public places, so much in favor with the nursery-maids, cannot in any way replace the undisturbed enjoyment of the child in a private park.

PART II.

SPECIAL SUBJECTS.

CHAPTER I.

DISEASES ORIGINATING DIRECTLY IN CONSEQUENCE OF DELIVERY.

ALTHOUGH, in a discussion on the diseases of children, it appears perfectly conformable with the purpose to adopt the plan of the latest works on Special Pathology, to simply take up the diseases of one part of the body after another, and not to base the classification upon the nature of the pathological alterations, still in the "Pædiatrica" we meet with a class of affections which have a definite physiological connection, and therefore must also be jointly treated of before all others. It is those diseases which are indebted for their origin to the act of the delivery, and to the transposition of the child from the uterus into the atmospheric air alone. Here belong: (A) Asphyxia of the new-born; (B) Atelectasis of the lungs; (C) Cephalæmatoma of the new-born; (D) The pathological conditions of navel; (E) Trismus neonatorum; (F) Sclerema; (G) Melæna; (H) Icterus of the new-born, and (I) Ophthalmoblenorrhœa of the new-born.

A.—ASPHYXIA NEONATORUM.

SYNCOPE of the new-born, or asphyxia (from *a* privativum and *σφίσις*, the pulse), is a condition in which the inspiratory muscles after the delivery do not contract at all, or only imperfectly, and the breathing therefore does not commence. The movements of the heart continue here tolerably rhythmical, although they are feeble and not always perceptible, and only heard on auscultation; the name asphyxia does not, therefore, seem to have been very happily selected for this affection. Two different forms of asphyxia are distinguished in the new-born; in the one form the children are cyanotic, usually they are very large and strongly developed, the integument is infiltrated, the tongue

thick and blue, protruding from the mouth, the eyeballs project from their orbits, and the cardiac beats are feeble and unrhythmical. This form is also called asphyxia apoplectica, because it is probably due to a congestion of the brain, in consequence of imperfect action of the heart. In the other form the children are deathly pale, the extremities hang down powerlessly, the lower maxilla drops down upon the sternum, the cardiac impulse and the pulsations of the umbilical cord are irregular and barely to be felt, the respiration is either totally absent, or the thorax at short intervals rises short and spasmodically, and the meconium flows off involuntarily. The respirations constantly grow more infrequent, the cardiac beats feebler, and death usually ensues in a few hours. Between these two principal forms there are transitions which do not reflect perfectly either of the delineations just sketched; in general, however, they are rare.

Etiology.—Asphyxia has various causes. It may originate from compression of the umbilical cord against the pelvic walls, or the cord is wound around the neck of the child, or the placenta has become prematurely detached. The skull may have suffered in its passage through the narrow pelvis or from the forceps, or the air-passages are plugged up with blood and mucus. Finally, early deliveries, feeble parents, and especially exhausting diseases of the pregnant mother, are known to be causes of asphyxia. Compression of the larger blood-vessels of the neck can only induce the apoplectic form, because a pressure that will merely make the arteries of the neck impermeable can scarcely produce asphyxia, as the more superficial cervical veins, with thin coats directly beneath, will only suffer. The flow of the blood to the head does not thereby become arrested, its return only is hindered.

Compression of the navel-string, on the contrary, exercises an influence over the umbilical vein before it does over the arteries; more blood flows, therefore, from the foetus than to it, and anæmia with exhaustion, and, finally, the so-called asphyxia nervosa, can only result from this condition.

Pathological anatomy does not here supply any constant results. At the autopsy, nothing but a still tolerably complete fetal circulation is found, and, in particularly violent deliveries, or very unfavorable pelvic disproportions, extravasations of blood between the meninges or in the brain itself.

The course of this evil, as may of itself be understood, must be a very rapid one; if no regular respiratory acts and distinct cardiac beats take place in a few hours, life will cease altogether, which termination more frequently occurs in the nervous than in the apoplectic form. Very often, with proper assistance, the respirations are established

after some time, the beats of the heart become stronger and more rhythmical, and the cyanosis in the one form, as well as the abnormal pallor in the other, disappears completely.

Therapeutics.—The treatment depends mostly upon the cause. First of all, the mouth should be thoroughly cleaned, and this is best accomplished with the finger. By touching the palate and epiglottis, slight acts of choking and coughing are induced, which alone may suffice for the establishment of the respirations. If nothing was achieved by the cleaning of the mouth, then, in the cyanotic form, two tablespoonfuls of blood should be allowed to flow from the severed funis. If the cord does not bleed any more, all further attempts at abstraction of blood must be renounced. Pale children very naturally tolerate no loss of blood, and are rather to be guarded against it by carefully tying the cord. A very simple and always handy remedy is, a few slaps with the open hand upon the buttocks. Partly from the pain, partly from the shock, very useful reflex actions of the respiratory muscles ensue. If this procedure is also ineffectual, the child should be put in a warm bath, taken out in a few minutes, swung up and down several times, and then put into the bath again. A beneficial stimulation of the skin ensues from these alternate warmings and coolings of the child. Irritating fluids may also be dropped upon the chest, among which, vinegar, brandy, ether, and Cologne water, are the most useful remedies. A very much liked, often praised, and then again discarded procedure is the direct inflation of air. For this purpose, the mouth and nose having been first cleaned, the physician applies his own lips to the open mouth of the child and blows, when naturally the air will come out at the nostrils of the child; if they are so permeable, the physician should compress them with his thumb and forefinger and then blow in air anew. It is a great error to suppose that any air is forced into the lungs by this method; in most instances, the epiglottis, through the distention of the mouth with air, becomes depressed still more firmly upon the larynx, and then all communication between the mouth and lungs is completely cut off. Still, the irritation originating from the distention of the mouth may possibly have a similar effect to that produced by touching the glottis or tickling the fauces.

If it is really desired to blow air into the bronchi, then *Chaussier's* instrument especially constructed for that purpose should be introduced into the trachea, the epiglottis having been previously elevated by the point of the index-finger. Many and renowned obstetricians, however, discard the inflation of air altogether, and experiments performed upon new-born animals, which have been artificially asphyxiated by immersing them in warm water, also speak against it. It is rational to lay the child upon the right side, with the upper half of the body slightly

elevated, because by that the right auricle will come to lie downward, the left upward, and thus the blood that has entered the right auricle will have to mount straight upward if it desires to reach the left auricle directly through the still open foramen ovale instead of passing downward into the right ventricle. This posture may facilitate the closure of the fetal passage by the valve. Electricity will always be the surest means of causing the inspiratory muscles to contract. And, as the inspiratory muscles can only dilate the thorax at the expense of the lungs, the alveoli must therefore become filled with air, which, if it once properly fills and distends them, cannot escape again so rapidly, and will continue to act more and more as a stimulus for repeated inspiratory movements; the greatest difficulty which we have to contend with here is that there is "periculum in mora," and that to produce an electric current always requires a certain amount of time and knowledge which can hardly be expected of a midwife.

All these attempts at animation are to be persevered in so long as the beats of the heart can still be perceived by auscultation. Not until these have been inaudible for several minutes may we abstain from all further attempts and pronounce the child dead. If we succeed at all in saving an asphyxiated child, then we usually accomplish it in one or at the most in two or three hours.

B.—ATELECTASIS PULMONUM.

If the inspiratory muscles do not contract sufficiently and regularly after the birth of the child, the lungs will also be but imperfectly and irregularly distended; in some parts the alveoli will retain their fetal condition; they will be airless and remain collapsed. This anatomopathological condition is called *Atelectasis* (from *a* priv., *τελος*, the end, and *ἡ ἐκτασις*, the dilatation).

A whole lung or an entire lobe is seldom found affected; generally a few scattered lobules, especially posteriorly and downward, are observed to be atelectic; they are sharply defined in both lungs, dispersed throughout the parts that contain air, are bluish-red in color, and compact, do not crepitate on pressure, and sink in water; the cut surfaces are smooth, regular, and not granular. The atelectic portions of a lung may be easily inflated, but these inflated parts still remain of a darker color than of that by which they are surrounded. Atelectasis is satisfactorily differentiated from lobular pneumonia, by this possibility of inflation of the atelectic parts. In addition, the passages of fetal circulation in most of these children are found still pervious; no trace of inflammatory exudation, however, is to be detected in any part of the lungs.

Symptoms.—Generally, the children come asphyxiated into the world, or at least they breathe from the time of birth but superficially and imperceptibly; their voice is characteristic of the evil. They are neither able to cry loud nor continuously, but will only utter a few single, weak, moaning cries, and are also unable to suck actively or continuously for any length of time. Sometimes they are temporarily cyanotic, sleep much, and have a pale, cool skin. The pupils act slowly, are slightly dilated; the pulse is feeble and slow. The percussion-sound of the thorax, when the atelectasis is not very extensive, is scarcely ever altered, in general somewhat less sonorous than in healthy new-born. Owing to the slight motions of the thorax, the respiratory sounds are naturally very feeble. Bronchial respiration is scarcely ever heard over the atelectic portion of the lung; crepitating rhonchi, however, may sometimes be detected. If this condition has existed for several days, spasmodic contraction of the facial muscles and general convulsions come on, the respiratory and circulatory movements constantly grow feebler and slower, the skin becomes cooler, and the children either die by degrees, or expire suddenly during a severe tonic or clonic convulsive attack.

Causes.—(1.) Asphyxia and all the conditions mentioned in connection with it. Atelectasis itself may be regarded as a milder degree of protracted asphyxia. (2.) Premature and feeble children. (3.) Authors also consider the inhalation of too cold air as a cause; it is much more probable, however, that pneumonia originates from the inhalation of cold air; and (4.) Too rapid and easy deliveries are stated to give rise to atelectasis. Atelectasis acquired some time after birth will be spoken of further on, in connection with pulmonary affections.

Treatment.—The treatment is precisely the same as for asphyxia. As a prophylactic, it is of importance to cause every child, in the first moments of its life, to cry loud and continuously, for the purpose of which the remedies recommended for asphyxia are the most appropriate: inflation is totally useless here, but the utmost benefit is derived from the cautious application of electricity to the pectoral muscles. As regards general rules, the children should be confined to a room of uniform temperature, of at least 59° F., and be kept as warm as possible, by warm garments and bottles filled with hot water; their attitude should be changed frequently, and they should be carried about. They should not be fed with a spoon, but be made to suck, even if it costs them some exertion, because deep inspirations also originate through that. I once used the emetic recommended by Jörg, pulv. r. ipecac. gr. ii, but with an unhappy result, and since then confine myself to tickling the palate and epiglottis with

the finger, once or twice daily, which induces violent retchings, followed by correspondingly deep inspirations.

An attempt has also been made to imitate the respiratory acts by external pressure; the extremely flexible thorax of the new-born is, in this procedure actively and gradually compressed with the hand, the back of the child resting upon a firm support. Neither from this measure have I seen any favorable results, which in fact could scarcely have been expected, for these jerking compressions of the thorax have no more resemblance to the inspiratory movements than the corking of a bottle with its opening.

C.—*CEPHALÆMATOMA*.—*BLOODY TUMOR OF THE HEAD*.

Symptoms.—The bloody tumor of the head, *cephalæmatoma* (from ἡ κεφαλή, the head, and αἷμα, blood), also called *thrombus neonatorum*, is a painless, soft, elastic, distinctly-fluctuating tumor upon the scalp, and is produced by an extravasation of blood between the pericranium and bone, and, for the purpose of more accurate definition, is also called *cephalæmatoma subpericranium*. The extravasation most probably occurs during the delivery; for as early as the first day of life, when the common *caput succedaneum* begins to disappear, a very distinct swelling is noticed, which remains from the fourth till the sixth day, at the longest, when a tumor of the size of a ripe apple is discovered upon one of the parietal bones. Usually it is observed on the right side, and is only exceptionally met with on both parietal bones. They never extend over a suture.

When this tumor has existed for several days, the finger, in traveling toward it from the normal scalp, encounters a firm bony ring which surrounds the base of the tumor. This is a bony exuberance which has developed itself between the bone and the periosteum, which is elevated by the extravasated blood (Pl. II., Fig. 5, No. 6), and denotes the commencement of absorption. Gradually the tumor loses its softness, and imparts to the finger a peculiar sensation or noise, due to a commencing formation of bone upon the surface of the pericranium facing the extravasation. By degrees the tumor decreases in height, constantly becomes harder and flatter, and, after three or six months, an irregularity or inequality of the bone is only detected by carefully feeling with the finger, and the scalp at this time may easily be moved over the tumor. *Cephalæmatoma* is a tolerably rare disease, and occurs only once or, at the most, twice, in one thousand new-born children.

Etiology.—Its cause, according to *Valleix*, seems to be the following: In most of the easily-delivered children, an ecchymosis of the

pericranium is found, three inches in length and two in width, extending to both sides of the sagittal suture, more extensive, however, on the right parietal bone than on the left. Most probably it is due to the circular pressure of the dilated os uteri. In fact, these ecchymoses are most frequently met with on those places where the *cephalæmatomæ* generally occur, so that the latter seem to be only a higher degree of those small hæmorrhages which commonly occur.

In the frequency of difficult deliveries and the rarity of *cephalæmatoma*, it will certainly be necessary to assume an especial thinness or friability of the vessels of the cranium, in addition to this mechanical circumstance, and the *cephalæmatoma* in *breech deliveries* observed by *Nägele*, *Hüter*, and *Meissner*, show conclusively that the affair is not so simple as *Valleix* supposed, but that still other causes must participate here.

In addition to these peculiar bloody tumors of the bones of the head, hæmorrhages upon and beneath the *Galea aponeurotica* likewise very rarely occur after difficult deliveries, especially as a result of the use of the forceps; they are very diffuse, never have an osseous ring, and are more rapidly absorbed than the genuine *cephalæmatoma*, attended by a greenish and brownish discoloration of the scalp. Pl. II., Fig. 6, exhibits a section of such a *cephalæmatoma subaponeuroticum sive spurium*.

Finally, conjointly with the true *cephalæmatoma*, but also without it, an extravasation of blood is occasionally found upon the internal surface of the skull, between the bone and *dura mater* (Pl. II., Fig. 7). Convulsions and paralysis are the usual consequences here of pressure on the brain. It is not possible to diagnose positively this meningeal apoplexia; when, however, these symptoms supervene upon *cephalæmatoma subpericranium*, then the complication of *cephalæmatoma meningeum* may be assumed with tolerable certainty. This process usually terminates in death.

Besides being liable to be mistaken for *C. subaponeuroticum*, the genuine *cephalæmatoma* may also be confounded with:

(1.) *Caput succedaneum*, the common tumor of the scalp. It is an oedema of the scalp, does not fluctuate, and pits on pressure. It disappears in the first twelve or twenty-four hours, whereas *cephalæmatoma* is scarcely perceptible at birth, grows from day to day, till, at the end of eight days, it has attained its greatest dimensions, and becomes surrounded by a bony ring. The *cephalæmatoma* is often hidden by the *caput succedaneum* for the first twenty-four hours.

(2.) With *congenital prolapsus of the brain* (*hernia cerebri congenita*). Rupture of the brain never occurs on the parietal bones, but always *between* the cranial bones, in the sutures and fontanelles. It

bulges out more when the child cries or coughs, and easily induces convulsions. The scalp covering it is mostly thin and devoid of hair.

(3.) With *vascular tumors*. These are very rare in the new-born; and, when they do occur, are very seldom met with upon the scalp. They do not fluctuate, have a doughy feel, and no bony ring. The integument covering them has a bluish tinge, due to the strongly-developed veins beneath.

Treatment.—The treatment may very readily be divined from the delineation which we have given of the course of the evil. If the cephalæmatoma is quietly left to itself, is not squeezed, the skin covering it is not irritated, and no surgical procedures are undertaken, it becomes completely absorbed, as stated above, in from three to six months, the children at the same time continue to develop without any hinderance, suffer no pain when the uneven bone is pressed, and, in general, experience no bad effects from the entire process and its sequelæ.

Notwithstanding these incontrovertible facts, there are a number of methods of treatment which have been invented partly by surgeons anxious for an operation, and partly by altogether too meddling physicians. The tumor has been washed with all possible aromatic waters, been smeared with iodine, ammonia, and blue ointments, etc., etc. A mild pressure has been exercised upon the tumors by penciling them with collodium, or by a tin plate with which the child's cap was lined, caustics have been applied, setons introduced, and, lastly, the blood has been evacuated from the tumors by puncturing, slitting, or even by dividing them by a crucial incision.

Compression, cauterization, puncturing, and incisions, only cause harm and danger through irritation of the scalp, and exposure to the air of the bones denuded of periosteum. In the so-called discussive treatment, the most harmless remedies are the best, and I therefore use only some indifferent kind of fat, which is daily rubbed upon the tumor. According to *Fürth's* report, I learn to my satisfaction that, for many years back, sixty-nine cases have been treated in the Vienna foundling-houses on the purely expectant plan, and with the best results.

D.—DISEASES OF THE NAVEL.

After the cord has been divided, the portion remaining adherent to the abdomen of the child begins to dry up, and falls off between the third and tenth day. The time for the separation of the cord from the body is subject to the formation of the funis; when it is thin, it will drop off rapidly; when thick, or, as the midwives say, fat, it requires a longer time for the water contained in the Whartonian

gelatinous substance to become absorbed or evaporated. As a result of the customary enveloping of the cord in a rag, and of confining it by the belly-band, it becomes flattened like a piece of tape, on which the arteries and vein are seen as three dark stripes. At the place where the Whartonian gelatinous substance joins the abdominal walls, the integument, at the shrinking of the umbilical cord, becomes contracted into a radiated depression, and, when the cord finally falls off, a tolerably firm, dry cicatrix is found to have formed. In some instances the integument is found prolonged for some distance upon the cord, by which, after the latter has dropped off, a disproportionately large pad and a deep funnel result, a condition that has been denominated "flesh navel," and is delineated on Pl. I., Fig. 9, a and b.

In fat umbilical cords, this process of cicatrization is less advanced; instead of the cicatrix, a red, inflamed, humid, or an actual suppurating surface appears, from which various pathological conditions originate. The desiccation of the cord progresses only in the living child; when the new-born dies, soon after birth, the cord *does not desiccate*, but quickly begins to *rot*, and, in medico-legal autopsies, this point may serve as an index in determining the time when death ensued.

Treatment of the Normal Navel.—In order to obtain a uniform desiccation and dropping off of the umbilical cord, it is necessary to protect it from all traction and maltreatment. It should be wrapped up in a fine soft piece of cotton or linen rag, and confined to one side by the belly-band. In dressing and undressing of infants, as well as during bathing them, all handling of the navel-string, that is constantly becoming stiffer, should be avoided, and the attempt should never be made to pull or twist the cord with a view to its speedy removal.

The following pathological processes occur during or after the fall of the cord:

(1.)—**INFLAMMATION OF THE UMBILICAL VESSELS** (*phlebitis and arteritis umbilicalis*).—It sometimes happens fortunately, however, but rarely, that the coagulated gelatinous substance which fills out the umbilical vessels, beneath the abdominal muscles, becomes purulent, decomposed, and produces a sero-purulent discharge from the navel. By pressing around it, a few drops of serum may be squeezed out at one time. Owing to the pain and inflammation, the children are very restless, exercise the abdominal muscles as little as possible, and invariably have fever. Soon pyæmic inflammations of the serous membranes, or erysipelas of the abdominal parietes, become superadded thereto, and the children perish, at the longest, by the end of the third week. When, exceptionally, no purulent absorp-