LECTURES
ON THE
DISEASES OF CHILDREN,

DELIVERED IN THE

Chatham Street School of Medicine, Manchester.

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LECTURE XI.

Fevers in their objective appearance in infants and children under three years; their more alarming aspect; relation of different ages, to different kinds of fevers. The principal symptoms and their comparative analysis. The whole objective description of a primary paroxysm. Comparative and synthetic procedure in forming our opinion on a recently-developed fever; prudent reserve of the practitioner; changes to be expected within the first thirty-six hours.

GENTLEMEN,—Having in the former series of lectures exposed what I would call preliminary notions, I come now to speak on special diseases. I intend, before all, to devote a few lectures to *fevers in infants and young children*, considered as they appear to your senses, by *objective symptoms*, without the aid of words on the part of the patient, and how to manage them accordingly. My inquiries will almost entirely refer to the *tender age under three years*, because in proportion to the advancing age, all kinds of peculiarities in form, diagnosis and treatment, and all kinds of difficulties become less. In this task I have no predecessors, and you will find nothing of the kind in books; but I am convinced of its usefulness and of the possibility of giving the young practitioner some valuable hints and directions.

Fevers in children form a most arduous part of practice. You will have occasion to notice constantly, that as soon as a child shows the expressive symptoms of fever, the parents get uncommonly afraid and excited, and the position of the physician becomes a very difficult one. The reason of this is clear. It is the greater vehemence and obscurity of symptoms. Bethink yourself of two patients affected with the same kind and degree of fever; the one a man and the other an infant. On both you observe, without asking, a high degree of heat, great frequency of the pulse, both with great languor on their countenance, heavily moaning, and refusing food. You auscultate both, and find nothing important in the chest. So far you are on equal diagnostical terms with the man and the infant; but you feel not satisfied. That expression of languor and that moaning make you anxious, and you will now ask some questions. The man answers:—he feels no decided pain anywhere, but giddiness and heavy pressure in his forehead, fulness and pressure in the epigastrium, and bitter taste in the mouth. And now you feel satisfied and easy about the patient; you prescribe an

emetic with the fullest confidence. But suppose he could not have spoken a word; what a difference to your understanding of the case! And so you are with the infant; and yet you cannot stop there, you must endeavour therefore, by some other means of investigation, to supply the want of words.

There is reason for anxiety in these cases indeed. Strong fever is always connected with headache, and headache connected with fever in a child may appear as meningitis, whilst *words* might have convinced you otherwise. In the same manner, some obscure symptoms of pain in the abdomen, whilst the skin is hot and the pulse running over 140, may lead you to suspect enteritis, where an intelligent patient might have dispelled that fear. You see here the necessity of some other means of observation and diagnostical construction in order to supply the want of words.

And yet even the eruptive, and the typhoid, almost the only fevers you meet with in treatises on children's diseases, are treated, to a great extent, in a manner which supposes intelligent patients; and subjective symptoms, and other fevers are more neglected still.

My present task, therefore, is to draw your attention to those phenomena and signs, which you must detect for yourselves on the child affected with fever, who does not reflect and cannot express his sufferings; and to show you the way, how to form the diagnosis, or at least an opinion upon the case, and give you some directions for treatment.

I have not to speak here on the *theory of fevers*. Very generally, and with good reason, a great class of *fevers* is admitted, *primarily and essentially*, as *general disorders of the blood and nervous system*, which may begin as such, and run to a happy or an unhappy termination *as such*; but in the course of which also different local disorders can arise, of different importance. Even pneumonia or enteritis are sometimes preceded for a good while by fever, before they appear in their first rudiments. Our predecessors of ancient times said of similar instances;—"Febris in pulmones,—in intestina lapsa." Our present purpose is to consider *fevers* on children, in which fever itself, with its general disorders, plays the prominent part; but it is clear in this task, we must frequently refer to different kinds of local affections, which may be concealed under the general phenomena of the disordered blood and nervous system, and which in many cases become more important than those general febrile disorders. Therefore a treatise on fevers cannot be kept strictly separated from those concerning local affections.

There is a facility in the fact, that children are liable to the same fevers as adults; that, consequently, the knowledge we have got by the *words* of intelligent patients, can fill out one part of the vacuum left on the speechless child. Thus the first advice I give you for that object of practice, is, when you have to attend a child in fever, take the case up exactly in its objective symptoms, then recollect or imagine one similar in a grown-up patient, after which make a sort of application of those symptoms of the latter, which you have or might have got by his words, to the illustration of the

former. I will explain myself by an example. Suppose you have before you a little child under heavy fever since yesterday, his skin very hot, the pulse about 150, the respiration very quick, accompanied by slight moaning, which appears to be short, as if cut off; the child lies quietly, with some expression of languor on his countenance, the abdomen a little tense. You cause it to be lifted up in the arms of the mother, examine every part of the body, use auscultation and percussion, with a negative result; languor and a plaintive moaning become more apparent. There must be pain somewhere, you say, but you know not where. You imagine, now, a similar group of symptoms on an adult. You might have requested him to make a deep inspiration, and upon trying to do so, he might have felt checked by pain in one side of the chest. Now you conjecture, perhaps, this may be the case with the child; but how will you ascertain it? You must find means to make him more deeply inspire. Under similar circumstances I have been led to lay my hand across the lower part of the belly, and push in a gentle and gradual way the viscera towards the diaphragm up into the chest, in order to restrict that cavity and constrain the child to forcible inspirations, which I could not obtain by words. In fact, in doing so, I obtained what I wanted; I saw the child could not freely inspire; he became angry under my pressing, and began to cry, but it appeared at once that even crying was precluded by pain. And now, by some more close examination by auscultation, together with appropriate positions and movements performed with the child, I could even conjecture in which side was the seat of pain. And then, regarding the degree of heat and pulse in proportion to the visible degree of pain in the chest, without râles, without dulness, only the second day after the fever had commenced, I was allowed to conjecture rheumatic fever with pleurodynia.

This may serve only as an example of a possibility. Your comparison and induction (different in different cases) will not always come to a clear conclusion on the child, but I believe you will find useful that little mental operation in your diagnostical exertions.

The relation of children to fever, however, differs in many points from that of grown-up people. Some species are at certain periods of childhood more, others less frequent; or their intensity and effects are different. Thus eruptive fevers are seldom met with before the fourth month; they are the most frequent between the seventh and twelfth year. Abdominal typhus is rare before the eighth, or at least not characterised in the same degree on the intestines, as from the eighth year upwards. Intermittents and bilious fever, even during severe epidemics, (as I had opportunity to witness some,) seldom attack tender infants; under the third month I scarcely remember one case of the former, and under a year and a half none of the latter. Again, we observe just in the most tender age a kind of secondary asthenic fever, which in this form is rare at a more advanced period of life. In general the course of any high fever is in children more rapid, towards recovery or death; remissions, however, are more salient, and very

common in young children. And there are many other peculiarities in the course, character of reaction, forms, and complications.

The nature, stage, and complications of a fever in a little child, we recognise merely by objective symptoms. The most apparent, constant, and therefore important of these are, *abnormal frequency of the pulse, and abnormal heat of the skin*. Proportional to the degree of these, we observe a greater frequency of the respiratory acts, lassitude, and others, less constant, or less accessible to our senses.

If we ask, which degree of frequency of the pulse, and which of heat, form the limit between simple excitement (erethism) and fever? This question it is impossible to exactly answer. A pulse of 120, 130, or more, may be present for some time in a healthy infant, whilst that of 90 may be, in an elder child, a febrile pulse. In general you must value the frequency with regard to the age. On average terms the pulse is more frequent in proportion to the more tender age; from about 5 to 25 more pulsations than in adults. As to the skin, we observe generally a little lower temperature in the first few weeks after birth, then it appears commonly higher than in mature age, but never attains in fever that high degree of *dry heat* which imparts to our hands almost a *burning* sensation before about the seventh or eighth year. The skin of young children maintains sometimes, even in high fever, a degree of softness.

According to the great sensibility and mobility of the tender age, both heat and pulse vary more than in adults in short spaces of time; slight causes are sufficient to increase both much higher within the limits of health, but this very sensibility will make them also more liable to be thrown into real febrile disorder. Matters connected with life do not allow absolute limits and terms. I should say, a child under three years can be considered to be in fever if, under ordinary circumstances, and in prolonged quiet position, its pulse is above 100, and at the same time the skin feels uncommonly hot.

The whole *objective appearance of an attack of primary fever*, I would characterise as follows:—For a few hours, sometimes even days, the child appeared to be less cheerful and lively than usual; persons accustomed to see it will have noticed a change in his countenance, and a degree of languor; sweet and quiet temperaments show restlessness and irritability; sleepiness, but no tranquil sleep. Elder children are desirous to be put into their bed, but infants and young children generally will not remain there quietly, and must be taken up in the arms.

These symptoms precede, in some cases, only very shortly, the stage of cold, if it has to come; in fact, however, *rigor* is by far not so common a symptom at the commencement of fevers in children as in grown-up people; and *shivering*, even in intermittents, (of which I have observed great epidemics,) is exceedingly rare under one year of age. Under the fourth month I have never seen it; if it takes place then, we observe the child slightly tremble, when it appears to draw the

limbs close to its body; the nails of its fingers become blue, the countenance pale and collapsed, bluish about the eyelids, breathing quicker and more audible, the pulse augments to about 95, 100, or more, and rather small. Vomiting is not unfrequent at that time; also a little dry superficial coughing, is not rare.

This *stage of cold*, if present at all, may continue for some minutes, and in little children rarely longer than ten or twenty; in older, in rare instances, an hour or longer, during which the skin feels cool, or at least less warm than usual, and that of the nose and feet decidedly cool. The skin does not, in general, feel so rough as in adults. During that time the majority of nurslings do not take the breast, or only for a short time.

After that group of symptoms, more or less complete, most generally without perceptible cold, and frequently only limited to languor and low spirits, the skin becomes gradually hot over the whole body; frequently first on the epigastrium, in some cases rather on the front, but it extends then to the hands and feet. The skin has lost its softness, but becomes not so dry as in older children or adults. The pulse increases to 140, 160, or more, particularly in young infants, and continues hard, and rather small; distinctions which, however, we cannot easily make in very young infants, their arteries being too small for it. In the same proportion the respiration gets more quick, frequent and noisy. In most cases heavy sleep befalls the child, but it is restless, with occasional loud moaning, and starting up. The eyes are shut, or half shut, with occasional or constant *perpendicular wrinkles* on the front; the mouth performs frequently a kind of sucking, or other unconscious movement; the countenance becomes flushed and turgid; increase of thirst, which in infants is manifested by frequent desire of, and avidity in, sucking; the tongue and cavity of the mouth may now become dryer than usual, but not always, and not to such a degree as in grown-up people; nor must you expect in them that thick, yellow, or brown fur on the tongue; no urine, or very scanty, and leaving some stain on the linen; the bowels more frequently confined.

Dry heat may last, or even increase, for some hours, seldom longer than twenty-four, without some change in its intensity. In infants and young children vomiting or eclampsy are not unfrequent during that stage, and under ordinary circumstances, and in good constitutions, seldom dangerous, but always very alarming to the family. Febrile headache may be considered as frequently their source. Intermittent paroxysms cause more frequently eclampsy than any other kind of fever.

As I have before said, in almost all kinds of continued fever, in young infants, the stage of heat comes on without previous, or at least without perceptible rigor. In elder children we observe sometimes in the beginning, cold (shivering) and heat alternating for some time, like as in adults, and then passing to the full stage of heat.

Now this description of fever, as far as it at present goes, (to the stage of dry heat,) varies very little as to the principal symptoms; but in its further stages these will present great differences.

In almost all favourable cases, after a certain time of dry heat, the skin becomes softer, less hot, and moisture appears over it, increasing to more or less decided perspiration, under which the pulse becomes less frequent and more expanded, signs of headache and languor disappear, and the child manifests in aspect and movements a gradual relief. *Sweat*, so profuse as we notice it so commonly in adults, is again rare in tender infancy.

The practitioner generally is requested to see the child in its stage of heat. In these instances your visit must not be a short one. Remain for some time, (and in a proper position,) the quiet careful observer of the child. If it be asleep, observe for awhile its position, how it rests, how it breathes, and its countenance; touch gently the pulse; look at and touch the skin; and if you find all the symptoms in harmony, and nothing salient, perhaps you would be wishful not to disturb it at that time. Occasional moaning during sleep in fever, is, in general, of no importance. But continued moaning, plaintive, or of a heavy kind, with occasional starting, usually frighten the parents. Under these circumstances, if you wish to give an opinion, and to prescribe something, you must cause the child to be taken up in the arms, and observe it also when completely awake. Frequently you will find it to be better when you see it awake, than it appeared to you when asleep. In general, during the height of heat, infants lie with their eyes shut, and not seldom show even difficulty in opening them when we make them awake. The moment when it is taken up, watch it most closely, and observe it again for a good while in a quiet position, from a distance; notice if perpendicular wrinkles on the forehead appear; then cause it to be put in various positions, its body and limbs to be variously bent and moved; explore the chest by ear and fingers, and use all that minute care and means of investigation which I have exposed in a former lecture on the *examination of a child*. In all cases of a primary paroxysm, you must closely observe the skin, eyes, eyelids, nose, mouth, and neck, the latter by careful touch; and then let the child drink in your presence, and observe the mode of deglutition; these are parts which, in the fevers of children, frequently manifest some slight signs indicative of the future character of the malady. Some slight sneezing may be, under circumstances, a precious sign to you, and in relation with others at that early stage of fever, allow you to form an opinion of the case.

I will not here spend any time in exposing the manner how to ask and value the mother's account of the former health of the child, the cause and commencement of its present ailment, and how much more minutely you must investigate the urine—as it appears on the linen, fresh or dry—and other excreted liquids; but supposing all that to be well accomplished, I beg to draw your attention to a single kind of comparative process relating to the most salient objective symptoms.

Consider the *mutual relation and proportion* of the following treble set of *symptoms*:—Heat and dryness of the skin; frequency and strength of the pulse; bearing

of the head, and languor of the countenance. Suppose the child is before you in the arms of the mother. You see it lays languidly its head on the shoulders; the eyes look languid, frequently half shut, and the child is continually moaning. This you will say is a heavy appearance. But you will be less alarmed if you find the skin very hot and a little dry, and the pulse between 130 and 160, just because there is what we may call a good proportion between these symptoms. An adult, under the same circumstances, might have his skin more dry, but his pulse only about 110 or 120; he would complain of headache, and, when sitting upright, of some giddiness. As to the child, you may express the opinion that it is under considerable fever, but that its constitution seems to resist it well. Suppose, however, you should find the child with the same expression of heaviness of the head, languor, and moaning, as mentioned, but the temperature of the skin lower, and the pulse above 170. Under this proportion and mutual relation of the same symptoms, your opinion should be less favourable than the above; you might say that the child is seriously affected by *that* fever; or, the fever has an asthenic character. This, however, will scarcely ever happen as early as within the first twenty-four hours.

I here suppose always cases of fever, where you can not detect any such local affections which are more important than those general disorders of which the fever itself consists. Under these circumstances, at your first call, and within the first twenty-four hours since the outbreak, you must not be in a hurry with your opinion and medicinal interference; because between twenty-four and thirty-six hours from the outbreak, in the majority, you will see one or other of the following changes, which will throw more light upon the case:—Perspiration, vomiting, or diarrhoea, with some influence upon the fever; remission or intermission, and a new exacerbation of paroxysm; or some local affection coming forth.

Catarrhal, rheumatic, and true inflammatory affections, if they have to occur in the course of a primary fever of a child, almost constantly offer to a clever observer their first rudiments before twenty-four hours are over. Those of a secondary kind and bad character may appear under a further stage of it,—*f. e.*, ulcerous angina.

Acute exanthemata in little children announce themselves also within the mentioned time by some change on the skin—an apparent degree of injection, recognisable by drawing, with some pressure, our finger over it. But, again, sometimes the prodroma protract their ambiguous and puzzling appearance, even as long as three or four days; but if the fever is *high and unre-mitted*, you may regard as an average term of the eruption, for that age, about thirty-six hours from the beginning of its present and uninterrupted paroxysm. I say from the present, because in those cases where the eruption appears several days, even a week or more, after the so-called invasion, the fever will not maintain that continuous height of symptoms, of the stage of heat, as we have previously described it. There are alien remissions in similar cases.

Some conjecture upon the nature of the fever we derive also from the epidemical genius of the season and place.

Asthenic or typhoid fevers, in the majority of cases, can scarcely be recognised before the third or fourth day; and typhus is, even at that time, and in children above the eighth year, frequently ambiguous. Influenza, however, which in young children and infants frequently appears as an *asthenic* bronchio-catarrhal fever, often shows that character already between twenty-four and forty-eight hours. The secondary asthenic fevers (so particularly proper to young children, of which I will speak more in one of the following lectures), can also be guessed sometimes as early as that, but rarely develop themselves clearly before the third or fourth day.

As another point useful to the formation of your opinion as to the dangerous or favourable character of a recently-developed fever, is the *period of prodroma*, which preceded its formal outbreak. In general I have found that prodroma which run a day or two longer before the outbreak, show a more severe character of the fever than shortly-lasting prodroma, or when the fever bursts out more suddenly.

The parents, anxious to get your opinion with regard to the character and danger of the case, generally incline to denounce a fault in diet, or cold, as its cause. You must not yield too easily to similar suppositions. In young children and infants, of healthy and good constitution, indigestion most generally causes vomiting, which makes the case clear. Sudden attacks of high fever in general arise from atmospheric or epidemical causes.

Finally, it scarcely need be mentioned that your prognostical opinion will be led also by the constitution and other circumstances of the child.

The mentioned anxiety of parents, and the questions they ask you at your first call, in cases of *violent fever*, concern very commonly meningitis; and the great majority of practitioners, by the same fear, resort to leeching immediately at their first call; though I am satisfied, if they had waited some hours longer, in ninety out of one hundred similar cases it would have become manifest that there was no necessity for it. It is febrile headache, as I mentioned, which causes that alarm, so much the more if convulsions had appeared. In this way very often the good course of the fever becomes troubled, and a favourable crisis delayed; this is, in particular, the case with weak and delicate children, who are the most liable to febrile troubles and headache, but the least liable to active congestions or meningitis.

As to a transient fit of eclampsy at the height of recently-developed fever, we must value the fact, that strong fever is connected with headache and disordered spinal innervation, by which latter, in young children, eclampsy may easily be induced. I have shown it to hundreds of those who attended my courses in the Children's Hospital of Pesth, that in the majority of children who died by convulsion, dissection could not prove the anatomical character even of active conges-

tion, still less of meningitis. The same is the result of the extensive pathological inquiries of Dr. Bednar, published in Vienna in 1851.

These reflections I adduce only in order to counteract a little of that fear, too general, of meningitis in children during the stage of febrile heat. The alarming aspect of febrile headache in a speechless child, however, cannot be denied; I will, therefore, consider that subject, and some others connected with fever, more closely in my next lecture.

ON THE DIAGNOSIS OF CHRONIC OVARIAN TUMOURS.

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"Hydrops ovariorum ut plurimum steriles annosaeque mulieres occupat difficulter cognoscitur et vix sine sectio cadavere."—Boerhaave (*Aph.* 1233.)

(a) *Ovarian Tumours may be confounded with Tumours of the Unimpregnated Womb.*

RETROVERSION and retroflexion of the womb have been mistaken for incipient ovarian tumours, fallen into the recto-vaginal pouch, or confined there by false membranes. On examining, by the vagina, a patient suffering in this way, we may find a circumscribed tumour at the posterior portion of the vagina, painful on pressure, and resembling the fundus of the womb; but on a more careful examination, the os uteri will be found in its proper position looking backwards, the body of the uterus forwards. The mobility of the tumour, by the uterine sound previously introduced, will show whether or not it be uterine.

Retroflexion of the womb is more likely to simulate incipient ovarian cysts; for, as in this affection the fundus uteri is thrown back upon itself like the belly of a retort, while the os uteri remains in its natural position, the finger feels a tumour directly behind it, between the rectum and the vagina, but here again the uterine sound soon clears away any doubt that may have arisen, for it will be found that the concavity of the instrument will be obliged to pass backwards, following the course of the cavity of the womb, and through the walls of the tumour; the point of the instrument may sometimes be felt by the finger placed in the vagina. By a careful manipulation the tumour may be made to disappear and to re-appear so often as it is restored to its natural position, or again directed from it by the sound.

(b) *Ovarian Tumours may be confounded with Abscess of the Walls of the Womb.*

Case.—Some years since Professor Recamier was consulted by a medical man for his wife, who had long suffered from what was called ovarian dropsy. On making a very careful examination, Recamier discovered a round tumour about the size of a pigeon's egg,

situated between the rectum and the uterus. On exploring the rectum with the index of the left hand, while that of the right remained in the neck of the womb, more than usually dilated, he felt fluctuation, and as the pus seemed nearest to the posterior wall of the neck of the uterus, Recamier determined on making an incision there. To perform this operation, he placed the index of the left hand in the neck of the uterus, and guiding a convex bistoury on the pulp of this finger, he plunged the extremity of the bistoury into the abscess, a few teaspoonsful of pus came out, and to facilitate its egress he enlarged the inferior angle of the wound, by completely cutting through the posterior lip of the os uteri, the index of the left hand placed in the rectum serving to guide the bistoury, and prevented too deep an incision. During the following day a small quantity of pus was voided. Frequent injections were made, and the patient soon got well. This case shows how to detect and to cure similar instances of disease.

(c) *Ovarian Tumours may be confounded with Abscess of the Cavity of the Womb.*

Husson presented to the Anatomical Society of Paris a case of this description, the neck of the womb was completely obliterated, and its dilated cavity contained two tumblers of pus. Maisonneuve saw a similar case in a woman who died from cholera; and Dr. Reignier has repeatedly observed the same appearances in the old women of the Salpêtrière—the asylum for aged women in Paris. In Husson's case, the woman had experienced no symptoms, but some of Dr. Reignier's patients were troubled with bearing down pains. We admit that a case of that description might be taken for an ovarian tumour, and then, if a careful recto-vaginal examination were made, the swelling would be referred to the womb. If, on making a speculum examination, the womb were found obliterated, the presumption would pass into conviction; and if not, then the uterine sound would show whether the womb was normal and the tumour ovarian. The rarity of the case must be borne in mind.

(d) *Ovarian Cysts may be Confounded with Hydro-metra, or a Collection of Water in the Womb,* and we do not doubt but that some of the cases described as cases of spontaneous cure of ovarian cysts are to be referred to the rupture of such uterine tumours. The distension of the impregnated uterus by an aqueous liquid has been lately contested by Nægele and by Stoltz, although it is difficult to see why the mucous surface of the womb should not secrete a large quantity of limpid fluid, as well as the mucous surfaces of the maxillary and frontal sinuses. The disease has been too well described by Ferrelas (*Patho. Liv. vi., chap. 15*), by Mauriceau (*Traité des Maladies des Femmes Grosses*, tom. i., p. 74), by Lisfranc (*Clinique*, tom. iii, p. 346), to be thus denied. Dr. Storrey has also described a case (*Haye's Journal*, 1850). It will not do to say that the aqueous discharge comes from the ovary, because Vesalsus, Blank, and Nicolai have opened women who had long suffered from this disorder, and found the womb containing 84lbs. and even 180lbs. of