

Is Routine Procaine Spirit Application Necessary in the Care of Episiotomy Wound?

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ABSTRACT

Background: A randomised controlled trial to investigate the usefulness of local application of procaine spirit versus cleansing with water for care of episiotomy wound after normal vaginal delivery was conducted in 100 women.

Patients: Fifty women entered the study arm and 50 entered the control arm of the study. Women in the two arms were similar in their demographic and obstetric characteristics.

Results: The pain scores on a verbal analogue scale was highest (score = 2.5) on Day 1 of the delivery. This was the same in women in both arms. The number of paracetamol tablets consumed was also low and was similar in both groups of women. By the fourteenth day of delivery, all the women were pain-free and the wound had healed well. It was noted that all the women maintained a high standard of perineal hygiene with a mean of 5 washes a day.

Conclusion: It is concluded that in a woman with normal vaginal delivery, local application of procaine spirit is unnecessary in the care of a routine episiotomy wound.

Keywords: procaine spirit, episiotomy wound

INTRODUCTION

Episiotomy is an incision made in the perineum during a vaginal delivery to facilitate and expedite delivery and to prevent perineal tear⁽¹⁻³⁾. In women without an elective episiotomy, many experienced perineal laceration requiring surgical repair. Pain from episiotomy is a significant morbidity in the puerperium⁽⁴⁻⁵⁾. Yet, there is little research on the care of this most frequently performed wound. Traditionally, midwives were left to manage the episiotomy and perineal wounds.

Procaine spirit, a preparation of procaine HCL 2% with spirit 70%, is routinely prescribed for application to the perineal wound, three times a day following the cleansing of the perineum with water. It is intended to be a local anaesthetic. The efficiency of this preparation, however, has not been substantiated. Stanley Estead claimed that procaine is not an effective anaesthetic when applied

topically to tissue⁽⁶⁾. Ernest Jarvetz also reported that procaine has no value as a surface anaesthetic though spirit is an antiseptic⁽⁷⁾. It is widely accepted that topical antiseptic do not aid wound healing but on the contrary, often impairs healing. Cleansing of incisional wound with water is more effective and less damaging than application of antiseptic. Furthermore, Spencer et al suggested that spirit should not be applied to wounds as it causes unnecessary pain⁽⁸⁾. When applied on raw surface, spirit forms a coagulum under which bacteria may subsequently thrive and increases the risk of wound infection. We therefore questioned the wisdom of the routine usage of procaine spirit in the care of perineal wound after vaginal delivery. A randomised controlled study was performed to evaluate the anaesthetic and perineal wound healing effects of procaine spirit.

PATIENTS AND METHODS

Patients

One hundred women who had undergone a normal vaginal delivery were studied. The purpose and method of study was explained and an informed consent obtained. The women were divided into the control and treatment groups. The treatment group consisted of women who delivered on odd dates and the control group were women who delivered on even dates.

Episiotomy

Elective midline episiotomy was performed on crowning of the fetal head. Episiotomy repair was performed with chromic catgut "2/0" suture with infiltration of 10 mLs 0.1% lignocaine into the wound.

Management regime

Treatment regime : Perineal toilet – cleansing with water and procaine spirit.
Application to wound 3 times a day.
Control regime : Perineal toilet – cleansing with water only.

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Data collection

Data were collected prospectively and entered into a specifically designed chart to include:

- (1) The demographic features, duration of the first and second stage of labour, position of episiotomy, type of suture used and the infant's birth weight.
- (2) The number of perineal wash per day was recorded by the women themselves.
- (3) The pain score and episiotomy wound healing score assessed by designated trained nurses on day 1, day 2, day 3, day 7 and day 14, and post delivery.

Pain score was assessed by verbal analogue scale between 0 – 10 by the women's own report. The number of analgesic tablets consumed was also recorded. Episiotomy wound healing was assessed for the degree of oedema, bruising, erythema, wound union and wound discharge with a score of 0 – 2 for each of the parameters to indicate increasing severity of wound complication. The total score ranged from 1 to 10 points.

RESULTS

Fifty women participated in each arm of the study. The demographic details and the obstetric outcomes of the two groups of women were similar (Table I). Just more than half of the patients were primigravidae and the mean duration of labour was 6 hours and 48 minutes for the first stage and 36 minutes for the second stage. Pain was mostly experienced in the first day and was usually mild to moderate in severity. There was no difference between the 2 groups (Table II). The maximum pain score was 8 in the procaine spirit group and 7 in the controlled group. The consumption of analgesics reflected the reported degree of pain (Table III). The majority of women required only one to two tablets of paracetamol in the first three days following delivery. By day 14, all women were pain free. Perineal wound healing was good in both groups of women. There was no significant infection or wound complication and all had healed by day 14 in both groups (Table IV). There was no incidence of wound breakdown. Both groups of women performed perineal toilet, at least three times a day, with an average of five times a day (Table V). There was no difference in the habit between different ethnic group of women studied.

Table I – Demographic details of women

	Treatment group n = 50	Control group n = 50
Mean age (years)	27	28
Parity – 0	27 (54%)	31 (62%)
– 1	23 (46%)	19 (38%)
Educational level		
– Primary	10 (20%)	13 (26%)
– Secondary	24 (48%)	25 (50%)
– Tertiary	16 (32%)	12 (24%)
Ethnic group		
– Malay	20 (40%)	21 (42%)
– Chinese	2 (4%)	2 (4%)
– Indian	26 (54%)	24 (48%)
– Others	1 (2%)	3 (6%)
Mean infant weight (kg)	3.17	3.10
Duration of 1st stage (mean)	6 hrs 48 mins	6 hours 36 mins
Duration of 2nd stage (mean)	36 mins	34 mins

(No statistical significant differences between the two groups)

DISCUSSION

In this study, the randomisation resulted in comparable patient populations for the two arms of study. This allows legitimate conclusions to be drawn from the study.

Generally speaking, episiotomy repair was well done for the women in both arms of the study. There was no vulval haematoma or wound dehisions. This may explain the low pain score reported by the women even in the first three days of delivery when pain was expected to be most significant⁽⁴⁻⁵⁾. The similarity in the reported severity of pain and the number of paracetamol tablets consumed between the two groups of women indicated that procaine spirit did not exert beneficial local anaesthetic effect as intended. On the other hand, the similar wound healing score between the two groups indicated that procaine spirit did not cause discernible local wound inflammation or infection either. These results clearly demonstrated that uncomplicated and well repaired episiotomy wounds were not unduly painful and that they healed well. Application of procaine spirit, though harmless, was unnecessary.

It is noteworthy that the women studied maintained a high standard of perineal hygiene. There were on average five perineal washes a day. The significance of contribution of meticulous hygiene in the excellent outcome of the episiotomy wounds in these women could not be over-emphasised.

It is concluded that routine application of procaine spirit to uncomplicated episiotomy wound is unnecessary. Instead, women should be instructed on maintaining perineal hygiene.

Table II – Pain scores from day 1 to day 14

Delivery day	Treatment group			Control group		
	Max score	Min score	Mean	Max score	Min score	Mean
1	8	0	2.5	7	0	2.5
2	6	0	1.8	6	0	1.8
3	5	0	1.3	4	0	1.2
7	3	0	0.5	1	0	0.4
14	1	0	0.04	0	0	0

(No statistical significant differences between the two groups)

Table III – Paracetamol consumption (number of tablets)

Delivery day	Treatment group			Control group		
	Max	Min	Mean	Max	Min	Mean
1	6	0	1.8	6	0	1.5
2	8	0	1.6	6	0	1.7
3	8	0	1.0	4	0	0.9
7	4	0	0.4	2	1	0.2
14	0	0	0	0	0	0

(No statistical significant differences between the two groups)

Table IV – Comparison of wound healing scores

Delivery day	Treatment group			Control group		
	Max score	Min score	Mean	Max score	Min score	Mean
1	3	0	0.6	2	0	0.3
2	2	0	0.3	2	0	0.3
3	2	0	0.2	1	0	0.1
7	1	0	0.04	0	0	0
14	0	0	0	0	0	0

(No statistical significant differences between the two groups)

Table V – Comparison of ethnic group and number of daily perineal wash in both groups

Ethnic group	N	Treatment group			N	Control group		
		Max nos.	Min nos.	Mean		Max nos.	Min nos.	Mean
Malay	20	8	3	5.5	21	8	3	5.2
Chinese	27	8	3	5.6	24	8	3	4.6
Indian	2	6	5	5.5	2	5	4	4.5
Others	1	8	4	5.3	3	6	6	6

(No statistical significant differences between the two groups)

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