ognizes "incomplete," "latent," and so-called "tetanoid" forms, where spontaneous spasm is absent, but where Trousseau's, Erb's and Chvostek's signs are present, and he also recognizes cases with typical muscular spasm where the accessory phenomena are absent. It appears, although it is not specifically so stated by the author, that all these incomplete and tetanoid forms occur in cases associated with gastric derangement. Frankl-Hochwart, W. Fleinert and Ury declare that such cases are not to be considered as true tetany, and they limit tetany strictly to such cases as show typical contractures, with Trousseau's, Erb's and Chvostek's phenomena all present. Frankl-Hochwart makes the following subdivisions of tetany:

(a) *Tetany of adults*.—(1) Tetany in sound individuals, acute or subacute, mostly mild forms, which in certain localities, as Vienna and Heidelberg, at certain seasons, especially March and April, is very prevalent, and attacks with preference young men of certain callings, namely, tailors and cobblers. This is called idiopathic laborer's tetany, and is often associated with light fever. (2) Tetany of gastric and intestinal affections: diarrhea, dyspepsia, gastric dilatation, helminthiasis. (3) Tetany after poisoning with chloroform, morphin, ergotin, lead. Single cases of each reported. (4) Tetany of acute infectious disease: typhoid, cholera, influenza, measles, scarlet fever. (5) Tetany of puerperal state. (6) Tetany of thyroid extirpation and strumipriva. (7) Tetany in connection with other nerve diseases, exophthalmic goitre, brain tumor, syringomyelia.

(b) *Tetany of children with relation to gastrointestinal disease, acute infectious disease and rachitis*.—Apart from the reports of individual cases there have been but two studies of the occurrence of tetany in America, namely, those of Griffith and of Morse.

Griffith, from an analysis of all cases of tetany reported in America up to 1894, concludes that there is no essential difference in tetany of adults and of children, nor in continuous and paroxysmal forms. He also states that not every case shows all the cardinal symptoms.

Morse, studying tetany in infants, carries the review up to Jan. 1, 1901, adding thirty-one cases in infants and children. He concludes that tetany, like epilepsy, is a nosological entity and not a definite disease, that its only pathognomonic symptom is spontaneous, intermittent, paroxysmal muscular contraction. Trousseau's symptom, Erb's symptom, and the facial phenomenon are not pathognomonic of tetany because they are not constantly present in tetany and occur in many other conditions.

(To be continued.)

THE Colorado Board of Health has issued an order providing that the minimum period of quarantine for smallpox patients shall be not less than four weeks from the first eruption, and in any case not less than ten days after scaling is completed. — *Journal American Medical Association*.

NOTES ON THE DIAGNOSIS AND TREATMENT OF EARLY MISCARRIAGE.¹

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THE term "early miscarriage" has been used here in considering pregnancies interrupted before the completion of the eighteenth week. The notes are based on 104 such cases seen at the Boston City Hospital and in the Out-Patient Clinic of the Boston Lying-in Hospital. No attempt will be made to give an exhaustive symptomatology, as I design only to reiterate certain points of practical value in diagnosis and in treatment, which I have seen ignored by good practitioners.

A. Diagnosis.—I. Pelvic pain associated with uterine bleeding suggests miscarriage. Frequently the absence of accurate history requires a consideration of the possibility of an excessive menstrual period with pain. In making a differentiation between menstruation and miscarriage, the history of previous amenorrhea, combined with a history of usually painless menstruation; the absence of the characteristic menstrual odor, the presence of a fetid odor, the dark grumous character of the blood and the dilated os, all suggest the interruption of pregnancy. The enlargement of the uterus, its shape and its consistency are to be considered, but one must not mistake the subinvolved multiparous uterus, with its gaping external os, for a gravid or puerperal uterus.

II. Not rarely do the symptoms of miscarriage simulate those of a bleeding extra-uterine pregnancy. The following points are given as suggestive of extra-uterine pregnancy: (1) Palpation of a tender mass at the side of the uterus or in the fossa of Douglas; (2) the discharge from the uterus of a decidua graviditatis without chorionic villi; (3) disproportion between the severity of the pain and the size of the uterus; (4) disproportion between blood lost and a pulse which indicates hemorrhage; (5) in extra-uterine pregnancy the uterus does not present the globular enlargement of pregnancy and does not increase beyond the size of a ten-weeks' uterus;² (6) its enlargement is longitudinal only, never anteroposterior nor transverse.³

On the other hand, miscarriage would be suggested by a total absence of the above symptoms and of such peritoneal symptoms as abdominal rigidity and tenderness, vomiting and distention. It is to be noted that in an early miscarriage the uterus is frequently smaller than the history would lead us to expect. This is due to the involution which follows the rupture of the ovum and its partial expulsion.⁴

III. The question of "threatened" or "inevitable" miscarriage must remain always one of personal judgment in the individual case. This is

¹ Read before the Obstetrical Society of Boston, May 20, 1902.

² Abel-Bandler; *Gynecological Pathology*, p. 83.

³ Webster; *Ectopic Pregnancy*, p. 163.

⁴ In an extra-uterine pregnancy an attempt at criminal abortion, if followed by peritoneal symptoms, would obscure diagnosis hopelessly. (See Boston Medical and Surgical Journal, cxlvi, 40.)

illustrated by the following extreme cases. In Case I the head of a four-months' fetus (membranes intact) was engaged in an internal os dilated so as to admit two fingers; yet, under treatment, all symptoms disappeared and the patient was carried over. In Case II there was practically no bleeding, but persistent uterine contractions, which, in two hours, sufficed to dilate the closed os and expel the intact four-months' ovum, repeated doses of morphia having been without effect. But the differentiation between threatened and inevitable miscarriage has not confronted me so constantly as the necessity for decision, whether a case was complete or whether some part of the ovum still remained in utero. This decision is usually difficult. Rarely is one able to find parts of the ovum, even if the discharges have been saved and examined conscientiously. The following data were noted: A firm uterus, closed os and slight ooze of blood indicate, (a) where the previous flowing has been slight, a threatened miscarriage; (b) where the previous flowing has been profuse and in clots—a complete miscarriage. In partial miscarriages the bleeding persists, and the os almost invariably admits a finger which feels readily the characteristic ragged portion of the ruptured ovum. In fact, where the os is so patulous as to admit one finger easily, the ovum, intact or in part, will be found almost invariably to be in the uterus.

Having suggested the difficulty, in some cases the impossibility of absolute differentiation between threatened, inevitable, partial and complete miscarriage, I shall attempt to formulate a plan of treatment which shall cover all cases. Any such plan must be discretionary, but the limits of discretion can be drawn fairly well.

B. Treatment.—In all cases where a high temperature is indicative of sepsis, or where the pulse, in rate or quality, has been affected by the bleeding, the uterus should be emptied at once by the method to be described below. Where neither of these conditions is present, and it is impossible to establish definitely whether the case be threatened or inevitable, partial or complete, the treatment should be directed to the conservation of the ovum, but with careful watching, so that if at any time the mother's condition becomes worse, the treatment may become radical at once.

To be more precise, when no part of the ovum is prolapsed through the os, or when the os is not sufficiently dilated to permit the finger to feel the intact or ruptured ovum within the uterus, if the patient's pulse be good in quality and less than 110 beats per minute, treatment should be expectant. Where miscarriage is not complete, seldom will one be obliged to wait more than twenty-four hours in order to see either an anatomical change which makes clear the diagnosis or a change in condition which demands action. During this expectant period the patient may be left with safety in care of a nurse, or where this is impossible, can be seen once in six hours by the physician.

All writers agree that the mortality in early miscarriage is exceedingly low. None of the 104 cases resulted fatally, although some entered the hospital septic, with temperatures of 104° to 106°, and others were exhausted from hemorrhage (pulse 150-160). Of this series but three cases showed a high pulse as a result of the loss of blood, and these three had bled eight, fifteen and twenty-two days, respectively. It has not been explained why a woman during an early miscarriage can lose so much blood without constitutional effect, but it has been suggested that the loss takes place slowly enough to permit recuperation nearly to keep pace with it. At any event, such bleeding practically never is dangerous until it has continued several days. The emergency is not one of minutes, but of hours or days.

Hirst's request⁵ for statistics leads me to offer the following 1,028 cases (none over six months):

I. Six hundred and ten cases treated at the Boston City Hospital (1892-1902), 29 deaths, or 4.75%. Large proportion of induced and neglected cases. The deaths include cases with pre-existing typhoid and pneumonia. With two exceptions those of the twenty-nine deaths obviously due to the miscarriage were caused by septic pneumonia following a miscarriage between four and six months. The other two were due to sepsis after abortion at the third month.

II. There were 418 cases treated as out-patients of the Boston Lying-in Hospital (1892-1902). There were five deaths, or 1.2%; one case could not be traced. The five deaths were due to (1) typhoid; (2) pyonephrosis; (3) pulmonary embolism; (4 and 5) sepsis.

Of the 1,028 cases but seven were twin pregnancies.

Methods.—Having decided upon radical measures, ergot and the tampon are to be used, where indicated, as the textbooks direct. The tampon is seldom necessary in cases under four months, as the small amount of requisite dilatation is obtained with rapidity and with little bleeding. When it comes to the emptying of the uterus, instead of immediate recourse to the curette, it was seen that a large majority of the cases could be treated efficiently with the finger, thus leaving the uterine mucosa in a condition much more nearly resembling that of the normal puerperal uterus. The curette, removing practically all of the deeper layers of the decidua serotina and vera, leaves little or none of the glandular element upon which depends the reproduction of the normal endometrium.⁶ Whether the subsequent imperfect reproduction is not the cause of much of the persistent endometritis which is seen, is an open question for the pathologist.

Almost every textbook describes the method of digital removal of the ovum⁷ and the use of the curette. I have found it very convenient to enter the uterus with the second finger of the left hand, allowing the shorter forefinger to extend outside

⁵ *Obstetrics*, 3d edition, p. 262.

⁶ Minot: *Human Embryology*, p. 21.

⁷ Reynolds' *Practical Midwifery*, p. 60.

of the cervix into the vaginal vault. I have never found ether necessary because of pain, but have used it where a rigid abdominal wall prevented the right hand from fixing and slightly depressing the fundus. Where the finger fails, the curette, always sterilized and at hand, is employed. I have found best a medium-sized sharp curette with so stiff a staff that it cannot be bent, except by exerting considerably more force than is permissible in using it. Only extreme carelessness can result in puncturing the firm-walled uterus of early pregnancy. An exception exists in cases where the uterine wall is broken down by a sepsis of some days' duration.

Whichever method is employed, the uterine cavity should be irrigated thoroughly. I have used corrosive sublimate (1-5,000), formalin ($\frac{1}{2}$ to 2%), and sterile water with equally good results, the quantity being more important apparently than the constituent. The uterus having been emptied, the cessation of bleeding is invariably instantaneous, except for the very slight lochial ooze. The use of rubber gloves causes so little inconvenience in digital manoeuvres that their value for asepsis far exceeds the delay they may occasion.

It has been my experience that most women, either through design or unwittingly, underestimate the duration of their pregnancy. I have noticed (and Dr. Minot confirms me) that judging from its length obstetricians generally underestimate the age of the fetus. These errors derive import from the variation in treatment according to the duration of the pregnancy. The following figures are quoted*:

Fetus 28 days =	Length	7.5 mm.
" 60 " =	"	28 mm.
" 3 mos. =	"	78 mm. (3 1-16 inches).
" 4 " =	"	155 mm.

It seems misleading to state that before the end of the third month there is no placenta. Embryologists seem to agree that coincident with the development of the ovum there occur those changes in the chorionic villi and the decidua serotina which result ultimately in the formation of the placenta. Before the end of the eighth week the general atrophy of villi, except at the decidua serotina, makes an easily perceptible differentiation.

Frequently in partial miscarriages at seven to nine weeks, I have found that just this small tufted piece of chorion remains attached to the uterine wall (that is, decidua serotina) and causes persistent bleeding; consequently, in very early miscarriages, this immature placenta must be sought. Here also may rest the etiology of subsequent fibrinous mole.

The health report for the week ending Nov. 8 shows the occurrence of 124 new cases of typhoid fever, the disease being in every ward but the eleventh and twelfth. This is seventeen cases more than last week. Over 500 cases are now being treated.—*Philadelphia Medical News.*

* Minot: Human Embryology, pp. 384 et seq.

Clinical Department.

RECURRENT PAROTITIS FOLLOWING RECURRENT ATTACKS OF APPENDICITIS.

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Miss S., age nineteen, had a first attack of appendicitis in Portland in 1897. At this time there was a large abscess about the appendix which extended into the pelvis. The abscess was drained ten days after the onset of symptoms, and forty-eight hours after the operation the right parotid began to ache and swell; forty-eight hours later the left parotid became involved. The pain and swelling continued five or six days, and gradually subsided.

The patient developed a second attack of appendicitis one year later. At this time the abscess extended into the pelvis, as at the first attack, but was much smaller. The abscess was drained forty-eight hours after the onset of symptoms, and forty-eight hours later the right parotid became swollen and painful, followed in two days by the involvement of the left. A week after the onset of symptoms both sides had subsided.

The patient first came under the care of Dr. M. H. Richardson during a third attack of appendicitis in November 1899, two and a half years after the first attack. Thirty-six hours after the onset of symptoms the patient was operated upon, a small abscess about the appendix, extending into the pelvis, was drained, and the appendix removed. Two days after the operation the right parotid became swollen. The patient went through a third attack of double parotitis similar in all respects to the two previous. There was no chill, and the symptoms were comparatively mild; the temperature at its highest ranged between 100° and 101°.

Stephen Paget, in a paper published in the *British Medical Journal* in 1887, gives the following facts regarding parotitis. Out of 101 cases collected by him, 10 were due to disease or injury of the genito-urinary tract, 18 to disease or injury of the alimentary canal, 23 to disease or injury of the abdominal wall, and 50 to disease or temporary derangement of the generative organs. Of the 101 cases, in only seven was any other than the original septic process reported. Thirty-seven out of the 101 died, but all these Mr. Paget says died of the original disease or injury, and not because of the parotitis. In 25 cases of ovariectomy, both parotids were affected in nine. Of 78 cases, 45 went on the suppuration and 33 resolved.

STATE HOSPITAL FOR EPILEPTICS.—At a meeting of the Pennsylvania State Convention of the Directors of the Poor, held recently at Somerset, it was recommended that Highland Inn and 100 acres of ground be purchased for the purpose of establishing a State Hospital for Epileptics.—*American Medicine.*