RESEARCH PAPER

PERINEAL HEALING AFTER EPISIOTOMY WITH OR WITHOUT ALOE VERA GEL: A RANDOMIZED CONTROLLED TRIAL

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ABSTRACT:

Objective: To compare the outcome of Aloe Vera Gel versus control on perineal healing after episiotomy

Study design: Randomised Controlled Trial

Study place and period: Obstetrics & Gynecology Department, Ghurki Trust Teaching Hospital, Lahore and Lahore Medical and Trust Teaching Hospital, Lahore from November 2025 to April 2026.

Methodology: One hundred and fifty patients enrolled and were randomly assigned in two groups. In group A, artificial Aloe Vera gel was applied after episiotomy on the perineal area using the recommended procedure twice daily for a period of five days following delivery. In group B, nothing was applied after episiotomy on perineal area. Then females were underwent delivery and Episiotomy was done by standard method. Length of episiotomy was noted. After 5 days, wound was evaluated by using REEDA method.

Results: In this study the median age of the patients as 27(9.25) years and median gestational age of the patients was 40(3) weeks. At baseline; in aloe Vera group the mean REEDA score of the patients was 9.24±1.99 and in control group the mean REEDA score of the patients was 9.15±2.06 (p-value=0.779). After 5 days; in aloe Vera group the mean REEDA score of the patients was 2.83±1.33 and in control group the mean REEDA score of the patients was 4.20±1.72 (p-value=<0.001).

Conclusion: Thus Aloe Vera Gel showed significantly better outcome on perineal healing after episiotomy.

Keywords: *Perineal Healing, Episiotomy, Aloe Vera Gel*

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INTRODUCTION

Obstetrics' ultimate purpose is to deliver the foetus safely because their health is linked to that of the community. Episiotomy is occasionally done to support natural vaginal birth for this purpose.[1] Midline episiotomy is when it is performed vertically downward; mediolateral episiotomy is when it begins from the midline and continues laterally away from the rectum.[1] One of the most frequent surgical procedures performed on women is an episiotomy. Episiotomy discomfort is perpetually distressing and impairs women's reproductive capabilities.[2]

The method and the nursing care provided subsequently are crucial because of the physical, psychological, and socioeconomic effects it has on women. Although it is currently less common to do an episiotomy with a vaginal delivery. Asian women's short, thick perineal tissue has been shown to make ragged wounds and tears more likely in them.[3] Episiotomy consequences include bleeding, dyspareunia, and infections. if no disruptive elements, such as an infection or a significant episiotomy, exist. In three puerperial weeks, it is fully repaired.[1]

Unconstrained or episiotomy-initiated harm to the genital organs during conveyance influences the nature of dynamic work, particularly among primiparous ladies. It is regularly seen during conveyance and can unfavorably affect a mother's wellbeing and personal satisfaction[4]. The mother who has an episiotomy loses more blood during labour and delivery, and there is a chance that her wound won't heal properly and that she will experience more pain in the first few months of her pregnancy.[5]

Episiotomies should be used sparingly in hospitals, according to the most recent study evidence, rather than on a regular basis. In many parts of the world, however, conducting an episiotomy is still a frequent practice among women giving birth

vaginally. Bacterial infections related to childbirth can seriously harm the mother and her unborn child, even resulting in death.[6, 7].

The mitigating, against bacterial, hostile to viral, against septic, and wound-recuperating impacts of aloe Vera are factual. As the primary strategy, using aloe Vera to promote wound healing is advised.[8] Although it did not significantly reduce discomfort, topical aloe Vera gel considerably showed quicker split-thickness skin graft donor-site healing. [9]

Rationale of this study is to compare the outcome of Aloe Vera Gel versus control on perineal healing after episiotomy. Aloe Vera gel is economical and also found to be beneficial in perineal healing after episiotomy. It is readily available in market and can be extracted from home plants of Aloe Vera. Literature has reported that the outcome with Aloe Vera gel is improved and better results than any other method. So we want to conduct this study to confirm the evidence favoring more appropriate regimen to improve the healing of episiotomy wound in local setting. So that in future, we can be able to recommend regular more appropriate regimen to avoid development of wound infection and improve early healing. This will enable us to enhance our procedures and give the populace the finest care possible in the future.

METHODOLOGY

After approval from ethical review committee, this randomized controlled trial was done at Department of Obstetrics & Gynecology, Ghurki Trust Teaching Hospital, Lahore and Lahore Medical and Trust Teaching Hospital, Lahore from November 2025 to April 2026. Sample size of 150 cases; 75 cases in each group is calculated with 90% power of study, 95% confidence level and mean REEDA score i.e. 1.62±0.92 with Aloe Vera gel and 3.48±1.77 in controls [10]. Females fulfilled selection criteria were enrolled by using simple random sampling.

Inclusion criteria: Primigravida aged 18-35 years, presenting at gestational age >37 weeks in active labor (>3 contractions in 10 minutes, cervical os <4 cm dilated), undergoing episiotomy were enrolled. 3.4.1. Episiotomy was characterized as a careful cut of the perineum and the back vaginal wall commonly performed during second phase of work to rapidly expand the opening for the child to go through.

Exclusion criteria: Females with pre-eclampsia (BP≥140/90mmHg with proteinuria >+1 on dipstick method), chronic diabetes (OGTT-1h >186mg/dl) and anemia (hb<11g/dl) were excluded.

Written consent was obtained. Demographic information was also recorded, including name, age, BMI, gestational age, and parity. With the aid of a random number table, females were sorted into two groups at random. Random number table was generated by using Microsoft excel. In group A, synthetic Aloe Vera gel was applied after episiotomy on perineal area by standard method two times a day for a period of 5 days during the postnatal period. In group B, nothing was applied after episiotomy on perineal area. The researcher then underwent delivery of the females. In the labour room, all females were monitored until birth. The episiotomy procedure followed the norm. The episiotomy's length was observed. Females were admitted to post-delivery wards following delivery and were released after 24 hours. Females were then monitored for 5 days in OPD. REEDA score was recorded after 5 days of wound evaluation using the REEDA method. This information was entered using a pre-made proforma.

Data was statistically analyzed by using SPSS v. 27. Normality of data was checked by histogram and normal curve and confirmed by Shapiro-Wilk test. Quantitative variables like age, gestational age, BMI, gestational age, episiotomy length and REEDA score was presented as mean and standard deviation. Parity was one of the qualitative factors that was reported as a frequency and percentage. Using an independent samples t-test, the mean REEDA scores of the two groups were compared. P-values under 0.05 were considered significant. To determine the impact on the result, data were stratified for age, gestational age, BMI, episiotomy length, and parity. Following stratification, the mean REEDA scores of the two groups were compared using independent samples t-tests within each stratum. P-values under 0.05 were considered significant.

RESULTS:

In aloe Vera group the mean age of females was 26.68±5.35 years and in control group the mean age of females was 26.75±5.38 years. This distinction was genuinely unimportant, for example p-value=0.939. In aloe Vera group the mean BMI of females was 23.00±2.78 kg/m2 and in control group the mean BMI of females was 24.67±2.78 kg/m2. This distinction was genuinely critical (p-value=<0.001).In aloe Vera group the mean gestational age at delivery was 39.65±1.09 weeks and in control group the mean gestational age at delivery was 39.45±1.17 weeks (p-value=0.283). In aloe Vera group the mean length of episiotomy of the females was 3.71±0.45 cm and in control group the mean length of episiotomy of the females was 3.75±0.47 cm (p-value=0.662).Table-I

At gauge; in aloe Vera group the mean REEDA score was 9.24±1.99 and in control group was 9.15±2.06 (p-value=0.779). Following 5 days; in aloe Vera group the mean REEDA score was 2.83±1.33 and in control group was 4.20±1.72 (p-value=<0.001).Table-II

In females having age ≤ 30 years; in aloe Vera group the mean REEDA score after 5 days was

2.92±1.34 and in control group was 4.15±1.71 (p-value=<0.001). In females having age > 30 years; in aloe Vera group the mean REEDA score after 5 days was 2.57±1.29 and in control group was 4.33±1.77 (p-value=0.001). In females having BMI ≤ 25 kg/m^2; in aloe Vera group the mean REEDA score after 5 days was 2.82±1.37 and in control group was 4.05±1.75 (p-value=0.001). In females having BMI > 25 kg/m^2; in aloe Vera group the mean REEDA score after 5 days was 2.84±1.21 and in control group was 4.34±1.69 (p-value=0.001). In females having gestational age 38 weeks; in aloe Vera group the mean REEDA score after 5 days was 2.68±1.25 and in control group was 3.43±1.73 (p-value=0.001). In females having gestational age 39 weeks; in aloe Vera group the mean REEDA score after 5 days was 3.43±1.02 and in control group was 3.78±1.53 (p-value=0.473). In females having gestational age 40 weeks; in aloe Vera group the mean REEDA score after 5 days was 2.76±1.53 and in control group was 4.26±1.85 (p-value=0.005). In females having gestational age 41 weeks; in aloe Vera group the mean REEDA score after 5 days was 2.60±1.27 and in control group was 4.15±1.77 (p-value=0.003).In females having episiotomy length ≤4; in aloe Vera group the mean REEDA score after 5 days was 2.89±1.37 and in control group was 4.18±1.68 (p-value=<0.001). In females having episiotomy length >4; in aloe Vera group the mean REEDA score after 5 days was 2.65±1.22 and in control group was 4.24±1.81 (p-value=0.002). Table-III

Table-I: Demographic details of females enrolled in the study (n = 150)

	Aloe Vera	Control
n	75	75
Age (Years)	26.68 ± 5.35	26.75 ± 5.38
BMI (Kg/m^2)	23.00 ± 2.78	24.67 ± 2.78
Gestational Age (Weeks)	39.65 ± 1.09	39.45 ± 1.17
Episiotomy length (cm)	3.71 ± 0.45	3.75 ± 0.47

Table-II: Comparison of both trial groups for REEDA score at baseline and after 5 days (n = 150)

	Aloe Vera	Control	p-value
n	75	75	
Baseline REEDA score	9.24 ± 1.99	9.15 ± 2.06	0.779
After 5 Days	2.83 ± 1.33	4.20 ± 1.72	<0.001

Table-III: Comparison of REEDA score after 5 days between study groups when controlled for effect modifiers (n = 150)

	REEDA score		p-value
	Aloe Vera	Control	
Age ≤ 30 years	2.92±1.34	4.15±1.71	<0.001
Age >30 years	2.57±1.29	4.33±1.77	0.001
Normal BMI	2.82±1.37	4.05±1.75	0.001
Overweight or obese	2.84±1.21	4.34±1.69	0.001
Gestational age 38 weeks	2.68±1.25	4.43±1.73	0.001
Gestational age 39 weeks	3.43±1.02	3.78±1.53	0.473
Gestational age 40 weeks	2.76±1.53	4.26±1.85	0.005
Gestational age 41 weeks	2.60±1.27	4.15±1.77	0.003
Episiotomy length ≤4 cm	2.89±1.37	4.18±1.68	<0.001
Episiotomy length>4 cm	2.65±1.22	4.24±1.81	0.002

DISCUSSION:

Ould employed episiotomy in 1743 as an adjunctive procedure to speed up vaginal birth. It entails severing the perineal muscles during the second stage of labour in order to enlarge the perineum and prevent delays in extracting the foetus head.[11] Because Asian women have short perineal and inflexible tissue that is susceptible to wide laceration, the routine use of episiotomies has reduced in developed nations.[12, 13]The importance of wound care has been investigated in many ways. Natural substances are essential in this context as supplemental medicine. Aloe Vera has been shown in numerous studies to aid in the healing of wounds, particularly cutaneous wounds.[14].

In this study, at benchmark, in Aloe Vera group the mean REEDA score was 9.24±1.99 and in control

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group was 9.15±2.06 (p-value=0.779). Following 5 days, in Aloe Vera group the mean REEDA score was 2.83±1.33 and in control group was 4.20±1.72 (p-value=<0.001).These findings were similar to another trial, conducted by Eghdampour et al., They found that after episiotomy, the mean REEDA score i.e. 1.62±0.92 with Aloe Vera gel, which was significantly less than 3.48±1.77 score in control group (p-value <0.05) [10].

Another trial was conducted by Gol et al., on 84 women undergoing nulliparous episiotomy. Aloe Vera gel was used twice daily for 10 days in the intervention pack while the benchmark group received betadine showers twice daily for the same period of time. In the Aloe Verapack, there was an absolute drop of 57.1% on the seventh day and 30% on the tenth day. The seventh day's aggravation power usual was 2.3, and the tenth day's was 1.21. [15].

Aloe Vera gel dressing was used in the mediation group while a simple dressing on the wound post caesarean section was applied in the other group of 90 females undergoing caesarean section, according to Malazem et al. In the first 24 hours, wound healing took less time in the Aloe Vera group than in the benchmark group (P=0.003). On the eighth day, however, there was no difference (P=0.283). Finally, the positive effects of aloe Vera treatment were confirmed. [16]

Eghdampour et al., displayed in their survey that using Aloe Vera and Calendula ointment essentially accelerates episiotomy wound recovering so it will in general be used for animating the episiotomy patching. Taking a gander at the mean of REEDA in five days after movement showed truly enormous qualification among control and preliminary social events.[17].

Essa et al., was a measurably massive contrasts between the two gatherings comparable to perineal agony force following 10 post pregnancy days (X2 = 7.937, p = 0.005). On the tenth post pregnancy day, the whole Aloe Vera group accomplished total recuperating of episiotomy twisted contrasted with 80% of the typical saline gathering. There was a genuinely tremendous contrast between the two gatherings (p < 0.0001). Among the examinations looking at the impacts of home grown meds on injury mending and episiotomy torment in light of the mean score of agony recuperation, the utilization of lavender, olive, turmeric, cryotherapy and Aloe Vera, were accounted for as the best techniques in injury mending and mitigation of episiotomy torment.[18-20]

Following the development of a skin wound, cells in the dermal area begin to produce more collagen and respond to inflammatory a stimulus, which is followed by a reorganization of the epithelial tissue. This is a physiological process, and a variety of factors, such as growth factors and cytokines, may affect the way it develops. The goal of wound healing is to treat it as quickly as possible while causing the patient as little pain, discomfort, and scarring as feasible. [14]Aloe Vera gel can assist with upgrading twisted mending by expanding how much collagen in injuries as well as modifying its arrangement and expanding collagen cross-connecting.[21] Since the vast majority of the gel contains water, examinations in science have demonstrated the way that it can make skin more adaptable and less weak.[22]

As a result of the properties of Aloe Vera and its combinations, holding skin soddenness and respectability can be used. Because it contains mucopolysaccharides, amino acids, zinc, and water, it also prevents skin ulcers. Aloe Vera is substantially more impressive and less expensive than the currently available elective drugs in terms of the quality and speed of wound healing. Aloe Vera is recommended as the corresponding treatment alongside various ways because of the propensity for traditional medicine advancement and the intriguing side effects of this helpful plant.[23]

One of the mediations in normal vaginal conveyance is episiotomy, which is a straight entry point into the perineal body or back vaginal wall to work with second phase of work in very nearly 15-95% of conveyances.[24] The utilization of Aloe Vera gel, contrasted with typical saline, diminishes torment and speeds up episiotomy ulcer recuperating with no aftereffects; accordingly, it tends to be advantageous for ladies.[2] Aloe Vera extract is found to be effective in faster wound healing [25].In this study, due to financial constraints and time limitation, only one outcome variables was researched and on small sample size. Mostly females had lost to follow-up or did not follow proper prescribed quantity or product advised. Further studies should be done on more outcome variables and on larger sample size. To achieve better outcome, compliance should be improved and further trials should be done under appropriate monitoring.

CONCLUSION:

From the discoveries of this study we may inferred that Aloe Vera Gel showed essentially improved result on perineal recuperating after episiotomy when contrasted with control group.

REFERENCES:

1. Cunningham F, Leveno K, Bloom S, Spong CY, Dashe J. Williams obstetrics, 24e: Mcgraw-hill; 2014.

2. Nazari S, Ezati Arasteh F, Nazari S, Shobeiri F, Shayan A, Parsa P. Effect of Aloe Vera gel on perineal pain and wound healing after episiotomy among primiparous women: A randomized clinical trial. *The Iranian Journal of Obstetrics, Gynecology and Infertility* 2019;21(11):44-51.

3. Pakniat H, Bahman A, Movahed F, Mohammadi N. Effects of Topical Phenytoin Cream on Episiotomy Repair in Primiparous Women: A Double Blind Clinical Trial. *Iran J Pharm Res* 2018;17(4):1563-70.
4. Essa R, Mohamed N, Kandeel H. Effect of Aloe Vera Gel versus Normal Saline on Pain Relief and Healing Process of Episiotomy. *J Health Med Nurs* 2020;70:2020.
5. Maria Menezes P. Effectiveness of aloe vera gel vs lavender oil on episiotomy wound among postnatal mothers in a selected hospital, Mangalore. *Int J Nurs Midwif Res* 2017;4(3):48-54.
6. Bonet M, Ota E, Chibueze CE, Oladapo OT. Antibiotic prophylaxis for episiotomy repair following vaginal birth. *Cochrane Database of Systematic Reviews* 2017(11).
7. Bonet M, Ota E, Chibueze CE, Oladapo OT. Routine antibiotic prophylaxis after normal vaginal birth for reducing maternal infectious morbidity. *Cochrane Database of Systematic Reviews* 2017(11).
8. Yagi A, Hasegawa M, Ataka S. Possible Efficacy of Aloe Vera Gel to Wound Healing and Pain Relief: Case Reports of Kampo Medicine With Aloe Vera Juice. *Journal of Gastroenterology and Hepatology Research* 2020;9(5):3298-302.
9. Burusapat C, Supawan M, Pruksapong C, Pitiseree A, Suwantemee C. Topical Aloe vera gel for accelerated wound healing of split-thickness skin graft donor sites: A double-blind, randomized, controlled trial and systematic review. *Plastic and reconstructive surgery* 2018;142(1):217-26.
10. Eghdampour F, Jahdie F, Kheyrkhah M, Taghizadeh M, Naghizadeh S, Hagani H. The Impact of Aloe vera and Calendula on Perineal Healing after Episiotomy in Primiparous Women: A Randomized Clinical Trial. *J Caring Sci* 2013;2(4):279-86.
11. Khajavi Shojae K, Dawati A, Zayeri F. Frequency and side effect of episiotomy in primiparous women: a three-month longitudinal survey. *Qom University of Medical Sciences Journal* 2009;3(2):47-50.
12. Desai P. Current Practice Obstetrics Gynecology: Jaypee Brothers, Medical Publishers; 2009.
13. Lam K, Wong H, Pun T. The practice of episiotomy in public hospitals in Hong Kong. *Hong Kong Medical Journal* 2006;12(2):94.
14. Hashemi SA, Madani SA, Abediankenari S. The Review on Properties of Aloe Vera in Healing of Cutaneous Wounds. *BioMed Research International* 2015;2015:714216.
15. Sabzaligol M, Safari N, Baghcjeghi N, Latifi M, Koohestani Hr, Bekhradi R, *et al*. The effect of Aloevera gel on prineal pain & wound healing after episiotomy. *complementary Medicine Journal* 2014;4(2):766-75.
16. Molazem Z, Mohseni F, Younesi M, Keshavarzi S. Aloe vera gel and cesarean wound healing; a randomized controlled clinical trial. *Global journal of health science* 2014;7(1):203-9.
17. Eghdampour F, Jahdie F, Kheyrkhah M, Taghizadeh M, Naghizadeh S, Hagani H. The Impact of Aloe vera and Calendula on Perineal Healing after Episiotomy in Primiparous Women: A Randomized Clinical Trial. *J Caring Sci* 2013;2(4):279-86.
18. Delaram M, Dadkhah N. Comparing the effects of lidocaine cream and mefenamic acid on post episiotomy pain. *Women's Health Bulletin* 2015;2(2).
19. Shahrahmani H, Kariman N, Jannesari S, Ghalandari S, Asadi N. A systematic review on the type of treatment methods to reduce pain and improve wound healing in Iran. *The Iranian Journal of Obstetrics, Gynecology and Infertility* 2016;19(9):17-31.
20. Essa R, Mohamed N, Kandeel H. Effect of aloe vera gel versus normal saline on pain relief and healing process of episiotomy. *JHMN* 2020;70:66-81.
21. Boudreau MD, Beland FA. An evaluation of the biological and toxicological properties of Aloe barbadensis (miller), Aloe vera. *Journal of Environmental Science and Health Part C* 2006;24(1):103-54.
22. Ghaffarzadegan R, Alizadeh SA, Ghaffarzadegan R, Haji Agaei R, Ahmadlou M. Effect of aloe vera gel, compared to 1% silver sulfadiazine cream on second-degree burn wound healing. *Complementary Medicine Journal* 2013;3(1):418-28.
23. Hekmatpou D, Mehrabi F, Rahzani K, Aminiyan A. The Effect of Aloe Vera Clinical Trials on Prevention and Healing of Skin Wound: A Systematic Review. *Iran J Med Sci* 2019;44(1):1-9.
24. Jones HW, Rock JA. Te Linde's operative gynecology: Lippincott Williams & Wilkins; 2015.
25. Vinodhini C, editor Effect of Aloe vera Extract on Episiotomy Wound amongPostnatal Mothers in a General Hospital, Krishnagiri2010.