



CASE SERIES ON EFFICACY OF VAPU SPRAY IN EPISIOTOMY WOUND

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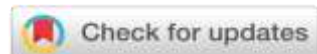
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ABSTRACT

BACKGROUND: A surgically planned incision on the perineum and the posterior vaginal wall during the second stage of labour is called episiotomy (perineotomy). In Ayurveda Samhita, the description of an episiotomy wound has not been given directly, but Vrana(wound) is described very well, and an episiotomy wound can be considered Yoni Vrana. In the present era, there are several methods for managing episiotomy wounds, such as NSAIDs, antibiotics, etc. Still, it is found to have various adverse effects like inflammation, itching, peptic ulcer, delayed wound healing and drug resistance. Hence, the prime focus is proper care and treatment to promote episiotomy wound healing and avoid complications. **AIM-** To evaluate the preventive and therapeutic efficacy of **VAPU Spray** on perineal wound healing after episiotomy. **OBJECTIVE-** To analyse the effect of VAPU spray in managing episiotomy wounds. **MATERIALS AND METHODS-** The study was conducted among a few post-natal patients with Right mediolateral episiotomy (RMLE), and four such subject evaluations are presented here. **RESULTS:** These patients were successfully treated with VAPU Spray, which contains Panchavalkala, Triphala, etc., and has Vrana Shodhana and Vrana Ropana qualities. The result was assessed by using the REEDA Scale and VAS scale. The considerable results were pain, oedema, discharge, redness, and tenderness in episiotomy wounds. **CONCLUSION-** Thus, we can conclude from the study that this Ayurveda regimen with a modified drug delivery system was influential in managing episiotomy wounds.

Keywords: Ayurveda, Case series, Episiotomy Wound, Yoni Vrana, VAPU Spray.

INTRODUCTION

A surgically planned incision on the perineum and the posterior vaginal wall during the second stage of labour is called episiotomy (perineotomy) [1]. Pain following episiotomy appears to be universal. The overall episiotomy rate in India was 40.6% in 2003[2]. A current medical survey shows that 60% of women with episiotomies reported severe post-partum pain, 25% experienced infection at the site, and 20% had problems during intercourse for up to three months after childbirth. Proper episiotomy wound healing after delivery is a significant concern to avoid complications. Among the Sutika Roga, there is a reference to Yoni Kshata, Yoni Bheda, Yoni Vibhinnata, Yoni Shopha, Yoni Shula, Yoni Bhramsha, Yoni Dosha, which suggest perineal trauma causing these conditions [3]. It can be considered as Shuddha Agantuja Vrana or Sadyovrana [4]. Thus, for the healing of this Shuddha Vrana, its management can be done by using Dravya, which possesses Shodhana, Ropana, and Vedanasthapana properties. For the management of Vrana, Acharya Sushruta has described 60 different procedures and numerous drugs. Sushruta broadly classifies these drugs into two groups: Vrana Shodhana and Ropana. Acharya Sushruta also described the external application of various medications, like the drugs of Nyagrodhadvarga, which includes Panchavalkala. Clinically, Panchavalkala is very effective in controlling wound infection when used externally in different forms. Triphala is the drug of choice in any form of Vrana. The present study uses VAPU spray, which contains Panchavalkala, Triphala and other ingredients like Haridra, Amalaka, Kushta, Manjishta, etc., having Kushtaghna and Krimighna properties. Hence, it can help check wound infection.

MATERIAL AND METHODS:

The study was conducted among post-natal patients with vaginal delivery with RMLE who were admitted to PTSR IPD of Alva's Ayurveda Medical College, Moodubidire.

CASE PRESENTATION:

CASE-1

A 26-year female patient (Primigravida -38 weeks) with c/o leaking p/v was admitted to PTSR IPD. She delivered a female baby of 2300 grams on 10/01/2024 with RMLE. She had regular ANC and received two doses of in. TT.

Obstetric History- Primi with 38 weeks of gestation, with a marital life of 2 years, without any history of abortions or any usage of oral or other contraceptives, with uneventful pregnancy period with mild to moderate emesis gravidarum, not a known anaemic with adequate nutritional status during ANC period.

Past medical history: No significant history

Past surgical history: No history of any surgical intervention.

Family History: No considerable history

Clinical Examination:

BP- 110/70mmHg

PR - 84/min

RR- 18/min

Temp- 98.6 F

P/A- Uterus Contracted

Lochia- Within normal limits

Abnormal Odour- Absent

Amount - 3 pads per day.

Clots - Absent

Local Examination-

All episiotomy stitches are intact.

Wound Healthy

Moderate redness+

Moderate edema+

Bloody Discharge+

Moderate Tenderness- present

Investigations-

Hb%- 12.5 g/dl

TC- 9600/ mm³

DC- N-69%,L-28%,E-2%,M-2%,B-0%

PLT- 2.5 L/ mm³

Blood group- B- positive

HIV/HBsAg – Negative

RBS-73 mg/dl

CASE-2

A 29-year female patient (Primigravida with 32 weeks) was admitted to PTSR IPD with Labor pains. She delivered a male baby (dead-fetal distress with USG S/O duodenal atresia, AFI-37) on 25/02/2024 with RMLE.

Had regular ANC, Received two doses of inj. TT.

Obstetric History - Primi with 32 weeks of gestation, with marital life of 1 ½ years, without any bad obstetric history of abortions, hypertensive disorders, etc., without any usage of oral or other contraceptives, with uneventful pregnancy period with moderate emesis gravidarum, not a known anaemic with adequate nutritional status during ANC period.

Past medical history: No significant history

Past surgical history: No history of any surgical intervention.

Family History: No considerable history

Clinical Examination:

BP- 110/70mmHg

PR -78/min

RR- 18/min

Temp- 98.6 F

P/A- Uterus Contracted

Lochia- Rubra

Amount - 2 pads per day.

Abnormal Odour - Absent

Clots - Absent

Local Examination-

All episiotomy stitches are intact.

Wound Healthy and intact.

Moderate redness+

Mild edema+

Serous Discharge +

Mild Tenderness- Present

Investigations-

Hb%- 14.4g/dl

TC- 17200 /mm³

DC- N-88%,L-9%,E-1%,M-2%,B-0%

PLT- 2.5 L/mm³

Blood group- B- positive

HIV/HBsAg/HCV- Negative

CASE-3

A 33-year-old female patient (G4P3L1 with 37 weeks) was admitted to PTSR IPD for safe confinement. She delivered a male baby of 2800 grams on 27/02/2024 with RMLE.

Had regular ANC, Received two doses of inj. TT.

Obstetric History- ML- 8.5Years, G4P3L1D1, A1

1 – IUD at seven months 15 days

2 – IUD at seven months

3 – Male, 3yrs, FTND

4 – Present pregnancy

Past medical history: No significant history

Past surgical history: No history of any surgical intervention.

Family History: No considerable history

Clinical Examination:

BP- 120/70mmHg

PR - 82/min

RR- 16/min

Temp- 98.6 F

P/A- Uterus Contracted

Lochia- Rubra within normal limits

Amount - 2 pads per day.

Smell - Absent

Clots - Absent

Local Examination-

All stitches intact

Wound Healthy and Intact

Moderate redness+

Mild edema+

Serous Discharge+

Mild Tenderness- present

Investigations-

Hb%- 11.8g/dl

TC- 9000/mm³

DC- N-70%,L-26%,E-2%,M-2%,B-0%

PLT- 2.92 L/mm³

Blood group- A- positive

HIV/HBsAg/HCV- Negative

CASE-4

A 33-year-old female patient (primigravida with 37 weeks) was admitted to PTSR IPD with labour pains. She delivered a female baby of 2200 grams on 29/02/2024 with RMLE.

Had regular ANC, Received two doses of inj. TT.

Obstetric History-ML- 2 yrs., Primigravida, uneventful pregnancy with moderate emesis gravidarum.

Past medical history: No significant history

Past surgical history: No history of any surgical intervention.

Family History: No significant history

Clinical Examination

BP- 110/70mm Hg

PR -76/min, regular

RR- 20/min

Temp- 98.6 F

P/A- Uterus Contracted

Lochia – Rubra within normal limits

Amount - 2 pads per day.

Smell - Absent

Clots – Absent

Local Examination-

All episiotomy stitches are intact.

Wound Healthy

Moderate redness+

Moderate edema+

Serous Discharge +

Mild Tenderness- Present

Investigations-

Hb%- 14.8g/dl

TC- 10,400/mm³

DC- N-66%,L-29%,E-3%,M-2%,B-0%

PLT- 1.5 L/mm³

Blood group- AB- Positive

HIV/HBsAg/HCV- Negative

INTERVENTION/ MODE OF TREATMENT -

All four subjects were advised to apply for VAPU Spray.

Table No.1 Methodology and Posology of VAPU SPRAY [5]

Drug Name	VAPU SPRAY
Form	Spray - Hydroalcoholic extract
Route Of Administration	Local application
Dose	3-5ml of Hydroalcoholic extract
Frequency	Twice daily after cleansing the wound with lukewarm water
Duration	7 Days

INGREDIENTS OF VAPU SPRAY WITH ITS CHEMICAL CONSTITUENTS:

1. Vata (Ficus bengalensis)

Phytosterol, Triterpin, Beta Sitosterol, Glucoside, Bengalinoside, Flavonoid Glycosides

2.Udumbara (Ficus racemosa)

Glucol, Sitosterol, Ceryl Behenate, Lupeol, Friedelin

3.Ashwattha (Ficus religiosa)

Betasitosterol-D-glucoside, Vit.K, N-Octacosanol, Methyl Oleanolate, Lanosterol and Stigmasterol.

4. Plaksha (Ficus lacor)

Alpha-amyrin, Beta-amyrin, lupeol, stigmasterol, compesterol, glucoside, sorbifolin.

5.Haritaki (Terminalia chebula)

Betasitosterol-D-glucoside, Vit.K, N-Octacosanol, Methyl oleanolate, Lanosterol and Stigmasterol.

6. Vibhitaki (Terminalia bellerica)

Tannin, Gallic Acid, Ellagic Acid, Ethyl Gallate, Beta Sitosterol, Mannitol, Galactose

7.Amalaki (Embelica officinalis)

Ellagic acid, Zeatin, Zeatin nucleotide, Chebulic acid, Chebulinic acid, Chebulagic acid

8.Rakta Chandana (Pterocarpus santalinus)

Santalin, Santalic Acid, Santalicpterocarpin, Stigma Sterol, Erythrodiol

9.Ushira (Vetiveria zizanoides)

Isobisabolene, Khusol, Zizanol, Zizanene, Zizanoic Acid, Vanillin.

10.Kushta (Saussurea lappa)

Kushtin, Inulin-betulin, Stigmasteral, Saussureal, A and B Selineenes, Sausurine.

11.Manjishta (Rubia cordifolia)

Combined Anthraquinones, Free Anthraquinones, alkaloids, steroids, flavones, flavonoids, phenols, saponins, tannins, proteins, and glycosides.

12.Choraka (Anjelica glouca)

Furocoumarins, Dimeric, Lingusticum lactose, 1.5% volatile oils
 13. Parpata (Fumaria parviflora)
 Fumaramine, Fumaricine, Fumaridine, Parfumine, Sanguinarine

14. Haridra (Curcuma longa)
 5% Volatile Oil, Resin, Abundant Zingiberaceous Starch Grains, Curcuminoids.

**ASSESSMENT-
 REEDA SCALE**

Table: No.2 REEDA SCALE For Assessment of Episiotomy Wound Healing

Sl. No	Parameters	Findings	Grade
1	Redness	None	0
		Within 0.25cm of the incision bilaterally	1
		Moderate-Within 0.5cm of incision bilaterally	2
		Severe-Beyond 0.5cm of the incision bilaterally	3
2	Edema	None	0
		Mild-Less than 1cm from incision	1
		Moderate-Between 1 to 2 cm from the incision	2
		Severe-> 2 cm from incision	3
3	Ecchymosis	None	0
		Mild-Within 0.25cm bilaterally or 0.5cm unilaterally	1
		Moderate-Between 0.25cm to 1cm bilaterally or between 0.5 to 2cm unilaterally	2
		Severe- > 1cm bilaterally or >2cm unilaterally	3
4	Discharge	None	0
		Serum	1
		Sero-sanguinous	2
		Purulent	3
5	Approximation	Closed	0
		Skin separation 3mm or less B/L from incision	1
		Skin & subcutaneous fat	2
		Skin, subcutaneous fat & fascial layer separation	3

Table: No.3 Observation on REEDA SCALE among four subjects

Parameters	Case-1 BT (Day1)	Case-1 AT (Day 7)	Case-2 BT	Case-2 AT	Case-3 BT	Case-3 AT	Case-4 BT	Case-4 AT
Redness	2	0	2	0	2	0	2	0
Edema	2	0	1	0	1	0	2	0
Ecchymosis	1	0	1	0	1	0	1	0
Discharge	2	0	1	0	1	0	1	0
Approximation	1	0	1	0	1	0	1	0

Fig.1. VAS Scoring Pattern for pain assessment.

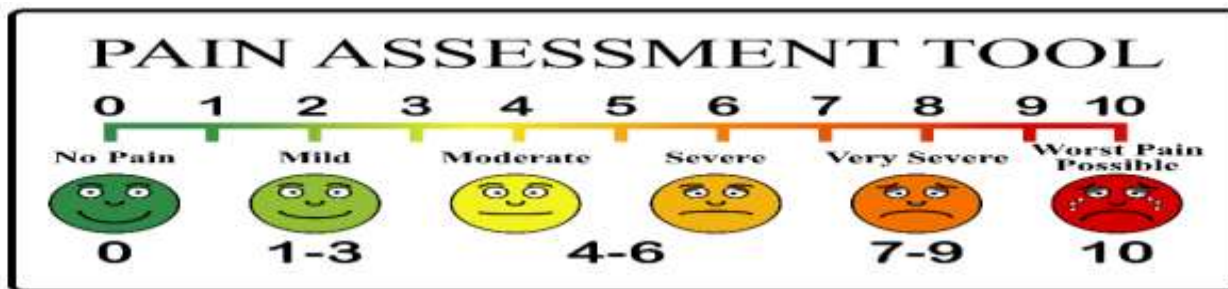


Table: No.4 Observation on Intensity of pain at the wound site (n=4)

PAIN INTENSITY	Case-1	Case-2	Case-3	Case-4
BT (Day 1)	6- Severe	5-Moderate	5- Moderate	6-Severe
AT (Day 7)	0	0	0	0

Adverse Drug Reactions or Events, if any There were no adverse effects of Vapu Spray application observed during this study.

Results/ Outcome of Therapy-

On day one and seventh postnatal day, the wound was assessed using REEDA SCALE and pain intensity by VAS SCALE. On the first day, moderate redness was noted in all four subjects, mild oedema in two subjects and moderate oedema in two subjects, mild ecchymosis in all four subjects, bloody discharge in one subject, serous discharge in three subjects and less than 3mm of skin separation on B/L side of the wound in all four subjects were observed. Severe pain in two subjects and moderate pain in two subjects were noted. The REEDA score and VAS score on day seven (AT) were 0 in all four subjects, which means the episiotomy wound healed appropriately without any complications.

DISCUSSION

The study is being done to determine the impact of VAPU spray on episiotomy healing among four postnatal patients. It revealed that all the puerperal women had significant progress in wound healing and tissue regeneration by applying VAPU Spray.

Probable mode of action:

Panchavalkala ^[8] -

Panchavalkala, a combination of five astringent drugs named, Nyagrodha (*Ficus bengalensis* Linn.), Udumbara (*Ficus glomerata* Roxb.), Ashvattha (*Ficus religiosa* Linn.), Parisha (*Thespesia populanea Soland ex correa*), Plaksha (*Ficus lacor* Buch-Ham.),

is one of the time-tested medicaments for Vrana Ropana. It possessed Vrana Shodhana, Vrana Ropana, and Shothahara, as well as anti-inflammatory, analgesic, and antimicrobial properties ^[5]. It accelerates wound healing, reducing Vrana Vedana, Shotha, Srava and Akruti. Thus, it provides an environment for the formation of healthy granulation tissues. Most of the drugs of this Panchavalkala are Kashaya Rasa Pradhana, Ruksha Guna and Kapha Dosh Shamaka properties, so Shodhana of Dushta Vrana and thus the Ropana is achieved. Early research explain that tannins present in Nyagrodha and Udumbara are antioxidants and blood purifiers with anti-inflammatory actions. Hence, it might have helped to decrease the swelling at the episiotomy wound site. The phytosterols and flavonoids are anti-inflammatory and analgesics that reduce pain. Tannins also proved antimicrobial properties, which might have reduced the discharge. Hence, these constituents in the Panchavalkala might have helped in the regression of signs and symptoms. Drugs of Panchavalkala and Rakta Chandana, Manjishta, Haridra, etc., were Sarvarneekarana (imparting standard skin colour at the site of the wound). Moreover, the drugs, when modified into hydroalcoholic extract, also helped in wound healing, and the mode of administration was much more accessible in spray form.

Triphala ^[7,9]:

It contains Haritaki, Vibhatiki, and Amalaki and is well-known for its wound-healing properties. It has

Kushtaghna [6], Tridosha Shamaka, Stambhaka, Kashaya Rasatmaka, Vrana Ropana, antiseptic, and astringent properties. It soothes the inflamed mucous layer and helps in checking for further infection. Triphala is a well-established clinical drug in wound healing with Shothahara, Kledahara, Deepana, Amahara, and Vrana Shodhana-Ropana properties.

CONCLUSION

Modified drug delivery system of the hydroalcoholic extract [10] of drugs of VAPU Spray in wound healing of Episiotomy wound was found to be safe, effective, cost-effective, easy to carry and administer and highly therapeutic effective in early puerperal care and imparts health benefits to women. Thus, it can be concluded that the local application of VAPU spray was influential in reducing the wound's size, promoting healing, and imparting normal skin colouration at the wound site.

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