

ON THE SIGNS OF PREGNANCY.

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(Read at the Anniversary Meeting of the Southern District Branch of the Provincial Medical and Surgical Association.)

THE evidences upon which our judgment must rest in a case of reputed pregnancy, are of two kinds; first, those which can be derived only from the description of the patient, and secondly, those which are only to be gathered by the observation of the practitioner. It might at first sight appear, that the first of these classes of facts were the most to be relied upon, and in the general mode of estimating the question these are often solely relied upon. If a woman informs us that she has ceased to menstruate for several months, that she had for a certain period morning sickness, pains in the breasts, accompanied by a progressive increase in the size of the abdomen, and still more, if the patient assured us that she constantly felt the movements of the child, we should be ready to conclude, without hesitation, that this was an undoubted case of pregnancy; and certainly, if the mere choosing of a nurse, or bespeaking the attendance of the surgeon, were the only weighty points resting upon our decision, we might safely risk the matter, and give the patient the comfortable assurance of the probability of her being a mother. But where property or character or life are at stake, the above-mentioned symptoms, any or all of them, are quite insufficient to enable us to form a decided opinion, since, besides the possibility of the patient's intentionally deceiving us, there is no one of the above symptoms which may not occur without the existence of pregnancy. The same may be said of all the host of symptoms mentioned by authors, as indicative of this state. I shall not, however, detain you now with a detailed investigation of all those signs, the merits of which are generally well understood, but I will at once refer to a few of those indications which are sensible to the medical attendant himself, and not dependent upon hearsay, and therefore approach nearer to what we may term demonstrative proofs.

Dr. Kennedy (to whose valuable little work on this subject I am largely indebted in the drawing up of this paper, and which I would strongly recommend to every one desirous of studying the

subject of pregnancy) divides the class of proofs of which I am now speaking, into those subjected to the touch, those cognizable by the sight, and those to be discovered by hearing. The two first of these divisions I shall mention lightly, that I may particularly bring before your attention the last, or those signs detected by the ear.

1. The first sign to be detected by the touch is the state of the hymen. The presence of this membrane used to be considered a proof of virginity, and consequently of the absence of pregnancy; but in a case requiring more than a mere probable evidence this will fail, since its rupture may have occurred without impregnation, and it may be present in pregnancy, even so as to constitute an obstacle to delivery, which has occurred under my own knowledge, so as to require division at the time of labour. The indications to be derived by the examination *per vaginam*, from the state of the uterus, are important as corroborative evidence, though by themselves they are quite insufficient to ground upon them a decided opinion. The form of the os uteri, and the developed state of the body of this organ, prove to us that we have not to deal with a normal unimpregnated uterus, but this enlargement may arise from many causes besides the presence of a child, as from hydatid polypus, or dropsy of this organ. The most important sign of pregnancy to be derived from the vaginal examination, consists in what the French term *balottement*. In order to perceive this symptom with the greatest precision, the patient should either be erect or seated on the edge of a chair, as nearly erect as may be. With one hand of the surgeon now placed on the abdomen, the index finger of the other hand should touch the os tincæ, and if a sudden impulse upward is given by the tip of the finger, a foetus of six or seven months will be felt to rise from the impulse, and after a moment to fall greatly down again upon the point from which it rose. If all circumstances are favourable this phenomena is easily produced, and at once communicates the conviction that we have felt a foetus floating in the fluid of the womb. But, on the other hand, we must remember that this important sign can only be distinguished after the foetus is of a certain age. Previous to the fifth month, the foetus is too small to convey to the finger of the examiner any decided impression of *balottement*, and at the latter periods of pregnancy the relative proportion of the liquor amnii is frequently too small to allow of a sufficiently free elevation of the foetus to produce the symptom clearly. After all, this sign, though ever so clear, only proves to us that there is a comparatively solid body floating in a fluid within the uterus; it does not inform us if the child is living or dead, nor does it even certify us that the floating body is really a child. Of all the signs cognizable by the touch, the movements of the foetus afford the most certain and most valuable. By the aid of this mark, Mr. Crosse of Norwich, assisted by two other enlightened surgeons, rescued an innocent victim from the very jaws of death, by declaring a woman to be pregnant who had been condemned to death for murder, and who had, in accordance with the present very imperfect state of our penal code, been examined by a "jury of discreet matrons," and pronounced by them not pregnant. The innocent offspring was to have suffered with its guilty parent on the following day, but for the humane

interference of the above eminent member of our profession.

As, with many other evidences, this of the movement of the child, though when shown positively is most valuable, yet negatively is not to be trusted to. That is, though the presence of this sign pretty clearly demonstrates pregnancy, its absence is no proof of the contrary. I had lately to examine a young woman who had every appearance of pregnancy of about seven months. The tumor was most distinct, but upon the application of the hand in every possible way, I could distinguish no movement in the fœtus. I even grasped the tumor between my two hands, and elevated it from the spine on which it lay, but not the least movement could be detected, and had it not been for the aid of auscultation, I should never have proved that there was a living child in the uterus. The evidences of pregnancy cognizable by the sight I shall pass over with little more than an enumeration, since none of them can be said to afford us more than presumptive proof. The enlargement of the breasts, the secretion of milk, the presence of a brown areola round the nipple, all of them ordinarily accompany the state in question, but they, one and all, are occasionally found to accompany different states of uterine derangement, independent of pregnancy. The same may be said of prominence of the umbilicus, and of the fissured and cracked state of the abdominal integuments, which may be the simple result of distension of any kind whatever. The fact seems to be, that with regard to all the evidences of pregnancy which I have now enumerated, or which are at present known, with the exception of that which I am about to mention, all that can be said for them is, that they afford valuable corroborative testimony, but that no one of them can be said to give positive and absolute proof of the pregnant state. It is true that their weight is sufficient, particularly when several of them are found united, fully to justify the delay in the execution of justice, in a case of capital offence; but a certain degree of doubt must always attach to them. But with auscultation we are capable of arriving at a much greater degree of certainty, so much so, that where its signs are positive and clear, all doubt is at once set aside.

If a person in the latter periods of pregnancy is subjected to examination with the stethoscope, the following are the phenomena distinctly and readily observable.

At some part of the abdominal tumor, generally at the lateral and inferior parts, a peculiar whizzing, blowing sound, of a pulsatory character, exactly resembling what Laennec called the bellows sound, is heard over a space varying in extent in different individuals. This soufflé, as it is generally termed, will always be found, on examination, synchronous with the pulse of the mother, and has, by repeated examination, been proved to be produced in that part of the uterine circulation in the immediate vicinity of the placenta. This sound is seldom sufficiently distinct to be recognized clearly before the fourth month of pregnancy, and at that time is found most distinct just above the pubis, and as the uterus rises with the advance of pregnancy, the sound is heard higher up. From the presence of this symptom, we are justified in concluding; 1st, That there is a placenta within the uterus; consequently, 2nd, That there is a

fœtus: 3rdly, That the fœtus is alive; since it is found that after the death of the fœtus the whizzing soufflé becomes changed into an almost simple short pulsation; and lastly, we can by this symptom detect pretty accurately the exact situation of the uterus to which the placenta is attached.

But the placental soufflé is not the only indication afforded by the stethoscope. By a careful examination, we find at some part of the uterine tumor a sound which has been compared to the ticking of a watch, which is produced, in fact, by the pulsations of the fœtal heart, and in which the double action of the auricular and ventricular strokes is readily recognized. A comparison between this sound and the pulse at the mother's wrist, at once proves the distinctness of the two causes which produce them; the maternal pulse being generally from 75 to 85, while the short sharp stroke of the fetal heart will be found to be about 120 to 140.

Here, then, we have another indication, which, if clearly and satisfactorily ascertained, is quite sufficient to set aside all doubt, both as to the fact of pregnancy and as to the life of the child. I was lately requested to examine a woman, who had always borne an irreproachable character, but who had several of the symptoms of pregnancy. In this case I have no doubt that if I had proposed a vaginal examination, I should have met with a positive refusal. The mere placing the patient on a bed, covered with a sheet, has not only a much less offensive appearance than the vaginal examination, but the intention of the treatment is hardly comprehended by the patient, and therefore willingly submitted to. In this instance, I readily detected a short quick pulsation, 140 in the minute, while the pulse of the wrist was 75. The case was at once clear, and no further inquiry was necessary. The greater delicacy of this mode of examination is worth the attention of the medical man, as he may by this means often spare the feelings of an innocent woman unjustly suspected.

A few days since, a woman was brought to me, with many dark hints to be very particular in my inquiries. I found that the catamenia had ceased flowing for six months. There had been morning sickness, and a progressive enlargement of the abdomen. I examined carefully with the stethoscope, but could detect neither placental soufflé nor fœtal pulsation; and as the general health was much deranged, I considered that I was quite justified in giving her the full benefit of the negative evidence thus obtained, without injuring either her character or her feelings, until at a future time another examination, or the result of the medical treatment, shall fully decide the question.

The symptom now in question is so much the more valuable that it must, from its very nature, afford indications more certain than any other, since the action of the fœtal heart, the "primum vivens, ultimum moriens," must, of course, be an essential feature in pregnancy. It first makes itself cognizable by the stethoscope, though a few weeks later than the placental soufflé, yet earlier than any of the more marked ordinary symptoms of pregnancy. It is, moreover, so easily recognizable, that the most unpractised ear will often readily discover it.

Let me not, however, be supposed to assert that in all cases of pregnancy the indications of the

stethoscope are equally clear; the sound of the fetal heart and of the placental souffle are not always at once and distinctly to be heard.

The case to which I before alluded is interesting on this as well as on other points. Almost every symptom of pregnancy was present. There was no hymen; areola large; abdomen considerably enlarged; neck of the uterus nearly obliterated; a hard bony tumor, like a child's head, felt in the vagina; os uteri plugged with mucus. On examining the abdomen, there was a body of unequal hardness to be felt through the integuments. Two circumstances only threw a doubt upon the nature of the case. 1st. The mother, who appeared a respectable woman, asserted that her daughter had been nearly as large as at present, for the last eleven months, and that for more than that time she had been increasing in size. 2nd. There seemed no movement of the fetus. I pressed the tumor in every direction, through the vagina and through the abdominal walls; I lifted it up from the spine between my two hands, still not the slightest movement was felt. I now applied the stethoscope, and after a careful search heard the pulsation of the fetal heart very distinctly between the umbilicus and the epigastrium. On again applying the stethoscope, after a short interval, I could not hear the sound in this spot, and not till after a long search I found it in the left iliac region. In a few minutes after I could not find it here, and all that I could discover was a very indistinct sound, as if the heart was under the stethoscope, but at a distance from it.

I will not trespass upon your time and patience by a lengthened detail of all the circumstances, or points of inquiry, in which auscultation will afford us valuable aid in reputed cases of pregnancy, or of the various complications which may obscure even this mode of diagnosis. These few hasty observations aim at nothing more than the calling your attention to a most important subject, and the writer anticipates the deriving to himself of much more information from the discussion of this paper than he can pretend to give.

I must, however, be allowed to mention some few more of the circumstances under which the stethoscope affords us important assistance. A woman comes to us in the latter period of pregnancy, stating that she had, in every respect, been going on well, but that a short time previous to our seeing her she had missed the movements of the child, and she is anxious to be certified as to its being alive or not. If, now, we find by the stethoscope a distinct placental souffle somewhat shorter and more abrupt than natural, but cannot discover the pulsations of the fetal heart, we may be pretty certain that the child is not alive. This evidence is particularly valuable in those cases of difficult labour where it becomes a question whether we shall use the perforator or not. If we are satisfied that the child is not alive, we, of course, shall feel no hesitation in doing whatever may be necessary for the safety of the mother much earlier than we should be justified in doing if the fetus were living.

Another example of difficult diagnosis occurs sometimes in ovarian enlargement. In this case of very slow progress, the ordinary symptoms of pregnancy are not unfrequently present, and our treatment must depend in great measure upon our view of the nature of the case. It may be said

that there is no harm in waiting for a few months, when the truth will be manifest; but granting this, it is well to have a means of deciding the point immediately. It is said that an ovarian dropsy begins on one side; this is ordinarily true, but suppose, what happened in a case I lately saw, the ovarian tumor commenced and progressed with a former pregnancy. By the time that birth was given to that child, the ovary was so large as, after the labour, to occupy the middle of the abdomen; this historical sign, therefore, fails us in such a case. Here, therefore, the stethoscope enables us to unravel the question whether it is dropsy or pregnancy, or both together.

A patient came to me a short time since, having many of the signs of pregnancy. She had a family before, and was now sick in the morning, and several other signs, which induced her to believe that she was pregnant; and among others, the sensation of something, to use her own expression, alive in her, which she attributed to the movements of the child. The stethoscope, however, dissipated the illusion by the discovery of a small pulsating tumor, having the character of an aneurism, in the situation of the superior mesenteric artery.

But the most important case in which this means of diagnosis is likely to afford us assistance, is in those cases of reputed pregnancy, in which this state is pleaded in arrest of judgment, after capital convictions. On this difficult and interesting question, I have much pleasure in referring you again to Dr. Kennedy's little volume, where you will find several examples of the successful application of the stethoscope to the detection of imposture, and the vindication of the truth. I must, before concluding, allude to one more means of detecting pregnancy, which has of late occupied the attention of the profession; I allude to the kiestein. I have stated that the stethoscope will detect the pulsation of the fetal heart till between the fourth and the fifth month; and that the placental souffle was to be heard a few weeks earlier than the former symptom. But it is sometimes desirable to be able to decide the question of pregnancy at an earlier period, and this several observers think they have the means of doing in the kiestein. It is found that the urine of pregnant women exhibits a thin pellicle on its surface, after standing for two or three days, which is found under the microscope to be crystalline. This pellicle, if allowed to remain for five or six days, sinks in broken pieces to the bottom of the vessel. Dr. Bird has lately given some interesting observations on this subject, in the Guy's Hospital reports for April 1840. These crystals, which are in the form of triangular prisms, are said to be that part of the secretion of the breasts which, during gestation, is absorbed into the circulation, and carried off by the urine. It seems to be satisfactorily proved that the urine of pregnant women, even as early as the second month of gestation, does afford this product, and we have, therefore, in this, a strong corroborative evidence of pregnancy. But to give this sign any positive value, we ought to know that this crystalline product is not met with in any other cases than of pregnancy. I will not detain you with the detail of my own inquiries on this subject. I will only say, that though in every case of pregnancy I have found the kiestein even as early as two months,

yet from the experiments in numerous instances of disease, I find in some other cases besides pregnancy crystalline products, which, though not exactly similar to the kiestein, yet so nearly resemble it, that I fear a further investigation of this subject will not prove this sign to possess the value of our experimentum crucis, in deciding the question of pregnancy. It is, however, a subject of too much importance to be lightly dismissed, and well deserves the full investigation which I doubt not it will receive from scientific men.