THE ADVANTAGE OF LIMITING ARTIFICIAL INTERFERENCE IN OBSTETRIC PRACTICE.[1]

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THE purpose of this paper, from its title, may seem at first somewhat different from the aims gained through the impression made by the many precepts as usually set forth for guidance in the management of cases coming under the care of the obstetrician. The treatment of the subject, however, when made in a broad and conservative manner and with the insistence that due reliance be placed on certain of the instinctive powers of nature by which the ordeal of parturition can be safely passed through, will really need no apology when it becomes fully realized how numerous have been in labor the serious mishaps which have subsequently been brought to the attention of the gynecologist, or the suffering through which the mother has often had to pass. My own observation in regard to the nature of this class of cases was begun in

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the earlier years of my practice. I had noticed that there was an inclination on the part of many obstetricians to have resort at the earliest possible moment to the use of forceps for the ostensible purpose of lessening or abridging the hours of labor of the mother. This practice had its inception before the significance of a perineal or a cervical laceration or of other traumatic lesion had become well understood. The variety in style or alteration in the manufacture of forceps or other device to be employed in midwifery, has always been a tempting bait to be caught at by the younger or less experienced members of the profession and so the powers of Nature, often slow but safe in their operation, have not infrequently been interrupted at the expense of the incurring of a laceration in the genitalia, of more or less severity, or at that of an immediate infection of the periuterine tissues.

When one takes the trouble to review the history of the invention and employment of the forceps from the time of the elder Chamberlain, of London, to within a comparatively recent period, the fact will appear that the instrument in question has been constantly undergoing changes in form or appearance, many of which have been of the most doubtful utility; such changes in construction seem to have often been put forth in response to the caprice of the designer or to fulfil a desire to have his name connected with some device that might add to his claims as a teacher or as an authority on the obstetric art.

In the discussion of this subject I do not intend to enter into any extended consideration of those cases in which the parturition is preternatural or in which manual assistance may be necessary, or the employment of suitable or appropriate instruments should be used. All experience teaches that the occurrence of such cases often takes place and that the attending physician should be timely prepared to meet every emergency that may arise. The mere fact, however, of his being fully equipped to meet untoward complications is no reason why any device or instrument should be employed or any material manual assistance be offered to hasten delivery, unless the same is clearly indicated for the safety of the mother or for the preservation of the child.

Before proceeding further it might be well to recall the fact that the measurements of the normal female pelvis are practically as follows: the conjugate diameter including the soft parts of the pelvis is three and three-fourths inches, the transverse with soft parts four inches, and the oblique with soft parts four and one-half to five inches. The various measurements of the fetal head

are: the biparietal diameter three to three and one-half inches, the occipito-bregmatic or perpendicular diameter three to three and one-half inches, the occipito-frontal four inches, the transverse three to three and one-half inches, the trachelo-bregmatic diameter three and one-half inches, the bitemporal two and one-half, though some writers say three inches and upwards; the occipito-mental five inches. The facial extremity of the ellipse of the fetus from the top of the forehead to the end of the chin, the fronto-mental is three inches, the bimastoid two and one-half inches.

When we compare the several diameters of the normal female pelvis including the soft parts, with the various diameters of the normal fetal head, it becomes apparent that there should be adequate room for the expulsion of a fetus at term; especially so should it become evident when it is considered that there are various degrees of safe compression and of elongation to which some of the diameters here given may frequently be subject, as that of the biparietal, which may be reduced to three inches or less, and the occipito-mental may be extended from five inches to six, and even seven inches in diameter.

Among the common causes of retardation of labor is that which may be embraced in the term uterine inertia, often in consequence of a somewhat deficient action of the uterus itself or of the abdominal muscles. This may arise from debility of the constitution, either from previous exhaustion of the patient; or from some severe ordeal through which the patient has just passed; or to some mental emotion. So far as the latter factor is concerned, its influence can most often be overcome by endeavoring to exercise firm but gentle control over the patient and to inspire in her that degree of confidence in the advice offered and the skill shown in the management of the case, that is so essential to the attainment of success in every department of the medical art. In those cases in which the patient has previously been much debilitated it is often advisable to insist upon the partaking plentifully of bland but nutritious food ot short intervals. Stimulants in varying quantities may also be added as the occasion may require.

Another cause of delayed delivery I have long since noticed has been the too early and free use of anesthetics. I have more than once been called in consultation to an obstetric case in which the patient, it appeared, had been in labor some forty-eight hours or more, and during the greater part of that time had been kept under the influence of ether, and that the amount of ether which had sometimes been used was from three to four pounds,

a quantity quite sufficient for the employment at an amphitheatre of a great hospital where scores of surgical operations, more or less important, are to be performed. Now, it may be incidentally remarked that any physician who contemplates indulging his patient in the use of anesthesia, beginning at so early a stage of the parturient processes cannot expect otherwise than to bring unnecessary trouble upon himself and much more upon his confiding patient.

Forceps should not be employed unless there is an absolute necessity for such use, as the resort to it is liable to be attended with more or less hemorrhage, or sepsis, or other local or constitutional disturbance, as these results, I have not infrequently seen, even when the greatest precaution against sepsis or injuries had been taken. This has been evidenced by more or less subsequent elevation of temperature, though it may not have been much, still it was sufficient to indicate that there was a lurking danger to which the patient had been exposed. In those cases in which there has been immediate emptying of the uterus by the untimely resort to forceps, the involution of the uterus will not be as complete or as perfect as it is when the fetus is expelled by the natural forces of the parturient system. Hemorrhage following will be greater and clots are liable to be retained and to give rise to trouble that may require intrauterine douches or irrigation, which practice to be carried out is often fraught with danger to the lying-in woman. The most systematic employment of the Credé method for bringing on uterine contraction will not always prove a sufficient measure against the danger, nor will the timely use of ergot or of any of its various preparations be entirely adequate to such end.

The use of the forceps in all cases requires greater dimensions in the diameters of the maternal pelvis for the safe expulsion of the fetus than when delivery can be effected by the natural processes. Therefore, when there is only, or barely sufficient, room for engagement, rotation and descent of the fetal head, the space occupied by the blades of the forceps must be compensated for by the excessive elongation of the occipito-mental diameter of the fetus or by the undue compression of the biparietal diameter. My attention was, by Dr. Wahl,[1] of Dresden, Germany, particularly

[1]See also the article, Ueber die entblindungen mit der Zange an der Königl. Frauenklinik in Dresden in den Jahren 1889 bis 1 Januar, 1894. von Dr. Wahl, zwietem Assistenten. (Sonderabdruck aus *Archiv für Gynäkol.*, Bd. L, Heft 2.

called, some years since, to the fact that the space occupied by the forceps is always to be considered as being of material consequence in any case in which it is proposed that it is to be used. Though Dr. Wahl's paper had for its object other considerations to present than those which I wish to bring out, yet a careful perusal of his most excellent contribution reveals the truth that there are many dangers incident to the use of such instrument. He says that of all obstetrical operations the one in which the forceps is to be employed is attended with the most hemorrhage. In the milder class of cases in which the forceps is used (leichten Zange) there is liable to occur, he says, laceration of the vagina, of the cervix, and of other parts that may lead to dangerous hemorrhage, if not to the death of the mother. Before using the forceps, the medical attendant should, as already intimated, be prepared to resort, if necessary, to symphysiotomy or to Cesarean section. In the operation of version less space for the most part is necessary than in that in which the forceps may be used. In those cases in which the fetus is dead and cannot be extruded whole, craniotomy can be had recourse to and the space in which the operation is done can be reduced to the narrowest limits.

Before resorting to radical measures for relief, the condition of the patient and of the fetus should be most carefully considered, and not always the number of hours of labor that have been passed. Some women, though not seemingly very robust, have endured more or less pain attendant on labor for two, three, or more days before the birth of the child and still have recovered without the intervention of the slightest untoward symptoms, while others having a malposition of the fetus or some material departure from the normal trend of parturition have collapsed or perished quickly soon after the supervention of parturient processes. There have been many instances of this class of cases to which I have, during my professional course, been called. It is not the tenseness of the soft parts nor the mere resistance to be overcome that is most liable to affect seriously the mother; it rather depends upon the nature of the obstacle. This must be accidental in character in order for it, for the most part, to be likely to transmit unfavorable impressions to the parturient center of the spinal cord, that portion of the medulla spinalis opposite to the first and second lumbar vertebræ.

Another point in this connection I will mention, which I consider to be of much importance. It is the substitution in large

measure of external for internal vaginal examination. In almost every case a quite perfect knowledge or understanding can be obtained in regard to the position and presentation of the fetus by external inspection and palpation, without incurring the necessity of making frequent internal examinations. When it becomes essential or when I feel that the results of the external should be verified by the vaginal method this can be done after carefully sterilizing my own hands, and also the vulval and vaginal parts of the patient, by inserting the fingers gently between the lips or clefts of the soft parts so as to have the hand come as little as possible in contact with the tissues of the patient. This can be greatly aided by making free use of sterilized gauze sponges; one can be placed on each side of the labia so as to keep the parts everted during the examination.

In no case do I use an intrauterine douche or irrigation after the expulsion of the child unless there is a positive indication presented for such employment, for the secretions and blood at this time are all practically aseptic and, therefore, any attempt to modify what is cleanly will be likely to do more harm than good. Of course, if one does not feel sure of his ground, or has reason to believe that he has not been fully cautious in carrying out the details of his work, he must do the next best thing that may occur to him to correct the error or to obviate the danger which he may think there may be of sepsis.

Without going further into detail in regard to the management of this class of cases, I will take occasion to mention a portion of the results recorded in my notes and lists of some forty-two cases in which the most favorable outcome had been presented. This record comprises cases of primiparæ and multiparæ. Eighteen were cases of primiparæ. The labor of twelve cases of these primiparæ extended over the period of twenty hours, four cases over twenty-three hours, one case eighteen hours, one case over fifteen hours. In no one of these eighteen cases was there during convalescence any appreciable elevation of temperature nor was there any septic or other untoward symptoms, and no laceration of the perineum or of other structure. The recovery in all cases was normal. In one case, however, in which the age of the patient was forty years, there was no secretion of milk in either mamma. The child, a male, weighing ten and one-half pounds at birth, was sustained on well-sterilized cow's milk. The ages of these twelve mothers (primiparæ) were one 18 years, one 19 years, two 23 years, two 24 years, one 29 years, three 34 years,

one 40 years, and one had attained to the age of 44 years. The weights of the various children of these twelve mothers were as follows: of the one who was 18 years old the weight of the child, who was a male, was nine pounds; of the one who was 19 years of age the weight of the child, who was a male, was eight and one-half pounds; of the two mothers of 23 years one had a child, a female, the weight being seven pounds, and the other had a child, a male, the weight being ten pounds; of the two mothers of the age of 24 years the weight of one child, a female, was nine pounds, and of the other the weight of the child, a male, was six and three-fourths pounds; of the mother of 29 years the weight of the child, a male, was six and one-half pounds; of the three mothers of the age of 34 years the weight of two children, who were females, was seven and one-half pounds each and the other was eight pounds; the mother of the age of 40 years had a child, a male, whose weight was ten and one-half pounds, and the mother of the age of 44 years had a child, a male, weighing nine pounds. The other six cases of primiparæ had a period of duration of labor of less than twenty-four hours: one mother was aged 18 years, having a child, a male, weighing seven and one-half pounds; two mothers were aged 19 and 21 years respectively, the weight of one child, a male, being eight pounds, the other's child weighing seven pounds. The ages of the other three primiparæ were 24, 27, and 30 years respectively. The one aged 24 had a male whose weight was eight and one quarter pounds; the one aged 27 had also a male weighing seven pounds; the one aged 30 years had a female whose weight was six and three-fourths pounds.

It might be interesting in this connection to compare the measurements of the several diameters of the pelvis of the various mothers with the measurements of those of the fetal heads. Suffice it to say, however, that the diameter of the antero-posterior in almost all approached to nearly the normal standard or with the soft parts varying from three and three-eighths to three and seven-eighths inches. It is the measurement of the antero-posterior or sacro-pubic that should be most carefully considered in the management of any obstetric case, for if that diameter approaches nearly to the normal standard, one can, cæteris paribus, often correctly conclude that the other diameters of the pelvis are regular. In one case mentioned in which the patient was 18 years old, the child was a male, weighing nine pounds, the sacro-pubic diameter of the mother's pelvis scarcely exceeded three and three-eighths inches. This patient was one of the class

whose labor was over twenty hours. There was slow dilatation of the os uteri. External examination, however, revealed that the child was not in an abnormal position. As the descent was made the nape of the neck appeared behind the right acetabulum and the bregma to the left sacro-iliac synchondrosis. Engagement at the brim at first was slow and almost imperceptible; rotation and descent were also slow and these stages appeared to be due to the gradual manner in which the biparietal diameter was being compressed and the occipito-mental diameter was undergoing the necessary process of elongation for safe rotation and extrusion. The child, after it was born, appeared to be of high vitality and it continued to be well and active. Careful measurements of its head and the degree of overlapping of the bones and the compression it had sustained showed that these favorable features found must have reached their extreme limits for safety and that any further compression which might have been done by forceps to hasten matters would have been dangerous if not fatal to the life of the child. Of the other cases, which were twenty-four in number and which were multiparæ and which had favorable outcome both as regards the mother and the child, much could be said, though an extended consideration at this time into detail will have to be omitted.

In one case, however, I might say that the age of the patient was 37 years. Her history was that she had three times previously been delivered, twice by forceps and once by version. The children died soon after being born. The sacro-pubic diameter in this case with the soft parts was three and three-eighths inches. During the last six months I kept the patient on a much restricted diet, requiring her to take considerable daily exercise in the open air so as to improve the general tone of her system and to develop strongly her muscular powers. The duration of the labor was twenty-seven hours from the onset. There were old tears of the cervix and of the perineum, but these had given her but little trouble. Engagement at the pelvic brim was slow, so also were rotation and descent of the head. The delay was due undoubtedly to the large size of the child and especially to that of the head. Though there was no caput succedaneum, there was nevertheless a most marked elongation of the occipto-mental diameter, which measured fully seven and one-half inches, while the biparietal diameter from the compression which it had undergone scarcely measured at the time two and two-thirds inches. The child soon became active and got on well. Its weight was ten and

one-fourth pounds, not including any clothing. The patient was seven and three-fourths hours longer in this labor than in either of the other three, in each of which the delivery was effected artificially, and in all three of which the child did not survive.

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