REMARKS

ON

THE DIAGNOSIS OF EARLY PREGNANCY.*

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THE diagnosis of early pregnancy is confessedly difficult. Within the first three months the prudent physician will often call in Time to his aid, and will postpone the positive "Yes" or "No." Of course, he disregards all the subjective signs. It is not safe to trust to any evidence but the objective signs—those physical conditions that are revealed to him on examination of the patient. At the epoch under discussion, the evidence is of a cumulative character. We cannot rely with entire confidence upon any one sign. It is a case where the old law maxim, "*Multa collecta probant, quæ singulatim non probant*," is especially applicable. The little further evidence to which I now beg leave to draw attention is simply an addition to the heap. I claim for it no absolute value; but that in conjunction with other signs it helps to complete and to strengthen that body of evidence from which a decision, more or less positive, may be drawn.

In seeking for evidence of pregnancy we seek, of course, to discover those physical alterations in the generative organs which pregnancy induces. Putting aside, as beyond the scope of my present purpose, the changes wrought in the breasts, I wish to fix attention principally upon the changes that take place in the uterus and vagina. As regards the uterus, there are changes in form, size, weight, mobility, position, texture, secretion, and relation. As regards the vagina, there are changes of form, texture, colour, secretion, and relation. The changes observed in the vagina are mainly the consequence of changes in the uterus. It is therefore desirable to study the uterine changes first. The changes in form, size, and weight are so interdependent that they are best taken together. The change of form consists chiefly in a greater proportional enlargement of the body than of the cervix or vaginal portion of the uterus. The increase of size and weight, of course, are also more marked in the body. But so far, and taken by themselves, these signs may be due to engorgement or hypertrophy of the uterus, possibly to the presence of a tumour in the wall of the uterus, or to the presence of a polypus in its cavity. Under the hypothesis, we are precluded from using the uterine sound, and must rely upon such means as are not likely to disturb pregnancy. We must trust to manual exploration, and sight, for I assume that characteristic auscultatory signs are not yet developed. The touch will recognise—

1. A change of texture in the os uteri and vaginal portion. It is soft, cushiony, a little patulous perhaps, and lubricated with mucus.
2. A change of position: the os is found considerably higher up and farther back under the promontory than in the unimpregnated state; and the os, instead of looking downwards in the axis of the pelvic cavity, looks backwards, perhaps a little upwards.
3. A change of position in the body of the uterus: this depends upon the same cause as the change of position of the os. The normal position of the uterus is one of slight anteversion when the body is in the erect posture. The uterus, swinging, as it were, on the broad ligaments, is ready to revolve to a certain extent on its transverse axis. If the finger be applied to the os, drawing down the vaginal portion, the fundus rises in the opposite direction. The whole uterus is a lever of the first order; the fundus and vaginal portion form the two arms, either of which may be moved by an external power. The two arms are of an unequal length; the upper one formed by the body of the uterus is not only the longer but the heavier, and the freer from restraint. When, therefore, the body—the part which is exclusively the seat of gestation—is enlarged, the increase of size, length, and weight adds in a geometrical ratio to the power of the longer arm of the lever. It naturally falls forwards and downwards; the axis of the uterus no longer approximates to that of the pelvis, but becomes oblique in reference to the axis of the pelvic brim; nearly horizontal when the subject is erect. This anteversion is further liable to increase by the fundus being weighted with the superincumbent intestines. Every inspiration,

every movement that fixes the chest, tends to exert a leverage action upon the uterus, the power of which increases in an accelerated ratio with the growth of the uterus. This leverage in anteversion, or *mouvement de bascule*, as the French call it, produces the sign to which I wish to invite special attention.

4. The elevation and retrogression of the vaginal portion is impeded by the intimate union existing between the anterior wall of the cervix uteri and the base of the bladder. The neck of the uterus can only rise backwards by dragging the neck of the bladder along with it. This produces peculiar conditions very perceptible to the touch. The resistance opposed by the mass of cellular tissue that binds the uterus to the bladder is partly overcome by stretching. The cellular tissue is remarkably extensible; and the extensibility of the vaginal wall is well known. The mass of inter-cervico-vesical tissue plays an important part in pregnancy and labour. During pregnancy, it undergoes the stretching referred to. During labour it is still further stretched; it is by virtue of this free extensibility that the lower part of the uterus glides down into the pelvis before the advancing head, the bladder and anterior wall of the vagina remaining more fixed. In this way, small vessels are commonly torn, and hæmatocele or small extravasations of blood take place in the loose tissue. These extravasations are very common; but a condition I have never found wanting in every case in which I have had the opportunity of examining the body a few days after labour, is a large effusion of serum. This, of course, is readily absorbed, and the stretched cellular tissue recovers its normal compactness. Thus the space between the uterus and bladder is elongated. This stretching and elongation is attended by a stretching and smoothing out of the anterior and upper wall of the vagina. This change in the vagina is very remarkable. Instead of the deep groove or *cul-de-sac*, commonly found in the non-pregnant state in front of the os uteri, the os being lifted up, and brought nearly into a straight line with the anterior wall of the vagina, we find the anterior aspect of the cervix from the edge of the os, forming a continuous plane with the upper part of the anterior wall of the vagina.

The features of this plane vary with the epoch of pregnancy. During the first month, whilst the anteversion or mutation of the body of the uterus is yet moderate, the vaginal *cul-de-sac* is not quite obliterated; the length of the plane, measured from os uteri to the lower edge of the symphysis pubis, is about two inches; the natural corrugations of the vagina are not lost; and there is an elastic sensation in the course of this plane through which it is not always easy to feel the body of the uterus, which rests upon it. But, at the end of two months, the features are less ambiguous. The os has been tilted higher up; the body of the uterus is larger, and its mutation is more marked. The connecting tissue between uterus and bladder is more stretched; the vaginal mucous membrane, also stretched in a corresponding degree, is smoother and more tense to the feel; and the uterine body reclining upon it is felt firm and rounded through it, an elastic cushion intervening. If the abdominal walls be not too thick and resisting, the fundus of the uterus can be felt by the hand pressed in above the symphysis, so that the size, shape, and position of the uterus, can be measured between the two hands.

I believe there is no condition excepting pregnancy that brings out so distinctly the features I have attempted to describe. The tense smooth plane, extending from the os uteri forwards to the symphysis pubis, is characteristic of pregnancy. This sign alone has many times indicated to me the existence of pregnancy; and, on seeking for corroborative testimony, I have seldom failed to find it.

The most valuable sign of all, perhaps, is the violet coloration of the vaginal-portion and the vagina, described by Jacquemier. If this is minutely investigated, it will be found that the appearance due to pregnancy differs from the occasional resemblances that depend upon other causes. In pregnancy, the general and intense hyperæmia is dependent upon an augmented supply of blood attracted by the developmental stimulus. Owing to the absence of valves, and the free anastomosis of the vessels, the entire vascular system of the pelvis shares in this hyperæmia. The capillaries and smaller veins become enlarged; the veins increase in tortuosity and prominence; they become in some instances varicose; the mucous surface is irregular in consequence, sometimes resembling the cerebral convolutions; but a more characteristic feature is, the appearance of small veins in the labia minora et majora, of a purple colour, merging in the vagina into the general purple colour of the mucous membrane. This appearance of the veins of the vulva is strictly analogous and similar to that of the veins in the breasts. I can verify the observation of Dr. McClintock, that the violet colour of the vagina disappears if the child dies.

If the speculum be used, it will commonly be found that a creamy secretion gathers in the fundus of the vagina. The features which I have described, *taken together*—namely, the feel of the os uteri, its position, the

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smooth stretched plane of the vagina extending backwards, the rounded firm mass felt through the elastic plane, and the vascular appearance of the vagina and vulva—*raise the presumption of pregnancy almost to certainty.*

Still, there are other conditions that may deceive. A case that presented in a high degree a combination of the signs described was the following. A lady had had two children. After the last, which was born in July 1867, the abdomen did not diminish in size to the extent expected. After six months, she began slowly to increase. She was brought to me with the object of ascertaining whether the increase was due to pregnancy or to an abnormal growth. I found abdominal enlargement that would correspond to three or four months of gestation; no fluctuation or distinct tumour. The os was tilted up and backwards, not characteristically soft; the anterior roof of the vagina was on the stretch; the uterus was a little enlarged and anteverted; the mucous membrane exhibited a sub-violet colour, with creamy mucus. There was hardness and resistance in the right iliac fossa. I reserved my opinion as to pregnancy, leaving this in doubt; but stated the probability of a tumour. About five weeks later, it was considered that she was in labour; but collapse increased, with severe abdominal pain, and she died in a few days. On dissection, the uterus was found not to have been pregnant; there was some enlargement, with anteversion. The anteversion was caused by the pressure of an ovarian tumour upon the body of the uterus. The colour of the vagina was due to congestion from pressure. The cause of death was remarkable. The tumour, which had increased rapidly in size during the last month, had become twisted on its axis, so that the pedicle resembled an umbilical cord. The strangulation of the vessels so induced had led to rupture of vessels in the cysts of the tumour.*

The converse of the backward stretching of the vagina happens in the case of retroversion of the gravid womb. In this case, the cervix uteri is jammed behind and above the symphysis pubis; the lower and posterior wall of the vagina is bulged forward by the fundus uteri.

CASE OF THROMBOSIS OF THE HEART, ETC., AND OF THE RIGHT FEMORAL VEIN; WITH FATTY DISEASE OF THE KIDNEYS.

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ELIZABETH M., aged 10 months exactly, had been delicate from her birth. She was attacked twelve days before death with scarlet fever, in which she was going on well, till the sixth day before death, when she was suddenly seized with very rapid and short breathing. The pulse became small and quick; the skin was hot, with general feverishness and thirst. The bowels were regular; the urine free; the tongue and the inside of the mouth and gums were ulcerated. She could hardly be made to take the breast, which the mother attributed to her sore mouth. On examination by the stethoscope, nothing but harsh breathing could be detected. There was no dulness on percussion. Three days later, the right thigh and leg were found to be swollen, but not oedematous, and discoloured of a purplish hue. There was seemingly no pain in the limb, the temperature of which was not lower than that of the left limb. The pulsation in the right femoral artery was much fainter than that on the left side. Next day, there were also, with the harsh breathing, slight bronchial *râles*, but no dulness. Two days later she died, the symptoms before death being very hurried, short breathing, pulse hardly perceptible, face anxious and pale, discoloration in the right limb more pronounced. From the first access of these symptoms till the last, she had hardly any cough.

Dr. Alexander Ogston kindly conducted the *post mortem* examination, thirty-six hours after death, of which the following is his report.

On the outside of the body there was nothing very remarkable beyond a purplish blue discoloration of the skin over the right groin and haunch, and upper part of the right thigh, which discoloration was the more conspicuous as the rest of the surface was of a waxy paleness. The uniform purplish discoloration of the right thigh and leg, as well as the swelling observed during life, had almost entirely disappeared. There were the usual cadaveric lividities of the back parts; the joints were flaccid; the pupils small. On opening the chest the pleure were healthy.

and the pericardium distended with a fluid ounce of clear serum. The whole of the contents of the chest were removed in a mass, and examined after being separated from the body. On opening the right auricle, it was full of clot, half of which was the usual red blood-clot, and half yellow and fibrinous. This fibrinous clot, which was densest and yellowest in the auricular appendix, became deeper and deeper in colour, until it passed into the red clot; but did not extend into either of the venæ cavae. The right ventricle was empty; but the pulmonary artery, from the valves onwards, was full of fibrinous clot; which, on being pulled out, formed a cast of the trunk and branches of the artery to its finest ramifications. The left ventricle was empty; the left auricle was full of fibrinous clot, densest and yellowest in the auricular appendix, and extending into the smallest ramifications of the pulmonary veins. The aorta was full of a similar yellow clot, exhibiting, when pulled out, a cast of the arch and descending thoracic aorta, and of the main arteries of the head and arms for a short distance. The substance and valves of the heart were quite healthy. The thymus gland was diminished to about one-half of its original size. The lungs were bulky. The upper lobe of the right lung was healthy; the middle lobe of the right lung having an almost emphysematous feel. The back part and lower lobe of the right lung were solidified and hepatized; and gave out, on pressure, a very little muco-purulent fluid from the cut bronchi, and serum from the lobes themselves. The hepatized part was not softened. The left lung had the front of its upper lobe a little emphysematous to the feel, but otherwise natural. The back part and lower lobe of the left lung were in the same state as the corresponding parts of the right lung. The stomach, liver, spleen, and intestines, were healthy. The abdominal aorta was empty; the abdominal vena cava contained semi-fluid blood. The left kidney was large, flabby, pale, and extremely fatty throughout, and showing all the appearance of advanced fatty disease, both on section and when stripped of its capsule. The right kidney was intensely fatty; hardly a trace of normal tissue remaining. The bladder contained a small quantity of urine, which, with heat, gave a copious deposit of albumen.

On making an incision down the front of the right thigh, along the course of the main vessels, which laid bare the internal saphenous vein, this vein, to the length of one inch from its origin, felt like a hard incompressible cord, and was found filled with a hard, blackish, friable, dry clot, of the consistence of the lymph usually deposited on the inner walls of an aneurism. Below this, it was filled with semifluid blood; and the walls of the vein bore nowhere any traces of inflammatory action. The femoral vein, from the level of Poupart's ligament to two inches downwards, had the same hard feeling, and was filled with the same hard clot; the clot extending for a quarter of an inch into the profunda branch. This clot in the femoral vein presented a peculiar appearance. Although, on the whole, black, hard, and friable, as above described, it presented, at intervals of about half an inch, places where it was firm, white, and fibrinous; and was thus composed of short white portions alternating with black longer parts. This was evidently owing to the manner of its formation; the white portions, which were evidently the first that had been formed, corresponding to places where the venous valves were present; small projections (from the white portions) themselves even more white and tough, fitting into the sinuses of the valves, and seeming to have been first produced. The appearances led distinctly to the inference, that the thrombus, commencing in the sinuses of the valves, grew thence till the vein at the part was plugged; the intermediate black clot having been formed by the imprisoned blood. Above and below this part described, the vein contained semifluid blood, and presented no trace of any inflammatory action. The femoral artery on this side, as well as the femoral artery and vein on the other side, were natural. There was nothing else unusual. The head was not examined.

REMARKS.—The interest of the case is manifest. The fatty disease of the kidneys was sufficient to account for a condition of blood tending to production of thrombosis; while such disease of the kidneys, and such extensive and well marked thrombosis, in a child ten months old, is sufficiently uncommon to deserve record. The sudden access of hurried and short respiration, with the purplish discoloration of the limb, prove that the thrombi had begun to form some days before death. These two sets of symptoms, along with the absence of stethoscopic signs to account for the state of the respiration, pointed at once to the diagnosis. The hepatization of portions of the lungs was evidently merely the precursor of death, as, two days before, there was no dulness on percussion on either side. The small quantity of mucopurulent fluid which could be pressed from the cut bronchi, was just what one would have expected to find from the existence, two days before death, of slight *râles*.

* I have seen another case in which an ovarian tumour was rolled over in a similar manner by the growing pregnant uterus. Death ensued in the same manner by rupture of the vessels of the cyst.