

If now, as a *résumé*, I were to give an explanation of my views, it would go to show that there never has been, and most probably never will be, a remedy by which whooping-cough may be abridged, any more than we are able to cut short the acute exanthemata, or typhus fever, or pneumonia. Hence, an expectant treatment is to be continued as long as possible; the violent paroxysms should be palliated by narcotics; lobular pneumonia in infants we must try to prevent by small doses of calomel; feeble children are to be treated with tonics, and, as a general rule, all the patients should be kept under the most favorable hygienic conditions possible.

(12.) PERIODIC NOCTURNAL COUGH.—Periodic night-cough is an extremely rare and peculiar disease. It is observed in perfectly healthy children, but oftener in those with hereditary tuberculosis, and usually attacks children from two to ten years of age.

Throughout the entire day, the child does not cough, sleeps tranquilly in the evening, and, as a rule, wakes up only after midnight, crying violently, and coughing. Generally, the cough is continuous and dry, not so paroxysmal as to give rise to dyspnoea as in whooping-cough, but severe enough to prevent sleep for two or three hours every night. It is not accompanied by expectoration, and the character of the cough is best compared with that of an hysterical girl, who sometimes suffers from paroxysms of a purely spasmodic cough. This cough recurs every night, not precisely at, but about the same hour, every paroxysm lasting an equally long period, until finally the child, entirely exhausted, and breathing rapidly, falls asleep, to wake no more till morning. Thus it goes on for weeks, and even months, the attacks finally becoming shorter and feebler, and ultimately ceasing entirely. The eruption of a tooth of the first or second dentition often forms the final act of this enigmatical disease. I have met with it but three times; one child, both previously and subsequently to the attack, was perfectly well, but the other two were the progeny of tuberculous parents, and subsequently exhibited very distinctly the signs of progressive tuberculosis. Although the cough in the daytime ceases completely, and no sibilant râles whatever can be heard over the entire thorax, nevertheless, during the whole day, the children are gloomy, morose, and become anæmic. They have not a proper appetite, and mostly suffer from cold feet.

Treatment.—The distinct intermissions which mark the course of the disease seem to indicate a treatment with quinine. But, notwithstanding this circumstance, this remedy has proved itself totally useless, the cough in most instances recurring, even when large doses,

from four to six grains, are administered at a time. Small doses of narcotics are quite as unsatisfactory. Opium and morphine, given to produce profound narcotism, do indeed bring about an arrest of the malady for one night, but the attending bad effects of large doses—loss of appetite, headache, and obstinate constipation—are so unpleasant, that I have always been compelled to desist from a continuous administration of these remedies, before obtaining any permanent result. The inefficacy of quinine and morphine proclaims with tolerable emphasis that a material alteration—to be sought for, perhaps, in a swelling or tuberculosis of the bronchial glands—must be at the bottom of this disease. It is best to limit the treatment to a good diet and tonics, fresh air, and uniform temperature, with which, according to the experience so far acquired, the malady has always, although after a very long time, terminated favorably.

F.—PLEURA.

(1.) PLEURISY (*Pleuritis*).—Pleurisy may even attack children *in utero*, who then as a rule perish, or survive the delivery but a short time. In the new-born child, phlebitis umbilicalis is a frequent cause of purulent absorption, and thus also of secondary pleurisy.

Empyema occurs so rarely in early infancy that the most experienced Pædiatricars have only been able to report a few solitary instances. On the other hand, general pleuritic adhesions are often found in young children, who, during life, suffered from pulmonary affections, particularly from phthisis pulmonalis. In older children empyema occurs not infrequently, becomes, when no complications are present, tolerably quickly absorbed, and leaves behind it no remarkable deformity of the thorax. Altogether, pleurisy in the first age of childhood may be regarded as an extraordinarily rare affection, and as a tolerably infrequent one after the beginning of the second dentition.

Pathological Anatomy.—According to *F. Weber*, of Kiel, to whom we are indebted for most of our knowledge concerning this condition, the profuse transudation of bloody serum into the large serous sacs, and consequently also into the pleural cavities, is to be accurately distinguished from the genuine pleurisy of still-born children. No flakes of fibrin are ever found in that simple cadaveric transudation, nor has the mother during her pregnancy experienced any symptoms referable to that condition. In these still-born children, *Weber* assumes a *purely inflammatory* and a *dyscrasic pleuritis*.

In *purely inflammatory pleurisy* of children before birth, the cor-

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responding lung, in most instances, is also affected. The pleurisy is unilateral or bilateral, and is seen as a thick or thin, fibrinous, whitish, transparent layer, which sometimes is easily, and other times again with difficulty, pulled off. The serous effusion is here always insignificant, yellow, and clear, and entirely different from the cachectic, never putrid, and never very strongly tinged with blood.

In *dyscrasic pleurisy*, both pleural sacs, and, in addition, generally also the pericardium and peritonæum, are simultaneously affected. The exudations are present in larger quantities than in the preceding form, and have a dirty, opaque appearance, and a putrid smell. This form occurs only in lying-in-hospitals, and at the climax of epidemics of puerperal fever. Pyæmic pleuritis, occurring as a result of umbilical phlebitis, also has the same characters.

In older children, pleuritic adhesions and layers of false membrane are very frequently observed; very seldom, however, large effusions. These inflammatory affections of the pleura but very rarely occur primarily and in an isolated form, but are always complicated with disease of the lungs and with tuberculosis. The morbid formation of false membranes, the displacement of the thoracic viscera, and of the diaphragm, are similar to those which take place in the adult.

Symptoms.—Every pleuritis begins with *fever*. The child becomes restless, sleepless, loses its appetite, and suffers thirst. The most distinct sign of fever is always an increase in the temperature of the skin over the entire body; whereas the frequency of the pulse, particularly in infants, deserves less consideration on account of its great physiological fluctuations. Older children suffer also from a chill.

In young children the *pain* can only be elicited by exercising an alternate pressure upon various parts of the thorax, or by percussion. Pressure or a blow upon a part freshly attacked by pleurisy always causes the child to utter a cry or moan of pain. Somewhat older children, two or three years of age, when questioned concerning the site of the pain, point to the præcordia, though there be no signs of disease there. To the statement of children under five or six years old, as to the locality of pain, no value can be attached. Generally, it comes on simultaneously with the fever, but hardly ever is of long duration, exhibits very distinct remissions, and, after four to six days, often disappears entirely, even without any remedies having been employed.

In general, it may certainly be said that the fever and the pain progress pretty regularly together, still, very frequent exceptions occur

to this rule. The sudden recurrence of a pain that has been absent for several days deserves particular consideration, especially if it is attended by fever; for it then indicates that the pleuritis is not simple, but a complicated one, and pulmonary tuberculosis may be stated to be the most frequent complication of, or rather cause for the appearance of such symptoms. The pain also exercises great influence upon the degree of the dyspnoea, which at first is much more aggravated by it than by the mechanical impediment, the effusion. As soon as the dulness becomes considerable, the effusion consequently having become greater, the pain, in most instances, vanishes altogether, and in its place the mechanical embarrassment, produced by the compression of the lungs, ensues. Why the pain is often confined to one spot only, notwithstanding the great extent of the pleurisy, is difficult to explain. The most plausible supposition, it seems to me, is, that the inflammation, in some part, implicates the neurilemma of the intercostal nerves, and thus the circumscribed, fixed pain, violently aggravated on pressure, is produced.

The *decubitus* in young children, who, in general, lie on the back, naturally has no great significance; but older children, at the invasion of the pleurisy, as a rule, lie, as long as the pain exists, upon one side, but not always upon the one corresponding to the pain. This seems to depend upon whether the pain is aggravated more by the pressure, or by the acts of respiration. In the first case, they lie upon the sound side; in the second, upon the affected one; for, in this later decubitus, the acts of respiration become smaller in a purely mechanical manner, without any special effort on the part of the patient.

The acts of respiration vary in *kind* and *number* according to the pain and fever. The more intense these two symptoms are, the more rapid and superficially do the children breathe. On the other hand, the effusion, after the acute process has ceased, is seldom so bulky as to keep up a continuous acceleration of the respiration. In form, the accelerated breathing is that of the expiratory, i. e., the accent lies upon the expiratory sound. No actual dyspnoea is present, but the respirations are frequent and superficial, in order that the deeper and painful ones may be avoided. For the same reason the movements of the *alæ nasi* are also less marked than in parenchymatous disease of the lungs, for example, in pneumonia, or advanced tuberculosis.

By inspection it is not possible to ascertain upon which side the pleurisy is situated, so long as there is only a pleuritic membranous

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exudation, and no bulky liquid effusion. But, when the latter has formed, the intercostal spaces become obliterated and bulge outward, and all those ribs which are separated from the corresponding part of the lung by the fluid effusion *remain stationary*. Then, mensuration of both thoracic halves also furnishes a larger circumference for the affected side. In lean children, a sinking of the liver, in right unilateral effusions, is seen, and, in left unilateral effusions, a displacement of the heart toward the xyphoid cartilage, and even beyond it.

Pleuritic effusions may very readily and accurately be diagnosed by *palpation* of the vocal fremitus, and, in children, this method of examination is of the greatest value, as it can be practised in restless, crying children. So far as the fluid exudation reaches, no, or but a feeble, fremitus of the voice is to be felt, while it is felt at the same time stronger over the rest of the thorax. Friction-sounds are extremely rarely met with in children at the beginning of pleurisy. They are somewhat more frequently heard in an empyema undergoing absorption, and are generally found at the place of transition from dull percussion to sonorous sound. Indeed, it is even possible to detect them by palpation alone, but, by palpation, it is very easy for one to be deceived by simultaneously-occurring sibilant râles. In quiet, sensible children, this physical method of examination may readily be completed by auscultation. At the commencement of a pleurisy, either friction-sound or normal vesicular breathing is heard, provided the lungs have not been previously affected. In most cases nothing whatever is to be heard after the fluid effusion has separated the lung from the ribs; sometimes, however, very unexpectedly, and without our having been able until then to obtain a special explanation, well-marked bronchial respiration is heard, but which lasts only for a few days, and then totally disappears. But when the exudation becomes so large in quantity that the lung of the affected side is wholly compressed and pushed backward into a solid compact mass, not puerile, but bronchial breathing will be heard upon the dorsum of the thorax as far as the airless lung extends. As the absorption of the empyema progresses, the lung dilates, the bronchial breathing disappears, sibilant râles often come on, or the normal vesicular breathing is again heard.

Percussion supplies positive results in very extensive fluid effusions only; compact pleuritic exudations, and, still less, simple pleuritic adhesions, effect no alteration whatever in the percussion-sound. But, when pleuritic effusions have actually taken place, we have a far more distinct dulness than in solidification of the pulmonary tissue; we get a completely flat sound (the so-called thigh or wall sound),

On the margin of the dulness, a tympanitic sound is invariably heard, which extends itself for some distance into the sonorous sound.

If at any time a large quantity of purulent effusion had accumulated in one of the pleural sacs, and subsequently become absorbed, a condition that is almost exclusively met with in children several years old appears. The behavior of the pleura after the absorption of the empyemic fluid, so strikingly observed in adults, soon becomes manifest. *On the affected side* the shoulder is depressed, the nates somewhat elevated, the entire pectoral half flattened and contracted, strongest between the fifth and eighth ribs, and the spinal column suffers a lateral curving, the concavity of which is directed toward the affected, the convexity toward the healthy side. A compensatory curvature of the lumbar vertebræ is, of course, also present. As the patients progress in recovery, and become invigorated, these distortions disappear almost completely in a few years, which is very much facilitated by an appropriate gymnastic training.

Spontaneous perforation of the thoracic walls, and evacuation of its contents outwardly, occur oftener in empyema of children than in that of adults. An erysipelatous erythema, attended by fever and lancinating pains, appears on some part of the thorax, most frequently on its anterior part, under the nipple; the corresponding intercostal space bulges more and more, fluctuation at length becomes more distinct, and, finally, there forms a circumscribed oval swelling, which bursts spontaneously, or may be opened with a lancet without any danger. At first a large quantity of pus is evacuated, but soon the abscess contracts, and is converted into an oblique, angular, fistulous passage, which frequently closes, but after a while is again attacked by inflammation, and breaks open anew. Such a fistulous canal will remain open for months, and even years, according to the condition and distensibility of the corresponding lung, and ultimately closes with a radiating, contracted, deep-pitted cicatrix. Caries of the ribs, notwithstanding the long duration of the process, scarcely ever occurs.

The *complications* of pleuritis are numerous. First of all, the various general diseases, in the course of which pleurisy may become developed, are to be mentioned. Thus, it occurs in scarlatina, measles, small-pox, typhus fever, pyæmia, and scorbutus. The frequency of these complications varies according to particular epidemics. Pleurisy is most unfavorable and dangerous when it supervenes early on a general disease, while that occurring during convalescence comparatively often takes a favorable course. Pleurisy, as a result of pyæmia and scorbutus, is, naturally and unexceptionally, fatal.

Pleuritis very often is a secondary disease of tuberculosis and

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