TRANSACTIONS OF THE CINCINNATI OBSTETRICAL SOCIETY.

Reported by J. W. UNDERHILL, M.D., Secretary.

Stated Meeting, January 11, 1877.

DR. A. J. MILES, *Vice-President, in the Chair.*

DR. J. C. MCMECHAN read a paper on

DELIVERY BY EXTERNAL PRESSURE,

of which a synopsis is here presented.

Historical Sketch.—We can easily imagine that in ancient times, before midwifery became a science, and before podalic version and the forceps came into use, delivery by external pressure must have been tried often and often—sometimes with success but oftener without success, owing to its having been tried in cases not suitable for the procedure. In ancient times *vis a tergo* was used in place of our modern *vis a fronte*, and as far back as the twelfth century Albucasis refers to delivery by external pressure in the following words: "Cum ergo vides ista signa, tunc oportet, ut comprimatur uterus ejus ut descendat embryo-velociter." A whole chapter of his book is devoted to the subject of forcible delivery, and at his day external pressure was one of the principal manœuvres practised in the delivery of the fœtus. In 1554 Jacob Ruff published a work at Zurich, entitled "A Beautiful, Funny, and Consoling Little Book on the Conception and Birth of Human Beings," in the first chapter of the fourth book of which he gives the following advice: "A skillful woman at this time must stand behind the woman in labor, and placing both arms around her and over the abdominal wall must press downwards until the child is delivered." In 1594 Rodericus a Castro recommended midwives in their practice to make pressure over the woman's abdominal wall, in order to press the fœtus downwards. According to Dr. S. M. Mouser,[1] the Indians of the Pacific coast must follow nearly the same line of procedure, as

[1] Boston Gynecological Journal, Nov., 1870, Vol. III., p. 274.

he says: "In such cases a female friend of the patient acts the part of widwife, seats herself on the ground, her back resting against a tree. The patient is seated on the thighs, her back resting against the abdomen of the midwife. During the expulsive pain the midwife embraces the abdomen of the patient with both arms, making firm pressure, relaxing her embrace during the interval, and thus continuing the process of pressure and relaxation until the completion of labor, and in case the placenta is retained the midwife walks upon the abdomen of the patient until it is expelled." John Von Hoorn, in the 30th chapter of his "Siphra and Pua," seems to have had a very good idea of this manœuvre, as he says: "If the woman is not delivered in a few hours we ought to assist her by external pressure. She should lie upon a comfortable bed and the pains coming on, the uterus, if found lying laterally, should be pushed to the median line of the body, and the midwife, placing the palms of the hands over the uterus, pressure should be made downwards. I have often witnessed this manœuvre and have often seen its good effects in assisting the delivery of the child." It was Von Ritgen,[1] however, who described this manœuvre and its advantages, in an article written in 1856, in which article he says very truly, "Why do we always drag and never push out the fœtus? The natural mode is by pressing out the fœtus, and why should we not imitate nature?" Although Von Ritgen described this procedure in a very beautiful, full, and concise manner, he never practised it himself. Kristeller, however, on reading Von Ritgen's article, and being convinced of the practicability of this method of delivery, tried it in nineteen cases with success, and reported the results of his experiments and investigations in the "Berliner klinische Wochenschrift" for 1867, No. 6. He also invented a dynamometric forceps to demonstrate how little force is required to extract a head that has lain for hours unmoved, and he found that a force of from 6 to 8 pounds was often sufficient to deliver the child in such cases. Ploss, in the "Zeitschrift f. M. Ch. und Geburtskunde" for 1867, advocated this procedure. Abegg, in a work entitled "Zur Geburtshuelfe und Gynækologie;" Playfair, in the "London Lancet" for 1870; and Barnes, in his "Obstetric Operations," all refer to this mode of delivery in very flattering terms.

Method of Delivery by External Pressure.—According to Kristeller, the patient is to lie on her back and the obstetrician is to stand at one side of the bed, and he is to endeavor to push

[1] Von Ritgen, ueber das Entbinden durch Druck statt Zug. Monatschrift f. Geburtskunde, 8 Bd., S. 233.

away all portions of intestines from the uterus and to bring that organ into axis with the pelvic inlet. After this he is to seize the uterus in such a way with his hands that the external borders of the little fingers will look towards the pelvis and the palms of the hands grasp the fundus or sides of the uterus at its upper half, whereby the thumbs will lie over its anterior surface and the fingers are to be spread over its posterior surface as far as possible. The hands on both sides must be applied at about the same level. Upon this the obstetrician is to gently begin pressing the abdominal wall against the womb, and keeping his hands applied at the same points he increases the pressure until considerable force is expended upon the uterus. If the os is but slightly dilated the pressure should be lateral, but if the os is well open the pressure should then be made principally at the fundus. According to the exigencies of the case and the sensitiveness of the patient, a pause of ½ to 3 minutes is to be made and the pressure commenced again, and at the same time changing the point of compression slightly. Each compression should last from 5 to 8 seconds. The compressions are to be made 10–20–40 times, and towards the end of labor they are to be made in more rapid succession and the points of pressure are to be closer together. Sometimes a few compressions are sufficient to terminate a tedious labor. If no progress in the process of labor occurs after 20–40 compressions have been made, it is better to desist from further efforts. In pluriparæ, in women with thin abdominal walls, in twin births where one child has been born, this method proves most successful. On the contrary, where the abdominal wall is thick, this method is attended with greater difficulty, but it is particularly easy of performance when the patient is etherized.

Objections to this Method.—It might be said against this method that the pressure might cause such irritation of the uterus and its surroundings that peritonitis might be excited or that the utero-placental circulation might be interrupted. In answer, it may be said the compressive force is exerted over such a broad surface and is so slight that it can do no harm; and then again, the uterus has far more tolerance for such compression than was formerly supposed. In regard to interrupting the utero-placental circulation, there is no danger of this, as the compressive force used is not as great as that caused by the natural contractions of the uterus.

Advantages of this Method of Delivery.—Abegg of Dantzig[1] states the advantages of the method of delivery by external pressure, as follows:

[1] Zur Geburtshuelfe und Gynekologie, Berlin, 1868, p. 32.

1. It shortens the duration of labor.
2. The normal position of the child is preserved during extraction by the forceps.
3. It often renders the application of the forceps unnecessary.
4. There is but slight danger of injuring the perineum.
5. In breech presentations it prevents the arms from being carried upwards.
6. It hastens the delivery of the shoulders after the head has been born.
7. It renders delivery by the forceps much easier.

The external pressure has the effect of increasing the labor pains and of hardening the uterus. It dilates the os uteri and causes a gradual descent of the fœtus through the pelvic canal. In regard to the external pressure dilating the os uteri we have no better method of effecting this object than by this method, and often after morphine and ether have failed the external pressure will be used with success. In case there is hemorrhage during labor this method is preferable to any other, as the uterus is compressed as the fœtus is gradually delivered and the danger from hemorrhage is thus lessened. In comparing this method with that of delivery by the forceps, it may be said that to deliver with the forceps the membranes must first be ruptured by this; it is not necessary that they should be ruptured, and in fact it is better that they should not be. The danger by this method is almost nothing in comparison to delivery with the forceps; for every time the forceps are applied there is more or less danger of injuring the bones of the cranium, and there is also a danger of tearing the perineum with these instruments. By using external pressure we avoid both these dangers. In cases where the forceps cannot be readily adjusted, by this method we can press the head down sufficiently so as to be able to apply them. In cases of shoulder presentation Braxton Hicks lays down the rule that we should always try and perform cephalic version first, and failing in this we can then have recourse to podalic version. Abegg, in imitation of this remark, says, "we should first attempt delivery by external pressure, and failing in this we can then apply the forceps."

Cases.—Kristeller, in his last essay on this subject, reports nineteen cases in which he delivered by external pressure. In fourteen cases this method of delivery alone was used, but in the remaining five cases it was combined with other methods. Of the women delivered, four were primiparæ, fifteen pluriparæ. In six of the cases the breech presented, in twelve the head. Three of the children were premature and were born four to six weeks before the proper time, and were dead before

the commencement of labor. All the remaining children did well, and all the mothers made good recoveries. A number of interesting cases of delivery by this method are related by Abegg in his work already referred to. In concluding this article I shall quote two cases occurring in the practice of Dr. Playfair,[1] of London, which cases prove in the clearest manner the practicability of this method of delivery.

Case I.—"Labor commenced at 12 M., February 23d, 1868. At three A.M. on the 24th the membranes had been ruptured for several hours, and the os was fully dilated. The pains were frequent and regular, but they had no effect in causing the head to pass through the brim. During the pains it partially engaged at the brim, but always receded during the interval. After waiting it seemed as if the forceps would be required. Von Ritgen's method was now tried. The patient was placed upon her back, and firm pressure was made over the uterus. The good effects of this manœuvre were very striking. The first pain was manifestly increased in strength and duration, and the head was felt to advance as it was pushed down, and in about six pains the head was expelled."

Case II.—"On the 10th of August, during the day, the pains were feeble. At 10 P.M. the os was slightly dilated; the pains became stronger at 1 P.M., and at 3 A.M. the os was pretty well dilated. At 4 A.M. the membranes ruptured, and an enormous quantity of water was discharged. At 6 A.M. the os was fully dilated, and the head engaged at the brim in the first position. The pains were scarcely worthy of the name. Ergot was given, but without the desired effect. I waited until 11 A.M., and then made up my mind to apply the forceps. The husband objected. This method was tried, pressure being made every five minutes. The labor was quickly terminated in this way."

This procedure certainly has a great future before it, and, as life can certainly be saved by this method of delivery, we should endeavor to bring it into practice again. It was about the only method of delivery used by our forefathers, and we should not discard it now because we have other methods of delivery.

DISCUSSION ON DR. McMECHAN'S PAPER.

Dr. W. T. Brown.—"I have not given much thought to the subject treated in the paper, and cannot, therefore, discuss it very satisfactorily. I think I would prefer the forceps in some of the conditions in which delivery by external pressure has

[1] London Lancet. 1870.

been recommended. Still there are certainly a few cases in which the method proposed might prove very useful."

Dr. Trush.—"I have tried delivery by external pressure to some extent. In only one case where I have employed it am I satisfied that it accomplished good. That was in the case of a primipara whose family objected to the employment of forceps. By this method in two hours the child was expelled. Yet I cannot tell how much this agency of external pressure effected in delivery in this instance. I am satisfied a part of the good effects was due to the external pressure. Of the cases related by authors who have employed this plan, we are left in the dark as to how much of the good effects is due to the *direct* pressure, and what proportion is due to the *increased action of the uterus* induced by the irritation excited in that organ by the application of external pressure.

One point not touched upon by the essayist, relates to the use of pressure in the third stage, though probably he thought that would not properly come within the scope of the paper. I think the method proposed would be of little use as a dilating force in the first stage of labor. Certainly it would be of much more value in the second stage, and in some cases would prove a valuable auxiliary to the forceps. Perhaps its greatest value will be found in hastening delivery of the head in breech presentations. In conclusion, I will add that I believe women will very generally object to its employment in ordinary cases of labor, because of the increased pain to which it would give rise."

Dr. Cleveland.—"I am not very familiar with this subject practically, but I have been instructed by the admirable paper read this evening. In my opinion, external pressure is of no use in the first stage of labor, though of value often in the second stage—as an excitor of contractions in the uterus if not otherwise. Possibly, however, some assistance toward expulsion may be rendered directly through the force applied. My attention was called to a case some time since in which the midwife bore heavily upon the abdomen of the parturient woman and yet failed to accomplish delivery. I was called and extracted the child by forceps. The patient died shortly afterward from a form of puerperal fever, and the family still believe that the woman's death was superinduced by the pressure which she had been subjected to by the midwife. I am not satisfied, however, that this was the case. It will not often happen that we can employ this method in our private practice, even though we be satisfied of its efficacy, because women will object to it from motives of delicacy and also because it has a tendency to increase their pains. I thank the

essayist for the article because it develops a subject upon which I have thought insufficiently. Yet I must add that the method proposed is one which can never become a substitute for the forceps."

Vice-President Miles then called Dr. W. T. Brown to the Chair.

Dr. Miles.—"I have seen excellent results from external pressure in a few cases of breech presentations where the head had been retained. In such a case, especially when the pains are inefficient, if proper traction be made at the same time upon the child's limbs, external pressure will greatly facilitate the expulsion of the head. It may also be employed where the family object to the use of forceps. I have seen its good effects in a couple or three cases of primiparæ, where the pains had ceased, leaving the head pressing on the perineum. I have never seen good results from its employment in the first stage."

Dr. Reamy.—"I thank the author of the paper for the care and industry which he has shown in its preparation. It is easier to see defects in an essay after it has been read than while writing it. There is certainly more to be praised than condemned in the paper to which we have listened. I think the essayist might properly have tried to show the increased uterine force caused by external pressure in the cases he has quoted from various authors. In some of the cases cited I think the rapid completion of labor was due to the external pressure. In certain cases the uterus can be stimulated into vigorous action by pressure, and when this can be done it is much better to employ it than ergot. When we come to think of it we will find that we all probably employ compression to increase uterine action. Can delivery be accelerated by pressure independent of the increased uterine power induced by such pressure? I fear that, in many cases, a natural presentation, as of the head, for example, might be converted into a face or some other abnormal presentation by compression. External pressure, when employed, should be used intelligently, otherwise harm may be accomplished. The method ought to be confined to cases in which delivery cannot be effected as well, or as safely, without compression, and to cases where the object is to excite uterine contractions. As has already been suggested, it is eminently proper in case of breech presentation, where the head is retained and delivery retarded. Here is its greatest advantage."

Dr. Trush.—"I do not desire to criticise the paper itself, but merely the cases reported by the different authors, as quoted. I think these authors have given too much credit to the *direct pressure* and too little to the *uterine pains* induced

by the irritation. I do not share in Dr. Reamy's fears of changing the position of the child by external pressure."

Dr. Reamy.—"I desire to add that the chief end of the employment of pressure is to increase the uterine contractions. If the mere pressure, independent of the uterine contractions, is great enough to force the child along in its course, then such an amount of pressure is likely to change its position. The secondary force of increased uterine contractions is principal; the other, that of *direct* force, is of far less value as an expulsive agent."

Dr. McMechan.—"I have had no personal experience in using this agent before dilatation. I think it is advisable to try it in cases where morphine and other remedies have failed to relax the os. I think that if the necessary manipulation be quietly conducted, and in such a way as not to make too much of a display of the method, women will not be so averse to the proposed plan as some of the speakers fear. The plan is not applicable to cases other than those in which the head presents in an easy position, and breech presentations. I have seen a case with Dr. Reamy where it was very evident that the plan assisted very materially in delivery. I think it would be well for all the members of the Society to make careful observations on this subject, so as to develop enough reliable information to enable us to judge accurately of the value of external pressure in delivery."