A CASE OF RUPTURE OF THE UTERUS IN LABOR AT TERM, THE CHILD BEING BORN ALIVE.

Recovery of the Mother, and Subsequent Delivery of a Full-term Child in Normal Labor.

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Recovery from rupture of the uterus in labor is stated by most authorities to occur in only five or ten per cent. of the cases; and in this small proportion of recoveries, whether or not owing to conditions consequent upon the uterine rupture, subsequent pregnancy and parturition are extremely rare. Parvin,[1] in a paper read before this Society in 1878, mentions the case of Lambron, who, "in 1775, performed gastrotomy in a case seventeen hours after the rupture, in 1779 repeated the operation upon the same patient, who, in 1781, gave birth to a living child *per vias naturales*." Doubtless occasional instances of recovery from rupture, with subsequent pregnancy, have occurred from time to time; but in the literature of the last ten years I have been able to find only four well-authenticated cases.

Wenzel[2] quotes from the *Transactions of the Medical Society of Wisconsin* the cases of Marston and Moore. In Marston's case the uterus ruptured spontaneously in the sixth labor, and the fœtal head escaped through the rent: a dead child was extracted by the vagina, and the mother recovered. Sixteen

[1] Transactions American Gynecological Society, vol. iii. p. 308.
[2] American Journal of Obstetrics, vol. xv. p. 374, 1882.

months later the woman miscarried at the fourth month, and eight months thereafter she was prematurely delivered at the sixth month. Eleven months later she was taken in labor at term: after four hours of labor the uterus ruptured again at the seat of the former tear, and the woman died in twenty-four hours. In Moore's case spontaneous rupture occurred in the fourth labor, and the patient recovered. In 1880, five years later, the same patient suffered a second rupture, and the delivery of the child was followed by intestinal hernia through the rent: the intestine was replaced, and the woman recovered.

Lawrence[1] reports a case of spontaneous rupture in a multipara with a flat pelvis, the child being delivered by version, and the placenta extracted from the abdominal cavity: there was no prolapse of intestine. The woman was kept under morphine, had only moderate peritonitis, and got up on the fourteenth day perfectly well. Dr. Lawrence subsequently delivered her of a premature child, and another pregnancy followed.

In February, 1888, McLean[2] reported to the Obstetrical Society of New York that he had recently delivered by version a patient whose uterus had been ruptured in her previous labor, the fœtus escaping into the peritoneal cavity and being extracted through the rent.

The history of my own case is as follows:

Mrs. F., a native of Newfoundland, was delivered of her first child, a girl weighing nine pounds, in May, 1883, when she was twenty-eight years of age. Nothing is known by me of this labor except that it was long, that the forceps was used, that the cervix was lacerated bilaterally to the vaginal junction, and that the child lived to be over a year old. These few facts, however, in the light of my subsequent knowledge of the patient, lead me to believe that the child probably presented in an anterior position, that the force of the uterine contractions was not sufficient to drive the head into the pelvis and dilate the os uteri, and that

[1] British Medical Journal, vol. ii. p. 601, 1885.
[2] American Journal of Obstetrics, vol. xx. p. 401, 1888.

the forceps was applied at the superior strait and the head delivered through an imperfectly dilated cervix.

At midnight, December 18, 1884, Mrs. F. was taken in her second labor, and was attended by Mr. C. D. Jones, of the Harvard Medical School. The head presented O. L. A. The pains were relatively inefficient, and in the afternoon of the 19th Mr. Jones summoned me to the case with a view to instrumental interference. The forceps was applied at the superior strait, and a living male child weighing nine pounds was delivered with moderate difficulty. At this time I did not measure the pelvis; but it was obviously contracted in the conjugate diameter of the brim. The convalescence was tedious; but the case was dismissed in three weeks, the condition of the mother and child being good.

At 2.30 A. M., December 28, 1886, Mrs. F. was taken in labor with her third child, and was seen an hour later by Mr. G. W. H. Libby, of the Harvard Medical School. The head was found presenting above the brim O. D. P., and the os was the size of a quarter dollar. Four hours later the membranes ruptured spontaneously; but the head did not engage, and seven hours after the beginning of labor no apparent progress had been made. Gradually, however, the head extended, the brow entered the pelvis, and a large caput succedaneum formed on the left frontal bone. The cervix became thick and œdematous, and the os dilated to the size of a silver dollar. Recognizing the gravity of the case, Mr. Libby sent for Dr. Edward Reynolds, Assistant in Obstetrics in the Harvard Medical School. Dr. Reynolds found that the student had correctly diagnosticated the fœtal position and presentation, and he also found that the cervix had been so deeply lacerated in previous labor, especially on the right side, toward which the occiput was directed, that any operative interference must necessarily be attended with a considerable risk of an extensive tear into the lower uterine segment: he therefore asked me to see the case with him.

On my arrival, twelve hours after labor had begun, the condition of the woman was good, and the child was living. As the occiput was above the brim and in posterior position, the use of forceps was considered inadvisable by both Dr. Reynolds and myself. Podalic version was evidently the most favorable

operation for the child; but the deep laceration of the cervix, and the probable thinning of the lower uterine segment after twelve hours of obstructed labor, made this operation hazardous. Craniotomy on a living clild we especially wished to avoid in a Roman Catholic family. After careful consultation, and fully realizing the risk of the mother, we decided, nevertheless, to perform version in the interest of the child. Dr. Reynolds passed his hand into the uterus and brought down a foot without especial difficulty: the contraction ring was not marked, but the lower segment was thin. The extraction of the child was undertaken by myself, Dr. Reynolds following down the uterus and exerting supra-pupic pressure. Some difficulty was experienced in delivering the arms, as they became extended (it was found later that the right shoulder was dislocated), and a considerable pressure was necessarily exerted over the head to force it through the brim, but altogether the delivery did not exceed fifteen minutes. A male infant weighing nine pounds was born in a state of asphyxia, and some twenty minutes were required to establish respiration.

While I was resuscitating the child, Dr. Reynolds took charge of the uterus and found it contracted to such a degree that he supposed the placenta had already been extruded into the vagina; but on introducing his hand to remove it, he found to his amazement, that the placenta was in neither uterus nor vagina, but that the cord led up to and through a rent in the lower uterine segment on the right side. Carefully disinfecting his hand, and dilating the rent which had closed firmly upon the cord, he found the placenta among the intestines and removed it with membranes entire: there was no difficulty in the withdrawal of the hand or placenta. The uterus contracted firmly, and there was no intestinal hernia and no hemorrhage. The woman was in a condition of profound shock, and her pulse was 150. Brandy was given subcutaneously, and six hours later the pulse had dropped to 120.

Being asked for my prognosis by the student in charge, my answer was that, if the patient survived the primary shock (which had already in a great measure passed off), she would undoubtedly have peritonitis, from which there was certainly a

good chance of recovery: septicæmia she ought not to have, as throughout the case the most careful precautions had been taken: undoubtedly there were some blood-clots in the peritoneal cavity; but the peritoneum is very tolerant of aseptic blood, and the liquor amnii had entirely drained away before the child was extracted: no hemorrhage whatever had occurred externally, and there were no symptoms of concealed hemorrhage, showing that most fortunately no large vessels had been torn. The case would, therefore, resolve itself into one of traumatic peritonitis, from which the patient ought to recover, if her strength could be sustained. Even were the patient in the best of hygienic surroundings, it would not seem advisable to me in this instance to perform laparotomy to close the rent in the uterus; nature would undoubtedly do this in thirty-six hours or less. Moreover, with firm uterine contraction maintained, there would be little risk of the escape of lochia into the peritoneum, when there was a free exit through the cervix. Should subsequent symptoms point to a purulent accumulation in the abdominal cavity, drainage by the vagina, or perhaps laparotomy, would have to be considered. My directions were to give opium freely, and to support the strength with stimulants and liquid food.

The next morning I found the patient under the influence of opium, with a pulse of 110 and a normal temperature. The temperature gradually rose, however, and on the fourth day reached 102°, with the pulse at 120. The abdomen was extremely tender, swollen, and tympanitic, and the patient complained of great pain if the opium was not pushed. A sublimated douche was given every day, and brandy, milk, and eggs constituted the dietetic treatment. On the sixth day there was some vomiting, a passage from the bowels took place, and there was profuse sweating. Next day the temperature reached 103.8°, and the pulse 130; but from this time progress toward recovery was uninterrupted. The patient was dressed on the fourteenth day, and on the next day, with a normal temperature, resumed her household duties. Of course, the patient was still weak when she left her bed, and suffered for a time with pain in the right iliac region and over the bladder, which was somewhat irritable. I saw her occasionally during the next two weeks, and had the

perhaps undeserved satisfaction of being told by her, when the baby was a month old, that she was in perfect health, and never felt better in her life. Throughout the case Mr. Libby was untiring in his devoted attention and intelligent care, and to him belongs the chief credit of the successful result.

The pelvis was now for the first time measured with care: it was found to belong to the generally contracted, flat, rachitic type; the contraction in the transverse diameter was moderate, and the true conjugate of the brim was 3.5 inches. The woman was small in stature, but presented no evidences of rickets other than those shown in the pelvis.

Just when and how the rupture occurred in this case is uncertain: Dr. Reynolds was not conscious of the accident at the time of the version. The chin came down on the right side and perhaps caused the tear, although probably not, as it is doubtful if the head could have passed the brim unless it were well flexed. Possibly my efforts in releasing the arms caused the tear; but my own belief is that the powerful supra-pubic pressure, exerted under my direction to drive the head through the brim, forced the placenta through the thinned lower segment on the right side before the head had passed through the pelvic canal.

In the recovery of the patient the element of chance played a large part: had large vessels been torn, the case would have been lost by primary hemorrhage; had not the liquor amnii drained away before the rupture occurred, and had, therefore, quantities of meconium and fœtal débris entered the peritoneal cavity, the result might have been quite different. It is with no small satisfaction that I point to the absence of any symptom of septicæmia; for a patient subjected to examinations by three different men, undergoing the operations of podalic version and manual extraction, having her uterus ruptured and the placenta manually extracted from the abdominal cavity, could hardly fail to be infected, if all that came in contact with her genital canal were not aseptic. If, however, as shown to be possible in this case, septicæmia can

be eliminated from the dangers of ruptured uterus, the prognosis is very decidedly improved, and will depend on the amount of shock, hemorrhage, and subsequent peritonitis, and on the patient's general strength and power of endurance. Practically, therefore, a few hours should settle the prognosis: if the patient does not die in a short time from shock and hemorrhage, the chance of recovery is certainly not a bad one.

It is not my purpose in this communication to discuss the propriety of laparotomy after rupture of the uterus; but the cases in which that operation is indicated are, it seems to me, those in which there is a continued, moderate hemorrhage, which is sure to exsanguinate the patient if neglected, and those in which the fœtus has escaped into the abdominal cavity, either wholly, or to such a degree that extraction by vagina through the rent is inadvisable. In such cases it is justifiable to expose the patient to the added shock of gastrotomy for the purpose of removing the child, tying bleeding points, and perhaps suturing the rent in the uterus. If the tear is extensive and does not involve the lower segment below the proper place for amputation, and especially if the uterine musculature has become friable, removal of the uterus would seem to be the proper treatment. If much detritus has entered the abdominal cavity, or if the child has partially escaped therein, irrigation through the rent and the use of suitable drainage have given very good results in foreign hospitals, especially so in the hands of Frommel.

In regard to the obstetric treatment of such a case as this, I would not again run so great a risk to the mother for the sake of the child. I would attempt by gentle manipulation to rotate the head to an anterior position and then apply high forceps; failing in this manœuvre, as I think I should have done in this instance, I would either do craniotomy, or, if I did version, would make the extraction more slowly, with only moderate supra-pubic pressure, even if thereby the child were lost.

At midnight, January 8, 1888, about two years after recovery from the uterine rupture, Mrs. F. was taken in her fourth labor. Mr. L. B. Clark, of the Harvard Medical School, attended her, and unfortunately was unable to make an accurate diagnosis of the fœtal position, as the patient insisted on keeping a kneeling posture by her bed. It was ascertained that the position was right, but whether anterior or posterior is uncertain. Believing, as I do, that nearly all right positions are primarily posterior, it seems probable that anterior rotation took place while the woman was in the posture favorable to that movement, namely, while on her knees by the bedside. At all events the woman was normally delivered of an eight pound girl, occiput anterior, after twelve hours of labor, just before my arrival. I took charge of the third stage of labor, and thought I could detect through the abdominal wall on the right side of the uterus a somewhat thickened ridge at the seat of the previous rupture. The placenta was extruded by the normal efforts of the uterus, and the subsequent convalescence was uneventful.

It is interesting to regard the obstetric history of this patient in connection with the pelvic measurements. The children were all large. In the first two labors the head presented in anterior position, and although the pelvic contraction was such that the unaided power of the uterine and abdominal muscles was unable to force the head of a nine pound child through the superior strait, the head engaged, nevertheless, and was in both instances safely delivered with high forceps. In the third labor, however, the position was posterior, and it was impossible for the biparietal diameter of a child weighing nine pounds to engage in the diminished chord subtending the sacro-iliac arch contracted by both transverse and antero-posterior narrowing, and which even in normal pelves is less than the oblique diameter through which the biparietal passes in anterior positions. Meeting with resistance, therefore, on the occiput, the head extended and sought to enter the pelvis by its frontal diameter, establishing the brow presentation with which we had to deal. In the fourth labor the child

weighed one pound less, and perhaps would have passed the brim even in a posterior position; but the posture of the woman probably promoted anterior rotation before the head entered the pelvis, and the head then passed through the most favorable pelvic diameters, propelled only by nature's efforts.

DISCUSSION.

Dr. T. Parvin, of Philadelphia.—The case is interesting as proving that abdominal section is unnecessary after some cases of rupture of the uterus, and spontaneous recovery may be so complete that the organ proves itself as perfect in childbearing as before the injury.

There is no treatment for ruptures of the uterus in childbirth, and the question to be settled is in what cases should the abdomen be opened, and in what simple drainage by the vagina can be relied upon; certainly the results obtained by the latter in recent years are very encouraging. Probably the solution of the question is this, that where the tear is in such a position that vaginal drainage is perfect, the abdomen need not be opened; but if such drainage is impossible, or imperfect, then section is indicated.