DELAY IN THE FIRST STAGE OR PROTRACTED LABOR.*

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Protracted labor is a labor that is unduly prolonged from causes which occasion delay in the first stage.

The conditions which give rise to delay in the first stage are varied and diverse; but by tracing their mode of action upon the individual we arrive at a threefold distribution, viz.:

1. Any condition that enfeebles the uterine action and prevents dilatation though there be no impediment in the way of delivery.

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2. Where there is no deficiency of the expulsory action, but an arrest of cervical expansion from some obstacle.

3. Where there is neither uterine insufficiency nor hinderance in the canal through which the child has to be propelled but a disproportion in the fœtus itself.

It follows then that we must look to one of three factors for its solution: the expelling power, the channel and the body to be expelled.

The first requisite essential to all normal labors is strong and regular uterine contractions, with a distinct pause or interval of rest between the pains. If, therefore, from any cause the force of these contractions becomes enfeebled or their rhythm disturbed during the first stage protracted labor is likely to ensue.

The next requirement is that the parturient canal be free from all obstacles either acute, *i. e.*, œdema, spasm, etc., or chronic, *i. e.*, tumors, deformities and contractions either congenital or acquired.

The third, that the child shall present properly and be in proportion to the passages through which it has to pass.

If from error in any one of these factors, or from derangement in their correlations, the balance between them be disturbed labor may be interrupted or even come to a standstill until the harmony is again restored.

For practical purposes therefore we shall classify as follows: *A*, maternal causes; *B*, fœtal causes.

The maternal causes are both local and constitutional. Local maternal are: *a*, uterine; *b*, vaginal; *c*, bladder; *d*, rectal, and *e*, pelvic.

Constitutional maternal are: *a*, organic disease, acute or chronic; *b*, psychical; *c*, chronic poisoning, and *d*, want of physical development, muscular or osseous.

Treatment.

It is evident before one can deal successfully with a case of protracted labor, he must be fully acquainted with its nature and the cause producing it. It would be as irrational to administer quinine for uterine inertia due to a distended bladder as to rupture the membranes, when the delay is the result of uterine obliquity. Examination per vaginam will tell at once the state of the bladder and rectum, the direction of the cervix, its consistency and degree of dilatation, the condition of the membranes and the nature and position

of the presentation. Also the existence of deformities or growths in any part of the parturient canal. In many instances the finger of the trained accoucheur alone will be sufficient to make known to him all the facts in the case, but when a satisfactory exploration cannot thus be made, let him introduce the entire hand into the vagina or *uterus itself, if need be.* This in primiparæ will probably require anæsthesia, but in no other way can you obtain the information so important to the rational treatment of your patient.

Rigid Os.

One of the most frequent causes of delay in the primipara is rigidity of the cervix or os uteri.

It is a well-recognized fact that delay in first labors is not so much the result of disproportion as it is of rigidity of the soft parts or mal-position of the head. This is proven by the ease with which subsequent labors are conducted.

Assuming then that the other factors preserve their due relations, the fault must lie in the canal and be dependent either upon uterine insufficiency or a resistant os.

What are the conditions most likely to induce rigidity of the os?

Spastic contraction, thickening from œdema, abnormal direction and position of the cervix, an organically diseased cervix, cicatricial contractions, contraction at the brim, or presentation of some part of the child which does not descend easily and fairly upon the cervix, and agglutination of the os or cervix.

Spastic contraction is readily recognized by feeble uterine pains which are sharp and even agonizing. Upon local examination, we find an os which will admit one or two fingers. The tissues feel hot, dry and painful to the touch, and the edges of the os are like that of a knife-blade. The indication here is for very hot douches, repeated doses of chloral or the administration of chloroform. It is not likely that all of these measures will fail, but in the event of this happening, resort to the hand, Barnes's bags, and in urgent cases to deep incisions.

Œdematous thickening resulting from pressure may be relieved by elevating the head, liberating the imprisoned lip and pushing it out of reach. This failing, multiple punctures will relieve the œdema. Abnormal direction and position will be considered under pendulous abdomen.

Pendulous Abdomen.—A condition frequently met with in the

multipara favoring dystocia is pendulous abdomen, the result of weakening of the abdominal walls from either over-distension, separation of the recti muscles, or a contraction of the pelvis.

The uterine axis, instead of corresponding to the axis of the pelvic inlet, may be at right angles to it. When the flexion occurs at the vagino-cervical junction it is due to anteversion, and when at the utero-cervical junction to anteflexion. One has only to picture to himself either condition to understand how futile must be the uterine efforts to either dilate the os, or to expel the fœtus. In anteversion the cervix points to, or above, the promontory of the sacrum. The presenting part is felt through the thinned cervical wall, which may be mistaken for the membranes or the head. Absence of the os in the inferior strait, however, will readily clear up such mistakes. When flexion exists the os is more easily found, and is ordinarily undilated, even though it be softened and distensible. Introducing the fingers into the cervix, they meet with an obstruction at the point of flexion (os internum) which may be overcome by elevating the fundus and thus restoring the axis to its normal plane. Uterine deviation prolongs the first stage of labor primarily from inability of the pains to dilate the cervix, and secondarily by exhausting the uterus with its inefficient efforts.

The danger to the woman is twofold; either she lapses into powerless labor from uterine inertia, or the head forces itself through the anterior lip, or the entire cervix may be torn from its attachments. I have seen cases of pendulous abdomen in which women had been in hard labor for hours with the soft parts fully dilated and the child presenting normally, who were delivered immediately when this condition was recognized and corrected.

The treatment is simple. The patient should be placed in the recumbent position, the abdomen raised and supported with firm binder.

If the pains continue good, this will be all that is required. If, on the other hand, inertia has supervened and continues after a reasonable period of rest, deliver with forceps, or by version, according as the head is or is not engaged.

Organically Diseased Cervix.—Under this heading we include hypertrophies, cicatrices, chronic inflammations, myomata and carcinomata.

Hypertrophies and cicatrices, especially cicatrices from repeated lacerations, may be so firm as to refuse to yield to either hot vaginal irrigation or attempts at manual stretching. By incising the edges

of the os at various points with a probe pointed bistoury and then applying the hydrostatic dilator, the os may be opened enough to admit the application of forceps. If, in spite of incisions and the use of dilatators the rigidity continues, we may be obliged to perforate the head as a *dernier ressort.*

Women with chronic disease of the cervix rarely conceive. Should pregnancy occur, however, the delay is usually in the first stage, due either to a spastic os or to a cicatrix, the result of chronic inflammation. The treatment here is modified in accordance with the above mentioned causes.

Interstitial myomata, particularly those involving the cervix, may prove an insurmountable obstacle to complete dilatation, as in a case reported by me to this society in January, 1890. In this instance we barely succeeded in dilating enough for the uterus to cast off a four months' fœtus, but not enough for us to reach the placenta. The patient subsequently died of septicæmia. Hysterectomy or Cæsarean section affords the most ready means of relief from this difficulty, provided that the tumor cannot be pushed above the brim.

Carcinoma, if at all advanced, warrants Cæsarean section, and, if the operation is feasible immediate and total extirpation.

A contracted brim may, by preventing the descent of the fœtus, delay the os from dilating. If this condition be allowed to persist it can so exhaust the uterus as to induce inertia; or so soften the tissues that when the head is forced through, a laceration of the cervix takes place. The question of forceps, version, or the alternatives, symphysiotomy or abdominl section, arise, and must be decided in accordance with the degree of contraction and skill of the operator.

Atresia of the os and cervix occurring after conception is attributed either to occlusion by false membrane, concentric cicatricial contraction, or adhesive inflammation. It may be complete or partial. When complete there is an absence of the os, though inspection will ordinarily show where it had been.

Pressure with the finger at this point will often cause the adhesion to give way. When agglutination of the external os exists plunge a bistoury through it. Perform hysterotomy and dilate. This will relieve the cervical tension and prevent rupture. *Double uteri* may delay labor in the first stage through the uterine axis being deflected from the normal pelvic axis in consequence of unilateral development; or the imperfect muscular development may result in

uterine insufficiency; or the unimpregnated horn act as an obstruction.

Tumors.—There are few complications of labor that cause an accoucheur more anxiety and perplexity than tumors. Fortunately, fibroids located in or near the cervix act as an impediment to conception. When, however, conception has taken place the treatment will depend largely upon the size, character and location of the growth. As this paper deals only with the first stage we shall omit such as require removal either by vaginal or abdominal section, and confine ourselves to such as can be disposed of by simpler means. As a rule, where there is no encroachment upon the pelvic brim they give but little trouble. When, however, the parturient canal is obstructed we still have at our command several procedures. The tumor may be pushed above the brim; its bulk may be reduced by puncture when fluid and accessible from the vagina; or it may be removed with the wire loop or galvano cautery when it is pedunculated, and presents before the child.

Lastly, the fœtus may be turned, perforated or crushed.

Uteri bound down by adhesions, or pathologically changed by antepartum operative interference (as for example, ventro- or vagino-fixation) are capable, in a large number of cases of spontaneous delivery. But let the parallelism between the axis of the uterus and the pelvic brim be permanently disturbed from the above causes, and it may be necessary to do a Cæsarean section, or to sacrifice the life of the child for the safety of the mother.

Stenosis and rigidity high up in the vagina may be due to the age of the patient; or we may meet with atresia from cicatrices of traumatic origin, carcinomatous infiltration, or abscess-scars. Simple rigidity occurring in aged primiparæ is best treated by preserving the bag of waters, hot douches, Barnes's bags and such remedies as will retard labor until dilatation can take place. Where the contractions consist of dense cartilaginous tissues, that refuse to yield to the above measures free incisions supplemented by the hydrostatic dilator may succeed. Should other means fail and the mother's life become endangered craniotomy may become necessary.

Transverse bands, located high in the vagina, may obstruct the first stage of labor by preventing the external os from dilatating. They are readily removed by hooking the bridle under the finger and dividing it with the scissors.

The bladder, when distended with urine, becomes a serious ob-

stacle to labor, not only by displacing the uterine axis and thus preventing the presenting part from entering the brim, but by pressure upon the uterus interfering with the efficient contractions of that organ. Catheterization then often becomes very difficult from compression and distortion of the urethra, in which case it will be necessary to raise the presenting part in order to admit of passing the instrument.

A full rectum may offer considerable impediment to the first stage, especially if the accumulation has existed for a long time and has become impacted. The remedy consists in the removal of the scybalous masses, or, that failing, they should be broken up and removed with a scoop.

Deformed Pelves.

Pelves deformed, either by distortion or bony tumors must of necessity be a most potent cause of delay. But their varieties are so numerous and the methods of overcoming the dystocia due to them so various it would require a paper devoted to that cause alone to do justice to the subject.

Constitutional Causes.

We now come to a class of cases in which the uterine insufficiency is not due to disproportion but to weak muscular development. A simple want of *vis à tergo.* The pains occur at intervals but they lack the necessary power to overcome the cervix. We often see instances of this kind among women of the upper classes, who, from their mode of living, lack the vitality so indispensable to a normal labor. To differentiate between true and false pains is important, as the treatment differs as widely as the conditions themselves. The diagnosis of true pains is positive when dilatation of the os and bulging of the membranes during a pain can be established. The treatment of false pains resolves itself into the administration of chloral, opium, viburnum, viscum album or other uterine sedatives. On the other hand, weak pains due to vicious development or heredity demand the exhibition of such general stimulants as alcohol, coffee, tea, etc., or local stimulants such as quinine, or the introduction of a catheter into the uterus.

It might not be amiss to state right here, in terms which cannot be made too strong, that under no circumstances should ergot be

given, until everything is out of the uterus that should be out—be it fœtus, placenta, membrane or blood-clots.

Tough membranes are not infrequently a cause of dystocia, and are readily recognized. If, notwithstanding strong and regular pains, a normal presentation, a child in proportion to the passages, and the soft parts fully or easily dilated, the bag of waters continues intact, we have to deal with tough membranes. The diagnosis can be easily verified by introducing the aseptic hand into the cervix and between the pains palpating the membranes. Treatment—Puncture the membranes and thus complete the first stage. The following is a case in point: Mrs. D., multipara, age thirty-two years, seen in consultation with Dr. A., a neighboring practitioner. He told me that the patient had been in labor for twenty-four hours, during the most of which time he had remained with her. Her previous confinements were all so rapid that he concluded that the present delay must be due to a mal-presentation, and he requested my assistance. When I arrived she was still having quick, vigorous pains. As the cervix was out of reach of my fingers, I introduced my hand into the vagina and found a widely dilated os, a roomy pelvis, a normal head presenting and the membrane still unruptured. The breaking of the amniotic sac was followed by the immediate delivery of the child. The case is mentioned for the purpose of illustrating that had the true cause of delay been recognized by the attendant, both he and the patient might have been spared hours of fatigue and the woman much unnecessary suffering. Another cause of delay is a firm adhision of the membrane to the walls surrounding the os internum and so preventing the lower segment from stretching. The attendant has only to sweep the fingers within the cervix, between the membranes and the uterine walls, to break up the adhesions.

Persistence of decidua should be treated the same as tough membranes.

Absence of the bag of waters occasionally prolongs labor in the following way: The head being engaged in the true pelvis, fits the soft part so accurately that no liquor amnii is interposed between the head and the membranes, thus depriving them of their hydrostatic powers.

Another and similar condition is where the membranes have ruptured, but the head, acting as a ball-valve, prevents the escape of the waters during or between the pains. Treatment in both instances is the same. The head during an interval between the

pains should be pushed up a little and the liquor amnii allowed to descend.

Hydramnios by over-distending the uterus paralyzes its contractions and so prolongs the first stage. Having first assured ourselves that the os is dilatable and the presentation normal, we may rupture the membrane, remembering the advisability of puncturing high up, lest a too rapid escape of the fluid should occasion collapse, or should carry a knuckle of cord before it and so endanger the life of the child.

Premature escape of the liquor amnii causes the uterus to act at a disadvantage by preventing the bag of waters from acting as a wedge and substituting for it the presenting part which is less adapted to the work. In the majority of cases, unless the entire amount be lost it does little more than to delay the first stage; this time and patience will suffice to overcome. If from some untoward reason the amniotic fluid all drains away, we may be confronted with any or all the dangers due to dry labor. Our remedies here are hot vaginal irrigation, manual dilatation and Barnes's bags, followed, where there is an entire cessation of pains, by the internal administration of quinine, and other oxytocics.

Placenta previa may hinder the proper course of labor when the adhesion of the placenta to the os internum acts as a mechanical impediment to dilatation; and when the fœtus and its membranes are prevented from dilating the lower uterine zone because of the interposition of the placenta, especially if centrally planted. The treatment under these conditions is self-evident, not because of the prolonged first stage, but because placenta previa is a serious complication which demands immediate emptying of the uterus by any means that preserves the integrity of the maternal parts.

Malposition.—Protracted first stage is often dependent upon the faulty position of the child, the most frequent of which are the occipito-posterior, breech, and transverse. Determine the malposition by the introduction of the hand and rectify the same when possible.

Short cord, either relative or absolute, by preventing the fœtus from engaging properly may also retard labor. This rare and interesting condition is fraught with the gravest danger to both mother and child. On the part of the latter there is ever the possibility of spontaneous rupture of the cord from forcible attempts at delivery. On the part of the mother the danger to be anticipated is partial or complete uterine inversion. The diagnosis, while difficult, is

strongly presumptive when, other causes being excluded, the child is jerked from a lower to a higher plane during the labor; and if added to this we find, upon abdominal auscultation, a distinct umbilical souffle, the diagnosis is fairly clear. The treatment is as difficult as it is unsatisfactory. From a theoretical as well as a practical standpoint it would seem that the constant maintenance of a crouching posture by diminishing the length of the pelvic canal would make the cord relatively longer and thus effect the delivery. Should this not succeed apply forceps, at the same time artificial prolapse of the uterus with the object of preventing a possible inversion by lessening the tension upon the cord. Supposing the head to be above the brim do a version with the same artificial uterine prolapse. When the cord is extremely short the method advised, and successfully used, by the late Isaac E. Taylor might prove of material assistance, consisting of an elective version preceded by severing of the cord in utero and followed by immediate and rapid delivery.

Hydrocephalus and congenital encephalocele when small rarely give trouble in the first stage. Should, however, either condition be recognized and indications be present for delivery, puncture the sac, and if required turn.

Premature ossification of the fœtal cranium is a condition so rare as merely to require mention as a possible cause.

Monsters and other conditions under this classification seldom interfere with the dilating stage. When they do become a factor in delay, the cause will, as a rule, be found to be due to either malposition, over-distension, or absence of liquor amnii.

In conclusion, doubtless some of the remedies or procedures suggested in this paper will not meet the approval of a part of my hearers. I ask them to bear in mind, however, that while they, by special schooling, are fitted for the more radical operations, that there are many skilled obstetricians who lack that training, and who would oftentimes fail to get the consent of the patients, even if competent to perform them.

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