

EVALUATION OF THE RUCKER METHOD OF EPISIOTOMY REPAIR AS TO PERINEAL PAIN*

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THE episiotomy is, of all obstetric surgery, the most frequently performed procedure and is in itself one of the chief factors in the postpartum comfort or discomfort of the mother.¹ On its successful use and proper repair depends much of the patient's future well-being. The consensus is that the episiotomy is not only definitely indicated but is essential in many instances in the prevention of the development of rectocele, cystocele and prolapse of the uterus. The postpartum perineal discomfort on the part of the patient not only is at times very distressing but also of considerable annoyance to the accoucheur. It is our opinion that it is possible to minimize or eliminate the perineal discomfort, which often follows the employment of episiotomy, through the use of the Rucker repair.

That many obstetricians expect their patients to have pain due to stitches is shown in an article by Kretzschmar and Huber,⁴ who, in their last item under technique of repair of episiotomy, list heat compresses for the relief of discomfort. Scheffery,¹¹ who was struck by the common complaint of distress, discomfort and even severe pain following the episiotomy repair, resorted to the use of a local anesthetic (eucupine-procaine) which would last long enough—four to five days—thus giving both immediate and prolonged effect. Hunter,⁸ in an attempt to control the pain after episiotomy, injects deep into the repair, procaine and butesin in oil, in order to obtain local anesthesia for periods up to three weeks. Hunter, as a matter of fact, in using a water soluble solution, stated that the main disadvantage was that the effect lasted only three to four days after which the patients had as much pain as in the control group.

It has been our impression that in order to eliminate this perineal pain and the need for medication to control it, two important factors in the cause of this pain must be borne in mind,

namely, the frequent use of the crown suture or similar sutures, which include a large bite of tissue on either side of the episiotomy at the mucocutaneous junction, and the use of knots in the suture thus causing tension when edema occurs within the first twenty-four to forty-eight hours. As a result of the edema the sutures cut into the tissue, thus giving rise to a great deal of pain. These two factors are eliminated in the use of the Rucker repair.

PRINCIPLES OF REPAIR

In addition to this we find that certain other precautions, as expressed by many authors,^{2,5,8,9,10,12} are essential in the technic of repair of any type of episiotomy in order to get not only the best results as far as the repair is concerned but also for the elimination of pain. They are the following: (1) asepsis; (2) adequate incision; Diethelm,¹ Huff,² Pieri,⁶ Pratt,⁷ and Taylor¹³ prefer the scalpel rather than scissors because there is no crushing of tissues; (3) adequate control of bleeding points; (4) use of fine, absorbable sutures, offering less foreign material and thus less tissue reaction; (5) prevention of undue suture tension; (6) avoidance of mass tissue sutures—small bites in tissues and no stay sutures; (7) avoidance of dead tissue spaces; (8) adequate exposure during repair; (9) accurate approximation of tissues layer by layer; (10) avoidance of sutures through the rectum; if small, disregard; if large, cut but do not remove.

TECHNIC OF RUCKER REPAIR

Two half lengths of No. 00 chromic catgut suture are used for the repair. The first half length is threaded on a medium-sized round needle. The first row of sutures, proceeding from side to side as a continuous mattress suture, is begun at the upper angle and placed in the deeper layer. When the suture reaches the lower end of the wound, it is brought out

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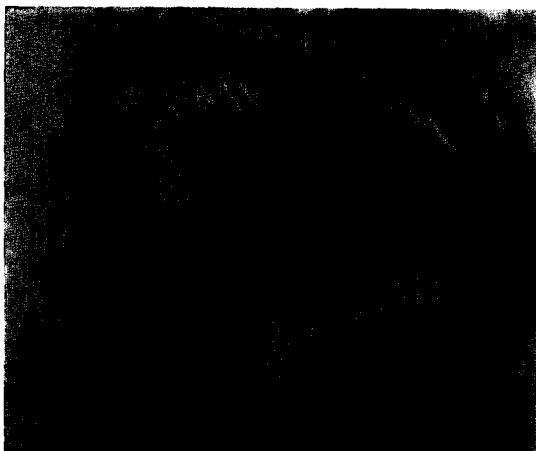


FIG. 1. First layer, continuous suture. No. 00 chromic catgut.*

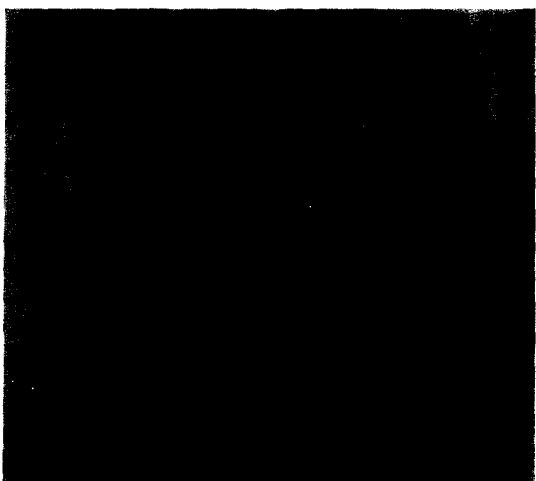


FIG. 2. Second layer, continuous mattress suture. No. 00 chromic catgut.

through the skin as far from the anus as possible. This suture is then clamped and dropped. (Fig. 1.)

The remaining half of this length of suture is then used to place the second layer of sutures, similarly placed but more superficial. This still further narrows the trough-like wound and is brought out through the skin in the neighborhood of the first suture. (Fig. 2.)

Using the second half length of suture a third layer of sutures is placed in the fascia. It is important with this layer to bring the surface markings, such as the hymeneal ring, mucocutaneous junction and pigmented skin, opposite one another. This suture, as the first two, is

* Figures 1 to 4 are reproduced by permission of Dr. M. Pierce Rucker from his article in *Am. J. Obst. & Gynec.*, 38: 703-707, 1939.

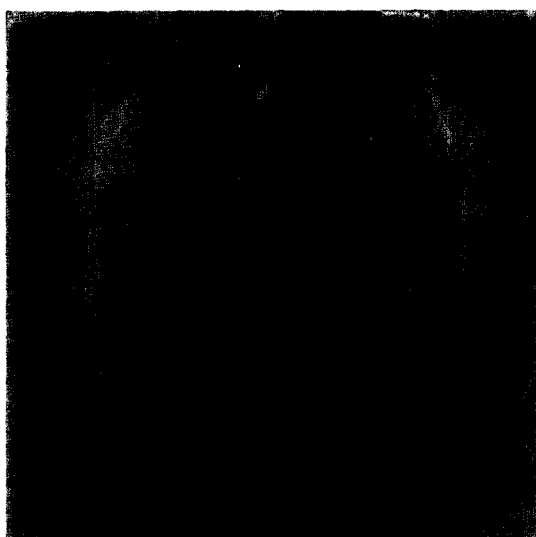


FIG. 3. Third layer, continuous mattress suture. No. 00 chromic catgut.

brought out through the skin in the same area. (Fig. 3.)

The remainder of this strand of catgut is placed as a submucous and subcuticular suture and also brought out through the skin. (Fig. 4.)

In order to facilitate bringing the sutures out through the skin as far as possible from the anus we use a large arc cutting edge needle for this step alone. No knots are tied. The sutures are cut close to the skin.

In those cases in which lacerations of the anal sphincter and/or laceration of the rectum are encountered these structures are routinely repaired using interrupted sutures of fine catgut for the rectum and one or two mattress sutures for the sphincter. After this the procedure as outlined before is continued.

Regardless whether or not the sphincter or rectum have been involved, the patient is placed on a regular diet and allowed out of bed the following day.

RESULTS

In order to determine whether the technic employed in the use of the Rucker repair as compared with other methods of repair will eliminate or diminish the perineal pain we have studied 200 cases of perineal repairs. One hundred cases were repaired according to the method of Rucker and 100 cases were repaired with other technics employed by obstetricians and general practitioners at the Franklin Square Hospital. In order to arrive at a

method which would be as objective as possible in evaluating each case it was decided not to question the patients about perineal pain or stitches until the fourth day post partum unless the patient complained before then.

TABLE I
RESULTS AS TO RELIEF OF PAIN

	No. of Cases*				Total Cases
	A	B	C	D	
Rucker repair.....	83	14	3	0	100
Routine repair.....	23	35	21	21	100

* Since there were 100 cases in each group, the above figures also represent percentage.

On the fourth postpartum day each patient was asked three questions: How do you feel? Have you any soreness? Have you any pain in your stitches? The exact answers given by each patient were recorded on a special sheet on her chart. To insure further that as little personal element as possible on the part of the authors would enter into this evaluation, all questioning was done by one of us (S. M. C.). Grading finally was based on the patients' answers, information received from the floor nurses and the nurses' notes on each patient.

Thus group A consisted of those patients who had no discomfort and were unaware of having had any stitches. These patients typically when questioned on the fourth postpartum day asked, "Do I have any stitches?" Group B consisted of those patients who had minimal soreness and required no medication. Group C consisted of those patients who had soreness and needed occasional analgesics. Group D consisted of those patients who had marked soreness and pain and needed frequent medications for relief.

In Table I are shown the results as to the relief of pain in patients who had the Rucker repair as compared to those who had other types of episiotomy repairs. One can see that 83 per cent of those patients with the Rucker repair had no complaint as compared to 23 per cent of the patients who had other types of repairs.

In order to determine whether any one type of repair done in the routine repair group was as good as the Rucker type we further subdivided them into the three types of repairs

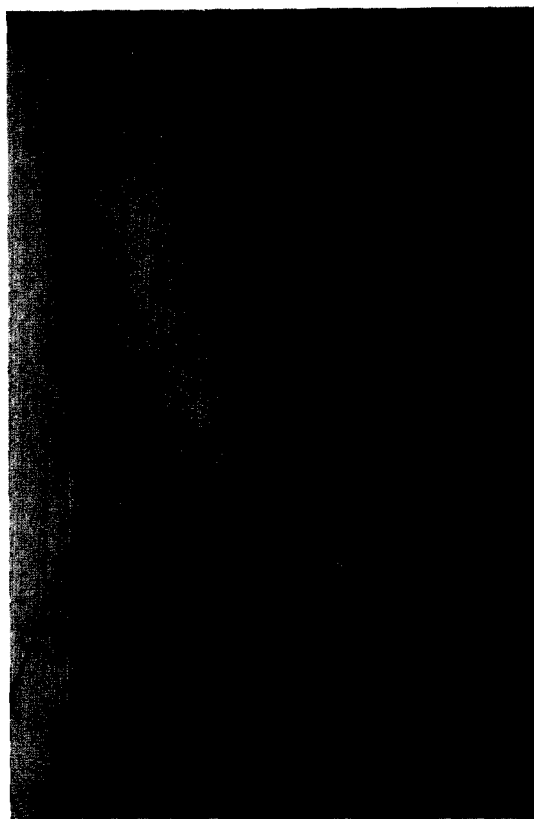


FIG. 4. Fourth layer, continuous submucous and subcutaneous suture. No. 00 chromic catgut.

that were done. In Table II are listed the results of these cases. Under A are included those repairs in which continuous sutures were used throughout and only two knots used, one at the apex of the mucous membrane in the vagina and the second at the mucocutaneous junction at the completion of the repair. Under B are listed those repairs which were similar to A except that interrupted sutures were used in the muscles and occasionally in the fascia. Under C are included those repairs in which continuous sutures were used in the mucous membranes, interrupted sutures in the muscles and through and through sutures in the skin whether continuous or interrupted. While this series is small, nevertheless one can see that the percentage of patients who were free from pain following these types of repair were considerably less than in the Rucker group. This is especially true in that small group of cases under C in which the results were universally bad as far as pain is concerned.

In Table III are recorded the results of these two groups of repairs as regard to whether the

patients were primigravida or multigravida. We find that in the Rucker repair group there was no essential difference in results between the primigravidas and the multigravidas except for a somewhat higher percentage of patients in the A group among the multigravidas.

TABLE II
COMPARISON OF RESULTS IN THE ROUTINE REPAIR GROUP
(CONTROLS)

	Total Cases	A (Per cent)	B (Per cent)	C (Per cent)	D (Per cent)
All routine cases..	100	23	35	21	21
a.....	13	38	31	15	15
b.....	82	22	38	21	20
c.....	5	0	0	40	60

This same finding is true in the routine repair group except for a higher number of unsatisfactory results D in the primigravidas as compared to the multigravidas.

TABLE III
RESULTS IN PRIMIPARA AND MULTIPARA

	A (Per cent)	B (Per cent)	C (Per cent)	D (Per cent)	Total Cases
Rucker Repairs					
Primipara.....	38	8	2	0	48
Multipara.....	45	6	1	0	52
Total.....	83	14	3	0	100

	A (Per cent)	B (Per cent)	C (Per cent)	D (Per cent)	Total Cases
Routine Repairs					
Primipara.....	13	20	10	15	58
Multipara.....	10	15	11	6	42
Total.....	23	35	21	21	100

In Table IV we attempt to compare the results as to the relief of pain according to the type of episiotomy, i.e., median or mediolateral, in the two groups. It appears from this analysis that increasingly more pain resulted in the

mediolateral type of episiotomy than in the median type, especially in the routine repair group. This finding seems to be in keeping with the opinion of many others that less discomfort is encountered with a median than with a mediolateral type of episiotomy.

TABLE IV
RESULTS ACCORDING TO TYPE OF EPISIOTOMY

	A (Per cent)	B (Per cent)	C (Per cent)	D (Per cent)	Total Cases
Rucker Repair					
Median.....	53	6	2	0	61
Mediolateral...	30	8	1	0	39

	A (Per cent)	B (Per cent)	C (Per cent)	D (Per cent)	Total Cases
Routine Repair					
Median.....	20	26	15	8	69
Mediolateral...	3	9	6	13	31

COMMENTS

It is our confirmed opinion that episiotomy must be continued to be used as a prophylactic means of preventing postpartum relaxation of the pelvic floor and supports. If we are to accomplish this, we should use that technic which will give us the desired results and, at the same time, give the patient the greatest amount of comfort and relief of perineal pain. The use of various types of medication to relieve this perineal pain cannot be entirely eliminated but the need for medication may be reduced if not eliminated by the employment of a technic which eliminates many of the causes of this pain. From a study of these two series of cases it appears to us that the use of the Rucker type of repair will eliminate or markedly reduce the incidence of perineal pain.

SUMMARY AND CONCLUSIONS

The efficacy of the Rucker repair depends primarily upon the use of a continuous knotless suture and in our hands has demonstrated the following:

1. It is not a technically difficult procedure.
2. It is easily adapted to the median as well as the mediolateral episiotomy.

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3. It requires but little additional time to complete this operation.

4. The additional few minutes spent in the repair are more than justified by the gratitude of the mother because of the elimination or decrease of postpartum perineal pain.

5. Tables I and II are self-explanatory and indicate the marked contrast in results between the Rucker and control groups of cases, evaluated through an objective questionnaire and interview program.

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