THE USE OF FORCEPS AND CAESAREAN SECTION IN LABOUR.*

BY

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I HAVE chosen for my subject "the use of forceps and Caesarean section in labour" for several reasons, the chief of which is that under its cover I may provoke discussion of certain mechanical problems that arise in connexion with cases of labour that may occur any day in any practice. Rather than detail a series of individual cases, I think it would be more profitable if I attempted to review labour as a whole, and tried to establish principles which might guide us in making a wise selection of the use of forceps or Caesarean section, when either is necessary.

The great majority of cases require no special mechanical treatment at all, and in them we merely try to control the pain and safeguard the patient against any possible avoidable accident. May I digress from the main theme here for just a moment, because the importance of the psychic side of labour is so often completely ignored, and we, as a profession, do not regard it seriously enough. To a great many patients the experience of labour is associated with ghastly pain, and the effect it produces upon their psychology is often very marked. It is very important in the present discussion that we should realize that though prolonged labour may be physiological, it is extremely painful, and we must bear that point well in mind if we are to make a wise choice in cases in which surgical intervention would be called for. Just as there is a breaking strain which varies with the individual metal, so there is a breaking strain in every human mentality, and it, too, varies with the individual. Many of us were familiar with cases of shell shock in the war; cases of birth shock are just as real, but they often pass unrecognized. It is with the consideration of cases in which labour is obstructed that we are now particularly concerned.

Before we can have an intelligent understanding of the methods with which we can tackle these problems, we must realize two important points: first, the positions in the pelvic canal in which labour is likely to be obstructed, and secondly, the mechanical factors which will bring about these obstructions. Most of us will remember the time when it was an established principle that in her first labour a woman should be allowed to go through what was called "a trial trip." That is to say, intervention was regarded with such suspicion, and its results were often so unfortunate, that it was considered wiser to let the woman try herself, rather than take a hand in the game by intervening, unless there was some very marked indication for intervention. Modern methods have completely altered this outlook, and we are all well aware that it is just as essential for any woman who goes through the prolonged strain, mental and physical, of pregnancy and labour to have a living child on the first occasion as on any subsequent occasion. We are therefore constantly trying to devise scientific means whereby it may be possible to anticipate for any individual whether there will be any cause for delay in the birth of her child, and, if so, the extent and importance of that cause. Now as labour is from start to finish a mechanical process, this problem is fortunately in the majority of cases quite simple; but it can be the most difficult problem with which we are faced, because the mechanical factors at work vary so much in the individual, and there is no means yet known of estimating them very accurately.

As you know, it is now the custom to insist on seeing every woman at intervals during her pregnancy, and certainly at the thirty-sixth week. It was an accepted maxim that the external measurements of the pelvis should be taken, and an attempt be then made to estimate the true conjugate of the pelvis. Now, personally, I have found that the external measurements of the pelvis afford no indication of the size of the true pelvis. Moreover, as

the child can vary from four pounds to fourteen, it is not so much a question of estimating the actual size of the pelvis, as of the relative size of the child to the pelvis in each individual case. I have seen a woman with a 3½-inch pelvis have a baby quite easily, and I have seen many a woman with what is regarded as a normal pelvis have very definite obstruction during labour. Let us therefore bear in mind that the child may be obstructed anywhere along the pelvic canal, but the most common and important point of obstruction is at the entrance to the pelvis, at the brim, and if we can be quite sure that the child's head will pass the brim, the rest of the treatment as a general rule will be relatively simple. In the majority of primiparae the head will be engaged in the brim, or through it, when labour begins.

Now let us consider those cases in which real difficulty may be experienced and fine judgement be called for. If, at the thirty-sixth week, the head is engaged in the brim, lying low in the pelvis, and there is no obvious deformity at the outlet, all we need do is to see the patient every week or ten days, and make sure that the head remains in position. But supposing the head is not through the brim, what are we to do? These cases will present themselves in three groups. In the first group overlapping is small, and we feel confident that the child is not likely to increase in size so greatly that the degree of overlapping will ever be anything but small. We hope, therefore, that the patient will have strong pains, and that the degree of moulding of the child's head will be sufficient to allow it to pass when labour ensues. We are seeing this patient at the thirty-sixth week, and it is well known that in a number of people the head will "drop" into the pelvis at a later date than this; we must always remember, however, that there is no definite time when in any particular individual we should assume that the child will drop. If there is apparently a slight degree of overlapping, we must also remember to be perfectly sure that the presentation is a normal one and not an occipito-posterior, in which the head is often partially extended and so appears to be larger. A final test of the degree of overlapping in which there is any reasonable doubt can only be made satisfactorily under an anaesthetic. On more than one occasion when I have been uncertain whether the head would pass or not, I have readily settled the problem by anaesthetizing the patient and finding that when her muscles were relaxed, and the angle of the pelvis altered, the head could readily be pushed into the pelvis.

In the second group the overlapping at the thirty-sixth week is so great that it would be relying too much upon chance to hope that, whatever the force of the uterus, or whatever the degree of moulding, the head could be forced down through the pelvic bones. The degree of prominence of the sacral promontory is a very important fact here, because, the head being above the brim, if the sacral promontory protrudes at all far forward, any thrust from above tends to make the child's head override the symphysis pubis, and, of course, prevents its entrance into the pelvis without a very considerable degree of moulding. In cases of this kind what are our alternatives? We can attempt to induce labour; or, after a long second stage, we can, if necessary, apply forceps; or we can perform Caesarean section at term. I have lived through the time when Caesarean section was regarded with such great disfavour and held to be such a dangerous operation that all these cases were treated by forceps. The results of applying forceps were often so disastrous that one naturally turned to a method which had some science in it, rather than to one which depended upon the application of brute force. As we have improved surgical technique the risk of Caesarean section has practically disappeared, and I cannot imagine anyone with a mechanically trained mind who would prefer to extract a child by sheer brute force rather than by a method which is just as safe and is guided by the modern principles of aseptic surgery.

Cases in the third group present the most difficult task of all; in these all seems well by every known test, and yet the child does not advance. We have because of our reluctance to intervene unless necessary, left them to Nature, but Nature has failed us. They prove that obstetrics provides no exception to the general gamble

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of life—we have taken every conceivable care, but the game has gone against us. Indeed, there is no means at present of knowing for certain whether any given case will or will not present such difficulty. Do not let us delude ourselves: cases in the third group are fortunately not common, but they do occur, and we must be prepared to meet them.

To return to the more general statement. The methods by which we can meet cases of mechanical obstruction are three. The first is the induction of labour. The methods at our disposal here are, of course, medical and surgical. Personally, I have practically abandoned both kinds in my practice, except in very exceptional cases, for three reasons. First, they are so very uncertain. The medical means, in which quinine and castor oil figure largely, have often failed, and particularly in those cases in which an early induction would be most desirable, and not only failed, but, if we realize the psychic effect of that failure, have left the patient in much worse state than when we started. I wonder if we always realize what must be the effect upon a sensitive patient who, having been assured that some drugs she will swallow in the morning will bring on her labour, finds that the only result of taking quinine, etc., is that she has terrific noises in her head and that she feels ill and wretched. This experience considerably shakes her confidence in her medical man, especially if, after she has been left alone for two or three days, the treatment is repeated, perhaps again with failure. With regard to surgical methods, such as the careful introduction into the uterus of bougies, stomach tubes, etc., my experience at Guy's Hospital has shown that they also are very uncertain, and on occasion ten to fourteen days have elapsed before the patient has been given the cheerful intimation that at long last labour has started. To my mind this is a very poor preparation for anyone who has to undergo the ordeal of a first confinement.

The second reason against the method of induction is the difficulty of establishing the time when it should take place. We have no accurate means, as I have already pointed out, of knowing when labour should be induced, and it must frequently be done when it is in fact quite unnecessary. Recently a case was brought to my notice which showed this difficulty in a marked way.

An experienced medical man had under his care a primipara in whom there was some question as to the exact duration of the pregnancy, because although the date of the last exactly normal menstrual period was definite, there had been some haemorrhage for three days at the time when the next menstrual period would normally have occurred, and this was regarded by the patient herself as a normal period, though the loss was considerably less and the duration three days instead of five. The head did not appear to go down into the pelvis, and so, at what he took to be the thirty-sixth week, under an anaesthetic, he introduced two bougies into the uterus. She passed these bougies out forty-eight hours later, when she had some slight pains, but nothing further eventuated. She was a very nervous woman, and her relatives, who were even more so, refused to allow anything further to be done. Seven weeks later she had, unaided, a lusty baby in six hours, though according to the general rule by which we estimate the duration of pregnancy, she was now three weeks past full term.

My third objection is that, in my experience, the risk of induction is just as great as with the other methods at our disposal. I do not forget that I have been called in on three occasions to see patients into whom bougies had been previously introduced, and who had subsequently died of sepsis, although every conceivable care had been taken. So, taking it all together, I regard it as an inferior method. I might mention in this connexion that at Guy's Hospital we have recently been making use of animal bladders filled with glycerin. This is more certain than the older methods of induction, and those who are interested in it may refer to a very capable paper by Mr. G. F. Gibberd, which appeared recently in the *British Medical Journal* (October 5th, 1929, p. 617).

The second method is the use of forceps, which, speaking generally, were short instruments originally designed to extract the child if there was any delay after it had reached the floor of the pelvis. Then their use was extended to the mid-cavity, the shaft of the forceps having been lengthened for that purpose, and so far they are, and have been, exceedingly useful instruments; but the subsequent development—axis-traction forceps, which at first

sight appear to be ingenious instruments—is really mechanically unsound when we are attempting by their use to deal with those cases in which the head is above the brim and cannot be made to enter it by the ordinary force of the uterus, because we are so often then attempting a mechanical impossibility. In cases of this kind the head of the child is often not through the os, which is not fully dilated, and whose lips have often become oedematous, because there has been nothing to complete its dilatation, the membranes having ruptured early. The uterus not having been able to push the child through the brim or to mould its head sufficiently so that it can pass the os, application of axis-traction forceps must result in something giving way to allow the head to pass; and this, in a large number of cases, certainly does happen. Very bad lacerations of the os and genital tract occur with all their sequels, or the intracranial membranes of the child are torn and it is born dead; but as it has been delivered through the vagina we are tempted to be satisfied, because a so-called natural delivery has taken place, though in reality a very primitive and unscientific method has been made use of. In my earlier days we were frequently instructed to make use of this method, and I do not know anything that is more likely to do irreparable harm to a woman without necessarily actually killing her. Now that Bossi's dilator is obsolete I consider axis-traction forceps used in these circumstances to be the most dangerous instruments we make use of, but as the damage is hidden for the moment apparently it passes unnoticed, until the patient appears at a later date as a chronic invalid, with her cervix badly lacerated, with a constant chronic discharge, the pelvic cellular tissues infected, and the uterus anchored in some odd position to the side of the pelvic wall, with the result that there is chronic pelvic pain. The application of these axis-traction forceps is often a very difficult matter, because it is necessary to make use of them in a primipara, in whom the vagina is not dilated, the os not completely dilated, the head is not engaged or fixed in the brim, and so is not completely flexed. Any slight misapplication of the forceps, therefore, when traction is made, is liable further to extend the head, and so increase the engaging diameter and the difficulty. To speak broadly, then, as a guiding principle, forceps should not be used if it is possible to avoid it, unless the head is through the os, the os being fully dilated, and the head at least partly down in the pelvis.

The third method is Caesarean section, which is an operation based on modern scientific surgical principles. Its mortality, in my own experience, is not greater than delivery by forceps, nor, for that matter, than any other abdominal operation. The risk to the child is rendered negligible; except in cases in which disease has been present I have not yet lost a child delivered by Caesarean section; and in considering the question of statistics on this point, which appear to delight the hearts of so many of us, let me say that they are of no value at all in the consideration of an individual case. We are not considering the risk of Caesarean section in normal labour, but Caesarean section as an alternative to other methods of delivery when obstruction has occurred, or will inevitably do so. The only drawbacks to its performance of which I am aware are: (1) the question of sepsis; (2) the question of the scar in the uterus; (3) the psychic effect on the woman and her relatives of the need for an abdominal operation, which is classically described as "having the child cut away," and the idea, therefore, that she must be in some way abnormal.

With regard to the first point, it has not been my experience that the risk of sepsis is any greater than by any other means of delivery. In my experience it has been less. It used to be supposed that the risk of sepsis in Caesarean section was very greatly increased according to the number of hours a woman had been in labour, and so firmly was this view held when I was a student that very few people would have dared to do the operation late in labour for that reason, particularly if the patient had been examined vaginally by a medical attendant or midwife. Now our views on puerperal sepsis are undergoing a very radical change, and extended experience of the operation of

Caesarean section shows that this risk is very greatly exaggerated. By that I do not mean that one would choose to wait long in labour before a Caesarean section is performed, but, as we shall show later, it may be necessary to do so; if, however, reasonable care had been exercised in any vaginal examination that may have been made, I personally would not hesitate on that ground to perform a Caesarean section. I should not prefer to do so, but I should not hesitate to do so, because it is the best alternative then at our disposal. In these circumstances I think it would probably be wisest to paint out the vagina and then to evert the uterus, packing it off completely from the peritoneal cavity, and when the child had been removed, to paint out the uterine cavity itself with a suitable antiseptic.

With regard to the question of a scar in the uterus, much has been made of its risk in a subsequent pregnancy. Personally I have not been troubled by it, and I attribute this to the fact that I take the greatest possible care in my method of suturing the uterus. Normally the cavity of the pregnant uterus is sterile. This I have proved, because in 75 cases I have taken smears at the time of operation, and these have been invariably returned as sterile. Therefore one is perfectly safe in putting one's sutures right through the mucous membrane into the cavity, and thus getting a very exact apposition of the walls.

I have one patient at Guy's Hospital on whom the operation has been performed five times, and on the fifth occasion I asked the dresser to show me where the scars were. None were visible; the only result of the five operations was that the anterior wall of the uterus was considerably thickened and more powerful than the posterior. I fancy there are very few women who would want more than five babies born by Caesarean section.

With regard to the psychic effect on the woman and her relatives, this used to be tremendously marked in the days when Caesarean section was performed as a last resort, and so rarely that every student and every nurse that could possibly manage to do so used to come to watch it. It also affords material for those amazing females who apparently delight to gather round a pregnant woman and tell her of all the horrors, real and imaginary, that can be associated with labour. Now, fortunately, this stage is completely past, and I have on many occasions, both in hospital and in private, been asked by women to deliver them by Caesarean section.

What, then, is going to be to-day our routine practice? Normally we should examine all women at the thirty-sixth week, and in the vast majority will find that the head passes the brim, and nothing more will be necessary, in all probability, than to avoid those accidents which may always occur during labour, however normal it may appear to be. However, one should be on the watch, because the head may pass the brim, but may become stuck in the mid-cavity, owing to those very important ischial spines. Should delay occur there, always be on the look out for a persistent occipito-posterior presentation, because these play a large part in determining backward rotation. Delay also may occur at the outlet. In the two latter cases, having corrected the position if necessary, the application of forceps, after sufficient time has been allowed for moulding to take place, will usually finish off the labour very satisfactorily.

In those cases in which the head is overlapping at the brim, and in which we feel certain that the power of the uterus and the moulding of the child's head will allow it to pass, do nothing, but expect the labour to last longer than usual; and here a study of the psychic side of the patient will be of very great importance, because a human being cannot be expected to go on indefinitely in pain, and it is in these that the use of morphine and scopolamine is of such great value. If it is found that after the lapse of a reasonable time the head does not come down into the pelvis, Caesarean section may still quite safely be performed. If, however, the child does come down sufficiently for the head to be through the os and through the brim, and becomes at all engaged in the pelvis, the extraction of the child by forceps should be carried out.

On the other hand, if we feel certain after all examinations have been made, supplemented, if necessary, by x-ray

photographs, that the head is definitely too large, I should not consider the induction of labour at an early date, for the reasons I have already given, but would let the woman go on into labour and see what happens. If the child makes no advance I should perform Caesarean section. If I felt confident at the start of labour that the overlapping was so great that one could not intelligently anticipate that the obstruction could possibly be overcome, Caesarean section would be indicated.

AN IMPORTANT SIGN IN ACUTE APPENDICITIS.*

BY

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Most cases of acute appendicitis present no difficulty in diagnosis. The sudden abdominal pain, first, possibly, in the upper part of the abdomen, then localizing in the right iliac region, the nausea or vomiting, the hyperaesthesia and/or tenderness on gentle palpation of the right iliac fossa, the rigid abdominal wall, either limited to the right iliac region or general—all these signs and symptoms present a picture which the veriest tyro can recognize. The possible presence of right-sided localized tenderness or swelling on rectal examination, pain felt in the right iliac region when sudden pressure is made over the left iliac region, pain evoked on suddenly bringing into action the muscles upon which an inflamed appendix lies, an increased rectal temperature, are still further corroborative signs, one or more of which may be present.

In a large number of cases, however, a patient complains of slight abdominal pain in the right iliac region, but there are none of the above-noted signs or symptoms. There is a clean tongue, normal temperature, normal pulse, no pain or tenderness on movement, no nausea, no vomiting, no rigidity, and no abnormality discovered rectally; in fact, there is simply a "stomach ache." In the course of the last few years I have had at least a dozen such cases where I was yet able correctly to diagnose acute appendicitis, in each case an immediate operation demonstrating the appendix to be either inflamed or full of pus, or ulcerated.

Such apparently mild cases with no distinguishing signs or symptoms place one on the horns of a dilemma: if one diagnoses acute appendicitis and removes an appendix which proves to be normal, one is rightly blamed for performing a needless operation; if, on the other hand, one decides against appendix trouble, and a few hours or days show definitely that appendicitis is present, with possibly disaster resulting from delay in operation, then one is impaled on the other horn. Auto-suggestion may give rise to many of the symptoms of appendicitis, especially in young susceptible people, and these constitute the larger bulk of difficult cases; children form another large class; but there are also a large number of cases of acute appendicitis with practically no signs or symptoms.

For some years I have noticed that in all cases of acute appendicitis one sign, not mentioned in the textbooks, is invariably present at the onset. It is the state of the abdominal wall covering the right iliac fossa, and is produced by the earliest reflex of the inflamed appendix. This reflex may, indeed, produce the classical "rigidity" in severe cases where the onset of the appendix inflammation is very sudden and acute, particularly in those cases where the appendix contents are under pressure from a blockage of its lumen or are of great virulence; but in just such cases there is no difficulty in diagnosis. The earliest reflex may, however, result in nothing more than an increase of the normal tone of the muscle covering the right iliac fossa, and is definitely appreciable to careful palpation. This slight tightening of the muscle has to be carefully searched for, and all voluntary contraction of the abdominal muscles must be obviated. The patient lies on his back, limp, his arms by his sides, breathing freely with his mouth wide open, his tongue protruded, and his glottis open (making no noise on respiration). The warmed hand of

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