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THE EARLY DIAGNOSIS OF PREGNANCY.

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THE EARLY DIAGNOSIS OF PREGNANCY.

The opprobrium obstetrici is our inability to make a prompt and positive diagnosis of pregnancy in the earlier months. How often are we confronted by one of our female patients with the query, "Am I pregnant?" Many a woman imagines that her doctor can look at her and tell whether she is pregnant. How often great things depend upon our decision. Our patient may wish to take a long and long-looked for journey, but will defer or abandon it if she is pregnant; or other affairs of import, as the question of operative interference may depend on our answer. In fact, fortunes, empires and lives hang on our decision. She who fears she is to be a mother, though not a wife, thinks her case of no less importance.

It is in the first months of gestation that the physician needs reliable evidence, hence we should endeavor to add to the means already at our disposal any symptoms indicative of the presence or absence of pregnancy. It is with this in view that I will endeavor to rehearse the symptoms, confining myself to those of the first trimestrium. Those symptoms well known will receive but passing comment. Those newer and as yet not fully established in our textbooks, shall have more attention.

First in the natural order, we consider the signs which may occur at the time of conception. Aristotle taught that a woman had conceived if there was no return of semen after sexual intercourse, and if the penis was unusually dry when withdrawn. Such is also the universal opinion of shepherds. Hippocrates said that the eyes sank in their sockets. Democritus, that the neck swelled. These, however, are of little value. Probably the only sign of any

worth is the peculiar voluptuous sensation, and the more general erethism experienced by some females on fruitful intercourse. Many think they can tell positively by their feelings when impregnation has taken place. Though they may be correct in some instances, yet it is quite probable that in many others they are not.

Among the first symptoms of pregnancy are absence of menstruation, nausea, and vomiting, slight flatness of the hypogastric region, depression of the umbilical ring, tumefaction, accompanied by sensations of pricking and tenderness; increase in size and weight of the uterus; increased pulsation in uterus and vagina and decensus uteri; womb is less movable, uterine walls have the consistence of caoutchouc; the neck is directed downwards, forwards, and to the left. The orifice of the os tincæ is rounded in primaparæ, but more patulous in others who have had children. A slight softening of the mucous membrane of the lips and an œdematous appearance of the same. Various neuralgias and neuroses, disorders of digestion, and other symptoms, are noticeable. Many women have an abundant leucorrhœa of white or greenish color (granular vaginitis). What may be said of the first of these, absence of the menses, may be said of them all. There are numerous exceptions to any one, and the same condition may be produced by other causes. Hence very unreliable testimony. Thus, an ulcerated os may perfectly imitate the velvety feeling of the cervix; the breasts may enlarge from mere uterine irritation; and the womb may hypertrophy from congestion. Jacquemier noticed the slate, or purple, color of the vagina from embarrassed circulation in the venous capillaries of the mucous membrane. However, patients with uterine tumors, especially old women, and those who have piles and varicose veins on the legs, may have a violet colored vagina. The same may even be caused by impacted fæces;

in fact, by anything which seriously impedes venous circulation. The smooth anterior vaginal wall mentioned by Barnes may also be caused by a uterine fibroid. So it is the size of the uterus, not its contents, which causes this condition.

Dr. Joseph Taber Johnson, of Washington, in a paper before the American Medical Association, in 1881, suggested that some of the principles of the telephone might be utilized in hearing the feeble sounds of the fœtal circulation much earlier than is now possible. I do not know that any one has pushed this matter further. Certainly here is room for investigation. Dr. Routh was the producer of the instrument called the vaginoscope, or more prope rly, using a word from the Greek, coleoscope; an in strument consisting either of the common stethoscope or the simple or double instrument with elastic tube. To the distal end of this is affixed a wooden speculum. Sometimes he used a solid tube made of gutta-percha or wood in lieu of an elastic one. He thinks glass would be better, as it is a very good conductor of sound, and rather increases the pitch, is readily kept clean, and does not make a noise when rubbed against the clothing. The flexible tube may be passed per anum. He reports a number of cases which seem to bear him out. Verardini has also contributed largely to this subject. Dr. E. Kennedy, of Dublin, gives examples in which he has been able to hear the placental souffle at the twelfth, eleventh, and once in the tenth week. He has not been confirmed by others. Cazeaux says the fœtal heart has been heard as early as the third month.

Dr. S. C. Dumm, of Columbus, Ohio, published in 1878 a new sure diagnostic sign of pregnancy. It consisted in finding the odor of the vernix caseosa upon the finger after a vaginal examination during the first or any subsequent month. In a recent communication to me the doctor says: "I think it is one of the clearest on the list, and if carefully paid

attention to will reveal the condition inside of four weeks."

Dr. Eugene C. Gehrung, of St. Louis, wrote of palpating the ovum with the point of the sound. He says the sound should be used very gently and by skilled hands, to which we will all agree, if we consent to its use at all. It gives the sensation of pushing the sound against a bladder filled with water. This is not a positive sign, for in the earlier weeks of pregnancy the ovum is only attached to parts of the uterine walls, and the sound may easily glide by. This same sensation might be produced by a polypus in the uterine cavity, as well as by some other foreign bodies. These cases, however, can generally be differentiated by the history. In a recent private letter Dr. Gehrung says that he proposed this not as an additional sign of pregnancy, but as a safeguard to the gynecologist. It will often save him the humiliation of causing an abortion. He says it is not to be thought of except as a last resort. The earliest period at which the sign has given him warning is at about the fifth or sixth week.

Kyesteine has been the means of determining many an early diagnosis, but still its presence is undoubtedly caused by certain pathological conditions. It has also been found in women not pregnant, and even in men.

M. Pinard, in 1877, treated of a swelling and softening of the gums in pregnancy, and later it is made the subject of an inaugural thesis by Didsbury. This begins about the second month, and is described by Didsbury as consisting of three grades. In the third the inflammation is so marked that it gives a violet red color to the gums. They are puffed out, and the interdentary spaces stand out in marked relief. The tartar and the epithelial débris collect about the necks of the teeth, and the inflammation extends to the alveolar periosteum, when the teeth become denuded and finally fall out in a perfectly healthy con-

dition. This gingevitis is located especially on the anterior and convex portion of the maxillaries. It is rare to see it go beyond the canines. The other symptoms which present, are pain and local hæmorrhages.

Jorisenne, in 1882, stated that he had discovered a new sign of pregnancy, and claimed to be able to diagnose that condition when there was no other sign present than the absence of one period. Long ago Graves formulated the law that in cardiac hypertrophy the radial pulse remains constant whatever the position of the body. Larcher and Ducrest, in 1828, described a hypertrophy of the heart which occurred in pregnant women. Larcher claimed that the arterial tract throughout the body elongated to supply the fœtus. This hypertrophy seems to be constant and considerable, and to be a purely physiological alteration to meet the increased exigencies of the case. The hypertrophy is limited to the left ventricle. Blot estimated the increase at one-fifth the whole weight of the heart. Löhlein, with more recent investigation, thinks the hypertrophy less than one-fifth. Receiving Graves's doctrine, Jorisenne found that whilst in the unimpregnated woman there is a variation of ten to twenty beats in the radial pulse, from change of position, in the impregnated it remains the same. He advises to proceed with deliberation, counting the pulse a full minute lying, sitting and standing, allowing a time between each change of position for the circulation to regain its equilibrium.

Dr. H. D. Fry has investigated this symptom fully and reported his cases. He found that the pulse varied with almost every change of position, and that absolutely no reliance could be placed upon this symptom as a diagnostic sign of pregnancy. I have tested it in a number of cases myself with negative results. Dr. Fry has also written concerning a new early symptom of pregnancy, viz.: An increase of

vaginal temperature. After discussing the question fully and relating his experiments, he arrives at the following conclusions: "That a vaginal temperature equal to or more than 99.7° is a strong presumptive evidence of impregnation; provided there are no pathological conditions of the uterus present and no increase of heat in the axilla." In a private letter not long since, Dr. Fry, after quoting the above, goes on to say: Now the results of my subsequent observations have led me to modify this statement somewhat, and I would substitute as more certain the following: "A rise of intracervical temperature to one degree or more above the temperature of the axilla. The reason is that in several instances I have found early pregnancy co-exist with a subnormal temperature in the axilla, so that while there was a difference of more than a degree in favor of the intracervical temperature, yet the latter only registered 98.4° in one case and 98.7° in another.

I have experimented, for more than a year, as to the vaginal temperature. While in many cases I have found this elevation of temperature, in as many more none could be detected; and again, elevations of temperature have been found where no morbid condition could be made out, and pregnancy was not present. As to the increase in intracervical temperature, my experience has been limited, but so far, has led me to believe it a more reliable test than the intravaginal.

To Hegar, of Freiburg, we are indebted for the new sign of great promise which bears his name. To Hegar's sign of pregnancy I had expected to devote the greater part of this paper. Owing, however, to the writings of Reinl, Compes, and Grandin, which have been so largely quoted by the American medical journals during the last two or three months, I fear I shall be speaking of something not new but quite familiar to all. This sign consists of an unusual resiliance, compressibility, softness, bogginess,

yielding and thinning of the lower uterine segment; that is, the section immediately above the insertion of the ligamenta sacro-uterina. This condition is not alone present when the remainder of the body, as is often the case, is firm and hard, but also quite prominent when this is soft and elastic. The shape assumed is fan-like, or that of a balloon, more than the usual pear shape. It has also been termed an old-fashioned fat-bellied jug. This enlargement is especially marked antero-posteriorly. The change is most apparent at the middle portion of the lower segment and in the median line, the sides of the organ being much firmer and more resisting.

Compes makes the examination as follows: The thumb is introduced into the vagina until it reaches the cervix, and the index finger into the rectum until it reaches beyond the ligamenta sacro-uterina; the other hand is placed over the abdomen immediately above the symphysis and pressed down towards the finger in the rectum. The rectal finger explores the cervix and the lower uterine segment in all its parts, and lastly, the higher parts of the uterus. The examination is facilitated by pulling down the uterus with a volsella and evacuating the bladder and rectum. While this is undoubtedly a very thorough mode of examination, it is repulsive both to the patient and physician, as well as a difficult and hazardous procedure. It is certainly possible in a great majority of cases to make out all that is necessary with a finger in one of the culs-de-sac and the other hand externally. In urgent cases, where this does not satisfy the physician, it would be quite proper to make the examination as above described.

Compes has examined a number of women, found the sign present, then put them under an anæsthetic and still found it present. He says the softened and enlarged uterine segment above the cervix has often been mistaken for a tumor, and that, in fact, laparotomy has been performed under this delusion.

There are two states which may simulate this condition, viz.: distended bladder and the uterus distended with menstrual blood. A distended bladder can and should be evacuated. An imperforate hymen or vagina, or the history of the case, would soon dispel the other question. Hyperplasia would show increased density. Sub-involution increases the longitudinal as well as the transverse diameters. The obstructed circulation from an anteflexed uterus does not impart that feeling of resiliency and compressibility. In marked retroversion it is more difficult to palpate the corpus uteri, and the sign may fail. Here also it is proper to examine per rectum.

Dr. Reinl, formerly assistant to Hegar, has reported six cases; by letter he tells of extended experience as follows: "Among twenty-two cases I missed this sign but twice, and found it earliest in the fifth week of pregnancy."

Dr. Compes, present assistant to Hegar, reports eight cases.

Dr. E. H. Grandin, of New York, has reported twelve cases. In a letter to me since this report he says: "Since the writing of my paper I have had six additional cases, all corroborated, and one of these a case of retroversion. . . . Personally, therefore, I record myself as being able to make the diagnosis prior to the eighth week by Hegar's sign alone."

My experience has been so recent that many of the cases have not had time to prove themselves. I will mention but two, one in which the sign was absent, one in which it was present.

Case 1.—Mrs. B., a widow, æt. 37, came to me March 20, 1886. She acknowledged the opportunity and feared herself pregnant, not having seen her menses for twelve weeks. I examined her for Hegar's sign, but failed to find it. I told her I did not think she was pregnant. Gave her tr. ferri chloridi, and asked her to return in a few days. She returned

three times, each time expressing great fears of pregnancy. Each time I examined her, failed to find Hegar's sign, assured her she was not pregnant, and continued the iron. April 1st the menses reappeared, and were normal in amount and duration.

Case 2.—Mrs. R., a young married woman, æt. 20, a delicate blonde, the mother of one child æt. 2 years. She had been absent from her husband four months visiting her parents at Washington, D. C. She last had her menses January 15, continuing five days, normal in amount and conduct. She returned to Cincinnati and her husband February 9. March 5 Dr. Ransohoff was called, and finding the case to be gynecological, referred her to me. She had not had a return of her menses since the middle of January. The nature of her case required a digital and specular examination once, twice or thrice weekly. March 10 she was slightly sick at the stomach. This had not occurred before, and did not recur, nor any other sign indicating pregnancy, besides the cessation of the menses, before the sixth week after her return to her husband. During the sixth week I made three careful vaginal examinations, and at each one was sure I found Hegar's sign present. I assured the patient that I was quite confirmed in the belief that I had frequently expressed to her, viz., that she was pregnant. On March 30 she complained of not feeling well. On the morning of March 31, the forty-eighth day after her return, she passed a large quantity of blood and a membrane, which she saved and showed me. This proved to be the major portion of an ovum, the remainder of which was found within the vagina.

Dr. Palmer, of Cincinnati, informs me that he regard's Hegar's sign as possessing the greatest value in diagnosticating early pregnancy, especially taken in conjunction with the change of position, at first sagging, then increasing anteversion at the end of

the second and during the third month, both incident, of course, of the pregnancy.

As the shape of the uterus, enlarged by pregnancy, is one peculiar to that state, and is an enlargement largely confined to the body of the organ, it can thus be differentiated from the enlargements due to sub-involution, chronic metritis with hyperplasia or hypertrophy, or fibroid infiltration. The enlarged uterine body from pregnancy is likewise less dense than from hyperplasia or an intra-mural fibroid, and, to touch, presents a much greater degree of uterine pulsation.

In all these last named morbid conditions almost surely there will be a menorrhagia in some form, or a metrorrhagia, or both. It is extremely rare for a fibroid infiltration to involve both anterior or posterior walls alike; the enlargement is symmetrical.

The peculiar enlargement of the uterus described by Hegar, but noticed often by many before his description appeared, is best detected in the normal anteverted position of the uterus. Retroversion prior to pregnancy, as malposition is usually increased by pregnancy in the first month, presents conditions rendering it more difficult of recognition.

There remains to us, then, to again lament our inability, in many cases, to make a positive diagnosis of early pregnancy, to mourn the fallibility of the old and many of the new symptoms, to especially recommend the sign of Hegar, which until now has proven itself impregnable, and to plead for investigators in a field which should not be "barren or unfruitful."