On this basis of classification the gross mortality rate for uncomplicated cases is about 30 per cent. for primiparae and about 20 per cent. for multiparae, and after making all possible allowances foetal death rates of 28 per cent. and 15 per cent. respectively can be taken as the minimum estimate of the dangers associated with the breech labour itself.

Of non-fatal accidents to the foetus, injuries to the limbs occur in about 5 per cent. of cases. Early diagnosis of the injury is all-important, since early treatment is usually rewarded by excellent recovery.

The late results of non-fatal intra-cranial injuries are at present uncertain, and sufficient reliable observations are not yet to hand to justify us in forming definite views.

ANTE-NATAL TREATMENT OF BREECH PRESENTATIONS *

BY

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Breech presentations are found very frequently in the ante-natal period up to the 34th week. After this time they are much less common, as spontaneous version to a vertex presentation occurs in a large proportion of cases at about the 34th to the 35th week of gestation. In 100,000 cases of labour Pinard observed 3,301 breech presentations—about 3.30 per cent. These statistics include premature as well as full-time labours. If full-time labours are considered only we find 1 in 62 cases. The foetal mortality in breech cases is nearly 10 per cent.; the figures given at Queen Charlotte's Hospital being 11 per cent. in primigravidae and 8 per cent. in multigravidae.

There are two main reasons for preventing breech labour as often as possible, and these are (1) the higher foetal mortality in breech labour; (2) the disadvantages to the mother: (a) the greater risk of exhaustion following a long labour, and (b) the greater liability for lacerations and damage to the pelvic floor, and therefore a greater risk of sepsis.

In every case of labour it is important to secure for the patient as easy a labour as can reasonably be achieved for her. The length of time required for convalescence after a long and trying confinement is much greater than is necessary after a relatively normal labour. This is particularly true of the return to normal as regards the patient's nervous system. It is also quite unjustifiable to run any risk of having a still-born child. For these reasons it is now the common practice to do external version in the ante-natal period for all primigravidae, except under exceptional circumstances. It is my custom to do version also for multigravidae, partly to diminish the foetal risk, and because I have learnt from patients who have experienced labour, both with a vertex and a breech presentation, that in the majority of cases the suffering in a breech is far greater than in a vertex. There is also another reason for performing version in the ante-natal period, and this is of importance. In any case the most reliable guide for ascertaining the relative size of the head and pelvis is by pushing the child's head into the pelvis. For this test it is essential that the presentation should be a vertex.

As spontaneous version so often occurs, it is unnecessary to interfere in any way until after the 34th week. The ideal time for doing version in a primigravida is about the 35th week. At this time, as a rule, the presenting part has not descended into the pelvis. It is often possible to do version easily without anaesthesia, and this is a great advantage, as it prevents the obstetrician from using undue

force. If the patient is very nervous or the abdominal muscles are very strong an anaesthetic may be necessary. A thorough dusting of the abdomen with talc powder is helpful, and the manœuvres should be done gently and with firmness. In some cases in which the presenting part has already engaged it is very helpful to raise the foot of the couch on two chairs for a few minutes before starting version. In other cases the presenting part can be pushed out of the pelvis *per vaginam* before starting. Where an anaesthetic is needed it is wise to delay version until the 37th week, in case manipulations should start labour.

I have never seen any serious complications follow version. In one case only there was a slight ante-partum haemorrhage. This cleared up quickly and the patient went to term and had a normal delivery. It was a case of breech with extended legs in a primigravida. An anaesthetic was given and a good deal of force was used to turn the child. Cases of fairly severe ante-partum haemorrhage after version under anaesthesia have been reported.

METHOD OF PERFORMING VERSION

The first essential is that, before an attempt to turn the child is made, the presenting part shall be fully pushed out of the pelvis; most failures to turn are due to the neglect of this preliminary movement. The head of the child is then seized with one hand and the breech with the other hand. The head is next pulled down towards the pelvis and the breech pushed up away from the pelvis. The direction of choice is to pull the head down towards the pelvis away from the back of the child. By this means the flexion of the child will not be disturbed. If version fails in this direction, the other direction may be tried and often succeeds without harm.

Immediately after version the head will often sink low into the pelvis; but if this does not occur an abdominal binder is applied and the patient is examined again in a week's time. The use of a binder is particularly to be recommended after version in a multigravida, where the abdominal wall is often weak, and the mal-presentation therefore liable to recur.

In a multigravida version is usually done at a later date than in a primigravida, but there is no harm in doing it at the same period of gestation. Some women complain of discomfort from the hard head in the fundus, and by doing version the patient is made much more comfortable. It is not uncommon for women to bear increasingly large children. This seems to be specially true of women whose first child was small. For this reason it is unsafe to assume that because a woman has had one child normally that all subsequent pregnancies will be normal, as is frequently done. In my opinion this is an additional reason for turning a breech presentation in a multigravida, so as to be in the position of being able to test the relative size of the head and the pelvis.

Where version has failed it is usual to wait for a few days, when the patient is seen again. In a number of cases of this kind it will be found that spontaneous version has occurred in the interval. The attempted version seems to start spontaneous version, particularly if the presenting part has been pushed out of the pelvis.

After failure to do version in a primigravida it is very instructive to have an x-ray photograph taken so as to see exactly the position of the child. It is very easy to miss a breech with extended legs by abdominal palpation alone. In order to avoid this mistake the following points are of use:

The presenting part is relatively small and more conical than one would expect.

The head in the fundus is often difficult to distinguish and its mobility is impaired, but small parts can usually be felt near it.

* Read in opening a discussion in the Section of Obstetrics and Gynaecology at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

The whole uterus is narrower from side to side than usual.

On vaginal examination the presenting part is small and soft.

It is not uncommon to mistake a deeply engaged breech with extended legs for a vertex, and if any doubt is felt it is best to have an *x*-ray done.

In an occasional case of breech with extended legs spontaneous version occurs. This happened in a case at Queen Charlotte's recently, in which the *x* rays showed a breech with extended legs. The patient was delivered of a vertex normally. It is a very rare occurrence.

Occasionally an unsuspected twin pregnancy is found by *x*-ray examination in cases where version has failed. In cases of breech presentation where hydramnios is present it is very unusual to be able to maintain a vertex presentation. In mild cases version is easy, but the presentation is apt to recur.

VERSION IN BREECH WITH EXTENDED LEGS.

It is revealed by *x*-ray examination whether the legs are fully extended—that is, whether the child's feet are lying close to the head or not. If the legs are extended but not close to the head, and therefore where there is often fairly good flexion of the child's body, it is possible to turn the child with anaesthesia without risk.

If the legs are extended fully and there is also extension of the child's body it is wiser not to do version, as where this is performed with force under anaesthesia damage may be done, and also there is a risk of bringing a hand or arm down by the side of the head, which will cause difficulty in labour. In such cases it is best not to attempt version.

THE MANAGEMENT OF BREECH LABOUR*

BY

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The risks of breech delivery to the child and, to a lesser extent, to the mother, are great enough to call for considerable skill in its management, and, in view of certain new observations which have recently been made, it may be of interest to devote a little time to its consideration. Expressed in figures, the results at Queen Charlotte's Hospital show a foetal mortality of 11 per cent. for primiparae and 8 per cent. for multipara. These percentages may be a little higher than those of some private practices, because a large number of breech deliveries at the hospital are sent there as emergencies in obstructed labour due to extended legs.

Before describing any details of management let us first consider the particular dangers to which the child is exposed. An appreciation of the nature of the risks will assist in understanding the reasons for the rules of management.

CAUSES OF FOETAL DEATH

The causes of foetal death as shown by post-mortem examinations are intracranial injuries, injuries of the abdominal viscera, and asphyxia. Up to recent years it was thought that the predominant danger was asphyxia, but an investigation by the President, Mr. Eardley Holland, and his fellow workers, has shown that the majority (14 out of 16 cases examined) of stillbirths are due to tears of the intracranial septa leading to intracranial haemorrhage. It is not necessary to go into the exact nature of these injuries to-day, but the mere fact of their occurrence shows that sudden severe compression

of the head is the most formidable risk which the foetus has to face. Herbert Spencer showed in 1891 that abdominal injuries of suprarenal capsules, kidneys, liver, spleen, and other organs, as well as intracranial lesions, all involving haemorrhage, were to be found in nearly all still-born children, and that a high proportion of abdominal injuries occurred in breech-delivered babies. He showed that intracranial haemorrhage occurred oftener in still-born breech babies than in spontaneously delivered vertex cases. Spencer considered that these injuries were caused by too great pressure on the baby's body, as often follows premature rupture of the membranes, too rapid delivery, and also improper handling of the child's trunk as it is in the act of being delivered. Some of these risks are unnecessarily incurred in an attempt to deliver quickly to save the child from asphyxia, the result of age-long teaching that this is the greatest danger. On the other hand, too great deliberation in extracting the head will certainly cause asphyxia. In the management of breech labour we are therefore sailing between two rocks, and it is incumbent upon us to steer so carefully as to avoid collision with either.

Considering the lesser danger first—*asphyxia*—we have little control over the death of the child during the first stage of labour by prolonged pressure after a rupture of the membranes. Whether it is due to true asphyxia, caused by pressure of the uterus on the cord and placenta against the child's body, or by depression of the medullary centres, we are often powerless to expedite the dilatation of the os without risk of serious injury to the mother. The child is more likely to suffer from the almost constant pressure of an irritable uterus than from the effects of strong but separate rhythmic contractions with good relaxation between the pains. If, therefore, the uterus does not relax sufficiently, and the foetal heart is quickening or failing during the first stage, it is well to give the mother morphine and hyoscine hypodermically, and chloral by the mouth. A slow dilatation, especially after half completed, can often be expedited by pulling one foot down into the vagina. When the os is fully, or nearly fully, dilated, it is well to examine vaginally to find out whether the feet are within reach through the os, or out of reach—that is, displaced upwards by extended legs. I advise that this should be done in order that if the legs are extended they should be brought down at the beginning of the second stage of labour, except the child be so small that no obstruction need be anticipated. Much discussion has taken place on the question of whether extended legs should be brought down unless, or until, actual delay due to obstruction has occurred. My own views on this point are quite definite, and are founded on painful experience gained during the early days while a resident medical officer. I believe that it is wise to bring down at least one leg, and often two, depending on the size of the baby, in all cases as early as the os will conveniently and safely admit the hand.

DIFFICULTY DUE TO EXTENDED LEGS

Before we go further, I would like to spend a moment in explaining how I think extended legs cause difficulty in labour. The text-books state that the delay is due to the inability of the child's spine to flex laterally and follow the curve of Carus of the birth canal, by reason of the splinting of the legs as they lie alongside the child's abdomen and chest. I could imagine that the spine might be splinted if the two rigid bars were bound to the spine after the manner of actual splints, but it is absurd to suppose that the spine can be prevented from making a relatively small curvature laterally by two non-rigid limbs which are not in any place bound to the dorso-lumbar spine. Mere apposition of the legs to the child's abdomen

* Read in opening a discussion in the Section of Obstetrics and Gynaecology at the Annual Meeting of the British Medical Association, Eastbourne, 1931.