

never met with in children who respire quietly, for, in the first place, cavities in children under two years of age, as is well known, are of extremely rare occurrence, and in the second, even if they do exist, this sound can only exceptionally be detected by percussion. No diagnostic importance can therefore be attributed to it.

The size of the thymus gland may be ascertained by percussion. If the manubrium sterni is carefully and quickly percussed as sharply as possible, a dulness will be detected, which decreases in circumference from month to month. By this examination the physician can frequently convince himself that many children have a large thymus gland, and yet never suffer from spasm of the glottis, and also that, in many children who suffer from violent spasm of the glottis (or what has been called *asthma thymicum*), a thymus gland cannot be found on percussion.

Auscultation, in adults the most important part of the physical examination, offers in children fewer advantages, partly on account of their constant restless condition and irregular breathing, partly owing to the smallness of space and the propagation of the sound, favored as it is by the elasticity of the thoracic walls, and lastly from the fact that the infantile voice can neither be called into action nor suppressed at the wish of the examiner.

In emaciated children, when the intercostal spaces present marked depressions, it is altogether impossible to adapt the stethoscope accurately, and hardly any child tolerates the auscultation of the anterior or lateral surfaces of its thorax with the naked ear, therefore it only remains for us to auscultate the back. But while in the adult we definitely know the space that is bounded by tracheal respiration, in children this is not the case. In healthy children we hear over the entire back, often even over the entire thorax, *a loud expiration and a tubular inspiration*, so that, although this condition, when met with in an adult, would make us unhesitatingly affirm an extensive consolidation of the pulmonary tissues, yet it would not in children. We have not in these auscultations both the strongly-defined sounds of normal vesicular respiration, and the bronchial respiration, but over the greater part of the thorax a sound very much like bronchial breathing, and difficult to distinguish from it. Thus the main conclusion which in the adult we are able to form from bronchial respiration, namely, solidification of pulmonary tissue, is lost; in children we have chiefly to depend upon a mere comparison of both thoracic moieties, upon which of the two it is most distinctly heard. Auscultation of the voice furnishes good cardinal points. The voice, it is true, consonates all over the infantile thorax, but where solidified pulmonary tissue exists, there it consonates so forcibly that the examiner believes he holds his ear

against the mouth of the child, and that it cries directly into it. This sign is all the more valuable, as it is available in crying children, and therefore does not necessitate any particular care or loss of time in examining the child.

Palpation is the simplest and most convenient method of examining the infantile thorax. When the hand is laid upon the chest of a child, the temperature and moistness of the skin are immediately appreciated. Since thermometric measurement, owing to the restlessness of children, is not applicable, in private practice in particular, it is therefore necessary for the physician to become accustomed to judge of the temperature of the skin as accurately as possible by the hand alone, for augmented temperature is the most important of the group of symptoms which we call fever, and our therapeutic procedures in a great measure are conducted in accordance with it.

Besides the above general advantages, the hand that is laid upon the chest also feels the fremitus of the voice, i. e., the vibrations of the thorax communicated to the hand, which originate with the voice, and disappear again as soon as it ceases. These vibrations are most strongly felt at the spot where they originate, over the trachea and larynx, very distinctly along the spinal column, in the space between the scapulae, plainly in the lateral regions, and over and above the clavicles and the sternum. Where the heart and liver are in direct contact with the chest, the fremitus is completely arrested. Layers of adipose tissue also weaken the vibrations.

Now, these phenomena occur in every healthy child, but become modified as soon as a part of the pulmonary tissue undergoes solidification by compact tubercles or scirrhous infiltration, lobar hepatisation or carnification. When, in the above affections, the larger bronchi, terminating in the solidified parts, remain permeable, *the voice is felt much stronger than in health*. Occlusion of a bronchus abolishes all fremitus over a corresponding portion of the lung. Fluid effusions into the pleural sacs, where the liquid keeps the lung from the ribs, also hinder us from *feeling* the voice. On the other hand, in the compression of the lungs that necessarily results from that condition, the fremitus is much augmented over those parts of the thoracic walls against which the compressed lungs lie.

In addition to the voice, the rhonchi may also be elicited by palpation. If the tenacious masses of mucus which fill the trachea and bronchi in the form of lamellae or trabeculae are set in motion by the respiration, a certain sound is produced, which is carried along the thoracic walls farther and more distinctly than any other. On this latter circumstance is based the erroneous supposition that these sounds originate where they are most distinctly felt. The higher up toward

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the trachea the vibrating mucus is situated, the more diffused are the sounds produced thereby felt over the thorax; the smaller the calibre of the bronchus containing the mucus, consequently the nearer the periphery of the lung, the more circumscribed will the sound be on the thoracic walls.

Palpation of the voice and rhonchi should never be omitted, and in restless children must even take the place of percussion and auscultation.

These are the main points to which the physician has first to direct his attention in the sleeping or at least in the quiet child. Percussion should always be the last thing to perform, because by it the child is apt to be waked from its sleep.

The examination of the abdominal cavity is perhaps still more important than the examination of the thoracic, for in early life diseases of the intestines are by far more frequent than those of the lungs and heart. If, in the adult, percussion of the abdomen gives no reliable results, on account of the fluctuating gas in the gut, in the child, where this is of such frequent occurrence, it is of still less value. In all kinds of intestinal catarrh, the bowel is tympanitic, and distended, so that the liver and spleen, on percussion, appear to have perceptibly diminished in size.

Valleia, when he desires to examine the abdomen of a child, causes it to be brought suddenly to a bright window or near a light, on which the restlessness, as a rule, instantly ceases; the child is attracted by the light, and gazes at it steadily for some time. This moment must be made use of to make a slow, increasing pressure upon the abdomen, to which the child will calmly submit so long as the pressure causes no actual pain. In this manner the abdomen of the youngest child may frequently be pressed so firmly as to touch the spinal column. If the pressure is really painful, the child will utter an agonizing cry and distort its features, which sometimes directly ceases again as soon as the pressure has been removed.

Serous effusions into the peritoneal sac, which occur principally after scarlatina and in tuberculosis of the peritonæum, is difficult to detect in the supine position. The serum then sinks back into the posterior part of the cavity and the intestines float upon the top of the liquid against the abdominal walls, so that fluctuation can nowhere be discovered. But if the child be allowed to sit up or to lie upon the belly, the serum sinks downward and forward, and is then easy to be detected by percussion and by fluctuation.

The *anus* should be carefully inspected in every child. In every diarrhoea it becomes red, and forms a certain index of the severity and duration of the evil; on it also usually appear the first symptoms

of congenital syphilis. The internal examination is not attended by any difficulties whatever; the little finger well oiled is readily introduced by a slow, rotatory motion, but this procedure always causes pain, and should only be performed when actual indications for it exist.

The *genitals* also deserve, in all cases, to be closely scrutinized. They are reddened in diarrhoea, and the scrotum especially excoariates very rapidly; and the female genitals secrete a larger quantity of mucus. The simplest manner of examining the urethra is by introducing a silver probe, bent like a catheter, for boys, which procedure is of service, as a remedy in many cases of strangury.

The *inner surfaces of the thighs* are the best indices for judging of the fleshiness of a sick child. An indisposition, and particularly a diarrhoea of several hours' duration, makes the formerly firm, tense integument soft and somewhat lax, in twenty-four hours small folds form in it, and, if the disease continues, the adipose substance disappears so completely that, in place of the former symmetrical condition, flabby folds form, which, however, as the nutrition improves, fill up again surprisingly quick, and the inner surfaces of the thighs once more display their former shape and solidity.

The examination of the mouth should never be omitted. By pressing slightly upon the chin the child will usually open the mouth, or a finger may be introduced and carried slowly backward between the cheek and gums, till it reaches the anterior border of the ascending ramus of the lower jaw; here the finger is insinuated between the upper and lower maxilla, and now the mouth may be opened to the required extent. By a little adroitness and practice it is very easy to examine with the index-finger the posterior pharyngeal wall, the posterior nares, the epiglottis, and even the glottis itself; such an examination will often give much important information in certain cases of diphtheritis, retropharyngeal abscesses, croup, etc.

The tongue, in children, is even less "the mirror of the stomach" than in adults. Children with severe intestinal diseases very frequently have a perfectly normal red tongue, and conversely healthy children with a good appetite and regular digestion often exhibit a very white, or, at least, a tongue spotted with islands of white fur. Many parents so train their children from the earliest age, that they will put out the tongue whenever ordered, and accomplish some good by their obedience. The young ones, however, carry their good breeding so far, that they constantly put out their tongue, even upon the street, for the family physician, whom they often recognize at a distance, and to the general amusement of the passers-by. Teething children with swollen gums allow their mouths to be examined very unwillingly, it is therefore necessary to become accustomed

to examine both jaws as rapidly as possible by one sweep of the finger, so that they may not thereby be irritated and disquieted.

Finally, there are two sounds which we have to note in the examination of children: the *cry* and the *cough*.

Children cry only during the expiratory act. During inspiration, it is true, some single sounds occur, for instance, in spasm of the glottis. But these loud, long-drawn inspirations are always single, and, properly speaking, cannot be included in the description of "cry," for by this we understand a succession of tones quickly following each other. The ordinary cry, therefore, takes place only during expiration; it is loud, ringing, long-drawn, and, in children of equal age, of tolerably equal pitch: still the tone of the cry has, in almost every child, something peculiar, which cannot be more accurately defined than the variations of the human voice. A momentary disturbance of the circulation must always ensue during crying, because the air in the lungs becomes compressed by the abdominal pressure, and can only escape slowly through the tense glottis, and not in comparison to the degree of its compression. After a deep inspiration, the child begins its cry by opening the mouth wide, when the tongue may sometimes be seen moving about in slight convulsions over the margins of the gums, the *alæ nasi* become dilated, the eyes tightly closed, and numerous wrinkles form upon the cheeks and forehead, the face growing constantly redder, its veins, as well as those of the neck, become turgid, and the cry is prolonged to the utmost without renewing the inspiration. When this period arrives, it rapidly takes a deep inspiration, and thus brings about a momentary remission of the distortion of the countenance. These distortions last as long as the child continues to be agitated; but, when it becomes pacified, the inspirations and expirations become uniform again, the wrinkles disappear from the face, a few slight short cries follow, the mouth gradually becomes closed, and a slight exhaustion follows, which generally terminates in a calm sleep. Sometimes, three or four cries, in rapid succession, in one expiration, are followed by one long-drawn cry, which terminates in quivering strains. This cry has a great similarity to the bleating of the goat. It may also be remarked here, that infants under three months of age (and to these only is the preceding description applicable) never shed tears.

The most important conclusions, as to the nature of the disease, to be drawn from the cry, are the following: children who suffer from pneumonia, pleuritis, or atelectasis of the lungs, *never cry loud, or continuously*; they can only emit a low, painful moan. Children afflicted with catarrhal, diphtheritic, or croupous laryngitis,

are unable to cry at all, they are aphonic; the milder degrees of catarrhal inflammation of the larynx do not completely suppress the cry, but make it hoarse. Hydrocephalic children utter only shrill tones, and after each outcry relapse into their former drowsiness. A child ill with fever never cries continuously nor long, even when it suffers violent pains. Children suffering from otitis, deep abscesses, or when wounded, cry the longest and most violently.

In the *cough* we have a very important index by which to judge of the state of the respiratory organs. If the child coughs loosely, loud, and without pain, it is very certain that we have only a simple bronchial catarrh to deal with; if, however, it distorts the countenance when provoked to cough, if the cough is dry and low, and if it seeks to suppress it as much as possible, then it is equally as certain that we have to deal with an inflammatory affection of the lungs. Croup begins with a dry, barking cough, which but too soon gives place to a low aphonic sound. Pertussis consists of a long, spasmodic, jerking cough, interrupted by a protracted, loud, and sucking inspiration. Tuberculous children, in most instances, have a dry cough, which recurs at short intervals day and night. The cough of typhoid patients is, in comparison with the great morbid alterations which we physically demonstrate on the lungs and frequently find after death, very insignificant and without severity.

These are the principal peculiarities which the physician has to take into consideration in the examination of a sick child. Now, as regards the conduct of the physician, the utmost patience and gentleness are indispensable in his intercourse with children. Those from one to three years old are always the most difficult to manage. Nurslings and children under one year are seldom very timid, and are easily quieted by some diverting noise. But older children often have an insurmountable shyness for every strange face. Such a child the physician must not approach immediately after entering the room; he should at first ignore the child's presence altogether; should enter into a conversation with the parents or nurse, in a gentle voice, and finally gradually approach the child with some bright object, or with a piece of sugar. When at the bedside, the child should not be immediately uncovered, its abdomen felt and squeezed, and the physical examination instituted. Some questions suitable to its age are first put to it, its playthings are admired, or it is told of some new ones, and promised to be presented with them, etc., etc.; in short, it is necessary to be on friendly terms with the child before the undertaking of a regular, thorough examination can be thought of. In this manner, however, it is almost always possible to quickly gain the friendship of the

child. If, with a friendship formed in this manner, a little seriousness and energy are allowed to be blended, much more authority will thereby be acquired in a moment over the child than the parents ever thought possible. Children, under such authority, allow themselves very quietly to be examined, readily lie down upon any side desired, take even the bitterest medicines without objection, and assist the medical examination in every manner possible. *Never, and under no circumstances, should the attempt be made to bring an unruly child into obedience by harshness, by firmly holding it, and still less even by a slight blow.* Such measures not only cause greater fear, and give rise to violent crying, but the physician will thereby only bring upon himself the aversion and even hatred of most narrow-minded parents—the class that usually have boorish and unmanageable children. On the other hand, if the physician in such instances retains his equanimity and mild voice, the parents will feel most disgraced by the ill-breeding of their children. They then sometimes punish the child so severely that the physician, from a medical point of view, has to interfere, and then he will have gained an humble and submissive patient. In general, the principle will hold good that the more seriously sick the child is, all the more easily will it permit itself to be examined.

To the commencing practitioner, inexperienced in the Pædiatria, these observations may appear insignificant and unimportant, but, when he has once conducted himself in accordance with them, he will perceive that without these details a successful treatment would be clearly impossible, notwithstanding all his knowledge and skill in the methods of examination.

CHAPTER III.

NURSING AND CARE OF CHILDREN.

THE best nutriment for a new-born child is undoubtedly the milk of its own mother; if she cannot nurse, the milk of a wet-nurse; and, if this is also unattainable, the milk of a domestic animal.

In regard to the suckling of a child by its own mother, two adverse conditions are not infrequently met with, viz.: an *inability* of the mother to nurse; and the existence of circumstances rendering it improper for her to do so.

She *cannot* suckle, when she has insufficient or no milk, when the

nipples are wanting or are malformed, or when local diseases of the breast, abscesses or carcinomatous nodules, exist. Whether a mother will have milk and be able to suckle her child, is, in primiparæ, difficult to prognosticate. The size and firmness of a breast form no positive guide for that. Often young, healthy women, with well-formed and apparently physiological breasts, have no milk, while in feeble women, with previously flat bosoms, it is often secreted plentifully, contrary to expectation. Pregnant women, from whose breasts much colostrum flows, will be best able to suckle the coming child. In regard to this secretion, *Donné* divides pregnant women into three classes: to the first belong those who have so little colostrum that at the end of pregnancy it is only possible to squeeze out a few drops from the glands. This colostrum microscopically contains only a few milk-globules, and only a small number of colostrum-corpuscles. A small quantity of milk-secretion should, then, only be calculated upon after the confinement.

The second class comprises those women who, it is true, secrete much colostrum, which, however, has the very same properties as that of the first class. It is just as poor in milk-globules and colostrum-corpuscles, and a plentifully-secreted, though thin, but non-nutritious milk may, with probability, be expected after delivery.

But if, in the third class, the secretion of the colostrum at the end of gestation is rich, milk-white, and mixed with yellow streaks and lumps, and many milk-globules, and colostrum-corpuscles are present, then we may prognosticate, with tolerable certainty, that the pregnant one is destined to suckle her child, and will secrete sufficient nutritious milk.

Total absence of the nipples is seldom met with; frequently, however, a depressed nipple is observed, for which usually a too high corset, in which the space for the chest is too small, is to blame. After delivery it is too late to improve these depressed nipples, and the child will uselessly tire itself out in the attempt at extracting the milk, and finally ceases altogether; much, however, may be done for this condition during the last months of pregnancy. The women should be made to wear very loose garments, and once every day should put the bowl of a clay pipe over the nipple, and suck with the mouth at its stem, or, still better, the caoutchouc breast-pump may be employed. *Bouchut* suggests, if the woman cannot tolerate this manipulation, for another person to use the lips in the same manner as the nurse often draws the breast of the parturient woman.

Lastly, those benign, hard nodules, which occur so frequently in girls and young married women, but which are perfectly painless,

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