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EPISIOTOMY—A NEW PAINLESS TECHNIQUE

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It is generally accepted that episiotomy should primarily be performed to achieve 2 major objectives, namely (1) to protect the foetal head from prolonged pressure on a resistant perineum, and (2) to protect maternal tissues from irreversible damage. It is perhaps the commonest surgical incision employed in medical practice.

Pain following an episiotomy is probably the most frequent postpartum complaint, and presents a problem that few obstetricians are likely to have seriously considered. It is usually taken for granted that repair of an episiotomy may result in pain, regardless of precautions; and patients are sympathetically told to bear it with fortitude and patience and that in a few days the stitches will be removed.

Pain after episiotomy, however, is of profound practical importance, since the unpleasant memory of previous 'painful stitches' often prejudices a patient against its repetition. Patients are often encountered where the procedure had previously caused such marked distress that they firmly refuse it and gladly waive its ultimate benefits merely to escape the repeated, even if only temporary, pain and discomfort. Nevertheless, episiotomy is so necessary a step in helping to restore the mother to physical normalcy and for continuation of proper and satisfactory marital relations, that the problem of wound pain should be faced realistically and solved if at all possible. Furthermore, successful application, and repair, of the episiotomy incision should be regarded as a most important factor in allowing the patient a comfortable puerperium and leaving her with only pleasant memories of her confinement.

Therefore, when a paper by Dr. Wallace B. Shute, of Ottowa, was published in October 1959[1] describing a new technique of episiotomy repair, I read it with the very greatest interest. The results reported were so impressive that I started to use the technique as a routine procedure in my private practice in December 1959. Having now had more than 4 years experience with it, I can emphatically state that the method is a great advance in combating the problem of wound pain and discomfort in episiotomy repair. Its routine employment has led to such dramatic and improved results that I feel it my duty to recommend others to adopt this technique. I do so with the full assurance that they will be as pleasantly surprised as I was, and, what is far more important, that their patients will experience a degree of puerperal comfort that has to be seen to be fully appreciated.

Underlying Principles

A résumé of some of the underlying pathological and physiological principles of wound healing and wound discomfort should give a clearer understanding of the reasons for Shute's technique. The discomfort and pain of an episiotomy are the result of several factors. Tension upon the skin and the type of episiotomy have been suggested as important sources of pain. Far more basic causes, however, are apparent in any healing wound.

All tissues become engorged during wound repair, and this in itself may cause a degree of pain and discomfort. When, however, this physiologic swelling is forcibly contained by sutures, the initial pain is markedly increased. The embedding of catgut in subcutaneous tissues, moreover, will also produce a foreign-body reaction, with further serum production and consequent increased swelling and tension, and thus still more pain. Chromic sutures are also known to stir up a more violent reaction than plain catgut.

Thus a layer of sutures buried in tissues already bruised and injured will add increased painful constriction to the physiologic oedema of healing. The tension on the perineal skin is therefore due not so much to lateral skin tension as to the normal engorgement of subjacent tissues during the healing process, which becomes aggravated by constriction and foreign-body reaction produced by buried sutures.

Now the purpose of sutures in a wound is to hold the severed tissues in accurate apposition just long enough to allow the normal healing mechanism to bridge the gap between them with sufficient strength to resist normal stresses. In episiotomy repair, experience has shown that the optimum time for this bridging to last is 48 hours, after which all sutures should be removed. Recent studies in wound repair have shown that this healing mechanism is much more rapid and efficient than was previously supposed. Should the process of fibroplasia and the formation of collagen fibres be retarded by the presence of a foreign body, healing will be delayed; the irritation of buried catgut has been proved to hinder healing in this way. Repair is further hampered by any abnormal wound tension resulting from increased oedema and swelling contained by the unyielding pressure of buried catgut sutures. It has been shown that wounds subjected to such stresses are weaker after 5 days than those of controls.

Therefore to remedy pain resulting from constriction and foreign-body reaction and to promote accelerated healing, Shute devised the following technique:

1. To decrease physiologic oedema each patient is placed on Duo-CVP with K, 1 capsule 3 times a day, for the first 3 postpartum days.

2. A method of suturing is used that brings all tissues into accurate apposition without permanent burial of any catgut in the perineum.

3. All perineal sutures are removed as soon as complete safety in healing can be expected.

4. The suture material used throughout is No. 00 plain catgut.

The New Technique in Episiotomy Repair

The incision in the vaginal mucosa is apposed by a continuous submucosal suture, beginning at the apex and continuing beyond the hymen to the mucocutaneous junction (Fig. 1A), where it is tied. This seals the mucosa and prevents seepage of fluids from the vagina into the perineal wound. Since the submucosa is loose and closed without tension this suture contributes no discomfort.

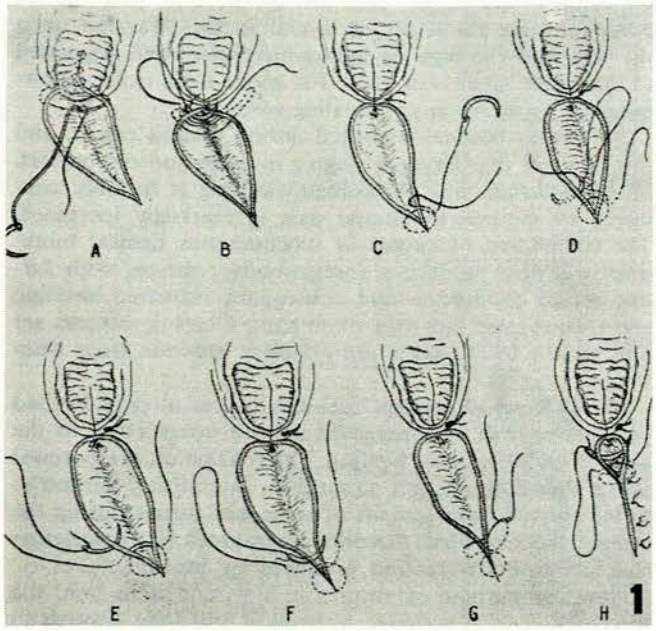

Fig. 1. A. Submucosal suture is placed in the vagina and tied at the mucocutaneous junction. *B.* Crown suture is inserted and tied. *C.* At the distal end of the wound the first deep loop is placed and the suture brought through the skin ¼ inch from lateral cut edge. *D.* The needle re-threaded with the free end draws the suture through the skin ¼ inch from the medial skin edge. *E and F.* Needle is reversed and inserted through skin 1/16th inch from each cut edge. *G.* First suture is tied. *H.* With four placed, the last suture is inserted just beyond the mucocutaneous junction. (By kind permission of Dr. Wallace B. Shute this Fig. is reproduced from his article in *Obstet. and Gynec.* of October 1959—**14**, 467.)

The all-important crown suture is inserted next, just below the mucocutaneous junction. This will attach the cut ends of the bulbocavernosus muscle to the anterior portion of the perineal body, thus re-establishing the original patency and size of the introitus. This suture is placed by the method shown in Fig. 1B and described in the following paragraph.

The needle is inserted about ¼ inch deep to the skin, taking in a wide bite laterally to the full depth of the wound, catching an equivalent wide bite on the medial side, and emerging again ¼ inch below the medial skin edge (Fig. 2A). The needle is then reversed, inserted at an equivalent depth below the lateral skin surface just posterior to the site of the first insertion, and brought out through the skin ¼ inch from the lateral cut skin edge (Fig. 2A). The needle is now threaded with the other end of the suture, inserted just anterior to the previous loop ¼ inch deep to the skin surface of the medial side, and brought out through the skin ¼ inch from the medial cut skin edge (Fig. 2B). Then the needle is reversed again and brought through both skin flaps 1/16th inch from the cut edge of each (Figs. 1B and 2C), thus bringing them into accurate and everted apposition. This crown suture is then tied (Fig. 2D).

Similar interrupted sutures are then inserted at about ½-inch intervals, commencing with one at the inferior angle of the wound in the ischiorectal fossa (Fig. 1C, D, E, F). With this latter suture, and perhaps the next one or two, depending on how near or how far past the anus the incision extends, the medial bite should be narrower than the lateral bite in order to avoid the rectum.

As each suture is tied, reference to Fig. 2A - E illustrates how the whole thickness of the subcutaneous tissues is brought into accurate apposition to the full depth of the wound by the figure-of-eight component of the suture, while the superficial tissues and skin edges are maintained in contact by the vertical mattress component of the suture. It will also make it clear that the factors in so long and complex a suture will prevent it from being over-tightened during the drawing up and tying, and hence obviate the painful strangulation of tissues so frequently resulting from layers of simple interrupted sutures.

Further Practical Points

(*a*) A mediolateral type of incision is always used and, in spite of attractive and imposing arguments to the contrary, is superior to the median type.

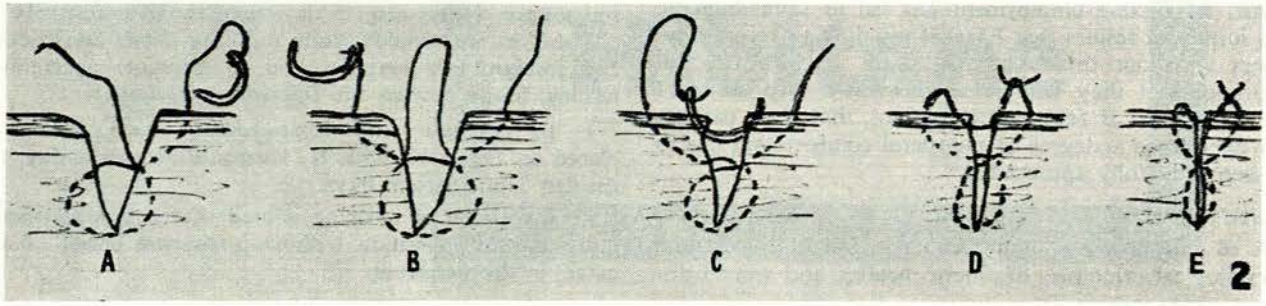

Fig. 2. Sections of cut tissue showing placement and vertical relationship of the figure-of-eight and mattress portions of the sutures. (By kind permission this Fig. is reproduced from Shute, W. B. (1959): Obstet. and Gynec., **14**, 467.)

(*b*) In a badly scarred perineum, or one where 3, 4 or more previous episiotomies have been performed, it is advisable to leave the sutures in for 72 hours.

(*c*) When the vaginal mucosal incision is not closed by a submucosal suture but with an ordinary continuous one, care should be taken not to bunch the mucosa or, as easily occurs at the hymenal ring, to allow the formation of loose tags. This can be prevented by dipping the suture behind the ring and bringing it out just below it. It is then carried back vertically under the hymen, catching the submucosal tissues on either side before continuing down to the mucocutaneous junction.

(*d*) A fully curved (half-circle) cutting needle, one with a diameter of about 1½ inches, has been found to be the most effective.

(*e*) To tie all the interrupted sutures in the perineum, from the crown suture down, with 4 - 6 knots and to note the number inserted on the patient's chart is of practical value and assistance to the nursing staff when these sutures have to be removed.

Postpartum Care

During the first 48 hours Shute makes use of dry heat to the perineum twice daily besides the capsules prescribed. This was not employed as a routine in my series, but is only used in cases where the incision is very long and deep, or there is excessive bleeding from the wound, or in cases where the perineal skin is seen to bruise easily. Instead of the capsules Duo-CVP with K, I have found 'ananase', 'chymovac', 'orenzyme' or similar related tablets to be as effective in combating physiologic oedema.

Liberal and frequent application of an acriflavine-in-oil emulsion on the perineal dressing until the sutures are removed is of great value.

Patients are allowed up as soon as the sutures are removed.

Discussion

The nursing staff have never experienced real difficulty in removing these sutures, and patients have consistently and unanimously stressed the fact that removal is practically painless. Healing is entirely by first intention and at the time of the postnatal examination 8 weeks later the scar is scarcely visible. Even after 2 or 3 similar episiotomy repairs there has never been any evidence of excessive scar-tissue formation, the perineum remaining soft and pliable.

The use of the oral trypsins as a prophylactic in combating physiologic oedema in surgical wounds is becoming a well-established practice and numerous controlled studies attest to their value and usefulness.

The effect on the patients' morale of removing perineal sutures after 48 hours has been especially gratifying. The relief of pain was especially appreciated by those patients who had had previous perineal suturing with other types of repair. They were unanimous and outspoken in their whole-hearted approval and complete acceptance of the new technique.

Having used this new technique up to the end of April 1964 in a series of 437 cases, I have obtained the same outstanding results in every respect as recorded by Shute. In the whole series there were only 3 cases where complications occurred. In 2 cases haematomas developed, the one on the fifth day, the size of a pea, and the other on the sixth day, about the size of a small acorn. Both patients stated that they could feel them develop during a bout of excessive straining in attempts to pass a very constipated stool. Both haematomas cleared up within 3 days after being opened, and perfect healing resulted. The third complication was in a para-5 gravida-6 who had had 5 previous episiotomies, with a scarred perineum. It occurred very early in this series and owing to a misunderstanding the nursing staff removed the sutures after 48 hours, instead of leaving them in another 24 hours. Healing was not complete, and a large portion of the episiotomy gaped. Secondary suturing, however, was immediately done with satisfactory results. Since this case there were a further 17 patients who had had 4 or more previous episiotomies and in whom healing was by first intention after the perineal sutures had been left in for 72 hours.

This technique has thus undoubtedly proved to be the answer to the age-old problem of 'painful stitches' in episiotomies. My experience fully corroborates that of Shute's in that the technique is not only simple and easy to perform, but absolutely effective and completely reliable.

Sincere thanks are due to Dr. Wallace B. Shute for kindly allowing me to reproduce his series of diagrams.

REFERENCE

1. Shute, W. B. (1959): Obstet. and Gynec., **14**, 467.

TREATMENT OF CERVICAL CANCER

In discussing the combination of surgery and radiation in the treatment of uterine cervical cancer, in a recently published symposium on this type of cancer,[1] Alan J. M. Nelson concludes: It would appear that with modern techniques the cure of stage I and II cancer of the cervix can only be improved by reducing the primary recurrence rate. This may be achieved by a simple hysterectomy, following after a course of radiotherapy by radium and linear accelerator, giving full dosage to the parametrium, but modified to reduce the high dose on the forniceal and paracervical tissues. The procedure has been found safe and satisfactory, but it is dangerous if the operation exceeds a simple removal of the primary site. Collaboration between radiotherapist and gynaecologist is essential.

1. Nelson, A. J. M. (1964): J. Coll. Radiol. Aust., **8**, 122.