averaged twenty-one months of complete disability before operation. The first case was operated on in October, 1920. The cases operated on since this report continue these extremely gratifying results. Dr. Hamilton, the cardiologist of our clinic, has repeatedly stated, also, that he believes there must be an occasional thyro-cardiac in every medical community suffering from cardiac decompensation, hopelessly disabled so far as medical treatment is concerned, but potentially curable by surgical treatment, once the underlying thyroidism is discovered.

THE USE AND ABUSE OF THE OBSTETRICAL FORCEPS*

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SPEAKING in a general way, one may say that obstetrical forceps have rendered greater assistance to womenkind during labour than any other mechanical apparatus. At the same time, this instrument has done more harm to womenkind than any other mechanical device used in obstetrical and gynæcological work, with the possible exception of the curette. When the curette is in use, there is usually only one life at stake, while with the use of the obstetrical forceps there are two lives usually to be considered.

Parturition is a perfectly natural event when the conditions accompanying it are natural. In normal cases, the attendance of midwives or obstetricians might be regarded in the light of luxuries. There are times, however, when the event no longer remains within physiological limitations. It is this class of case which, no doubt, prompted the physicians of ages past to mould an instrument for rendering assistance. The development of this instrument is interesting. I do not propose to go into the details of its evolution here, but would like to remind you of a few of its outstanding features.

The death of Rachel "in hard labour," as spoken of in the Book of Genesis, antedates the writings of Hippocrates by many centuries. The Book of Exodus makes mention of the fact that the Hebrew women were more easily delivered at childbirth than were the Egyptian women. Hippocrates tells us of the use of the crotchet, an instrument used for extracting a dead or dying child and evidently often piecemeal. It was not meant for the delivery of a living child. The Arabians, in the tenth and eleventh centuries, made use of an instrument for delivering a dead or dying child. They were destructive instruments with long teeth. The whalebone fillet was extensively used by the Japanese. The vectis was extensively used in Holland in the seventeenth century. This brings us up to the time of the use of the obstetrical forceps proper by the Chamberlain family. The forceps devised by Peter Chamberlain and models of its later improvements were found in 1813 in a secret closet in the old Chamberlain home. The characteristic features of the Chamberlain instrument were—its fenestrated blades, the cephalic curve, and a gliding lock. Smellie, in England, in 1779, improved the Chamberlain instrument by adding a pelvic curve, wooden handles, and a better lock. Levret, in Paris, modified the Chamberlain forceps in a somewhat similar way. In 1783 Stein attached a dynamometer to the forceps in order that the exact amount of pressure could be determined. Tarnier, in Paris, added the axis traction rods. The development of the obstetrical forceps is briefly as follows: Smellie's modification, 1729; Levret's modification, 1729; Tarnier's modification, 1875.

This brief history of the development of the obstetrical forceps will serve our purpose. We must now pass on and say something concerning its use. As stated before, forceps have doubtless, a very definite field of usefulness. I would like to emphasize this particular part of

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the paper because we all know that, with injudicious use, the obstetrical forceps become most dangerous instruments. Now let us confront ourselves with the question: When should forceps be used? Before answering this question, I wish to state that we will speak of their use here only in vertex cases, and that we will speak of them as high, mid, and low forceps. The application of "high" forceps signifies their use before the bi-parietal diameter of the skull has become engaged in the brim of the pelvis; of "mid" forceps means their use with the bi-parietal diameter of the fœtal skull engaged in the brim of the pelvis; of "low" forceps, their application after this same diameter has passed the brim of the pelvis and the vertex or some other part of the fœtal skull is now on the pelvic floor or perineum.

When should we use high forceps? This is a most vital question, and one that requires our best attention. We cannot look upon this lightly. I will give you evidence to this effect later in my paper. I do not question for one minute but that each one of you here can quote personal experiences which will corroborate my conclusions regarding the use of high forceps. Now let us discuss the real indications for the use of high forceps. We may at first name several apparent ones, yet on second thought we have certain alternative procedures which answer the purpose more satisfactorily. Briefly, I would say that the indications for the use of high forceps are, certain grave dangers to either the mother or child, e.g., serious cardiac complications of the labouring mother, or a failing fœtal heart, as in a case of prolapsed cord. If such a grave situation presents itself, we must bear in mind the primary requisites permitting the application of high forceps, namely, (1) A bony pelvis which is within normal limits; (2) a fœtal head which is not too large to pass, and is in proper position for extraction; (3) prolonged labour, i.e., prolonged second stage; (4) there should be no tumours, either bony or soft, obstructing the passage; (5) the cervix must be sufficiently dilated; (6) a living child is not an essential.

A considerable number of forceps cases come under the heading of prolonged labour. We must be careful with this particular question. If the second stage is unduly prolonged, there is usually a very definite reason. One of the most frequent I believe to be incomplete flexion of the head. If this is the case and the flexion cannot be corrected, we simply must be prepared to give the patient extra time. These are good cases for some forms of the so-called "twilight sleep." The patient deserves our sympathy and encouragement, but certainly not the premature application of forceps. She says "she is tired out"; and no doubt she is mentally very tired. The true criteria of fatigue in the mother are elevations of temperature and pulse rate; and in the baby, heart rate over 170 or below 100. In such cases the mother's temperature and pulse should be taken hourly, and the fœtal heart rate taken at least every two hours.

The delivery of this type of case usually completes itself normally if plenty of time is allowed. If, however, the head does not engage and delivery must be carried out by the obstetrician, I would seriously consider internal version in preference to high forceps, if the circumstances of the case would permit of such.

The indications for use of mid forceps are much the same as those just given for the use of high forceps. The dangers of the one are almost as great as those of the other. I therefore strongly advise against their use, except in cases where there is imminent danger either to the mother or baby.

The indications for the use of low forceps are more readily thought of and accepted. They are as follows: (1) Vertex delayed unduly on the perineum; especially in elderly primipara; (2) uterine inertia—and here pituitrin often gives good results.

Now let us consider what some of the dangers are attending the use of forceps. To begin with, we must remember that even the application of low forceps is not free from certain dangers, both to mother and child, yet the dangers I wish to speak of here are mostly met with in cases where either high or mid forceps have to be used.

1.—Dangers to the mother: (a) lacerations of cervix—may be due to unskilful application to the outside of cervical lips; (b) extensive vaginal and perineal tears; (c) fractured coccyx; (d) separation of symphysis pubis; (e) damage to sacroiliac joint; (f) sepsis.

2.—Dangers to the child—and "herein lies a long tale of woes." Injuries to the child may

be considered under the following two headings:

A.—Injuries to soft structures:

1.—Cerebral trauma—directly or indirectly: (a) cerebral œdema; (b) cerebral hæmorrhage; (c) trauma to brain substances from fractures or indentations of skull bones.

2.—Facial injuries—One of the common injuries being facial paralysis, which usually is but temporary.

B.—Damage to bones:

(a) Indentations; (b) fractures.

This very vital question of the causation of fœtal death has been recently receiving considerable attention in practically every civilized country in the world. Dr. Eardley Holland, of London, England, has reported his findings in 300 *post mortem* examinations of fœtuses that were viable but were born dead or died within a few days after birth. His work was evidently thoroughly carried out and his conclusions as to the causes of death were as follows:

Complications of labour	51	per cent.
Syphilis	16	" "
Toxæmias of pregnancy	10	" "
Chronic renal and other maternal diseases	2	" "
Diseases of placenta	6	" "
Fœtal deformities	5	" "
Cause of death unknown	11	" "

He concludes by saying that the complications of labour fall to the doctor. The value of pre-natal care of our obstetrical patients is well known and need not be further stressed. The most urgent reform now required is the improved training of the doctor and medical student. Fœtal mortality is not likely to fall appreciably until the standard of midwifery is raised. Holland's report is most interesting; it points out to us very clearly wherein we should be able to assist in lowering the fœtal mortality in this country. He calls particular attention to the fact that intracranial damage from the use or abuse of forceps plays a most important rôle in raising the mortality rate. Next to forceps delivery in danger to fœtus comes breech extractions.

The clinical manifestations of cerebral trauma are usually very evident in the majority of cases. There is usually certain muscular twitching, especially of the eyes, accompanied by a peculiar whining cry. Once the damage is done, one is nearly helpless concerning treatment. However, the essentials of treatment are—careful nursing, repeated spinal punctures, which sometimes help, and lastly, the removal of a localized hematoma, and the elevation of deep depressed fractures.

The meninges surrounding the brain and large venous channels really act in some respects as ligaments. They are able to withstand a certain degree of stretching, but beyond this they will certainly tear, and in tearing the enclosed blood vessels are often torn also. The tentorium cerebelli is the common site of such tearing. The degree of laceration and amount of hæmorrhage of course varies quite considerably.

It seems that even in the most skilled hands, we find a very high percentage of intracranial injuries when forceps are used. This particularly applies to the use of high and mid forceps. The use of low forceps is not accompanied with nearly so much danger, yet the use of low forceps is not free from danger by any means. In fact, we at times find at autopsy cerebral œdema or hæmorrhage in what was thought to be a normal confinement. There is very evident danger in all breech extractions. The meninges are very liable to tear with the delivery of the after coming head. How are we to assist in discouraging the use of the obstetrical forceps except in cases where we are certain that a very just reason for their use is confronting us? It seems to me that we can easily assist, if we approach each case methodically, and if we decide to use forceps only after all controllable factors of the case have been carefully considered, and there still remains at least one very good justification for resorting to forceps delivery.

Proper pre-natal care of the patient means that we know the size of the pelvis, and the relative size of the head to the pelvic brim. If the patient is a primipara we should know whether or not the head is engaging properly a few weeks before term. We should know whether or not the mother is a comparatively healthy individual. The only point remaining is that if during labour it is decided to use forceps, one must be able to apply the forceps properly, and learn to use the proper amount of traction.

Summary

1.—Forceps have a place in obstetrics, but it is up to the doctor to keep them in their proper place.

2.—With pre-natal care and sound obstetrical judgment and management during labour, the use of the obstetrical forceps will be appreciably diminished, and the fœtal mortality should proportionately decrease.

3.—If we, as doctors, fail to carry out our part of this very important work, we will find that the books of the future on obstetrics will contain more voluminous chapters on the abuse than on the use of the obstetrical forceps.

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URINARY RETENTION*

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FOR normal urination, the urethra must be patent and there must be relaxation of the sphincter accompanied by contraction of the bladder. Therefore retention may be due either to obstruction in the passages, or to interference with the normal detrusor action. In each case the exact cause of the retention should be discovered before treatment is commenced. The conditions giving rise to retention are best considered according to the age of the patient.

In childhood, urinary obstruction may be due to phimosis, atresia of the meatus, impacted calculus or foreign body, or congenital valve formation. The first two of these conditions need no comment. Impacted calculi, though they may occur at any age, are relatively more common in children. The stone most frequently lodges just within the meatus where it can be felt on palpation; when in doubt a probe or small sound may be passed into the urethra and the click felt. A simple meatotomy will frequently suffice to make its passage possible. The other common location for impacted stone is in the prostatic urethra. It may be dislodged and pushed back into the bladder by the passage of a bougie. The nature of foreign bodies passed into the urethra is extremely varied. The history is usually the important factor in discovering the nature of the obstructing object. One of the commonest articles is the ordinary large-headed pin; the head has been pushed into the urethra till the point has disappeared. The point should be driven through the under surface of the urethra and skin and then so turned that the head is pushed back to the meatus and manipulated out.

Congenital valve formation at the bladder neck is not a common occurrence but is one which should not be overlooked. Children suffering from this form of obstruction give a history of difficult urination since birth. A distended bladder may be felt on abdominal palpation. In such cases the condition of retention with overflow is seen. If careful physical examination of the abdomen is omitted these small patients are frequently treated for ordinary enuresis of childhood until the cause of the condition is discovered. A small catheter will pass easily as the valve only obstructs the outflow. A suprapubic cystotomy should be done and the valve destroyed.

During young adult life, retention is most frequently due to the complications of gonorrhœa or to trauma. During a recent or recurring acute gonorrhœal posterior urethritis, urination becomes painful and congestion of the mucous membrane and spasm of the sphincters ensue. The history is usually sufficient to reveal the nature of the difficulty. In less severe cases, a hot sitz bath, which may be supplemented by the insertion of a belladonna and opium rectal suppository, will usually give relief. When these measures fail, a well lubricated rubber catheter may be passed. When the bladder has been emptied with a catheter it should be irrigated with 1/6000 potassium permanganate solution.

Peri-urethral abscess is easily discovered on careful examination of the penis. Acute prostatic abscess gives rise to characteristic pain.

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