

PRIMARY OPERATIONS FOR OBSTETRICAL DEBILITY<sup>1</sup>

THE DELIVERY OF DEBILITATED WOMEN BY OPERATIVE METHODS, INTRAPELVIC OR ABDOMINAL, BEFORE LABOR, IN THE ABSENCE OF MECHANICAL IMPEDIMENTS AND AS A METHOD OF CHOICE

By EDWARD REYNOLDS, M. D., BOSTON, MASSACHUSETTS

THE most important part of the management of labor is the guidance of the natural process into its best channels, and we should supplement it by an artificial delivery only when, in spite of our best guidance, the natural process is failing to give the best results; but progress in obstetrics has consisted, from the earliest times to the present day, in continuous discoveries of new methods by which the minor aberrations of nature can be prevented, and in the application of artificial methods to an ever-widening field of comparative failures of the natural powers, in coincidence with the progressive decrease in the dangers of operative work, which has resulted from its greater frequency and improved technique.

There are two classes of failure in labor: 1. Those in which the bony or other mechanical obstacles are too great to be overcome by the normal expulsive powers; and 2. Those in which the expulsive powers are too weak to overcome a normal degree of resistance. The profession has for some years realized that cases of the first class are best treated by operative delivery at the beginning of labor. The theorem of this paper is the statement that the same principle should be extended to the treatment of a very few of the worst cases of the second class.

In order to avoid confusion and to insure comprehension of the subject, it is necessary to state at the start, and with the utmost emphasis possible, that nothing that is said herein is intended to apply in any degree to the management of strong women with bony deformities or other abnormally high mechanical resistances. In order to avoid confusion, these cases should be excluded from the mind of the reader in each successive phase of the argument.

It is intended to deal only with an exceedingly small class of overcivilized women in whom the

natural powers of withstanding pain and muscular fatigue are abnormally deficient.

Obstetrics has always been an exceedingly conservative branch of medicine. It is only within the last few years that it has been perceptibly affected by the progressive movement that has for many years influenced the other branches of practice. It differs from the other branches of medicine, in that it is concerned with the management of natural rather than of pathological processes, and its thought is still dominated to a surprising degree by a reverence for the "natural process," which has been elevated into a fetish or superstition. Were we as well trained in comparative zoölogy as in our detailed knowledge of human labor, we should escape the merely superstitious part of this reverence for the "natural process," and be prepared to take a more completely rational view of its phenomena.

Fifty years ago (1), the burning question of the day was, whether the sufferings of labor might properly and wisely be lessened by the administration of ether or chloroform; and while certain progressives urged the use of these drugs, it is interesting to see, on reading the literature of the period, that for a time the majority of the profession upheld a counterposition, which may be paraphrased to the effect that, since an all-wise and inscrutable Creator had decreed for his own mysterious purposes that women should suffer in labor, it was impious and sacrilegious for mere man to interfere with his plans, and that it could hardly fail to bring retribution, both on those who employed these mediums and on those for whom they were employed. It is interesting to observe that the persons who made these objections to the obstetrical use of ether saw no objection to its use in surgery, the whole trend of the discussion being that labor was a natural process, ordained by the Creator, and one not to be tampered with by man.

<sup>1</sup> Read before the Chicago Gynecological Society, December 21, 1906.



This theological opposition to advance in obstetrics soon lost its hold upon the professional mind; yet it was no sooner abandoned than the same idea crops up again, this time under the guise of a scientific or evolutionary doctrine. If we turn to the practice of the succeeding generation (2), we find anæsthesia adopted and the theological doctrine of impiety abandoned, but the conservatism of the day is arrayed against another point of progress, upon a different yet fundamentally similar basis. The progressives of that day are urging the more frequent use of forceps, while the conservatives oppose them with the obvious truth that labor is a natural process, the product of the great natural laws of evolution; and with the somewhat less obvious, but to their minds conclusive, corollary, that so long as the natural process persists, it is therefore always better than the efforts of art.

This generation has certainly learned from evolutionary study that nature's processes are often wasteful and indirect, and, on an individual point, by no means always the best or most efficient that could have been devised, had that point only been under modification in the development of the race. The thinking world is to-day prepared to consider without prejudice and without a feeling of impiety the question of whether labor in the *genus homo* is one of nature's successes, or whether it may not rather be regarded as one of the unfortunate compromises to which development is sometimes driven; and it may be instructive to look for a moment at the parturition of women from the standpoint of comparative zoölogy (3).

The three prime factors in parturition are: 1. The dimensions and shape of the bony canal, together with the strength and elasticity of the resisting soft parts; 2. The shape and size of the fœtus; and 3. The power of the propelling engine, or uterus.

That which first and most saliently attracts the eye of one familiar with human obstetrics as he turns to a text-book of veterinary obstetrics is the ease and amplitude of the pelvis. The vertebral column is straight, there is no promontory of the sacrum, the axis of the pelvis is straight, the inlet is oval and ample, the pelvic bones are in contact with each other only at the brim, and the greater part of the pelvic

canal is ligamentous and capable of expansion in labor. Of this, Fleming, the author of the leading text-book on veterinary surgery in the English language, says, "It is a fact of daily observation that the pelvis permanently widens in animals which have had young frequently"; and again, of the late ossification of the symphysis which occurs in some animals, he says that in young animals it "allows the diameters of the pelvic cavity to be increased during parturition, and [this] accounts for the rarity of difficult births."

As we turn to the soft parts, we are at once impressed with the simplicity of their arrangement, and with the relative absence of the fasciæ and muscles which we have been accustomed to weigh as opposing forces. The reason for this is obvious: the inlet of the pelvis lies above the level of the abdominal cavity and its axis inclines slightly upward; the soft parts, consequently, never bear the weight of the abdominal viscera, are only designed to fill in the ample space between the bones, and are consequently so distensible as to be capable of rapid dilatation whenever pressure is put upon them at any time during pregnancy, and even in the non-pregnant animal. Yet Fleming says, "Under normal conditions, it may be said that the pelvis itself does not offer any obstacle to the passage of the fœtus, and that it is the soft parts alone which oppose its exit."

Turning to the second factor — the fœtus — we find that in veterinary obstetrics the head of the fœtus is too small to play any part in labor; the thoroughly compressible thorax is the only portion of the fœtus which is of a size to meet any essential resistance, even from the soft parts, and, owing to the straight and simple form of the pelvis, there is no rotation, no mechanism of labor as we know it.

The conditions of labor in veterinary obstetrics are thus so easy that the uterus itself is not the great driving-engine of the human female, but is, even in the powerful uniparous quadrupeds, a comparatively thin-walled bifid organ, not unlike a pair of hypertrophied Fallopian tubes, in the slightly thickened junction of which gestation takes place.

Mark the results. Even with this comparatively feeble driving-power the duration of labor is surprisingly short. Fleming says, "In the



mare it [the whole process of labor] is ordinarily accomplished in about ten minutes, sometimes in five, though it may extend to a quarter or half an hour — rarely more." In the "cow, which has the most difficult parturition of any of the domestic animals, it is, on the average, one to two hours; sometimes only fifteen minutes." With the "sheep the period is also brief, being about fifteen minutes." With pluriparous animals, "there is ordinarily a period of ten or fifteen minutes, or even more, between each birth; not infrequently the sow will bring forth ten young ones within the course of an hour." The only delays met with in veterinary obstetrics are those due to malpresentation and monstrosities.

Compare the time of the processes in these statements, made by an authority, with the known duration and difficulties of labor in the human female.

Labor is, and throughout evolutionary time has been, an established success in the quadrupeds. When, however, one group of them were forced by the exigencies of their life to assume the erect posture, the laws of development were face to face with an entirely new problem. The necessity of sustaining and moreover balancing the entire weight of the whole trunk upon the pelvic girdle compelled the development of newly massive and rigid structures with close joints and correspondingly powerful ligaments and muscles. With the assumption of the lumbar curve the sacral vertebræ were forced into the pelvis, while the strain of the sacrosciatic ligaments drew the lower end of the sacrum forward and developed the ischial spines and the curved axis of the rigid pelvis as we know it. The soft parts were now obliged to sustain the thrust of the abdominal viscera, and a group of retaining-muscles, unknown to the quadrupeds, was accordingly developed. The head of the fœtus increased in size and ossification until it became the determining factor on the fœtal side of labor, and also until its passage through the cordate brim and curved axis became possible only by the complicated movements of flexion and rotation which characterize human parturition, and, in the whole scale of animated nature, human parturition alone. With the increasing difficulties of labor the uterus successively developed

in structure and power until it has become an engine of such force as is unknown in any other animal.

A comparative zoölogist familiar with labor in the other animals, but confronted for the first time with a hypothetical human female, would probably declare that parturition could not take place at all in the face of such difficulties. The development of these difficulties has, in fact, made human parturition phenomenally hard, but the development was necessary for the supremacy of the race. Without these bony and muscular modifications, primitive woman would have been unable to escape her enemies, and prolapsus and inversion would have been the inevitable result of parturition.

The whole process of the development of the human female has been, throughout, a struggle between the conditions which insure her health and efficiency in the non-pregnant condition, and the opposed conditions which make childbirth possible. The result has been a compromise. Race efficiency and race survival have been preserved, but at the sacrifice of ease of labor in all individuals, and of its safety in the weaker individuals.

Nature is always careless of the individual. Modern medicine fulfills the function of what is known in evolutionary language as the super-vention of an easier environment, which permits the preservation of the weaker individuals, often to the great benefit of the race (4).

In the course of the development of this compromise between the necessities of ordinary efficiency and those of parturition, the majority of individuals have reached a state in which a fair degree of both benefits has been obtained, but, under the ever-present law of variation, there are many individuals whose development has erred in one direction or the other. At one end of the line are those individuals who have of late been attracting so much attention from our orthopædic brethren, in whom the pelvic joints are not sufficiently fixed — the subjects of sacroiliac subluxations — and those in whom the soft parts are insufficiently rigid to maintain the ordinary balance of the pelvic organs — the subjects of retroversion and prolapse. At the other end of the line are those in whom the forces opposed to parturition are overdeveloped, or in whom the driving forces are too weak. It



is with this latter class that we are especially concerned.

Much may be learned of many other obstetric problems by a study of our development from the quadrupeds; but the lesson which I think we should here draw from comparative physiology is, that labor in the human female has been developed onto a plane of such extreme vital effort against overdeveloped obstacles as to place favorable natural labor beyond the powers of the obstetrically weaker individuals.

Human obstetrics has, in point of fact, long recognized the principle that the weaker individuals should be artificially delivered before serious exhaustion sets in. The only practical question is, whether we have or have not carried this principle far enough to attain the best results in those who stand at the lower end of the class of weaker individuals. I think that we may yet advance along this line. There is, in fact, at this lower end of the series, a class of women which it is difficult to define academically, but which is well known to all experienced practitioners. These are women upon whom we, as surgeons, do not hesitate to perform any needed operation, counting with certainty upon a fairly good convalescence, but whose pregnancies and labors, we nevertheless, as obstetricians, instinctively dread. They are neurasthenic women, who bear pain badly, of poor muscles, including of course the heart muscle, and usually of deficient lung capacity. They have, ordinarily, ill-developed eliminative systems, and are consequently unable to dispose easily of the products of any unusual excess of metabolism. They are delicate women of deficient muscular and nervous power, whom even the most ordinary observer would know to be unfitted for the muscular exertions and exposures of ordinary out-of-door life, and who, in point of fact, never subject themselves to such — the women who faint, or become otherwise unable to keep up when subjected to more than ordinary muscular exertion, or, rather, to more than that to which they are ordinarily accustomed. They are not confined to the more luxurious classes, though they are less common in the working classes, since the latter more often fail to reach maturity and maternity among their surroundings.

These women are not especially liable to

disease, and they convalesce from operation sufficiently well. Why are they unfitted for labor? The answer to this question is to be found in an inquiry into the physiological causes of exhaustion in labor.

I well remember a case which I saw in consultation about fifteen years ago, in which a young and healthy woman had been allowed to drag along through a powerful labor until her exhaustion was so great that the attendant became alarmed. On my arrival, the head was on the perineum, and could evidently have been expelled by a few powerful efforts, but the uterine contractions had died away, and the mother was so exhausted that she was unable to use her voluntary muscles. The delivery was made with forceps, with a single traction, but the patient failed, and died a few minutes after delivery, without apparent reason, and a careful and complete autopsy by an experienced pathologist failed to show any cause of death. This was apparently death from exhaustion in labor uncomplicated by any pathological conditions. Such deaths are now rare, but the lesser degrees of exhaustion are far from rare, and from the study of the more extreme cases we may gain a better knowledge of the lesser.

Immediately after this experience I made a careful effort to find in physiological literature any researches bearing upon the cause of such deaths, and in preparation for this paper have repeated this search, but without conclusive results, the nearest thing which I have found being numerous studies of the production of general fatigue from prolonged muscular exertion, and some *dicta* about nervous exhaustion from pain *per se*. I am forced to conclude that physiological research is as yet far from complete on either of these points, and especially so on nervous exhaustion, but the provisional results reached are as follows (5):<sup>1</sup>

General exhaustion from muscular exertion is due: 1. In part to the effect of a mild toxæmia, produced by the presence in the system of an excessive amount of muscular activity; 2. In part to the diminished activity of the heart, due to such toxæmia; and 3. In part, of course, to direct muscular fatigue of the heart muscle itself. These conclusions are the result

<sup>1</sup> It is to be noted that all these effects will be more rapidly produced if there is oxygenation due to poor lung capacity or by any inefficiency of the eliminative system.



of experimental work by many observers, and are fairly conclusively established.

Unfortunately, the obvious humane objection to the experimental study of the effects of extreme pain and fright has necessarily prevented the direct physiological study of general nervous exhaustion *per se*, with the exception of some early experiments, the publication of which excited universal indignation. The little that we know of it is therefore merely the result of deduction from the general knowledge of physiologists, and is to the effect that the endurance of pain through certain nerves in some way lowers nervous activity throughout the body. General exhaustion from pain is probably the result of diminished activity of all the organs, and this is perhaps due to a toxæmia produced by defective action of the digestive and eliminative systems, due to the ineffective condition of the nerves which guide and inspire them. Individuals of poor nervous organization will, of course, experience such exhaustion sooner than others.

These theoretical results of experimental study are supported by the practical experience obtained in training athletes. Training is a process which aims at putting an athlete into a condition of the highest possible resistance against exhaustion from muscular and nervous effort. It has been elaborated in the course of many generations of practical experience, and is, in brief, a process of carefully eliminating from the system all excess of metabolic products by careful dieting, sweating, rubbing, etc., and then, by a continuance of the same hygiene, enabling and training the organs of elimination to dispose rapidly and effectually of the larger amounts of these substances, produced by carefully graduated increase of the daily exercise. In this it will be seen that long established practical experience exactly confirms the results of experimental research.

Modern surgery involves exceedingly slight interference with the vital processes; it places very little strain on the eliminative organs, and almost none on the heart and lungs; but labor is the exposure of an untrained individual to the effects of long-continued muscular effort and pain. Most women endure it surprisingly well; but it is very evident why these weaker women of whom I am speaking endure oper-

ation well and labor badly, when we consider that they are by definition women who combine inferior musculatures, hearts untrained by exercise, deficient lung capacity, and untrained and usually naturally inferior eliminative systems, with a neurasthenic lack of nervous force (6).

To sum up the theoretical conclusions to which this argument has led: Comparative zoölogy shows us that natural labor in the human female is not the perfect process which ancient prejudice considered it, but is an evolutionary compromise, which was necessary for the supremacy of the race, but which bears very hardly on the weaker individual. A reference to the direct physiology of labor shows that individuals who combine weak musculature with poor eliminative, circulatory, and respiratory systems and deficient nervous force are peculiarly ill adapted to the endurance of natural labor, on account of the ultraphysiological strain which it imposes upon these organs, and it is a fair conclusion that for them natural labor is not the best method of delivery. The question which immediately arises, i. e., whether the obstetric art has yet come to a point at which we can recommend some other method of delivery as being safer and otherwise preferable in these cases, is a practical one, which can be answered only by experience, and these theoretical deductions are worth nothing unless they are borne out by the results of practical observation.

If any one will select from the records of his past practice, as I have done, all the women whose labors have been characterized by an inability to effect any essential dilatation of the cervix before the signs of impending exhaustion made him wish that it were possible to deliver them immediately, he will find, I think, that all these women showed, in varying degree, the varying factors of incapacity for labor which I have enumerated, but he will not find that all the women who present these characteristics do badly in labor; he will find, on the contrary, that some women who would be placed in this class before pregnancy are in fact relieved of their neurasthenic symptoms, and gain in muscular force and strength throughout pregnancy, while others, apparently no worse equipped at the start, pursue the opposite course. We cannot as yet altogether explain this difference,



but, after more than ten years of careful observation of considerable numbers of women with especial reference to this problem, I have come to the conclusion that by careful observation of the course of pregnancy in such obstetrically ill-equipped women we may find an almost infallible guide to the management of their labors.

We must remember that the strains of labor are, in many respects, but an exaggeration of those of pregnancy. The increasing development of the child during pregnancy normally puts a constant and increasing strain upon the muscular, circulatory, and eliminative systems of the woman, and during the latter half of its development embarrasses her pulmonary system. When this gradual increase of load is met by nature with a gradual increase of the efficiency of the organs, it may safely be argued that the woman is successfully "training" herself for the greater exertions incident to labor; when, as is so often the case, the nervous symptoms of an underdeveloped woman decrease during pregnancy, it may safely be argued that she will also be fit for labor, from the nervous standpoint. Many previously ill-equipped women are developed by pregnancy and do well in labor; such cases have usually had underdeveloped genital organs, and may even be permanently bettered by the uterine and general development involved in successful pregnancy. It is when the converse is true that we should be afraid of labor.

When a previously ill-equipped woman becomes throughout pregnancy less and less disposed to exertion, and progressively less able to endure it; when, in spite of appropriate care, her digestive and eliminative systems are less active; when an increasing deficiency of the circulatory system is shown by the character of the heart-beat and by the appearance of œdema in the lower extremities; and when, in addition, the nervous symptoms of pregnancy are unduly and increasingly marked,—the woman will surely have a more or less ineffective and unfavorable labor. Whether or not the character of her labor will be so markedly poor as to place her in the class for whom I am recommending operative interference at the beginning of labor, will be determined largely by the care taken of her preg-

nancy, and cannot, of course, be determined by the application of any general rule. Each case must be studied individually, and the relative weights of each factor in the case must be carefully estimated before a decision is reached; but I have become convinced that an experienced man can by such careful study distinguish, in advance, with a fair degree of certainty, the cases for whom natural labor is disadvantageous.

Not all these cases will fail to deliver themselves if left unassisted. Whether or not spontaneous delivery will eventually take place, even under their comparatively feeble expulsive powers, will depend upon the degree of resistance offered by their pelvis and soft parts, and their treatment must be determined by the resistances present.

Some of these women have bony deformities, or other plain indications for an operative delivery. These may be set aside from our present inquiry.

In others, the pelvis will be so ample and the soft parts so very lax, that, even with feeble expulsive power, they are likely to deliver themselves. The consideration of these we will postpone for the moment.

There remain for our present consideration women, originally ill equipped, who have deteriorated during pregnancy, either in spite of exact care or for the want of it, and who present average resistances in the pelvis and in the degree of rigidity of the soft parts. With even average resistances these women will rarely deliver themselves, and if they are left to natural labor, the pains will usually be irregular, painful, and have but little effect on the os. Impending exhaustion will be apparent before any descent of the head has been made, and usually before any essential dilatation of the os has been effected. If, then, the case be etherized and the hand passed into the vagina for dilatation of the os, all the conditions will usually be unfavorable for operation; the cervix will be found to be thick, spasmodically contracted, and brittle or friable; i. e., exceedingly likely to tear unless the greatest care is used. When the hand is passed into the uterus, its walls will often be found to be in tonic rigidity, and in most cases applied to the child in one or more zones of hour-glass contraction. If a forceps



operation be done, the head will advance readily under the first tractions, but this progress will shortly fail, and further advance will demand more and more powerful efforts, while the head will show a tendency to recede during the intervals between tractions. If forceps fail and version be resorted to, either primarily or after their failure, both the turning and the extraction will be rendered difficult by the rigid and resilient soft parts. Every obstetrician of experience is familiar with the difficulties and dangers encountered in this class of operating.

These assertions, too, are easily referable to a review of one's past experience in general. If any one will again look over the records of all those cases in his past practice in which he has been obliged to interfere with the head high because the pains had failed to dilate the os and the woman was becoming exhausted, he will find, I think, that the operation has been almost invariably hard, and usually attended by considerable danger and subsequent exhaustion on the part of both mother and child.

I wish to quote two cases illustrative of the different methods of management of such patients.

CASE 1. Mrs. T., primipara, 35 years old. Had never been an invalid, but had never been well. Exceedingly thin; always anæmic. Never well enough to indulge in any out-of-door sports. Had had two abdominal operations; one for the removal of a cystic ovary, and one for a so-called floating kidney. Was described in a letter from the very eminent surgeon who had attended her "as a creaking door" and as never having strength enough to be well. He said of her convalescence from the first operation, "She made a good recovery, and did reasonably well after the operation," and of the second operation, "From this operation she also made a satisfactory recovery."

She was prostrated by a considerable but not an alarming degree of the vomiting of pregnancy throughout the first five months, and when this subsided, was so weak, languid, and nervous as to pass the greater part of every day in bed or upon a lounge. It was with the greatest difficulty that she was induced to leave the house at all. The urine showed decreased metabolism, but was otherwise normal. When taken in labor, she suffered, from the first, extreme pain, which, at the end of three hours, became intense and never wholly absent. But little if any dilatation of the os was accomplished. At the end of a very few hours it was evident that the prospect of her ultimately delivering herself was very small, and her sufferings were so intense that, early in labor as it was, she was etherized and delivered. The cervix was very rigid, and was dilated with the utmost difficulty, retaining its resiliency to the end and recontracting whenever

relieved from pressure. The head presented O. D. P. behind the membranes; the hand, introduced into the uterus for the purpose of rotating the child to an anterior position, found the uterus in tonic contraction and a constriction ring about the middle of the child. After much difficulty and by pressure on the shoulders, the child was rotated until the head lay in an anterior position; forceps were applied, and a nine-pound living child extracted after a long struggle. The child was much bruised, but was resuscitated without unusual difficulty. The cervix and perineum were both torn extensively. The perineum was repaired successfully. Convalescence was uninterrupted, but was long and unsatisfactory, it being nearly a year before the patient was as well as at the time of her marriage. I was subsequently obliged to perform a third abdominal operation upon her for the relief of an acutely threatening appendix. Her convalescence from this was thoroughly satisfactory, though, of course, somewhat slower than would have been expected from a robust woman.

My management of this case is thoroughly open to criticism. Upon the one hand, it may be said that if she had been allowed to drag through a lengthy first stage, and not delivered until definite physical signs of exhaustion were present, the head might have advanced so far that the forceps operation would have been less difficult. This is possible; but I doubt if her strength would have lasted long enough to effect any essential advance, while every hour of delay would certainly have decreased the chances of the child, and the performance of a difficult operation in the presence of a rapid pulse would certainly not have been any more favorable to the mother than when it was undertaken before absolute exhaustion was present. My own criticism is, that this case should have been delivered by the Cæsarean section, from which I am confident that she would have convalesced as after her three other abdominal operations, but I had not at this time reached the point of being willing to recommend the section in the absence of bony obstruction.

In contrast to this case I wish to quote a second.

CASE 2. Mrs. B., primipara, 29 years old. Previous to marriage, a teacher in a normal school. A woman of considerable mental brilliancy, but of extreme nervous instability. Pale, anæmic, and of very dry, hard skin. Though always a semi-invalid, had been able to fulfill her duties with but few intermissions, though at the cost of great fatigue, and only under the pressure of absolute necessity. After marriage, and relief from her duties, she rapidly became hysterical, and suffered from every variety of nervous ill. Was dyspeptic, insomnic,



and obliged to stay in bed a portion of almost every day.

She was brought to me early in her first pregnancy, for an opinion as to whether she was physically capable of going through pregnancy. After seeing and talking with her, I was confident that she could be carried through pregnancy, but that her labor would be very trying. On examination I was much relieved to detect a moderately contracted justminor pelvis, and advised that she should be given every care during pregnancy, that the development of the child should be watched, and that Cæsarean section would be necessary unless the child were very small. I saw her repeatedly during pregnancy. She did fairly well physically, but the nervous instability reached an extreme point, and, as the child was evidently large, I advised that she be etherized at term and the method of delivery decided then. The membranes broke the evening before the appointed date, and she was etherized five hours later. Feeling uncertain of the size of the child, under ether I very easily dilated the os, made a tentative application of forceps, and satisfied myself that it was too large for easy delivery. I then did Cæsarean section, the child proving to be a ten-pounder. Mother and child did well, convalescence being uninterrupted, except by extreme nervousness, and as prompt as could be expected in such a patient. Her subsequent health was about that previous to confinement.

Five years later she was sent to me, again pregnant. She was in somewhat worse general condition, and the course of her pregnancy was somewhat less favorable physically and somewhat better nervously than on the first occasion. She was again delivered by Cæsarean section, and again did uninterruptedly well. Under constant care, and with a very easy life, she has maintained about as good a degree of health as could be expected.

I have so far performed the Cæsarean section only once in the absence of bony deformity, but I now believe that those ill-equipped women of constitutionally low expulsive power, whose pregnancies are unfavorable, and who present mechanical conditions which are either hard or average, should be subjected to a primary Cæsarean section.<sup>1</sup>

I believe that they should be treated by Cæsarean section because I am one of the many obstetricians whose experience has led them to believe that primary section is a lesser operation than hard, high forceps or version.

The maternal mortality of the late section (that performed after the mother is already exhausted in labor) is as high as it was twenty years ago; the mortality of the early secondary section (that performed after a moderate test

<sup>1</sup> In these women, some operation is always necessary, and intrapelvic operations are always hard.

of the patient in labor, but before the signs of exhaustion have become apparent) is believed by most obstetricians to be no more than that of hard intrapelvic operations; while the mortality of the primary section (that done at an elected date, or with the advent of the first pains of labor) has of late years been practically *nil* in the experience of all obstetricians.

My own experience with Cæsarean section fully supports these general results. It has been much smaller than it would have been had I not resigned my obstetric service five years ago, at about the time it was becoming frequent. Since that time my sections have been limited to cases in private practice, referred to me for the purpose; but I have done twenty-nine Cæsarean sections, thirteen of them in private practice, without losing mother or child. I attribute my good fortune to the fact that all my cases were operated on before the mother had been exhausted by long labor; while, certainly, the absence of foetal mortality and the after-condition of the mothers have been in marked contrast to those of any similar series of hard intrapelvic extractions. The superiority of the strictly primary section has also been apparent in my own series of cases.<sup>1</sup>

We have, so far, left unconsidered the remaining moiety of the women we are considering, in whom the resisting forces are so slight that they may fairly be expected to deliver themselves if left to natural labor. While it is, of course, impossible in such matters to draw sharp lines, and each case must be considered on its merits, it may be said without reserve that these women should not be subjected to Cæsarean section.

<sup>1</sup> In five of my first eighteen cases, fair labor had been present for periods varying from eleven to nineteen hours. In one case, six hours of good labor had been preceded by thirty hours of preliminary pain; nine had less than seven hours of labor; four were operated on in advance of labor. A careful study of my records, made in 1900, at the end of that series, convinced me that the patients' sufferings and my own anxieties during convalescence had been pretty closely proportional to the extent of effective labor that they had suffered before operation, and that the contrast was very great between cases operated upon during labor and those in which it was undertaken before any essential labor had occurred. I then decided that in my future cases I should, so far as possible, operate in advance of labor.

I have since then operated on one case which I saw in consultation after she had had a considerable preliminary stage and six hours of fair labor, but the other ten of my last eleven cases have been recommended a section at the calculated date of term. In eight of them the operation was so performed; in two, labor appeared slightly before the calculated date. The operation was performed as soon after the first pain as possible. In all these ten cases the convalescence has been but little different from that which we should now expect after a ventrosuspension or the removal of a small ovarian.

I am therefore now convinced of the superiority of doing the Cæsarean section either at the calculated date or with the advent of the first pains whenever it is to be done at all, my preference being for the calculated date.



Those in whom the powers of expulsion, on the whole, so far outweigh the resistances that labor may be expected to be very brief should be left to natural labor, or an extraction should be made during labor, if it is needed; but some of these in whom the balance tends the other way will do better after a primary pelvic operation than after even an easy natural labor, since even a fairly easy natural labor will produce a very serious amount of exhaustion in some few of these very feeble women.

I wish to quote two cases in illustration.

**CASE 3.** Mrs. A. This patient was a very fat, flabby woman of pale and pasty complexion. She belonged to an excessively neurotic family, every other member of which was an invalid. She was a woman of brilliant mind, perhaps a little of a crank, but otherwise possessed, personally, of a very fair nervous system. She had fair muscular endurance, but was always somewhat short of breath on an up grade, and especially during pregnancy. Her urine never showed any essential abnormalities, but she was markedly oedematous during the latter part of every pregnancy. She always suffered from moderately severe vomiting during the first half of pregnancy, and was very languid and tired during the last half. *First Labor:* Placenta prævia at seven and a half months. Delivered by version, in the face of hemorrhage. *Second Labor:* Two years later. Multiparous os and perineum, both slightly lacerated at previous delivery, both soft and dilatable. Ineffective, lingering pains for many hours. Patient nervous and complaining. Pains gradually improved, os slowly dilated, first stage ended after about twelve hours, remainder of labor fairly easy. Convalescence normal, but lingering. Patient unable to nurse, and in debilitated condition for many months. *Third Labor:* Similar, but terminated by forceps as soon as the os was fully dilated. Convalescence about the same. *Fourth Labor:* In this labor she was directed to send for me with the very first pain, and was etherized immediately on my arrival, about an hour later. The os was dilated manually without the slightest difficulty, and as the head was high and free, and the mechanical conditions exceedingly easy, the child was turned and delivered with the most extreme ease. The dilatation occupied about twenty minutes; the version and extraction were estimated at two minutes. The placenta was easily expressed a few minutes later. The rapidity of the convalescence and the prompt return of the patient to her usual condition of fair health was in marked contrast to former occasions, and was surprising to both the patient and myself.

**CASE 4.** Mrs. H. Patient's mother of good family history, but died in puerperal mania. Father a man of great ability and marked success, but a lifelong dyspeptic and never well. Patient herself dyspeptic, anæmic, and of deficient nervous force. Had always had the habit of lying down two or three hours every day, and suffered from headache if she were unable to do so.

Never well enough to take any active exercise or endure the most ordinary exposure to cold and wet. Was generally regarded as a delicate woman, but by these precautions preserved fair health. Was in a condition of rapidly increasing debility throughout pregnancy. I had not then reached the practice of delivering such patients by primary operation, although I realized its advantages. On visiting her in her first labor, after about two hours of trifling pains I was, for her sake, delighted to find that the cord presented, the os admitting one finger freely, the cervix and vagina lax and soft (unusually so for a primipara), the pelvis ample. She was immediately etherized, the cord was pushed back out of the way, the cervix manually dilated without especial difficulty, the child turned and easily delivered. (This case would have been more appropriate for forceps, had I not feared to use them, because the cord was still alongside the head.) I had known this patient for many years, and after her progressive loss of strength in pregnancy had been exceedingly anxious about her labor. Her convalescence was very rapid, and she appeared to be rather improved in health than otherwise during the succeeding year. *Second Labor:* Pregnancy about similar to the first. Head presentation, pains feeble and ineffective, but progress fairly steady, suffering rather extreme, but steadily eased by administration of small amounts of ether. Normal delivery. Second stage of labor less than two hours; total of labor, twelve hours. Patient much exhausted after labor. Did not fully react for about twelve hours. Convalescence very slow, was in exceedingly poor health for more than a year, being obliged to devote herself to a rest cure for several months. The difference of convalescence in these two labors may, of course, have been a coincidence, but I do not think it was. She has since had a third labor, which was at a distance from Boston, and was not under my care, but was conducted in accordance with my previous experience in her case. She was delivered by manual dilatation and forceps on a fixed date before the beginning of labor, and made a fair convalescence, much better than after the second labor. She entered on her fourth pregnancy in a distinctly unsatisfactory nervous condition, but by absolute regulation of her life was brought to labor in a much improved condition over that at the beginning of pregnancy. This labor was very rapid—less than four hours from the time of the first pain until the delivery of the child—and during the first two hours the pains came at intervals of every twenty minutes to half an hour, so that practically the active labor lasted only two hours. Convalescence was satisfactory; better than after the third labor. This case is a very fair illustration of the whole subject of the management of these very feeble women with low resistant forces, and especially of the importance of extreme care in their pregnancies.<sup>1</sup>

I believe that in extremely debilitated women, such as these, the most extreme care of pregnancy is of the first importance, but that when

<sup>1</sup> See Dr. Newell's remarks, in discussion, *post*, p. 368.



this has been neglected, or in the very rare cases in which it fails to prevent deterioration during pregnancy, they do better after an operative delivery than after natural labor, the method to be determined by the mechanical conditions present both in the bones and soft parts; those in whom an intrapelvic extraction might be expected to be difficult being subjected to the Cæsarean section, and those in whom it may be counted upon as easy being delivered by an intrapelvic operation.

It will at once be asked if there are not many transitional cases in whom the choice between these operations is difficult. This difficulty may, however, be met by deferring the decision in doubtful cases until after the patient is on the table, prepared for either operation; if, then, after pressing the head into the pelvis from above, and passing the fingers into the cervix, the operator thinks the conditions sufficiently easy to warrant an intrapelvic operation, he should proceed with the dilatation of the cervix, and after its completion apply forceps to the head and draw it gently into the brim, making no attempt at extraction, but simply testing the adaptation between head and pelvis. If he thus convinces himself that the case is within the limits of easy intrapelvic extraction, it will be easy to complete the operation; but if, on the contrary, he encounters unexpected difficulty, I think that he may still safely resort to Cæsarean section. I have resorted to this maneuver many times during my earlier experience with Cæsarean section in doubtful cases. It is to be avoided, if possible, but the information which it gives is of the greatest value, and I do not think that in skilled hands it complicates a subsequent section essentially; i. e., I have not seen more difficult convalescences after this operation than after primary sections. I am sure that it is a far less complication than that of testing the adaptation in these cases by allowing the patient to go into labor before performing the section.<sup>1</sup>

The delivery of a few of these debilitated women by a primary operation of the kind

<sup>1</sup> Such gentle tentative use of the forceps by an expert, with the patient on a table, and after full technical preparation of the field of operation, is a wholly different matter from the failure of an actual attempt at delivery with the forceps, more especially if this has been undertaken under the ordinary conditions of labor. This latter, in my opinion, contraindicates a subsequent section, both from the trauma which it necessarily inflicts on the lower uterine segment and from the risk of infection which its performance, under the ordinary conditions, necessarily involves.

appropriate to the individual case is, I believe, justified by a decreased maternal morbidity and some decrease of foetal mortality, as well as morbidity, as compared with natural labor in such cases, or extractions undertaken during labor, so long as it involves no increase in maternal mortality. That mortality is not increased and morbidity is lessened by such procedures, can be learned only by experience.

Since an increased mortality would, of course, rule out the primary operation, that point should be discussed first. Such a method as I propose for these few extremely debilitated cases implies the performance of some few primary Cæsarean sections in cases which might otherwise be delivered by intrapelvic operations during labor, but primary Cæsarean sections are lesser operations than the hard extractions which are ordinarily encountered in these cases. It involves a considerable number of primary intrapelvic extractions in cases with all the conditions easy which might have struggled through to a low forceps operation or even a spontaneous delivery, but I have learned from experience that extractions in these easy cases are always easy extractions, and, to a skilled operator, really easy extractions show no mortality to either mother or child.

I believe that primary extractions are always easy in these lax cases when undertaken at the very beginning of labor, and, further, that they are easy because they are undertaken before the uterus has been thrown into contractility by the stimulus of labor. I believe that if any one will look over the records of those cases in his past practice in which some emergency other than eclampsia<sup>2</sup> has forced him to dilate and deliver artificially under easy mechanical conditions, he will find that the operation has always been surprisingly easy, and successful for mother or child.

As I review the fourteen years during which I was in charge of a hospital clinic, which brought me in contact with great numbers of cases, I am confident that this has always been my experience. I believe that the easy dilatation and extraction is due to the fact that in these emergencies the patients are etherized and the operations performed before the cervical and uterine muscles are awakened into

<sup>2</sup> In eclampsia, the uterine muscle is always in a rigid state



active contractility by any considerable amount of labor.<sup>1</sup> This is an idea which I was at first unwilling to entertain, but which has strengthened itself in my mind with every new experience, and with every fresh review of my past experience.

It has long been held, for instance, that dilatation and extraction is always easy in placenta prævia, and this is as true where only the edge of the placenta is at the os as it is in cases of central implantation. Indeed, though the lower uterine segment may be weakened by the previous insertion of the placenta, the constriction ring of the cervix is entirely unaffected by it. My experience with the ease of intrapelvic operations undertaken before the onset of labor for other causes has made me believe that the acknowledged ease of extraction in placenta prævia is due to the fact that in these cases the onset of labor is usually announced by hemorrhage and that the operation is undertaken before the uterus is in contraction, rather than to any peculiarity of the tissues in placenta prævia. So, too, in the absence of bony deformity, extraction is always easy in cases in which the cord prolapses or presents at the beginning of labor. This is because, in the absence of bony deformity, this accident occurs, ordinarily, only in cases with lax soft parts, and the extraction is nowadays undertaken immediately and before the uterus has been thrown into contractility by any considerable amount of labor. This is a new idea, which I was at first unwilling to entertain, but which has strengthened itself in my mind with every review of my experience, and, at all events, I think we may safely feel that in these very easy cases the mortality involved in a primary intrapelvic operation is to-day no larger than that of normal labor.

That the morbidity in these debilitated women is less after primary operation (by whichever method is indicated by the mechanical conditions) than after normal labor is not easily proved, either in writing or to an audience; but I have convinced myself that it is so, after nearly ten years of careful observation of many cases delivered by all methods with this idea constantly in my mind, and have

<sup>1</sup> Always excluding eclampsia, in which the uterus is from the start in a state of contractility

checked my general impression by a recent review of such cases of this nature as I have seen in private practice sufficiently lately to enable me to remember them in connection with their records.

Such cases are never, in the aggregate, very numerous in any one man's practice. That my experience with pregnancy and labor has of late years been limited to consultation practice has perhaps rather increased than diminished their number, since a consultant sees, naturally, those cases of pregnancy about which alarm is felt. On reviewing my record files, I find that I have seen in the last five years twenty-one such cases, delivered in one way or another, as indicated by the extremes I have selected for quotation. A careful review of their records has convinced me anew of the strength of the position, that the earlier these women are delivered, the better their convalescences, the less their subsequent ill health; and I have been rather surprised to find that the frequency of extensive lacerations was very plainly in inverse proportion to the amount of preliminary labor they had undergone.

So indefinite a question as the effect of one or another procedure upon the general condition of patients afterwards is manifestly one which is incapable of a statistical report that would be worth the paper it was written on; but my conclusions have been reached after a very slow and painstaking process during a long experience, and I submit them as such, with a firm belief that in the long run they will be confirmed by a consensus of opinion both that primary operation produces in these feeble women better ultimate results (i. e., no increased mortality and much less subsequent morbidity) than operation undertaken after exhaustion is present, and that exhaustion occurs surprisingly early in this worst-equipped class of women.

When a primary operation of either form has been decided upon, some obstetricians will prefer to undertake it with the advent of the first pains of labor, while some will prefer its performance at a day of election at or about the calculated date of term. This is, I think, a matter of detail which depends upon the choice of the individual attendant, and one which has been so much discussed of late in connection



with Cæsarean section as to need no more mention here.

To sum up my conclusions, I believe that when we are confronted with pregnancy in one of these obstetrically worst-equipped individuals—i. e., neurasthenic women, with little nervous endurance or capacity for bearing pain, with poor muscles, heart muscle, and lung capacity, and with ill-trained and usually deficient eliminative systems—we should, during this period, establish a most careful regulation of habits, and should submit them repeatedly to the most extended and careful constitutional examinations, thus endeavoring not only to improve the functions especially deficient in each case, but also to gain a complete knowledge of improvement or loss in condition during the nine months.

The cases which gain during pregnancy may safely be left to the test of labor, as a rule; but even these favorable cases should always be delivered as promptly as is possible with safety, and in advance of any considerable degree of exhaustion. When, on the other hand, we find that an obstetrically weak woman has retrograded to any considerable degree during pregnancy, I think we should consider with the utmost care whether she is not one of the cases for whom the inevitable fatigues of natural labor are worse than the disadvantages of predetermined operative delivery.

If the answer is in the affirmative, I think that, either at the calculated date of term or with the advent of the first pains of labor, she should be carefully prepared, fully etherized, and placed upon the table as for a surgical operation, with abundance of assistance present; that the mechanical conditions should then be carefully determined under ether, by pressing the head into the brim from above, and by estimation of the laxity of the soft parts; that if the conditions are anything but easy, she should be subjected to Cæsarean section; but that if, on the other hand, they are easy, and the section is thought to be unnecessary, the cervix should be dilated, forceps applied, and strictly tentative tractions made; if this procedure develops the existence of more than moderate resistances, section can still be done; if, however, the conditions are still thought to be easy, the child should be extracted by forceps and

the mother returned to bed as after any other operation.

I am confident that in the hands of really experienced men such a procedure, so guarded, will be found to be thoroughly safe for both mother and child, and that the better convalescence and less subsequent morbidity of the mothers will, in these extremely ill-equipped cases, be in marked contrast to their condition when they have been delivered after being allowed to exhaust themselves in labor.

Our right to the choice of a predetermined operation at either time, in place of natural labor, rests wholly on our ability to distinguish in advance the cases for whom the exhaustion of natural labor is a greater disadvantage than the inherent disadvantages of all operative work. I can only say for myself, that, after many years of careful study of many cases in which I have not dared to put this principle into full operation, but have adopted the more cautious method of testing my preconceived opinions in labor and carefully noting the result, I have convinced myself that an experienced man can detect such cases in advance with sufficient accuracy to prevent any considerable percentage of unnecessary operating.

I would, however, say further, that I do not believe that any man has any right to accept such a suggestion on the authority of another investigator, nor until he has convinced himself by similar studies of his own experience that he can make this selection with a fair degree of certainty. It will never be proper practice for the unsupported judgment or unaided operating of inexperienced men; but, I repeat, in the class of ill-equipped women whom I have attempted to define, and in the hands of experts (and with strict limitations of predetermined intrapelvic operating to mechanically easy cases), I believe that this principle will make for the greatest good of the greatest number.

I know that I am not alone in holding these views. I know that similar studies are being made by other men. I believe that this topic of the best treatment of constitutionally feeble and debilitated women in labor will be prominent in obstetric discussions in the next few years, and that we shall come to a consensus of opinion upon it; in the mean time, the possibilities of mistake are so many, and the responsibility



involved is so considerable, that few wise general practitioners or embryo experts will care to assume it. I know that others who hold convictions similar to mine, and have not hesitated to put them into practice, have been restrained from expressing them publicly, by the feeling that their indiscriminate use would lead to a vast amount of harm from unnecessary and indiscriminate operating. I think myself that the time has come when this subject is ripe for discussion in societies of specially trained men. I believe that while the awakening of general interest in any such operative subject must inevitably tend for a time to the injury of some patients at the hands of overconfident and ill-equipped practitioners, such harm will be compensated to the greatest good of the greatest number, by a great lessening of human suffering and of maternal morbidity, by some slight decrease of maternal mortality and a great decrease in foetal mortality, among the patients of many conscientious practitioners, who will gladly avail themselves of any such advance so soon as any considerable number of men, who have become convinced of its worth by practical experience, will place it before them. I believe, too, that the immense force of prejudice among the laity in favor of the natural process, the odium which must inevitably attach to maternal mortality after an operation undertaken in advance of labor, and, more especially, to such an operation undertaken by any practitioner of less than established obstet-

rical reputation, will, in practice, exercise a strong deterrent effect against any extension of such operating beyond the very narrow limits to which it would naturally be restricted by men of wide experience.

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