Original Articles.

ON INTERMENSTRUAL DYSMENORRHEA.¹

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EVERY gynecologist will doubtless recall a few cases in which there was present at about the middle of the intermenstrual period a set of symptoms, ceasing suddenly after a day or two, much like those associated with menstruation, but without any discharge of blood or quite the characteristic pain. This phenomenon, the *molimen uterin intermenstruel, dysmenorrhæ intermenstruelle*, of the French, the *Mittelschmerz* of the Germans, sometimes called "intermediate pain or dysmenorrhæa," if mentioned at all in the text-books, is stated to be very rare. I have, however, met with it no less than 18 times in 400 suitable cases in which I have inquired as to its existence this last summer. Gynecologists are still so at variance as to its causation that a consideration of the subject may be of value.

I present notes of 20 cases occurring in my own experience.

CASE I. Chronic ovaritis and fibroid.—L. J., thirty, colored, nullipara. Five years ago dysmenorrhæa and constant pain in the left ovary. A tumor of the right ovary was then removed, but the left one, though in a suspicious condition, was not touched. The left ovarian pain was not helped by the operation, and for the last six months it has been much worse. A few months after the removal of the right ovary she began to experience on the thirteenth and, much more severely, on the fourteenth days after the beginning of menstruation a dull pain extending over the whole abdomen, but with much sharper exacerbations in the region of the left ovary, which, coming on in waves, lasts for an hour or so two or three times daily. These symptoms last from four to six days, and are unaccompanied by any discharge. During actual menstruation the patient feels better than at any other time in the month. Within the last year a fibroid the size of an infant's head has developed, but as that was presumably not present when the abdomen was opened five years ago, it can be dismissed as having no bearing upon the pain.

CASE II. Adherent retroflexion.—E. F., thirty-eight, three children, youngest nine. Four years ago began to have backache and dragging pain in left side, and for a day or two before and after menstruation a scratching, tearing pain in the left groin, menstruation coming on every twenty-five to thirty-two days, and the patient feeling better when actually flowing than at any other time. Three years ago began to experience on the thirteenth and fourteenth days from the beginning of menstruation much pain in the lower abdomen and back, but none in the left ovarian region. This pain comes on slowly, is at its maximum for a few hours on the second day, and then gradually dies away. It is not accompanied by discharge. A year ago her perineum was restored and ventrosuspension performed, but while her other symptoms were much helped by the operation, the intermenstrual disturbances were in no wise affected except that the seat of the pain was transferred from the back to deep in the vagina and became of a throbbing character. She is very sure that this change in the seat of the pain occurred at the very first intermenstrual period after the operation. Coitus, at all times a source of discomfort, although the woman is of fair sexual appetite, is quite out of the question during these two days, for, in her words, it feels as if there were a boil between the rectum and the womb. Defecation also is so painful during these two days that it is not to be thought of.

Examination here showed an extremely tender, sharply retroflexed and densely adherent uterus, with much endometritis, but the appendages could not be palpated satisfactorily. We may suppose that they were not much diseased at the time of the ventrosuspension from their not having been removed.

CASE III. Chronic pelvic peritonitis.—E. A., thirty-two, severe attack of pelvic inflammation (gonorrheal) twenty years ago. Four years ago a miscarriage with no immediate bad effects, but ever since irregular bilateral ovarian pain and backache; much dysmenorrhæa; obstinate rectal catarrh, much worse in middle of month.

In June, 1897, I removed the right ovary, which contained a small cyst, the size of a hen's egg, leaving the somewhat degenerated left ovary in deference to the demand of the patient. The appendages on each side were found buried in a mass of very dense adhesions. Afebrile convalescence. On September 1st, catamenia in perfect comfort for the first time in five years. On September 12th, an attack of sharp pain in the pelvis and right side lasting two days. I have no notes of the October menstruation, but the pain recurred November 5th, twelve days after the beginning of menstruation, it being this time on the left side.

Thus from month to month she went on with intermenstrual pain, sometimes on one side and sometimes on the other, but with no regular alternation. A year later I found a mass the size of a fist to the left of the uterus. She was then menstruating with little discomfort, but regularly on the twelfth to fifteenth day she had for three or four days this pain, dull in character, with occasional very sharp twinges. No discharge was associated with it.

In December, 1898, I opened the abdomen again and found a small encysted peritonitis each side, and removed the stump of the right tube, and also the very densely adherent left tube and ovary. The patient's condition forced me to leave the uterus behind. I had arranged to operate upon the day of the pain, but an acute digestive storm forced me to put it off for three days. Through an unfortunate accident the ovary removed was lost, but there was certainly no gross evidence of a recent or approaching rupture of a Graafian follicle. In this case menstruation has continued in spite of the removal of both ovaries, and so also has the intermenstrual pain. But considering the matted condition of the pelvis, I am not surprised that some ovarian tissue should have been left behind.

CASE IV. L. M., twenty-two, virgin. Apex consolidation with T. B. present four years ago; sound now. Lithemic; several attacks rheumatic fever. No pelvic symptoms until last few months. Menstruation in October painful; in November much more so. On November 29th (fourteen days after beginning of menstruation), sudden sharp pain in median line over pubes; feels as if everything were sinking down; considerable leucorrhæa. Careful examination showed no gonococci. The next menstruation was very painful, and after it had lasted ten days, the normal being two, I curetted her and also steamed out the uterus. The appendages examined under ether were normal. Since then she has had no pelvic discomfort of any kind.

CASE V. Interstitial fibroid, without disease of appendages.—Mrs. G., forty-two, never pregnant. Menstruation profuse but painless. For ten years has had on the eighteenth day after the commencement of menstruation, which is delayed two days, a definite pain lasting one day, with a profuse leucorrhæa which lasts three days. This pain is generally on both sides, and is of a dull, heavy character. It stops suddenly and completely. This patient was put on thyroid extract, and at the end of three months the pain had disappeared, although there was no change in the size of the tumor.

CASE VI. Gonorrheal endometritis, with no trouble with appendages that can be discovered.—E. R., thirty-two, one child and two miscarriages. Menstruation normal except for pain in one groin for the first day since it first appeared. For fifteen years has had on the fourteenth day

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from the beginning of menstruation pain in the same place as the menstrual pain but of a quite different character. This is associated with profuse leucorrhea, lasts two or three days and then ceases at once and completely.

CASE VII. *Endometritis and very mild chronic salpingitis.*—S. P. (Disp. 2,478). Two years ago a miscarriage, followed by salpingitis. Some months subsequently began to have on the fourteenth day dull pain on the left side lasting two to three days. Menstruation painless. Patient greatly relieved by six months' local treatment.

CASE VIII. *Retraction from parametritis; right ovary prolapsed; both ovaries thickened; endometritis.*—M. B. (Disp. 3,448). Miscarriage one year ago. For the last six months has been having pain on the fourteenth or fifteenth day, lasting for two or three days. No increase of leucorrhea. The pain is on the left side and running down the left leg; no pain ever on right side. Menstruation has stabbing pain in back of a different character.

CASE IX. *Adherent retroversion, with prolapsed and adherent appendages; endometritis.*—C. S. (Disp. 3,582). Gonorrhea six months ago; miscarried five months ago. For the last four months has had pain on the fourteenth day from the beginning of menstruation. The pain is in back and around umbilicus much the same as when unwell; it lasts a day or two.

CASE X. *Anteflexion; prolapsed ovary.*—H. C. (Disp. 3,982). Never pregnant. For three years has had on fourteenth day after the beginning of menstruation dull, paroxysmal pain in both groins accompanied by nausea. It lasts two days only and has no discharge. Menstruation is irregular, five weeks to three months, and painless. Patient much improved by sedatives.

CASE XI. *Pelvic organs normal by rectal examination.*—L. K., virgin (Disp. 4,007). Since menstruation began, seven years ago, has had sharp pains in both groins on the fourteenth day; the pain is unlike her cramps with menstruation; it lasts three days only.

CASE XII. *Retroflexion, second degree, adherent; little endometritis, and the appendages apparently normal.*—Mrs. H. (Disp. 4,040). For many months pain over pubes like that of menstruation, only much worse, on the fourteenth day. It lasts only one day and is not accompanied by discharge.

CASE XIII. *Posterior parametritis, with slight retrocession and metritis.*—Mrs. L. (Disp. 4,062). Since the birth of last child ten years ago has had every month a sharp pain on the fourteenth day. The pain is on the left side and exactly the same as when unwell. Leucorrhea is somewhat profuse but never bloody. The pain has not been helped by repair of cervix one year ago. I removed a neglected stitch from the cervix without effect upon the pain.

CASE XIV. *Slight salpingitis.*—K. N. (Disp. 4,108). Married two years; never pregnant; gonorrhea two years ago; no history of much pelvic inflammation. For one year pain in womb and over pubes on the fourteenth or fifteenth days, and at that time passes blood with the feces. No leucorrhea at any time. At menstruation, similar pain but no bloody feces.

CASE XV. *Endometritis.*—K. D. (Disp. 4,189). Syphilis four months. For two months sharp pain on the fourteenth or fifteenth day after menstruation. Pain much like that when unwell, but much worse; great improvement under treatment.

CASE XVI. *Salpingitis, purulent endometritis.* M. G. (Disp. 4,192). Twenty years, one child eighteen months old. Pain on the day after menstruation established. On the fourteenth and fifteenth days from the beginning of menstruation the same pain, associated with an increase in leucorrhea. This pain stops after a few hours.

CASE XVII. *Retroversion.*—Mrs. B. (Disp. 4,186). On the fourteenth and fifteenth days marked discharge but no pain. In this case the discharge disappeared on correcting the displacement and applying a pessary.

CASE XVIII. *Lacerated cervix; endometritis; adherent ovaries; slight retroversion.*—L. (Disp. 4,124). Twenty-eight years. Four children; last eight years ago. Men-

struation regular and painful; leucorrhea for years. For several years pain on fourteenth day like that of menstruation. This vanishes after two or three days and is associated with an increase in leucorrhea. I removed with the curette a fair amount of hyperplastic endometrium, and after breaking up the few adhesions that bound down the ovaries, excised a piece of one for examination and suspended the uterus. In the two subsequent months she had none of the customary intermenstrual pain, though menstruation was, if anything, more free than before and still painful. Removed specimen negative.

CASE XIX. *Endometritis; retrocession; chronic salpingitis; prolapsed ovaries.*—M. F. (Carney 393). Twenty-eight. Never pregnant. For three years (that is, since marriage) has had on the sixteenth day from the beginning of menstruation, which is regular and painless, pain in the lower abdomen and right side and leg. This pain is paroxysmal, lasting five minutes at a time for one to three days. There is no increase in leucorrhea.

CASE XX. *Right ovaritis; tender stump on left.*—Mrs. H. (Carney 314). Three years ago left tube and ovary removed for cystic degeneration. A child two years ago. Since the operation, has had every month, about the fourteenth day, pain in back and both sides, coming on suddenly and lasting for two or three days. This is quite different from the discomforts of menstruation.

To these 20 cases of my own I have added 25 more collected from the scanty literature on the subject. An analysis of these 45 cases shows the following facts:

(1) As regards the regularity of the pain, in all it appeared practically every month, except when pregnancy intervened. In 22 the pain always occurred on a definite day, from the beginning of the last menstruation. In 13 there was a variation of two days, and in four of four days. In two, with irregular menstruation, it occurred on a definite day before the next menstruation.

(2) As regards day of appearance, counting from the first day of the previous menstruation, in 20 it appeared on the fourteenth day exactly, in seven it appeared from the twelfth to the fourteenth day, in six from the thirteenth to the fifteenth day, in two from the seventh to the tenth day, in two on the sixteenth day, in one on the fifteenth day, in one on the seventeenth day, and in one on the eighteenth day, menstruation here being five days late. Thus in 41 cases it came from the twelfth to the sixteenth days in 37.

(3) As to its character, in a large number of cases its paroxysmal character was spoken of, the attacks either coming at intervals of several hours and lasting five to fifteen minutes, or else there being constant pain with marked exacerbations, often of the greatest severity, and subjectively much like labor pains. In about half the cases the pain resembles that of menstruation; in the rest it is "entirely different." In nine there was no pain with menstruation.

(4) As to duration, in 10 it lasted two days, in nine three days, in eight one day, and in only four did it last four or more. In most of these it could be inferred that it reached its maximum on the first or second day.

(5) As to seat, in 14 the pain was sharply limited to one side, with fairly regular alternations in two cases (Palmer and Marsh); in 12 it was more general.

(6) As to character of discharge, in none of these cases was there associated with the pain any discharge like that of menstruation, although in two it

was slightly sanguineous. These were respectively cases of easily bleeding fibroids and diseased appendages, with hemorrhagic endometritis; both conditions apt to bleed on the slightest provocation. This lack of characteristic menstrual discharge is the chief reason for objection to the term "intermenstrual dysmenorrhea," as that implies menstruation, and, as I have shown, there is no menstrual discharge, and in more than half the cases the pain is different from that of menstruation. On the other hand, a marked increase of leucorrhœa is spoken of in 10, showing a decided temporary congestion. In my third and fourteenth cases there were bloody dejections during the pain.

From this analysis it will be seen that we are dealing with a phenomenon definite in the time of its appearance, character and seat, which is quite unlike premenstrual congestive pain, or the soreness that sometimes persists after menstruation, and lacking the irregularity of ovarian neuralgia.

As to the causation of this pain, one might suppose, from its frequent location in the groins, that it is due to some affection of the appendages. While in most of the text-books it is dismissed as "ovarian," it certainly is not always so. Croom had a typical case, in which the pain disappeared after the removal of a hydrosalpinx, although the ovaries were not touched. In Fasbender's case there was no pain after the uterus was curetted, the appendages being apparently normal. My fourth case was a similar one; in my fifteenth case the improvement was measured by that of an existing endometritis, the appendages being normal, and in a case of Benicke a stenosis of the internal os was apparently the only lesion, while in at least one of my cases of fibroids and one of retroflexion the appendages seemed free. On the other hand, in 40 cases in which the local condition is stated I find that there was more or less of an inflammatory condition of the appendages in 30 ("ovariitis" 15, salpingitis 12, hydrosalpinx 3). Whether this preponderance is more than a coincidence demands an examination into the various theories suggested to explain this pain, remembering that a phenomenon associated with so many different conditions cannot of necessity be always due to any one, and remembering further that this proportion of inflammatory cases is not much different from that obtained in any series of gynecological patients.

The theories hitherto suggested may be called (1) the mechanical theory — tubes, ovaries; (2) the neurosis theory; (3) the intermenstrual cycle of congestion theory; 4) the intermenstrual cycle of ovulation theory.

The mechanical theory — applied to the Fallopian tubes — supposes the intermittent emptying of a catarrhal accumulation within the tube, the pain being due to efforts to force the contents of the tube through the closed uterine ostium, under which conditions it might be expected that the pain would be paroxysmal. Examining the cases under consideration, we find that a more or less watery discharge was noticed in four, in two of which a swollen tube had previously been felt. The intermittent character of this tubal hydrorrhea has been explained by supposing that under certain conditions, with the congestion of menstruation, there may be sufficient swelling of the mucosa to produce the temporary occlusion of the tubes with a resulting accumulation of

fluid, and that at the time of the greatest uterine quiescence the pressure within the tube becomes sufficient to expel its contents. In only two of these cases was the diagnosis of a hydrosalpinx proved by operation, and at best this theory would apply to but few.

The mechanical theory as applied to the ovary (by Johnston) is that the pain is due to the stretching of adhesions by the shrinking of the pelvic organs, or to the shrinking of the hard parenchyma of the chronically inflamed ovary, due to the ebb of the menstrual congestion, and inferentially assumes that this shrinking is at its maximum midway between the menstrual periods. If this theory were correct it would be but fair to expect that with such hypersensitive ovaries and adhesions, there would also be pain with the congestion that accompanies menstruation, but in nine cases menstruation was painless, and, in fact, in three the patients felt far better during the few days before and during menstruation than at any other time. Furthermore, typical intermenstrual pain was observed in six cases in which the ovaries were freely movable and not sensitive to pressure, and the uterus also was freely movable.

The neurosis theory (Croom, Fasbender, Boulli, Martin) involves ovulation taking place at a different time from menstruation. Assuming that this symptom is generally seen in nervous women, it is held that

"either general irritability of the whole system, or a hypernervous condition of the ovary due to local causes, may produce a discharge of nervous impulses in that organ sufficient to cause the painful bursting of a follicle." While it is possible to assume that in a nervous woman various factors might produce irregular ovulation, this theory does not explain why this discharge of ova should always take place just midway between the menstrual periods, and applying it to the cases under consideration I find only a few of them are spoken of as neurotic. Two of my cases, for instance, were phlegmatic to a degree, and totally without nervous hyperirritability, either general or local, and even in the cases called neurotic it may well be questioned whether the broken-down nerves were not the result rather than the cause of the pain.

The theory of an intermenstrual cycle of congestion assumes that the Stephenson wave is dirotic, so to speak. It will be remembered that according to the careful observations of Stephenson there exists in normal woman a monthly wave of vital energy, of which regular and demonstrable fluctuations of temperature, pulse pressure and amount of urea excreted are the measures. Menstruation does not correspond with the apex of the wave, but occurs five or six days after the decline has begun. Starting at about zero on the first day of menstruation, the wave descends with a fairly regular curve, reaching its lowest point

at about the fourteenth to sixteenth day, then rising until it reaches its maximum on the twenty-fourth, with a rapid subsequent drop again until it reaches *par* on the day that the next menstruation begins. Now this wave of vital energy, according to Stephenson and Mary Putnam Jacobi, shows sometimes secondary fluctuations, and it has been assumed by certain writers — unfortunately without as yet definite experimental demonstration — that there exists a definite intermenstrual wave — that the Stephenson wave is one of double rhythm, the second beat giving a certain amount of congestion, but not being of sufficient force to compel a discharge of actual blood.

While the large number of cases in which there was an increase of the amount of leucorrhœa, even sometimes tinged with blood during the prevalence of the pain, shows that at this time there may be a certain amount of pelvic congestion, the theory that the pain is of necessity due to such a congestion cannot be maintained, for the simple reason that many of these cases had no pain at all when really menstruating, a time when there is certainly much more congestion than at any intermenstrual secondary wave, and, furthermore, the intermenstrual pain and that associated with menstruation was generally of totally different character. In many other cases there was with the pain no increase of leucorrhœa, such as would follow much congestion of the pelvic organs.

The intermenstrual cycle of ovulation theory brings up the old question of the synchronism of ovulation and menstruation. I think it is now generally accepted that while a certain period of every month — generally approximating that of menstruation — may be regarded as that of ovulation *par excellence*, the ripening and discharge of ova is a fairly constant process, though to a much less degree. These irregular ovulations must be inferred to explain the cases of conception that sometimes take place outside of the limit of "five days before and ten days after" that are avoided by the Malthusian husband. Ovulation is, at least, helped by a congested condition of the ovary. We have seen that in many of these cases there is an increased congestion of the uterus as measured by the amount of leucorrhœa, and therefore presumably of the ovaries, and what more likely, according to this theory, than that the intermenstrual secondary wave of the preceding theory, due on the thirteenth to fifteenth of the menstrual month — counting from the beginning of menstruation, which is the nineteenth to twenty-first of Stephenson's wave, the climax of which precedes menstruation by a week — should be of sufficient force to cause ovulation to take place. The resulting pain would be due to the incarceration of the growing follicle or to the discharge of ova through the chronically inflamed capsule of the gland. Indeed, Marsh goes so far as to formulate the theory that the process of ovulation occurs every twenty-eight days, but that it is normally removed from that of menstruation by an interval of fourteen days, and that ordinarily it occurs in each ovary alternately. This cycle of ovulation is revealed to us, according to him, in the pathological cases by the pain caused by the dehiscence of the follicles, while under normal conditions ovulation would not be manifested by any appreciable signs. In the first place, this theory runs contrary to the experience of mankind that coitus is most apt to be fruitful in the few days closely following menstruation. I am unaware of any observations from the days when

so-called "cystic degenerated" but functionally active ovaries were sacrificed so recklessly that show that ovulation was especially active in any large proportion of cases in which they were removed in the middle of the month. If it is true that intermenstrual pain be due to ovulation occurring in chronically tender ovaries, if ovulation normally occurs fourteen days after menstruation, there should be vastly more cases of intermenstrual pain, considering how numerous such ovaries are. To be sure, occasional cases seem to bear out this periodic intermenstrual ovulation. In an ovary I recently removed on the fourteenth day I noticed a follicle that was within a few hours of rupture, but I question very much whether such coincidences are not to be explained by the fact that ovulation may be taking place at any time. As I have stated, a hasty macroscopic examination of the ovary removed in Case III, three days after the pain, showed no sign of functional activity, while the section of the ovary removed in Case XVIII gave the same result.

That the ovaries function alternately must be regarded as merely a theory until shown to be a fact, in spite of the somewhat striking alternation in the seat of the pain in the cases of Marsh and Palmer. In my own experience, when examining healthy ovaries in the course of abdominal work, they generally seem in about the same condition macroscopically on the two sides, which would hardly be expected were one active and the other resting. As bearing very strongly against March's theory of alternation, I would cite my third case, in which intermenstrual pain occurred every month, sometimes on one side and sometimes on the other, although one ovary had been removed a year previously. Finally, as against the theory that this pain is due to painful ovulation, I refer to the numerous cases in which the ovaries were apparently perfectly healthy, and to the two cases in which the pain disappeared after the uterus was curetted.

As possibly throwing some light upon the subject, I would offer the following theory, which for want of a better name I call the "awakening of menstrual activity" theory. The intermenstrual pain coming about the fourteenth day from the beginning of menstruation, the nineteenth after the climax of Stephenson's wave, occurs just about the time the pressure line has reached its lowest point. Cannot then the intermenstrual wave, if one exists, be one of preparation rather than of subsidence, a nervous explosion, so to say, as if nature were waking up with a more or less violent effort to make ready for the coming activity, whether menstrual or ovarian? We have seen how for nearly three weeks the wave of vital energy has been running down hill and the system has, as it were, got into a rut. Nature suddenly says this decline *must* be stopped, and in the readjustment of forces that ensues as the human machine begins to work again with greater energy, it is not to be wondered that there should be groaning from some of the machinery, which, however, after a day or two finds its bearings again and then works automatically and in silence. This theory would not be incompatible with the fact that this pain occurs under such a variety of pathological conditions, ranging from simple endometritis to pyosalpinx and fibrosis. The pain does not of necessity come from any one organ, but from whatever organ is the most irritable or diseased, will come the loudest protest at the sudden arresting

of the comfortable vital decline. A case of Sorel's shows well how this pain has more relation to the coming menstruation than to the previous one. The pain was always fourteen days before the next menstruation, although this came at very irregular intervals. This case was observed through 147 periods. I have found but one case in which the relation between pain and the previous menstruation was absolutely positive (my tenth). Here menstruation, occurring at intervals of five weeks to three months, was always followed on the fourteenth day by sickening paroxysmal pain in both groins, lasting two days and unattended by leucorrhea. I regard this case as merely the inevitable exception for which some other explanation must be sought. Both Priestly and Palmer have spoken of the possibility of intermenstrual pain having some relation with the coming menstruation, but offer no explanation of what this relation is.

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TREATMENT OF CANCER OF THE CERVIX OF THE UTERUS COMPLICATED BY PREGNANCY.¹

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If I am correct in interpreting the motive of our excellent host in inviting me to be present at this meeting of your honorable body, as an expression of his desire to afford me the opportunity of enjoying his hospitality and your good-fellowship, and not as dictated by those considerations which vanity might suggest, then this paper is to be regarded as scarcely more than a mere formality—a passport entitling me to entrance upon these coveted pleasures.

I have selected the subject announced in the title as one in which obstetrician and surgeon must be alike interested. In view both of the increased gravity of cancer of the cervix of the uterus when complicated by pregnancy, and of the many considerations which must, in most instances, be taken into account in deciding upon the proper treatment, there is probably no class of cases which demands greater accuracy in observation, wisdom in interpretation, and skill in management. It has, therefore, been somewhat of a surprise to me to find the question so briefly and unsatisfactorily dealt with in the treatises at my disposal. This was one consideration which influenced me in the selection of this subject.

Aside from this, the subject seemed to me a most suitable one for this occasion. The condition whose treatment constitutes the subject of this paper presents itself to the obstetrician and to the surgeon in slightly different lights,—due to their respective points of view,—there being just that shade of difference which is conveyed by the terms employed by each in referring to this condition. To the obstetrician it is pregnancy complicated by cancer; to the surgeon it is cancer complicated by pregnancy. To the

one, a normal physiological process assumes a new phase from the advent of a serious pathological condition; to the other, a pathological condition always grave, but by no means hopeless, is rendered far more serious by the existing physiological condition. In the solution of the problem presented the one considers what measures are demanded by the invasion of the pregnant uterus by a malignant neoplasm; the other, what modification of the procedures regularly indicated in the treatment of a malignant tumor of the cervix must be made when the invaded organ contains a more or less completely developed human being. From these considerations, therefore, it would be natural to predict that the obstetrician would be inclined to defer operative intervention to a later date than would the surgeon, and that the surgeon, on his part, would be disposed to grant to the interests of the unborn child less consideration than would the obstetrician.

But the gravity of these cases is such as to demand that in deciding upon the course of treatment each phase of the case should be accorded its proper significance, unbiassed by the dicta of any specialty. The position in which I am now placed, as a surgeon addressing a society of obstetricians, seems to me peculiarly adapted to the endeavor to formulate for the handling of these cases certain general impartial rules, in which full justice shall be done to the claims of both mother and child. Ignoring the questions of etiology, pathology, symptomatology and diagnosis, let us assume that we have before us a case presenting the condition under discussion. What method of procedure are we to adopt when this fact has been ascertained?

Fortunately, conception rarely takes place in the presence of cancer of the cervix of the uterus, the very nature of the disease almost precluding its occurrence. The onset of the cancer, then, is usually subsequent to conception. Since this lesion is most common in women who have borne one or more children, its earlier symptoms are quickly recognized by them as a departure from the course of former pregnancies; alarm is excited, and advice promptly sought. This results in an early detection of the malady.

Because the course of cancer of the cervix when complicated by pregnancy is more aggressive than otherwise, and for other cogent and obvious reasons, its management demands special consideration. In this consideration we are to take into account the precarious condition of the child, which rarely goes to the full term of intra-uterine life; the constant dangers which beset the woman from hemorrhage and infection; and, finally, at labor, rents which may extend into the peritoneum and lead to fatal peritonitis; or, should the uterine canal be occluded or rendered incapable of even moderate dilatation, there is the possibility of rupture of the uterus, on the one hand, or, on the other, the impossibility of terminating the labor without resorting at last to surgical procedures. Nor should the grave question of the rights of the unborn child be overlooked.

From the above considerations it is manifest that the well-established principles governing the treatment of cervical cancer in general must be modified when pregnancy exists. Our method of procedure will be influenced by a number of factors, chief among which are the extent of the lesion and the stage of pregnancy. On this basis we may divide these compli-

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