OBSERVATIONS

UPON THE NATURE AND TREATMENT OF

DIFFICULT OCCIPITO-POSTERIOR POSITIONS OF THE HEAD.

FOUNDED UPON

AN ANALYSIS OF TWENTY-SIX OPERATIVE CASES.

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OCCIPITO-POSTERIOR POSITIONS OF THE HEAD.

It has long been known among accoucheurs that when the head arrives near the base of the pelvis, with its long diameter so disposed that the occipital fontanelle is directed towards either sacro-iliac synchondrosis, the normal mechanism of delivery is liable to be tedious, and even to be frequently interrupted and deranged.

Associated with these interruptions and derangements, one particular mode of delivery is apt to arise, which the older accoucheurs were wont to term "face to the pubes." This, we know now, is no particular form of presentation however, but simply an arrested occipito-posterior position; but it no doubt proves itself a difficult method of termination in those cases. That nevertheless the termination of labour, even in the normal manner with rotation of the occiput forwards, under the aid of forceps, is not unattended with difficulty, and requires special care and management to prevent injuries to the lower part of the vagina in primiparæ at least, has been long impressed upon my mind. It was this fact, combined with the conviction that there exists among the ordinary authorities on the subject a somewhat unsettled opinion respecting the treatment of difficult occipito-posterior cases, that has induced me to draw the attention of the Society to this subject for a short period of time.

Believing as I do, with many Continental authorities, that the head usually enters the brim with its long diameter either exactly or approximately in the large transverse axis of the inlet of the pelvis, I am bound to hold that cases of occipito-posterior presentation do not become such till the head has advanced some little way into the pelvis, and indeed do not present under ordinary circumstances any special difficulty till the head meets the resistance of the floor of the pelvis.

In support of the statement now made, relative to the non-existence of an initial Solayres obliquity, we have to state that, in a considerable number of cases carefully examined during the early stage of labour, we have satisfied ourselves that the head passes approximately transversely at that time across the inlet.

But furthermore, the supporters of the initial Solayres obliquity

have yet to prove under what force, or for what purpose, the long diameter of the fœtal head should seek to squeeze itself into the oblique of the brim, when it has the choice of accommodating itself in the transverse diameter, which is at least by half an inch the larger.

The common argument that the transverse is shortened by the encroachments of soft parts upon its extremities, has always appeared to me both weak and irrelevant. For any one who carefully examines a female pelvis, with the soft parts lining it, will, I think, feel disposed to confess, were he not previously thirled to the support of that obliquity theory, that the soft parts encroach most upon the posterior ends of the two oblique diameters.

Still the gradual approximation of the sides of the pelvis, at the extremities of the transverse diameters, as the head descends, makes it assume, long before the floor of the pelvis is reached, a position such that its antero-posterior axis coincides more or less accurately with one or other of the two oblique diameters of the pelvis, so that in difficult cases of obstructed labour, with the occiput backwards, it is seldom that the ordinary short forceps has strength and length enough to grasp the head; consequently we require, as a rule, to employ the longer curved instrument—a necessity which is, as I shall have to point out by-and-by, not unattended with considerable risk to the soft parts, provided the rotation movement of the head takes place while we are engaged in the traction efforts.

The great bulk of the cases presenting the occiput backwards terminate quite naturally without any assistance whatever. Indeed, they may be found to terminate with more than the usual celerity at the latter part of the second stage. This, however, is commonly preceded by a period of distinct retardation. I have again and again seen such a case, in which the head had been arrested in its advancement near the outlet for half an hour, an hour, or even an hour and a half, while the pains were moderately strong, terminated by a single pain the moment the head effected its normal long rotation. It is barely a month ago since I purposely allowed an occiput to the right, which assumed to some extent also the nature of an intermediate or brow presentation, to be delayed for an hour under pretty powerful pains, which were distinctly causing the parietal and frontal ridges on the left side of the head to bend; but whenever I pulled downwards and forwards the occiput, and pushed upwards the brow, two pains of no great severity,—1st, terminated the rotation forwards of the occiput, and, 2d, the expulsion of the head. This case, as I maintain all cases capable of easy rectification to be, was a small head, and the pelvis was of fair size. No doubt, a large proportion of those labours known as "precipitate labours," if carefully classified, would be found to be cases of sudden termination of occipito-posterior positions of the head.

Between positions of the head, with the occiput towards the left

and backwards, and those of the occiput towards the right and backwards, I do not think there is such a disparity as Naegele's observations would lead us to suppose. I am sorry I have not kept an accurate record of the cases I have had presenting this peculiarity; but my conviction, from the frequency I recollect of meeting it, is that it is not at all unusual. One point in respect to those cases of this position which, in my experience, have turned out difficult, is this, that they very much more frequently than the corresponding position to the right terminate as "face to the pubes."

This leads me to say that though, as noted above, the great majority of occipito-posterior positions of the head occur in labours which terminate naturally, yet the long rotation is so apt to fail, that a considerable proportion need to be aided by instrumental or other means.

These cases further divide themselves, in regard to their terminations, into,—

I. Cases which terminate by the original occipito-posterior position becoming exaggerated, the forehead and brow of the child being squeezed against the body and descending ramus of one or other of the pubic bones, and the vertex and occiput ultimately sweeping the perinæum, *i.e.*, as "face to the pubes" of the older authors. This, however, is, according to my experience, the result only in about 25 per cent. of those difficult or operative cases; or,—

II. The rotation takes place while the operator is exerting traction efforts, and that purely as a result of the mechanical conditions, at the outlet of the pelvis, depending little, *if in any degree*, upon any voluntary rotatory efforts on the part of the operator.

But if the soft parts of the mother are tight and non-elastic, this rotation is exceedingly apt to lacerate them at the outlet, as it throws the forceps into an oblique position, against the injurious consequences of which the operator has to guard.

So far as my experience goes, it seems to point to the conclusion that whether an obstructed case of this kind terminates as "face to pubes," or by rotation of the occiput forwards, if the case is finished instrumentally, depends more than anything else upon the period at which the instruments are applied. If they are applied comparatively early in the case, we have rotation at the outlet; if at a comparatively late period of the labour, we have the case terminating without rotation.

Let me now briefly analyze the records of twenty-six cases of difficult occipito-posterior cases, which I have within the last two or three years delivered by forceps, either in my private practice my dispensary practice, or otherwise.

Of these twenty-six cases, six terminated as "face to the pubes," whilst twenty underwent the normal forward rotation of the occiput, and ended in the ordinary way by extension of the head below the symphysis pubis under the influence of traction only. I say

emphatically *under the influence of traction only;* for I never exerted the slightest force in the direction of favouring the rotation movement, and indeed have often wished that it could have been delayed until I was able to have removed the forceps.

Of these twenty-six cases, eight, or nearly one-third, presented with the occiput towards the left sacro-iliac synchondrosis; and of these eight, four, or 50 per cent., terminated as "face to the pubes."

Of the eighteen cases which presented the occiput towards the right sacro-iliac synchondrosis, only two terminated as "face to the pubes."

Of the twenty-six cases, twelve, or 46 per cent., occurred in primiparæ, so that in them we had to contend with defective rotation in connexion with soft parts in a state of considerable rigidity.

Of those which terminated as face to the pubes, four of the mothers were primiparæ, and two multiparæ. In those six cases which ended as "face to the pubes," in one case only, and that, too, a multipara, did there occur anything other than the most trifling laceration of the soft parts.

In this case the laceration, which was not at all severe, affected the back wall of the vagina without involving the perineal tissues, and happened at a part where the forceps could not reach. It very soon healed up, however, and never gave the least inconvenience.

I have been most disappointed with the results in the cases wherein rotation took place. I do not mean to say that the results have been at all bad; for of these twenty-six cases, only one terminated otherwise than most favourably for the mothers; and in the fatal case, the result, I am satisfied, was not referable to the forceps operation. That the members of this Society may also satisfy themselves on this head, I will record the case at length in the course of this paper. As it is a typical case of the difficulty I complain of, they will also thereby be able better to understand the grounds of my opinion as to the trouble which one meets in the management of such cases.

I am now inclined to believe that lacerations of the lower third of the vagina in instrumental deliveries are far more common than one would expect, if he formed his opinion solely by the little reference made to them in the ordinary British text-books. But it is necessary here to notice, that by lacerations of the vagina, I do not mean those of the fourchette or perinæum, which are allowed on all hands to take place in greater or less degree in almost every first case. On the contrary, I understand interruptions to the continuity of the vaginal mucous membrane in other parts of its circumference than in the mesial line posteriorly.

At one period of my obstetrical practice, I seldom or never found any lacerations, incisions, or abrasions of the vaginal mucous membrane after operating. But now, after having my attention more strongly than pleasantly drawn to this subject by one or two of those troublesome cases, and also from finding statements cor-

roborative of my observations in several German authors, more particularly in Schroeder, I must confess that I seldom meet with a moderately severe instrumental case in a primipara without being able to detect some little button-hole, abrasion, or even more serious injury of an incisive nature, in the vagina.

I cannot charge myself with operating with any less care, but am conscious that the very reverse is the case; and I trust also that increased experience and advancing knowledge are not diminishing my skill in the use of forceps; only, after every forceps operation of any severity, I am now in the habit of subjecting the vagina to a careful tactile scrutiny, which I did not do formerly. On this principle, I explain the difference between my present and former experience.

Luckily, however, such abrasions or button-holes seldom lead to any really injurious results. Having due regard, however, to the facility with which parturient women become the victims of all sorts of septic influences, one would like to avoid those solutions of continuity as far as possible.

But now, to take up the consideration and special treatment of those two terminations separately. I hope the Society will pardon me if, for perspicuity's sake, I briefly run over the chief points in the mechanism of a case which terminates as "face to the pubes."

Let us suppose the head in the left oblique diameter, and at or near the floor of the pelvis.

The occiput—instead of advancing downwards and forwards from the region of the left sacro-iliac synchondrosis, so as to get forwards from left to right successively into the transverse, then into the right oblique, and ultimately under the left descending ramus of the pubes, while the forehead should glide from right to left backwards over the right side of the pelvis until it ultimately reaches the hollow of the sacrum—keeps still backwards, and indeed, to a small extent, rotates in quite an opposite direction, becoming thereby nearly, but never completely, in the middle line of the sacrum. The forehead, on the other hand, rotates slightly forwards from right to left, leaving the region of the right foramen ovale, and becoming compressed against the body of the right pubic bone, and also against the upper part of its descending ramus. By this mechanism, or rather failure of mechanism, the child's head is made to engage at the outlet with its large fronto-occipital diameter in the small oblique diameter of the outlet of the pelvis, instead of presenting its lesser suboccipito-bregmatic, which is the diameter engaging at the outlet in ordinary vertex cases, when the head undergoes the normal extension, with rotation of the occiput forwards. It follows that thereby it must meet with greatly increased resistance, and so it does. The great resistance thus presented to the advance of the head in this position is such as to implant a special type to a child's head thus born.

It is accordingly found that if the labour is prolonged while the

head is situated as I have already stated, it becomes remarkably shortened in the fronto-occipital direction, and elevated in the bregmatic region, giving the child's head, if examined immediately after labour, a very curious and rather odd appearance. Indeed, so great is the tension to which the fœtal head is exposed under such circumstances, that occasionally, as I have myself seen, a large cephalhæmatoma is formed in the region of the anterior fontanelle.

If we now examined such a case for the first time, we should find that the anterior fontanelle was easily reached, and immediately behind the symphysis pubis only a little more of it would be to the right than to the left of the mesial line, while the sagittal suture would run nearly antero-posteriorly, but inclining slightly to the left towards its posterior extremity, while the posterior fontanelle could be reached with very great difficulty.

If now the pains are very strong and the head not too large, the forehead remains fixed against the right pubic body and the right descending ramus of the pubis, whilst the occiput is gradually pushed down over the lower part of the sacrum, coccyx, and perinæum. In the course of this advance of the occiput, it follows that, notwithstanding the relief gained by the shortening of the occipito-frontal diameter under the influence of the pains, the great bulk of the child's head must so act as to excessively distend the perinæum, inasmuch as the forehead is incapable of advancing upwards and forwards, as the occiput does when it escapes from under the symphysis, and thus eases the tension of the forehead as it sweeps over the perinæum in ordinary vertex cases. If, however, the occiput is gradually advanced under the pressure of pains of moderate severity, and the perinæum is not found to tear, first the mass of the vertex, and then the occiput, get over the anterior edge of the perinæum; after which the forehead and face of the child, which hitherto had been tightly implanted behind the pubic bones, get loosened, and are enabled to slip downwards and forwards. The birth of the head is in this way completed by a motion of extension. The movement called restitution is, in this case, such as to make the face of the child look towards the right thigh of the mother, and to bring the right shoulder forwards under the symphysis pubis, whilst the left is made to sweep the perinæum. The accomplishment of this mechanism unaided presupposes a small head and a roomy pelvis, conditions under which, though I have seen it, it has occurred in my experience only rarely. Under such circumstances, of course, no real difficulty does or can arise, and the duty of the accoucheur is clearly to keep from all interference.

I am led by what I have observed of such cases to believe that we seldom meet with this kind of mechanism, or rather failure of mechanism, in roomy, well-formed pelves, with normally-sized heads; as under such conditions occipito-posterior cases complete the normal rotation of the head forwards, and the cases are finished without interference, and "face to the pubes" seldom or

never requires to be encountered. They occur almost invariably, so far as my experience goes, in cases where the head in relation to the pelvis is disproportionately large, or where there is reason to believe that the pelvis is defective in the conjugate, or too large in the transverse diameter; so that, with rare exceptions, I have found it absolutely necessary to employ forceps before the head could be got to emerge from the oblique diameter at the floor of the bony pelvis.

For these reasons also, I have seldom seen it either practicable or advisable to use instruments with the intention either of bringing down the occiput or of favouring its rotation forwards; for it has in my hands proved either clearly impossible to effect this rectification, or, as the original conditions determining that error in mechanism were still operative, they have proved the maintenance of the rectification, even when it had been effected, impossible.

When so speaking, however, I mean to restrict myself to really difficult cases. I do not wish to assert that displacements of various kinds may not occur of such a nature as to retard labour when the head is very small or the pelvis very large, and which may at the same time be readily rectified. The case of half-brow, already recorded, is an example of the kind I mean, and the following abstract of a case is of a somewhat similar nature:—

Mrs R. (II *a*.); first confinement normal and easy; fell in labour at full term on Monday, 8th December 1873, the first symptom being rupture of the membranes at 6 P.M. This was followed by very slight pains for three hours, and then they increased in strength and in frequency. She was seen and examined at 10.30 P.M.; cervix found nearly dilated, and quite soft and dilatable. The head presented, but was observed to be very small and obliquely situated. The occiput was turned to the left side of the mother's pelvis, running so that the smaller fontanelle was somewhat posterior to the larger as well as on a higher level. But the child's head was strongly flexed towards the right shoulder, so that the left parietal bone presented, the right being immediately behind the symphysis pubis, and the sagittal suture passing close behind and below the pubic arch—the greater fontanelle being behind the upper third of the right descending pubic ramus. Only a small portion of the upper edge of the right parietal bone could thus be felt; though the left side of the head was pushed well down, so as to occupy the hollow of the sacrum, and present at the outlet. In this position, the head remained for nearly an hour without making any perceptible progress. I then introduced the two forefingers of the right hand, so as to seize the occiput, and pulling it downwards and backwards, and then forwards, in the interval between two pains I succeeded in almost completely undoing the right lateral obliquity, getting the right parietal to descend and the occiput forwards towards the symphysis pubis. I then held it there till a pain came on, and fixed the head on the

perinæum. Other two pains completed the expulsion of the head. The child was small, imperfectly nourished, and stillborn.

What I maintain is, that in such cases the rectification is so easy that they are not worth being called difficult cases. A few extra pains would almost invariably set them right without interference.

One of my chief reasons for bringing this subject under the notice of the Society is, that I feel very strongly convinced that Professor Leishman, in his work, which I have no hesitation in saying is by far the first text-book of Midwifery in the English language, recommends, more freely than I am inclined to believe is either proper or safe, methods of treatment, which have for their object rectification of the position of the head in difficult occipito-posterior cases by means of levers, forceps, etc. I am persuaded that in almost all cases in which the conditions are such as to determine a forward position of the forehead, attempts at rectification of the position will prove abortive. Holding these views, I cannot but regard with considerable dread the dissemination among students of the idea that levers and other instrumental means may be freely used to bring downwards and forwards the occiput.

One, however, feels little inclined to discuss questions involved in such difficulty as the rotation movement of the fœtal head, were it not for the injurious practical evils which too free interference with the mechanism is calculated to bring upon the unfortunates in whom these irregularities of presentation occur. While I have never met with what might be called a really difficult case of occipito-posterior position, in which there seemed to me the slightest chance of rectification by means either of hand or lever,—and at one time of my practice I was wont to endeavour to rectify with the hand,—on the other hand, I have failed to discover any injurious results from the application of forceps, even in cases which terminated as "face to the pubes," either in my own practice or in that of others which I have seen. Moreover, I do not think there is here so much risk to the perinæum as some writers would have us to believe. No doubt the perinæum is much distended. But almost all risk in such a case from rupture may, I think, be avoided by judicious management. When such a case turns up in my practice, I never leave the head to be completely delivered with the forceps on; but, after pulling it down with instruments so far as to allow me to get command of the occiput by the finger in the rectum, I then take off the blade and allow the pains, which have usually by this time become weak, to expel the head. But if the contractions are too weak, or if the perinæum seems in specially great danger, I endeavour to get the head over the perinæum in the absence of all uterine contraction, according to Von Ritgen's manipulation.

The forceps have always in my experience been capable of effecting delivery, and only in one instance did there result a vaginal tear worthy of the name, and even this was of the mucous membrane in the back wall, not involving either rectum or per-

inæum. It quickly, as I have said already, healed. Very severe cases of this presentation lead, no doubt, occasionally to the necessity for craniotomy. But luckily I have as yet not met with one which could not be overcome by the use of the forceps.

Now, as to the reason why those occipito-posterior cases are so frequently defective in regard to their rotation. This is a question really very difficult to answer.

Of course the great distance over which the occiput must glide forwards and the forehead backwards, is of itself sufficient to account for some proportion of the failures; the uterine action proving unequal to complete the task, even though the occiput gets well down. But the occiput not getting well down at first, as Dr Uvedale West has pointed out, may also be to blame for some of the defective cases.

But, then, even in cases of "face to the pubes," the occiput gets ultimately so well down as to be the leading point in the completion of the labour when the mechanism fails, and yet it does not come forward.

I do not believe, with Leishman, that in those cases of rotation forwards of the occiput in posterior cases it is necessary, or is the fact, that the occiput requires to get down so far as to be placed within the antero-posterior line of the pelvis which passes horizontally through the apex of the ischial spine of the side towards which the occiput is directed. I am satisfied that many, if not all, of those cases which rotate, do so while the occipital protuberance is distinctly above the level of the corresponding spine of the ischium, and indeed that the occipital end of the cranial lever passes over the spine in its motion forwards. Of this I have again and again convinced myself by careful and prolonged observation while the mechanism of rotation forwards was taking place.

I consider that we are too much inclined to regard the fœtal head as an unyielding mass in dealing with the initial steps of this movement, and that more of the initial tendency of the head to move forwards is owing to its elastic nature and its capacity for getting moulded under the influence of the pains. The force, then, of the pains transmitted along the spinal column is expended most upon the occipital extremity of the plastic mass formed by the child's head; and as only in one direction, viz., forwards, can this mass make way, as it is surrounded by unyielding hard structures both posteriorly and laterally, it begins to bulge in the unresisted anterior direction, and thus a tendency is established which no doubt has the effect, in favourable circumstances, to a certain amount, of making the forehead rise somewhat, so as to leave more room for the parts under greatest tension to occupy. It is also to be remembered that the projection formed by the posterior parietal protuberance, in cases of occipito-posterior presentation, acts at a much greater advantage in exerting a tendency for the hind head to glide forwards than it can effect in cases in which the occi-

put is towards a foramen ovale. At any rate, I have watched for hours occipito-posterior cases before they rotated, and have observed that the moulding process invariably preceded the marked, and often instantaneous, rotation of the head forwards.

I am inclined to believe that, though relative narrowing of the transverse diameter of the pelvis is no doubt a chief cause of those difficult occipito-posterior positions, general large size of the head is a most important factor; and that in consequence of this large size of the head the forehead gets so wedged into the pelvis anteriorly that its tendency to slacken and rotate backwards does not come into play. So soon as it fairly refuses to move backwards as it ought to do, the self-same plastic condition of the child's head, acting through the bregma, which is now the part exposed to least resistance, wedges it more and more into the unsupported space, and thus very quickly renders rotation of the forehead backwards, and consequently also rotation of the occiput forwards, impossible; so that the same plastic condition of the head which affords the best explanation of the causation of the proper rotation forwards, likewise explains best the failure of that rotation when the head is large.

That, however, pelvic specialty of conformation has much to do with these irregular positions, the frequency with which they recur in the same woman very pointedly attests.

In one of my patients, I find her labours, which have been three, to be made up of two occipito-posterior and one face case; all were, however, comparatively easy. In another, there occurred three occipito-posterior and a brow. In a third patient, who has been confined four times, the presentations have run three occipito-posterior and a face.

I might, indeed, multiply such examples from my notes of cases, but those recorded are sufficient to prove that occipito-posterior positions are apt to repeat themselves in the same individual.

A few words now in closing, respecting the treatment of those difficult occipito-posterior cases, in which, from original uterine inertia, from exhaustion of the uterus from severity of pains, or from other causes, the forceps were needed to effect delivery; but in which, when the head had arrived at the outlet of the bony pelvis, the occiput rotated forwards.

Such cases are not to be confounded with cases of obstructed labour, in which the head is seized by forceps high up in the pelvis before it left the transverse diameter. They were all carefully diagnosed as cases of occiput to either sacro-iliac synchondrosis before instruments were applied. It does not, however, matter much although any of them had been cases of original transverse position of the head; because even then the same difficulty from the rotation of the occiput forwards at the outlet, when in the grasp of the curved forceps, would be experienced; only in that case to a less degree, inasmuch as the angular divergence

between the conjugate and either end of the transverse diameter is less than the angular distance between the anterior extremity of the conjugate and the posterior extremity of either of the oblique diameters, measured along the brim of the pelvis. In these cases we usually experience difficulty before the head is well down towards the floor of the pelvis; and I believe, not so much on account of the position, as on account of the general large size of the head, combined with the arrest of proper pains in a uterus that has been worn out in a difficult first stage. I repeat, the obstruction can rarely be completely explained by the position; because before this obstruction, due to defective rotation, can come into play, the vertex must have descended to the level of the lower edge of the body of the third piece of the sacrum, which I am satisfied it had not done in all my cases. Still, the backward direction of the posterior fontanelle has, no doubt, something to do in rendering these cases more troublesome than they would otherwise have proved. In two or three of those cases the heads were so large that the concavity of Simpson's long forceps was found incapable of embracing the whole of the head, and the instrument was found to enclose only a portion of it. From this there results a very marked tendency in the instrument to slip, which, in the first case of the kind I saw, very much puzzled me.

In all of those twenty cases, rotation took place wholly or partially at the outlet of the bony pelvis, and purely as a result of traction efforts. In no case did I find the slightest inconvenience when dealing with multiparæ, nor could I detect in these the least trace of injury to the soft parts. On the other hand, in operating on primiparæ, I have been frequently galled to find abrasions and other interruptions of continuity in the vaginal mucous membrane at its lower part. These vexed me much, and led, on more than one occasion, to unnecessarily severe self-recrimination. The main cause of these abrasions, which at times amount to lacerations, and which, although they may be greatly diminished by care, and especially by operating slowly, are very difficult to avoid occasionally, is the rotation movement of the head at the outlet when in the grasp of the forceps, the soft parts at the same time being very tight. The result is this:

Suppose we have to deal with a case in which the occiput originally presented to the left and posteriorly; when the head is engaged in the outlet of the bony pelvis, it will be found to rotate under the influence of traction efforts alone; and as it does so, it throws the blades of the forceps, which were originally applied solely with reference to the pelvic cavity, and in such a manner that the line joining the central point of each fenestra would pass nearly transversely across the pelvis, into an oblique position. The left blade is now pushed upwards with considerable force towards the upper extremity and left side of the external genital fissure, whilst the right blade is turned downwards and made to project its sharp free border against the perinæum.

Suppose now the pains are severe, or the traction efforts continued, we are very apt to have the vagina injured in both the situations referred to—viz., in the region of the left labium minus anteriorly on the left side, and posteriorly on the right, more or less to the right of the central line of the perinæum.

Besides these risks it is exceedingly important to notice that the blade, which is in relation to the occipital extremity of the fœtal head, is usually found to have been applied so as to receive the occipital tuberosity between the limbs of its fenestra. This part projects considerably between the limbs of the fenestra, and it requires some care to free the occiput from between the limbs before the blade of the forceps can be removed. If now, in our anxiety to avoid rupture from the awkwardly oblique position into which the blades have got, we attempt to withdraw the left blade too rashly, we are very apt to aggravate very much, if not occasion, the very tear on the left side, which we desire to prevent.

Such being the case, it has become my practice to remove the blades of the forceps so soon as the head is all but cleared of the bony pelvis, and *preventing recession* of the head by the assistance of passive pressure upon the forehead by the forefinger of the right hand in the anus, aided by gentle pressure on the abdomen by means of the left hand, to wait till the pains are able to complete the delivery, if that is at all possible,—guardedly aiding the effect of such pains by Von Ritgen's manipulation. The head, which as yet has only partially rotated as a general rule, now gradually and slowly completes the rotation so as to bring the sagittal suture nearly to coincide with the antero-posterior mesial plane of the body, and at the same time the soft parts are slowly and safely dilated; but if the resistance of the perinæum is too great, or the uterine action completely in abeyance, the practitioner is obliged to reintroduce the forceps, and thereby effect delivery.

I have often thought that if one had always at hand a pair of straight forceps on these occasions, it would be advantageous to remove the curved blades when the head had been pulled well down into the outlet of the bony pelvis, and then, fixing it there by regulated pressure upon the abdomen, to apply straight instruments, and complete the delivery by their means. I have never been fortunate enough to have both sets of instruments with me at a case of this kind; but on the first opportunity that occurs to me, within easy reach of a short pair, I mean to try the effect. The short forceps could of course be allowed to rotate in any direction at will, without the slightest fear of bad results.

These cases, to my mind, form a considerable objection to the general rule—which, on the whole, is a good one—that one should accustom himself to the use of the long curved instruments only.

Another remark and I have done, and it is this, that I do not think that one is ever at liberty to undertake the instrumental charge of such a case without the aid of a skilled assistant to take

charge of the chloroform at least. I have on more than one occasion experienced considerable discomfort and anxiety from having no other assistance than that afforded by a flurried and half-educated nurse.

As an example of some of the difficulties I mean, I give *in extenso*, as I formerly promised, the only fatal case I have met in this connexion, so that gentlemen may see by example what kind of cases I have been speaking of.

Mrs M. M'G., æt. 23 (I *a.*), confined on 21st November 1873. Patient took ill on 17th November, but did not send for her medical attendant—a student attached to the New Town Dispensary—till the evening of the 19th. He remained with her during the night, and as she complained much of pain, he gave her first 30 gr. of chloral hydrate, and subsequently 23 minims of laudanum. On the morning of 20th, on examination by my then assistant, Dr J. B. Smith, the head was stated to be well down into the pelvis, and the cervix dilated to about the size of a crown-piece, but rigid, apparently owing to too frequent examinations (30 to 50 times) during the previous night. Pulse 78; pain and suffering not great. There had, however, been some vomiting. The membranes were stated to have been ruptured two hours previously. In the evening the cervix slightly more dilated, but grasping the presenting head very tightly, and a caput succedaneum forming. Pains weak and irregular, pulse good, and patient in better condition than in the morning. Breathing, however, rather quick, and evidence of extensive consolidation of the right lung at the apex. During this night the patient continued much in the same condition, getting from her attendant another dose of chloral, which procured her a little refreshing sleep. At 10.30 A.M. on 21st, I saw her for the first time. State then was, pulse regular, good strength, about 80, tongue clean, temperature normal, patient vomiting almost everything she took, uterus hard, and also tender to the touch. The bladder was largely distended, and there was a complete absence of pains. On examination per vaginam, head found well down, but cervix only about one-half dilated. A large caput succedaneum. Occiput to the left and posteriorly. A notch, about one-half inch in depth, in the left side of the cervix. Child's heart heard over the right lower aspect of the uterus; regular, but somewhat feeble.

The bladder was emptied, and the patient left till one P.M., in the hope that the pains might recur. At this hour, there being no recurrence of the pains, the long forceps were introduced; but on their introduction it was observed that the cervix was peculiarly lacerable and fragile, giving way like wash-leather under the pressure of the finger. With considerable difficulty, the head, which was a remarkably large one, was brought through the outlet of the bony pelvis, undergoing at the same time the long rotation of the occiput from behind forwards and to the right, whereby the forceps were thrown into an oblique position, giving rise to partial lacera-

tion on the left side of the vagina and abrasion of the right. The left blade had become fixed over the occipital tuberosity, and the right over the forehead. Fearing further tear, the forceps were removed, in expectation that the contractions would now complete delivery. But notwithstanding every legitimate effort to induce uterine action, the inertia remained profound. The forceps had to be reapplied, and delivery completed artificially, which was effected about 2.30 P.M. The uterus contracted fairly after expulsion of the placenta, and there was no post-partum hæmorrhage. The child, which was a male, was dead.

In the evening, the patient was feverish, and felt much exhausted, the tongue coated and dry, pulse 120, respirations 50 per minute. No unusual tenderness over the abdomen. She had two Dover's pills, of five grains each, but during the night slept little, and next morning was still more exhausted. Pulse still 120, but exceedingly weak,—in fact almost impercceptible. Respiration 50; abdomen tympanitic, and great tenderness on pressure over the uterus. Patient ordered beef-tea and stimulants every half hour, a pill containing 2 grains of calomel and $\frac{1}{2}$ grain of opium every five hours, and hot fomentations, with turpentine stupes over the abdomen. At 1 P.M., she was much the same, but her nurse had been so very remiss as to give her brandy only once. At 6 P.M., pulse stronger, but otherwise she continued the same; at 10 P.M., she was evidently sinking; and at 11 P.M. on 22d, she died.

A post-mortem examination was refused.

As already stated, I do not think the operation is chargeable with the fatal issue in this case. The painful termination of the case was no doubt due to acute metritis supervening upon a specially tedious labour, occurring in a patient enfeebled by the coexistence of pulmonary phthisis. Ever after I first saw the patient, I was concerned lest we should have a cervical tear passing up into the lower portion of the body of the uterus. This opinion was grounded on the fragile condition in which the cervix was found. But I had no reason subsequently to the operation to believe that such a rupture had taken place.

It is deeply to be regretted that the *nimia diligentia chirurgiæ* on the part of the student in attendance, should have been so perversely directed. It is only a poor apology that the errors were committed under the influence of the best of motives. I think it had been better had both chloral and opium been withheld; and certainly the frequent examinations during the first stage were alike injurious and unwarrantable.

The nature of the injuries inflicted by the forceps upon the lacerable and irritable, but resistent soft parts, is typical of the class of cases I have just been discussing.

A question might also be raised here, which is, to my mind, one of the most important and difficult in practical midwifery, and it is this: When, in a case of rigid os, such as the above, is the proper

time to interfere? It would come up in this connexion as an answer to the query, Was, or was not, the use of instruments too long delayed? I have repeatedly, in the management of cases with rigid cervix, put to the test both the practice of delivering early, and that of delaying as long as possible with safety to the mother and child, and I must say that the more of such cases I see, the more the conviction is forced upon me, that it is safer by far to operate somewhat late than too early. Seeing that, at 10.30 A.M. on the 21st, the child's heart was heard to be beating quite distinctly, and the pulse not over 80, it seems to me that no undue delay was made in putting off the operation for two or three hours, in the hope that the pains might return. But such question does not admit of a definite solution applicable to all cases of the kind in the general, as each patient's surroundings and conditions form a law of themselves applicable only to the particular case in hand.

But I must conclude by formulating the chief practical points I have endeavoured to maintain in this paper, and these are as follow:—

1. In occipito-posterior positions, if these are persistent, we may safely assume that we have some pelvic peculiarity or disproportionately large head to deal with, and, as a general rule, all attempts at artificial rectification of the position of the head will prove abortive, and are even dangerous if attempted to be effected by means of levers, forceps, etc.

2. The only exception is when temporary delay is occasioned from accidental displacement of a small head; in which case one has the alternative of waiting till the normal powers of parturition effect delivery, or of facilitating that event by timely rectification of the head by the hand.

3. In cases which threaten to end as "face to pubes," and are at the same time decidedly difficult, it is best to pull the head through cautiously, and to abstain from every attempt at rectification of the head—special care being taken to guard the perinæum, as the occiput, when passing over it, greatly distends it.

4. In cases of obstructed occipito-posterior positions in which the rotation takes place at the outlet of the bony pelvis, while the head is in the grasp of the curved forceps, there is very great danger, in the case of primiparæ, of the forceps lacerating the soft parts, on account of the oblique position into which they are thrown.

5. To prevent this accident, either, 1st, the blades ought to be cautiously removed, the head fixed in position, and the uterus allowed to finish the expulsion of the head; or, 2d, the curved instruments may be reapplied adjusted to the altered relation of parts; or, 3d, a straight short pair may be applied, and the further advance of the head thereby secured.

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