

## REPAIR OF THE PERINEUM UNDER LOCAL ANAESTHESIA.

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In recent years the standard of obstetrics in most parts of this country has greatly improved, and at last there has been a definite fall in maternal mortality. It would be one of the tragedies of the present moment if this progress were to have a serious setback from the War. There is no doubt, however, that the difficulties of obstetrical practice have increased and will continue to increase. Medical aid will become still scarcer, and it is probable that more confinements will take place away from hospitals and medical centres, and that much less skilled attention will be available. Repair of the perineum after delivery is one of the commonest operations that a practitioner may be called upon to perform, and it is the purpose of this article to show that the great majority of these tears may be adequately sutured under local anaesthesia by the single-handed practitioner under even the most difficult surroundings. There is nothing new in this practice, but the advantages of local anaesthesia in this direction are not generally realised. The difficulty presented by anaesthesia is no doubt the main reason why many perineal tears are left unsutured altogether in domestic practice, or are often inadequately brought together with superficial stitches, sometimes inserted without any anaesthetic at all. Such a practice may only cause other patients or the same patient on another occasion to refuse to be "stitched." Even the very smallest of lacerations, if not repaired, may permit the entrance of infection, and the raw areas of untreated lacerations that have become infected may greatly prolong the puerperium and leave subsequent disability, or even worse, lead to a virulent spreading or septicæmic infection. A careful examination for lacerations, therefore, and their repair, is part of the care that every delivery demands. The more serious lacerations, such as complete tears, are now uncommon, and vesico-vaginal fistulæ are extremely rare. It should be our object, however, in even the most trivial lacerations, to ensure as perfect a return of the parts to normal as is possible.

General anaesthesia has many disadvantages in domestic practice. The presence of a second practitioner is necessary for safety, though unfortunately in the unsatisfactory circumstances usually prevailing in this country in obstetrical practice, a general anaesthetic has to be given or supervised by the doctor carrying out the delivery or operation. Subsequent observation of the patient during recovery from the anaesthetic is necessary, and the vomiting that may occur is a poor start for the puerperium and lactation. The intravenous anaesthetics, such as evipan or its substitutes, and pentothal, are pleasant, but also have the disadvantage that a second practitioner must be present. In addition, the anaesthesia is often inadequate, especially without pre-medication, and the patient becomes restless in the lithotomy position, and it then becomes necessary to continue with general anaesthesia. The chloroform capsules used in the past to produce analgesia for delivery have been recommended, but adequate anaesthesia cannot be obtained with them, and they have the well-known risks of chloroform. Low spinal anaesthesia is extremely satisfactory, and at Walton Hospital it has now been used for many years for repairs as well as for other obstetric operations with very good results. The serious risks of high spinal anaesthesia are absent. It seems unsuitable for domestic practice, however, and occasionally there is severe and prolonged headache, and also interference with the emptying of the bladder in the first few days of the puerperium. Sacral anaesthesia, and regional nerve block anaesthesia have been recommended, but the technique needed to obtain good results is rather difficult.

Local anaesthesia by infiltration, therefore, is the anaesthetic of choice in most cases in domestic practice, as well, indeed, as in hospital practice. Its safety for cases of cardiac disease, or where there is shock, is obvious. In normal cases also, however, it should be more generally used, and in nearly every case, with time and patience, good results can be obtained. The few cases in which it is unsuitable are those in which the patient is very nervous or will not co-operate and remain still in the lithotomy position, a few cases in which the tear is very high or extensive and in which much retraction is necessary, and those cases in which a complete perineal tear is present. In such cases, some other form of anaesthesia, such as spinal or general,

is necessary. As the result of an experience of a large number of repairs carried out under local anaesthesia, both in hospital and domestic practice, often in extremely unfavourable surroundings, the following technique is recommended.

**Technique.** No elaborate armamentarium is necessary. While special local anaesthesia syringes are helpful, good work can be done quite satisfactorily with a record syringe, most conveniently of 10 c.cm. capacity. Two sizes of needle are necessary with this, a fine hypodermic needle, and a fairly long serum needle. After trying various anaesthetics in different strengths, I have found that a 1 per cent. solution of novocaine, or equivalent preparation, without adrenaline, to be the most satisfactory one. Stronger solutions are unnecessary, and weaker solutions require an undesirably large volume to produce anaesthesia. The amount required will, of course, vary, but a minimum of about 10 c.cm. will be required for small tears.

The instruments used will depend on the preference of the surgeon. Usually small round-bodied curved needles with a needle-holder are most convenient for the mucous membrane and deeper tissues, and these should be strong, as otherwise it is very easy to break them during the insertion of sutures, with awkward results. A combined needle-holder and suture-cutter, such as that described by the author (B.M.J., 1940.2.227), is of great help when one is working single-handed. For the skin, a large cutting needle is necessary. A small handled needle is useful for the deeper tissues, but the giant perineum needles illustrated in the catalogues are quite unnecessary. Size 2 catgut is the most suitable, and owing to the rapid rate of healing after delivery, this may be of the plain variety.

The left lateral position is quite unsuitable for the adequate inspection and repair of tears. The dorsal position, now becoming more general in this country for abnormal obstetrics, is the only satisfactory one, and may be maintained by quite simple methods. In domestic practice, the patient may be placed across the bed, with the buttocks well over the edge, and the feet resting on chairs. The simple device known as the "obstetric helper" may also be used. This is a simple strap which passes round the patient's neck and over her shoulders, and buckles in a convenient manner round the thighs. It is comfortable to the patient and can be washed. Most patients will co-operate in the maintenance of the dorsal position, but if unfortunately they will not, then a local anaesthetic cannot be used. Good light is necessary, and should come over the operator's shoulders. If both daylight and artificial light are inadequate, and this is much more likely nowadays with the black-out, a simple headlight worked off a dry battery is extremely useful.

Thorough mechanical and antiseptic cleansing of the field must first be undertaken according to the operator's usual technique. It must be remembered, however, that the raw tissue may be extremely sensitive to both chemical and mechanical stimuli, and must be dabbed with extreme gentleness. All swabbing must be carried out from before backwards, and the swabs then discarded. The legs and the operation area must then be covered with sterile towels, but quite satisfactory work can be carried out in domestic practice without these if a strict antiseptic and aseptic conscience has been achieved.

A full inspection of the laceration must now be made. The importance of this cannot be overestimated. It is not always realised, especially by midwives, that the skin of the perineum may be intact, while internally there is an extensive laceration of the deeper tissues. On the other hand, the skin alone may be torn back to the anal margin and gives the appearance of a complete tear, without there being any serious deeper tear. There are two important signs which nearly always indicate perineal laceration. These are oedema of the perineum, and laceration of the labia minora. These labial lacerations should be looked upon as "sentinels" indicating a more extensive tear posteriorly, into which, indeed, they often run. These labial tears, even if small, should always be sutured, as otherwise a painful raw area may be left, and adhesions between the two sides may occur.

Most tears will be found to have a diamond-shaped appearance, but there is great variation in their extent and appearance, as well as in the local anatomy. Tears are more common to one side of the mid-line, and may at first be hidden in a vaginal sulcus. Occasionally H-shaped, U-shaped, or M-shaped tears may be found. Sometimes an extensive laceration, more deserving the term "burst vagina," may be found. This occurs when the vulva is very

small and rigid, when there is great disproportion between the presenting part and the soft tissues, when the accoucheur's hand has been introduced into the vagina alongside the presenting part, or when there is a contracted outlet or narrow pubic arch. In such cases there may be great separation of the mucous membrane from the perineal body and skin, and an extensive raw area is left which is very difficult to repair anatomically. Very rarely there may be an intact bridge of skin anteriorly with a tear behind, the "central tear" of the perineum. Occasionally an anterior tear may almost seem to expose the pubic bone, which can be felt by the palpating finger with great ease. Most of these extensive lacerations should, of course, have been prevented by an episiotomy, and this may well be carried out under local anaesthesia. The extent of the tear may often be more certainly determined by digital palpation than by inspection.

If the repair is carried out some time after delivery of the placenta, there will usually be little bleeding, especially if care is taken previously to express clots from the uterus. If there is a slight bleeding, a pack placed in the vagina will keep the field clear, but if this is done, a forceps or suture must always be left attached to the pack, as otherwise it is extremely easy to forget its presence in the vagina at the end of the operation.

Throughout the whole procedure, the psychical aspect of the case must always be borne in mind, and much of the success of the anaesthesia will depend on how this is dealt with. The surgeon will have learnt much if he has ever had any operation under local anaesthesia, such as a dental extraction, performed upon himself. He will also learn much from carrying out operations under local anaesthesia. An increased respect for tissues and a greater delicacy of touch are taught by its use.

The patient will remain sensitive to touch and traction, and unless this is explained to her, she will get the impression that the anaesthesia has failed. It is also advisable for the surgeon or someone else to talk to her during the procedure. Post-partum cases differ from other surgical cases in that the greater part of the ordeal is now over, and the patient is more or less happy, and will talk readily of her baby and her family. This aspect of the case cannot be over-emphasised, and if attention is paid in this direction, sufficient time spent over the case, and the infiltration adequately made, failures will be very rare.

Injection of the anaesthetic should be commenced with the hypodermic needle. This is entered from the raw area immediately under the skin, and the solution is injected very superficially, or even intra-cutaneously. The raw area is seldom sensitive to the passage of the needle, but if desired, a swab soaked in the anaesthetic solution may be applied to its surface for a few minutes. The skin on each side of the tear is carefully infiltrated, at first with the hypodermic needle, and then with a longer serum needle. It is most important that the skin in the posterior part of the tear, especially if this is near the anus, should be well infiltrated, as this is extremely sensitive. A superficial injection of any labial tears should then be made, and it should be remembered that the skin in this region is very sensitive. A small amount should next be injected into the perineal body. This is moderately sensitive to traction, but less so to other kinds of stimuli. It must be remembered that after delivery the soft tissues of the pelvis are very lax, and that much more fluid can be injected than in normal tissues. It is not necessary, however, that the tissues should be ballooned out, as is usually done in infiltration anaesthesia with weak solutions, but only that an adequate amount should be used in the sensitive parts. In cases of toxæmia and heart disease there will often be vulval œdema, but this does not greatly interfere with the effect of the anaesthetic, and it is often in such cases that we wish to obtain the advantages of local anaesthesia.

The mucous membrane itself is not sensitive to the passage of a needle, but a small amount should be injected into the muco-cutaneous junction. The repair may then be commenced, and it will be found that by the time the skin has been reached, there will have been time for the anaesthesia to be complete.

The method of repair differs in no way from that adopted by the surgeon when other kinds of anaesthesia are used, and the details will depend on his usual technique. The general principles are that the tissues should be accurately brought together, that no dead spaces should be left, and that the minimum of foreign material should be buried. Catgut is the

most satisfactory suture material. It does not require to be removed, and is less painful than silkworm gut for the skin. Silkworm gut of medium thickness, however, is useful for small lacerations, and is of special value for the figure-of-eight stitch to be described shortly. Interrupted sutures should be used throughout, as they are more reliable, though not so hæmostatic or so quick to insert as continuous sutures.

Sometimes it is difficult to reach the top of a laceration, and this is especially the case with an episiotomy that has extended high up the vagina. In such a case, it is helpful to insert a single suture in the mucous membrane as high as possible, and to use this as a traction suture to pull down the mucous membrane, which usually has considerable mobility, and thus expose the higher part of the tear. Even with this aid, however, it is sometimes necessary to insert the highest suture by touch.

Interrupted sutures are then inserted in the upper part of the mucous membrane tear. A good bite of tissues should be taken, though care is always necessary near the mid-line in high tears, as the mucous membrane of vagina and rectum are here close together. The mucous membrane repair must not be completed, however, until the deeper tissues have been brought together, as otherwise a dead space will be left.

The levators and the perineal body are then brought together with deep sutures, and it is convenient to insert these with a handled needle. A good bite must be taken, but again extreme care must be used in the mid-line to avoid entering the rectum, as this is very easy to do when the perineum is short. The needle should be inserted rather parallel to the mucous membrane than at right angles to it. It is probable that a stitch entering the rectum is the cause of many poor results, or even of recto-vaginal fistulæ. All dead spaces should be obliterated when the sutures are tied, and the catgut should be cut close to the knot in order to leave the least possible amount of buried material. The figure-of-eight stitch is of great value at this stage. This takes first a bite of the mucous membrane on one side, then of the deep tissues on the opposite side, then of the deep tissues on the first side, and finally emerges again through the mucous membrane on the opposite side. This stitch brings the deeper tissues well together with the minimum of buried material.

The lowest part of the mucous membrane is then brought together, and finally the skin is sutured. A cutting needle is necessary for this. It is unnecessary to insert the stitches closely. Care must be taken, however, to evert the skin edges, and not to tie the sutures too tightly, as they may be very painful if there is any subsequent œdema. Silkworm gut stitches should be cut short, as otherwise the ends may stick in the patient and be very painful. Alternatively they may be left fairly long and the ends tied together and enclosed in a swab.

A rectal examination should always be done at the end, and the bulk of the perineal body and sphincter palpated between finger and thumb. In this way the soundness of the repair and the adequacy of the sphincter will be tested, and the presence of any suture in the lumen of the rectum detected. If unfortunately this is found, the gloves must be changed, the whole repair taken down, the field cleansed, the offending suture removed, and the repair carried out again.

No special after-treatment is necessary. If there is any œdema, a glycerine dressing is comforting. The patient should not be kept constipated, as I believe the disadvantages of doing so outweigh the supposed advantages, even in complete tears. Silkworm gut stitches may be removed in eight to ten days, or even earlier if healing is good. It is also sometimes advisable to remove catgut sutures, as absorption is often slow, and the knots collect discharges.

**Summary.** Most perineal tears can be adequately repaired under local anæsthesia soon after delivery, and thus the risks and other disadvantages of other kinds of anæsthesia avoided. Careful technique must be used, however, and ample time taken, and the patient's mental attitude considered. It is strongly urged that local anæsthesia be used to a much greater extent, especially in domestic practice, for repair of the perineum after delivery.