

Clinical Evaluation of Nimba-Madhu Ointment in the Management of an Episiotomy Wound: A Case Study

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Abstract

Episiotomy, also known as perineotomy, is a surgical incision of the perineum and the posterior vaginal wall generally done by an obstetrician. It is in fact an inflicted second-degree perineal injury. It is one of the most performed surgical procedures in the world. In episiotomy, the vaginal orifice is made larger to facilitate the birth of a baby. An episiotomy is a procedure developed to augment difficult vaginal deliveries while controlling for and avoiding potentially dangerous perineal lacerations during the delivery process. This wound of episiotomy is associated with a delicate area of the female with immense pain and discomfort and seeks appropriate medical care and attention. If ignored, it may lead to puerperal wound infections. This review aims to offer the most thorough understanding of episiotomy, its current concept, and episiotomy pain relief, with a particular focus on local application of nimba-madhu ointment as pain and healing management of episiotomy according to Ayurveda.

This case study documents the clinical course of a postpartum episiotomy wound managed with local Nimba-Madhu ointment in a 19-year-old woman following full-term normal vaginal delivery with episiotomy. The recorded VAS scores were 6 on day 1, 4 on day 2, 3 on day 3, 1 on day 7 and 0 on day 15, demonstrating an early fluctuation followed by progressive reduction. Recorded perineal findings showed transient redness, edema and approximation changes during follow-up, with a final recorded score of zero for redness, edema and approximation by day 15. On the day-15 follow-up, the wound was described as healthy, without swelling, redness, discharge or induration. No treatment-related adverse event was documented in the available case material. Because this is a single case without a concurrent control, the observations should be interpreted as a descriptive clinical outcome rather than proof of comparative efficacy.

Keywords: episiotomy; Nimba; Neem; Azadirachta indica; Madhu; honey; wound healing; REEDA; VAS; Ayurveda; postpartum care.

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1. Introduction

Episiotomy is a surgical incision involving the perineum and posterior vaginal wall, generally performed during the second stage of labour when enlargement of the vaginal outlet is considered necessary. After delivery, the incision is sutured and becomes a postpartum wound requiring attention to pain control, hygiene, infection prevention and restoration of tissue integrity. The attached synopsis emphasizes that inadequate wound care can contribute to delayed healing, pain, infection risk and interference with maternal comfort and early postpartum activities.

In the Ayurvedic framework used in the study protocol, the fresh surgical wound of episiotomy is considered in relation to Sadyo Vrana, and the therapeutic rationale is directed toward Shodhana and Ropana - cleansing and healing actions. The synopsis specifically identifies Nimba and Madhu as materials selected for Vranashodhana and Vranaropana properties and describes their intended local use in the form of an ointment.

2. Clinical and Therapeutic Rationale

The rationale for a topical formulation in an episiotomy wound is practical because the intervention can be applied directly to the local wound while routine perineal hygiene is maintained. Nimba-Madhu ointment was designated as the trial formulation with local administration twice daily and planned assessment on the first three days, day 7 and day 15.

The Nimba component - Azadirachta indica of the family Meliaceae, with Tikta and Kashaya rasa, Sheeta virya, Katu vipaka and Laghu-Ruksha guna and has Vranashodhaka, Vranaropaka, Krimighna and Shothaghna among the traditional actions and notes phytochemical constituents including azadirachtin, azadirone, nimbin and nimbandiol.

Madhu is described as Madhura in rasa with Sheeta virya and is attributed Shodhana, Ropana, Sandhana and Krimighna actions. It also has sugars such as fructose and glucose and antioxidant content, while the clinical use of

honey in wound care is treated as a supporting, rather than definitive, basis for the Nimba-Madhu combination.

Attribute	Nimba	Madhu
Identity / source	Azadirachta indica; family Meliaceae	Madhu (honey)
Rasa	Tikta, Kashaya	Madhura
Virya	Sheeta	Sheeta
Vipaka	Katu	Madhur
Guna	Laghu, Ruksha	Ruksha, Laghu, Picchila, Lekhana, Sukshma, Marganusari
Doshaghata	Kapha-Pittahara	Tridoshaghna
Karma listed in source	Shothaghna, Netrya, Grahi, Vranashodhaka, Vranaropaka, Krimighna	Sangrahi, Krimighna, Shodhana, Ropana, Sandhana
Prayojya anga / material	Leaf, bark, fruit, seed, flower listed generally; trial formulation specifies Nimba Patra	Madhu
Constituents listed	Azadirachtin, azadirone, nimbin, nimbandiol	Fructose, glucose, antioxidants

3. Case Presentation

A 19-year-old woman reviewed after full-term normal vaginal delivery with episiotomy. The delivery date was 9 September 2025. The initial record describes pain at the episiotomy site on day 1 with mild lower backache, reduced episiotomy-site pain on day 2 and mild episiotomy-site pain by day 3. No major past illness and no significant family history were recorded.

Clinical domain	Recorded information
Age / sex	19 years / female
Obstetric event	Full-term normal vaginal delivery with episiotomy
Date of delivery	9 September 2025
Day 1 complaint	Pain at episiotomy site; mild lower backache
Day 2 complaint	Pain at episiotomy site recorded as reduced in narrative note
Day 3 complaint	Mild pain at episiotomy site

Clinical domain	Recorded information
Past major illness	No major history recorded
Family history	No significant history recorded

Menstrual and Postpartum History

The menstrual history in the case record states menarche at 13 years, a regular 30-day cycle with approximately five days of bleeding, and an initial pattern of two pads per day for the first three days followed by one pad. The postpartum lochia sequence was recorded as rubra through approximately the first three days, serosa around days 5-8 and alba from day 9 onward.

Parameter	Details
Menarche	13 years
Cycle length	30 days, regular
Duration of menses	5 days
Pads/day	2 pads/day for first 3 days, then 1 pad/day
Lochia rubra	Day 1 to day 3
Lochia serosa	Approximately day 5 to day 8
Lochia alba	Day 9 onward

Ashtaviddha Parikshan (Examination)

Prakruti parameter	Characteristics	Dosha
Akruti	Madhyam	Pitta
Varna	Gaura	Kapha
Bala	Uttam	Kapha
Kshudha	Alpa	Kapha
Pipasa	Visham	Vata
Sweda	Alpa	Vata
Smruti	Chirkal	Kapha
Nidra	Khandita	Vata

Obstetric History

Second gravida patient with current full term normal vaginal delivery with episiotomy having baby weight 3.29kg. patient has history of medicinal MTP pills taken willingly in 2024.

Investigations

Investigation	Recorded result
Hemoglobin	13.3 g/dL
Total leukocyte count (TLC)	7,000 /cmm
Platelet count	1,76,000 /cmm
HIV	Non-reactive
HBsAg	Non-reactive
VDRL	Non-reactive

Diagnosis and Intervention

The clinical diagnosis is full-term normal delivery with episiotomy / Sutika. The treatment entry specifies local application of Nimba-Madhu ointment over the episiotomy wound twice daily, approximately every 12 hours, along with maintenance of episiotomy wound hygiene.

Intervention element	Implementation
Topical intervention	Nimba-Madhu ointment
Route	Local application on episiotomy wound
Frequency	Twice daily / approximately 12-hourly
Follow-up assessment days	Days 1, 2, 3, 7 and 15
Wound-care instruction	Maintain episiotomy wound hygiene

4. Outcome Assessment

Pain was evaluated using the VAS pain scale on the scheduled follow-up days which shows scores 0-3 as mild, 4-7 as moderate and 8-10 as severe pain.

Wound healing was evaluated using the REEDA domains: redness, edema, ecchymosis, discharge and approximation. It assigns each domain a 0-3 score, with lower scores representing more favorable findings; the overall clinical interpretation therefore considers both the pattern in individual components and the direction of change over time.

REEDA Scoring Framework

It explains how a change from 0 to 1 in a component may represent a small localized finding rather than a major wound complication and provides the basis for interpreting the participant's component scores.

Score	Redness	Edema	Ecchymosis	Discharge	Approximation
0	None	None	None	None	Close
1	Within 0.25 cm of incision bilaterally	Perineal, <1 cm from incision	Within 0.25 cm bilaterally or 0.5 cm unilaterally	Serum	Skin separation 3 mm or less
2	Within 0.5 cm of incision bilaterally	Perineal and/or 1-2 cm from incision	0.25-1 cm bilaterally or 0.5-2 cm unilaterally	Serosanguinous	Skin and subcutaneous fat separation
3	Beyond 0.5 cm of incision bilaterally	Perineal/vulvar, >2 cm from incision	>1 cm bilaterally or >2 cm unilaterally	Bloody/purulent	Skin, subcutaneous fat and fascial-layer separation

5. Results and Observations

Participant's specific outcome whole data is presented below in tables.

Pain Outcome by VAS pain scale

Follow-up day	VAS score (0-10)	Protocol grade
Day 1	6	Moderate
Day 2	4	Moderate
Day 3	3	Mild
Day 7	1	Mild
Day 15	0	No pain

REEDA Wound-Healing Findings

REEDA component	Day 1	Day 2	Day 3	Day 7	Day 15
Redness	0	0	1	1	0
Edema	0	0	0	1	0
Ecchymosis	-	-	-	-	-
Discharge	-	-	-	-	-

REEDA component	Day 1	Day 2	Day 3	Day 7	Day 15
Approximation	0	1	1	0	0

Follow-up Clinical Findings

Time point	Symptoms / reason for review	Vital/general findings	Local episiotomy finding
Day 7	Hard stools; episiotomy pain recorded as reduced; attended for stitch review	Pulse 84/min; BP 110/80 mmHg; weight 60 kg; respiratory system clear; cardiovascular system NAD	Episiotomy wound described as healthy; no pus/clear discharge and no induration recorded
Day 15	No complaint at present; attended for follow-up	Pulse 80/min; BP 120/70 mmHg; respiratory system clear; CVS/CNS NAD; uterus well retracted	Healthy episiotomy wound; no swelling, redness, discharge or induration

Interpretation of the Pain Trajectory

The VAS pain scale shows gradual reduction in pain from day 1 to 4 on day 2 then decreasing to 3 on day 3, 1 on day 7 and 0 on day 15.

Interpretation of the REEDA Findings

The REEDA component record shows that the perineal wound did not simply move monotonically from a high score to a low score; several early values were already zero, while small transient changes appeared in redness, edema and approximation during follow-up. Redness was marked 1 on days 3 and 7 before returning to 0 on day 15, and edema was marked 1 on day 7 before returning to 0. Approximation was recorded as 1 on days 2 and 3 and then 0 on days 7 and 15, suggesting resolution of the recorded approximation abnormality by the later visits. Ecchymosis and discharge were absent since day 1.

BEFORE TREATMENT AFTER TREATMENT**Discussion**

According to ayurveda the surgical wound of episiotomy can be considered as SadyoVrana. Different treatment modalities have been told for Vrana Chikitsa. Drugs having Shodhana and Ropana qualities are essential for healing. In Sushruta Samhita various drugs for Shodhana and Ropana of Vrana along with different kinds of medical, Para surgical and surgical methods of debridement are mentioned. Thus, in this type of wound, drugs with the properties of Kashaya / Tikta / Madhur rasa, Sheeta and Snigdha guna, can be used. In Ayurveda there are many drugs that have these properties which are used for treating pain at episiotomy wound site. The drugs discussed here are Nimba and Madhu have similar properties as vranaropana and vranashodhana which are stated to be good in alleviating pain and thus promote wound healing.

- **According to ayurveda:**

Nimba and madhu, being ruksha absorb kleda, tikta and sheeta which does raktashodhan, hence eliminating kleda and kandu and also the above mentioned attributes purify kapha pitta dushti too and its krimighna (bactericidal), sandhaniya properties will promote a healthy wound healing and pain relief. Madhu has Vranaropak properties as per the principles of the sixty Upakramas of Vrana management described in the Sushruta Samhita. Madhu is believed to act by 'pacifying' the three vitiated Doshas, i.e., Vata, Pitta, and Kapha by multiple actions attributable to its Madhura (sweet) Rasa, Kashaya(astringent) Uparasa, Ruksha (dry) Guna, Sheeta (cold) Virya, Madhura Vipaka, and Sukshma Marga Anusari (ability to permeate in microchannels) Prabhava. Madhura Rasa gives nutrition to the tissue, which helps in granulation tissue formation, while Kashaya Rasa provides Lekhana (scraping) that helps in de-sloughing, preparing the wound for healing. Thus, Madhu has excellent properties to heal the wound by virtue of its Sodhana (purification), Ropana (healing), and Sandhana (union) actions. The Madhura Rasa of the honey reduced the vitiated Vata Dosha, leading to reduced pain and enhanced healing. Madhu has been described as having the ability to promote phagocytosis, detoxification, and proteolysis, all of which assist in cleaning the wound. Nimba and madhu both have vranaropaka and vrana shodhan properties required for proper wound healing.

- **According to modern:**

Neem leaves purify the blood, prevent damage caused by free radicals in the body, remove toxins, treat insect bites and ulcers. Neem leaves have anti-bacterial, anti-microbial properties which works wonders on infections, burns and any kind of skin problems. It destroys the bacteria that causes infections, stimulates the immune system and encourages rapid healing. Leaf extracts of Azadirachta indica promote wound healing activity through increased inflammatory response and neovascularization. Honey is hygroscopic in nature. It prevents colonization and bacterial growth in tissues due to this acidic nature. Most microorganisms do not grow in pure honey because of its low water activity. Honey also has antibacterial properties. The presence of hydrogen

peroxide and a high osmotic pressure also contribute to the antibacterial effect of honey. These natural properties of Madhu are said to make it suitable for use in wound management.

The chosen drugs also have properties like anti-inflammatory, antimicrobial, antioxidant and neovascularization-related potential. These proposed modern pharmacological concepts also in turn help in wound healing and restoration of wound.

The observed case trajectory of gradual decrease in pain, eventual absence of recorded redness and edema, restoration of approximation and a clinically healthy wound by day 15 - is compatible with the intended therapeutic objectives.

7. Conclusion

In this anonymized postpartum case, local Nimba-Madhu ointment was used following full-term normal vaginal delivery with episiotomy and was followed by scheduled assessment through day 15. The recorded pain score reduced from 6 to 4 between days 1 and 2, then decreased to 3, 1 and finally 0 on days 3, 7 and 15. REEDA observations showed limited transient changes in redness, edema and approximation, and the final clinical note described a healthy wound without swelling, redness, discharge or induration.

The findings are consistent with a favorable healing course and with the therapeutic objectives of this study. Nevertheless, the case is descriptive and should not be interpreted as proof of causality or comparative efficacy. A larger controlled dataset is required to determine whether Nimba-Madhu ointment provides a statistically and clinically meaningful advantage over standard topical care.

Declarations

Patient consent: Written informed consent for publication of de-identified clinical information should be confirmed and retained by the authors before journal submission.

Conflict of interest: The authors should disclose any conflict of interest; none is stated in the supplied records.

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Ethical statement: The case was managed under an institutional clinical study protocol. Applicable institutional ethics approval and trial registration details should be inserted by the authors before submission.

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