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Case Study

THE EFFECT OF *SHATAHVADI ASTHAPANA BASTI* AND *DHUM NASYA* IN AUGMENTATION OF LABOR - A CASE STUDY

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ABSTRACT

Normal labor is a natural physiological process, wherein a woman experiences intense and often excruciating pain. Though labor is a natural process, it is not uncommon for it to deviate from the norm due to a variety of factors such as altered anatomy, physiology, and other unknown variables, resulting in an abnormal labor experience. Ayurveda offers a wealth of knowledge on *Prasava Paricharya*. Our *Acharyas* have mentioned several medicinal preparations that aid in achieving *Sukhprasava*. Here in this case, there was a delay in the process of labor. After prolonged period of 12 hours with no substantial progress in labor, so we augment the labor process by administration of *Shatahvadi Asthapana Basti* mentioned by *Acharya Vagbhata* and *Dhum Nasya* mentioned by *Acharya Kashyapa*. **Case Description**: A 26 years multigravida female patient came to OPD of Prasuti Tantra evum Stri Roga, RGGPG ayurvedic hospital Paprola on date 7th June 2023 with the complaint of amenorrhoea for 8 months 22days and labor pain with no history of leaking. **Aim:** To assess the efficacy of given treatment in terms of decreasing pain and/or duration of labor. **Objective**: To study the effect of *Shatahvadi Asthapana Basti* and *Dhum Nasya* in augmentation of labor. **Outcome:** On 8th June 2023 a full term alive healthy female child of weight 3.1kg at 5:00 am was delivered by NSVD. **Conclusion**: This case study shows that given intervention augmented labor process without any resulting complication.

INTRODUCTION

Childbirth is a significant milestone in the life of any parent, it is an event of joy and satisfaction. But the event of delivery is associated with many complications. Maternal mortality is a global issue that needs to be addressed urgently. About 287000 women died during and following pregnancy and childbirth in 2020 (WHO) [1]. Passage through the birth canal is the most critical journey to the fetus and the risk of complications increases significantly when labor is prolonged and the mother experiences painful contractions. This can lead to a heightened sense of anxiety and fear of having to undergo an operative intervention.

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So, to minimize any potential risks proper knowledge of the process of labor is essential for ensuring a healthy child.

Women who are admitted to labor wards in the latent vs. active phase of labor are at higher risk for obstetrical intervention including electronic fetal monitoring, epidural analgesia, oxytocin, and caesarean section [2-5].

In *Ayurveda* our *Acharyas* have described traditional practices like *Masanumasika Garbhini Paricharya* and *Prasava Paricharya* which can assist a pregnant woman in safely navigating the labor process and minimizing the likelihood of complications, ultimately facilitating a natural delivery of the fetus. *Ayurvedic samhitas* provide a detailed description of Prasava (normal labor), which greatly aids our understanding of it. The term "*Prasava*" is derived from *'shuyan prani prasave'* by prefixing "*Pra*" and applying *Panini sutra* "*Ridrop*". The term *Prakrit Prasava* refers to *Svabhavika* (spontaneous onset), *Upasthita kala* (onset of completion of term), *Avaksira*

(cephalic presentation), *Svabhavika kala* (without undue prolongation) and *Upadravarahita* (without having any complications).

Nowadays, both the obstetrician and the women in labour prefer the delivery to be accomplished within the shortest time possible, in accordance with mother and baby's safety. *Acharya Vagbhata* has mentioned *Shatahvadi Asthapana basti* in *Garbhsanga* [6] and *Dhoom sevana* has been mentioned by *Acharya Kashyap* in *Anagataprasava* [7]. An interruption or delay in the progression of labor referred as *Garbhsanga*.Thus, the effort is made to study the effect of *Shatahvadi Asthapana basti* and *Dhum Nasya* in the first stage of labor mentioned in our classics to augment the labor progress. The aim is to assess the efficacy of these treatments in terms of decreasing pain and/or duration of labor.

Case Report

A 26 years multigravida female patient came to OPD of Prasuti Tantra evum Stri Roga, RGGPG ayurvedic college and hospital Paprola on date 7th June 2023. The patient reported that she had been asymptomatic before 8 months 22 days. Then she developed absence of menses of one and half month and did a urine pregnancy test herself and found it to be positive. At the onset of the third month of gestation, she made her first visit to the PTSR OPD for antenatal care evaluation. Afterwards, she consistently attended the Prasutitantra OPD for her ANC check-ups and was prescribed standard ANC medications. 15 days prior to EDD She presented with intermittent abdominal pain and backache along with mucoid discharge from vagina at 8:00AM on 7th June 2023. So, she was admitted to the Prasuti ward for meticulous monitoring for vitals, uterine contraction, fetal status, and thorough management of the labor process.

History of past illness

There was no history of Hypertension, Diabetes, Blood transfusion, surgical intervention, Chronic infectious diseases.

Family history

There was no significant medical, surgical, and gynaecological history in her family members.

Personal history

Her appetite was good. She used to take mixed; veg and non veg diet. She had normal thirst; 9-10 glasses of daily water consumption. Sleep was sound and undisturbed. Tongue was not coated. Micturition habits were normal; 4-5 times a day. Bowel habits were of regular pattern; once a day. There was no history of constipation and loose stools. There was no history of any addiction.

Past menstrual history

L.M.P.- 15/09/2022

EDD- 22/06/2023

- Age of menarche- 13 years
- Duration- 3-4 days
- Interval- 32-35 days
- Amount- 1-2 pads/day, fully soaked
- Associated symptoms- pain, smell, clots, nausea and vomiting during menses not present

Obstetric history: $G_3P_2L_2A$

G1: 7 years male, full-term normal spontaneous vaginal delivery with Episiotomy, baby weight:3kg, intranatal events were uneventful

G2: 5 years female, full-term normal spontaneous vaginal delivery, baby weight: 2.8kg, intranatal events were uneventful

Examination of patient

Table 1: General Physical examination

Parameters	Results
Height	160cm
Weight	56kg
BP	110/68 mm of Hg
Pulse Rate	84/min
Breast Examination	NAD
Pallor, pedal edema	Not present
Icterus	Mild present

Systemic Examination

CVS- S1S2 normal, no added sounds

Chest- Bilateral chest was clear, normal vesicular breathing

CNS- Past and present memory was intact, well oriented to time, place and person.

GIT- Soft, non-tender, no organomegaly

Obstetrical examination:

Per abdominal examination- inspection: contour-Globular

Striae gravidarum: present, Linea nigra: present

Palpation: Lie: longitudinal

Fundal height: uterus term size

Presentation: cephalic

Head: on the brim

Auscultation: FHS +, regular, 148 beats per minute

Contractions were irregular, 1 in 15mins at time of admission, intensity: poor, duration: 10-12sec

Per vaginal examination: at the time of admission

- Dilatation: 1-1.5cm
- Effacement: 5-10 %

- Station: -4
- Membranes: +
- Show: present
- Pelvis: adequate

Table 2: Investigations carried out

Parameters	Results
Blood group	B positive
Hb gm%	11.0gm%
Platelet count	325lakhs cells/cumm
RBS	78mg/dl
TSB	0.5mg/dl
DSB	0.2mg/dl
SGOT	48IU/L
SGPT	24IU/L
TSH	1.809uIU/ml
Urine	Albumin, sugar- Nil Pus cells: 1-2/hpf, Epi cells: 0-1/hpf
Serum Creatinine	0.5 mg/dl
Uric acid	5.0 mg/dl
HIV	Negative
HbsAg	NR
VDRL	NR

USG Reports

12/12/2022: SLIU Pregnancy- 12 weeks 0 day; EDD- 26/06/2023

10/02/2023: SLIU Pregnancy 20 weeks 6 days, breech, no apparent anomaly detected, FW- 385gms, placenta- posterior upper, liquor- adequate

18/05/2023: SLIU Pregnancy 33 weeks 4 days, cephalic, FW-2188gms, Placenta- posterior upper maturity grade-2, Liquor- adequate.

MATERIALS AND METHODS

Treatment planned

Throughout the time interval of 8:00am to 8:00pm, there was no discernible progress during per vaginal and per abdominal examination. So, taking reference from *Ashtanga Hridayam Sharia Sthana* 1& *Kashyap Sharira Sthana* 5, we planned *Shatahvadi Asthapan basti* [6] given in the treatment of *Garbhsanga* and *Dhum Nasya* [7] given in the treatment of *Anagataprasava* in order to facilitate a successful and uncomplicated delivery.

Shatahvadi Asthapana Basti was given in the latent phase of labor at 11:00pm followed by *Dhum Nasya* during intracontraction period in active phase twice.

- *Sthanika abhyanga* to *Aptyamarga* (Vagina) was done in down-ward direction as mentioned by Acharya Vagbhata and Bhavaprakasha [8,9] & *Parshva, Prustha, Kati, Sakthi* with S*ukoshna Tila taila was* also performed during intracontraction period. [10,11]
- As soon as the cervix was dilated upto 6-7 cm, *Chankramana* (walking) and *Jhrumbhana* (yawning) were recommended. [10, 12]

Contents of *Asthapana Basti*

- *Makshika- 80ml*
- *Saindhava lavana*- 5g
- *Sneha (Tila taila*)- 120ml
- *Kalka* (*Shatpushpa, Vacha, Kushtha, Pippali, Sarshapa*) – 5gm each
- *Kashaya* (*Madanphala, Shatahva, Sarshapa, Ajaji, shigru, Pippali, Chitraka, Kushtha*-20gm each, *Hingu*- 1gm,)- 500ml
- *Aavapa dravya: Gomutra +Godugdha* – 100ml each

Table 3: *Kwatha & Kalka Dravya* [13]

Dravya	***Rasa***	***Vipaka***	***Veerya***	**Active principle**
Shatahva	*Katu-tikta*	*Katu*	*Ushna*	Coumarin
Sarshapa	*Katu-tikta*	*Katu*	*Ushna*	Fixed oil-sinalbin
Ajaji	*Katu-tikta*	*Katu*	*Ushna*	Volatile oil- cumic aldehyde
Shigru	*Madhur tikta katu*	*Katu*	*Ushna*	Alkaloids- moringine
pippali	*Katu*	*Katu*	*Ushna*	Alkoids-piperine
Chitraka	*Katu*	*Katu*	*Ushna*	Plumbagin
Hingu	*Katu*	*Katu*	*Ushna*	Assafoetin
Kushtha	*Katu-tikta Madhur*	*Katu*	*Ushna*	Saussurine
Madanphala	*Madhur tikta*	*Katu*	*Ushna*	Randalic acid
Vacha	*Katu-tikta*	*Katu*	*Ushna*	Calamediol

Preparation of *Shatahvadi kwatha*: *Kwatha* for *Basti* was prepared by taking each *Dravya* 20gm, *Hingu* 1gm i.e., total amount was 160gm and 2000ml amount of water was added then boiled it upto 500ml remain.

Preparation and route administration of *Asthapana Basti*: Firstly, ratio of *Madhu* and *Saindhava* was blended in Khal until a homogenous mixture of both components was achieved. *Tila Taila* was then added to the mixture, which resulted in homogeneity after which the mixture was put into a new pot. Subsequently, *Shatpushpadi Kalka* was incorporated into the blend, which was readily assimilated, followed by the addition of *Shatahvadi kwatha*. The mixture was then meticulously stirred until a uniform and consistent mixture was achieved. Afterward, the mixture underwent filtration through a fine sieve, resulting in a homogenous solution. This lukewarm mixture of 930ml was administered per rectum with an enema can to the patient.

Dhum Nasya [7]

Preparation and route of administration

Dhum Nasya with the drugs *Bhurjapatra, Nameru (surapunnaga)* and *Guggul* was given during intracontraction period. These raw drugs were taken in equal proportion and then burned together. The resultant medicated fumes were then inhaled through the nasal passage and subsequently eliminated through the oral route. This procedure was performed twice during the active phase of labor.

Table 4: Dhum Nasya Dravya [13]

Dravya	***Rasa***	***Vipaka***	***Veerya***	**Part used**
Bhurjapatra	*Kashaya*	*Katu*	Ushna	Stem bark
Nameru	*Madhura-kashaya*	*Madhura*	Sheeta	Stem bark
Guggul	*Katu-tikta*	*Katu*	*Ushna*	Resin

Assessment criteria:

Duration of stages of labor, Partograph, Bishop's score & APGAR score were used to assess labor progress.

1. **Duration of stages of labor**

Mean Duration of 1st stage of labor in multigravida: 6 hours

Mean Duration of 2nd stage of labor in multigravida: 30 minutes

Mean Duration of 3rd stage of labor in multigravida: 15 minutes

Table 5: Bishop score [14]

Bishop score	0	1	2	3
Cervical dilatation	Closed	1-2cm	3-4cm	5+
Cervical length	>4cm	3-4cm	1-2cm	0
Consistency of cervix	Firm	Medium	Soft	-
Position of cervix	Posterior	Middle	Anterior	-
Head station	-3	-2, -1	0	+2, +1

Partograph [15]: figure no. 1: Partograph

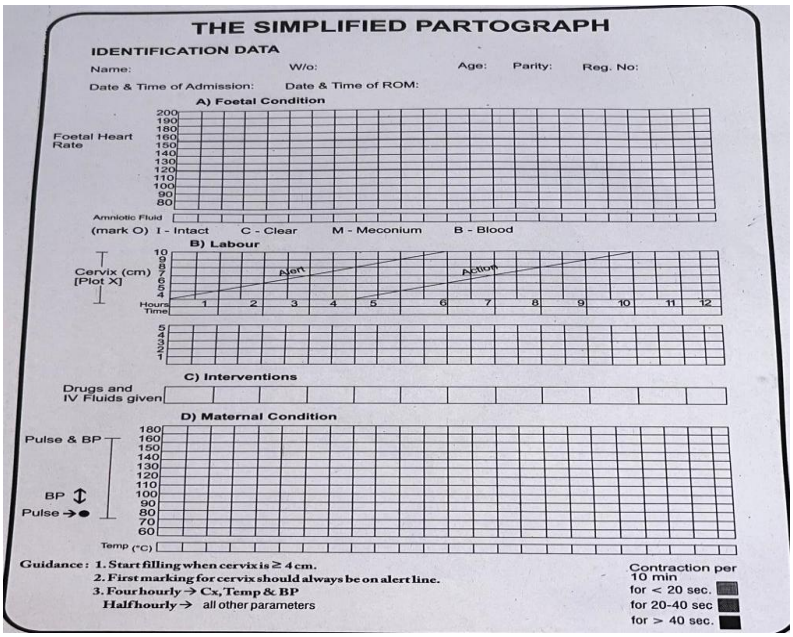


Table 6: APGAR Score [16]

	0	1	2	3
A	Activity (muscle tone)	absent	Flexed arms and legs	Active
P	Pulse	Absent	Below 100bpm	Above 100bpm
G	Grimace (reflex irritability)	Floppy	Minimal response to stimuli	Prompt response to stimuli
A	Appearance (skin colour)	Blue, pale	Pink body, blue extremities	Pink
R	Respiration	Absent	Slow and irregular	Vigorous cry

Before treatment

P/A- Uterus irritable, FHS regular, 148bpm, head: on the brim, cephalic

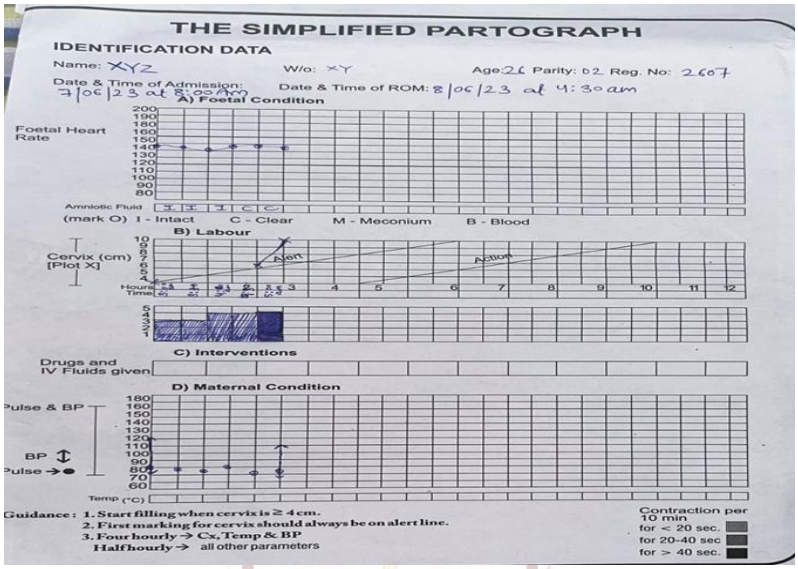
P/V- Cervix 1-1.5cm dilated, 3-4cm in length, station -4 membranes+, show+, pelvis adequate

Table 7: Observation and Results

Time	Contractions	Fetal heart sounds	P/V findings	Bishop score
At 8:00am (at time of admission)	1/15 minutes/10-12 seconds	146bpm	Cx- 1-1.5cm dilated, 3-4cm in length, medium, middle, station -4, memb +, show+	4
At 8:00pm	1/10minutes/10-12 seconds	144bpm	-	-
At 11:00pm (*Shatahvadi Asthapana Basti* intervention carried out)	1/10minutes/10-12 seconds	148bpm	-	-
At 12:00am (after intervention)	2/10 minutes/24-25 seconds	144bpm	Cx- 2.5-3cm dilated, 3-4cm in length, medium, station-2, memb +, show+	6
At 3:00am	3/10 minutes/25-28 seconds	146bpm	Cx- 3.5-4cm dilated, 3-4cm length, soft, station-2, memb+, show+	8
At 3:30am (*Dhum*	3/10 minutes/28-30	144bpm	-	-

***Nasya* intervention carried out)**	seconds			
At 4:00am (*Dhum Nasya* intervention carried out)	4/10 minutes/32-35 seconds	140bpm	-	-
At 4:30am	4/10 minutes/38-40 seconds	146bpm	Cx- 6-6.5cm dilated, 1-2cm length, soft, station-1, memb-, liquor clear	10
At 5:00am	4/10 minutes/42-44 seconds	148bpm	Cx- 9-10cm dilated, 0cm length, station +1	13

Partograph: figure no. 2



RESULTS

1. **Duration of Stages of Labor**
   - Duration of 1st stage of labor in multigravida after *Basti Karma*: 5 hours
   - Duration of 2nd stage of labor in multigravida: 15 minutes
   - Duration of 3rd stage of labor in multigravida: 5-6 minutes
   - Fourth stage of labor: uneventful.
2. **Bishop's Score:** The bishop's score was initially noted to be 4 at 8:00am. However, subsequent intervention was administered resulting in improvement of the score as demonstrated in Table No.7.
   - **Cervical dilatation and effacement**: Effacement and dilatation of cervix was increased gradually. Improved cervical conditions have been noted after augmentation along with contractions intensity.
   - **Cervical consistency:** As labor progresses, it was observed that the administered drug had a favourable effect on the cervix, resulting in a medium to soft consistency.
   - **Head station:** The drug acts upon the *Apana Vayu*, thereby stimulating the *Avi (*labor Pain) and facilitating the progression of labor. This is evidenced by the observed increase in uterine contractions and the resultant effect on cervical position and fetal head station.
3. **Partograph Results**
   - After a waiting period of 12 hours, there was still no discernible advancement in labor during both per vaginal and per abdominal examination.
   - So, we augment the labor process by administering Shatahvadi Asthapana Basti during latent phase and Dhum Nasya during active phase of labor.
   - After augmentation, the labor progressed rapidly and she was successfully delivered before crossing the alert line in the Partograph.
   - **Fetal heart Rate:** The FHR remained consistent at 120-148 beats per minute throughout the duration of the delivery.
   - No variability & instances of late deceleration were detected during the fetal heart rate monitoring as shown in figure No. 3 & 4.

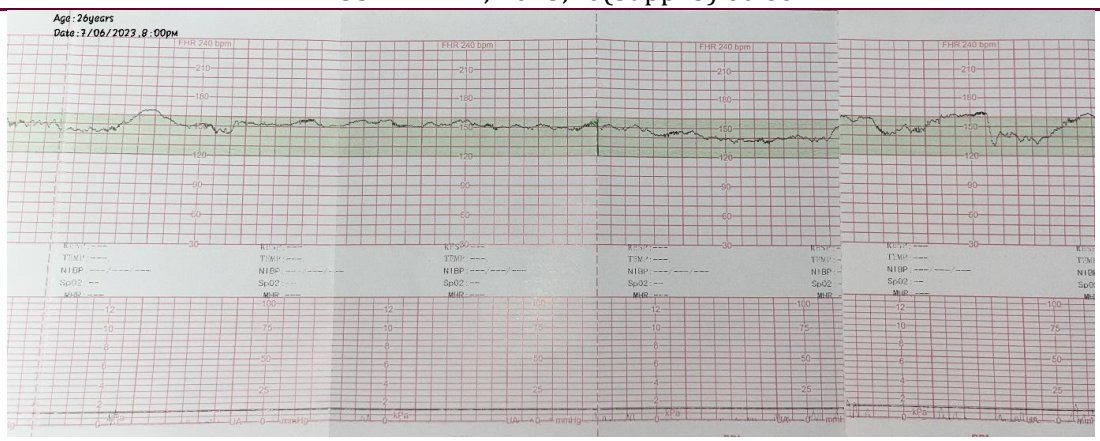


Fig. 3: FHS monitoring on CTG machine before intervention

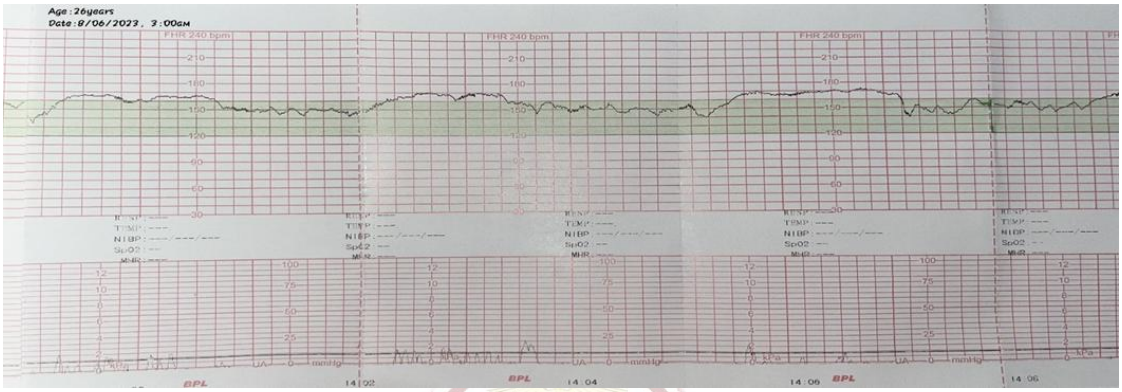


Fig.4: FHS monitoring on CTG machine after intervention

Rupture of Membranes: Spontaneous rupture of membranes was observed at 4:30am with clear liquor.

Vitals: Blood pressure of patient was noted every 2 hours and pulse at every 30 minutes in the active phase. Both BP & Pulse rate were found to be within the normal range, as shown in Figure No. 2.

- On 8th June 2023 a full term alive healthy female child of weight 3.1kg at 5:00 am was delivered by NSVD.

APGAR Score: At 1-minute post-partum was 8, at 5th & 9th minute was 10 indicating a strong overall health status of neonate.

Placenta delivered completely after 5-6minutes with all its membranes and cotyledons intact.

Postpartum Haemorrhage: The uterus was contracted well**.** No evidence of cervical laceration or post-partum haemorrhage was detected. The patient remained under diligent observation for a duration of 1 hour, during which no complications were observed.

Treatment Given after Delivery

- The patient was administered *Panchakola churna* 2gm BD for first 10 days with the aim of reducing the incidence of secondary PPH.
- *Dashmool kwatha* 100ml BD

DISCUSSION

The ultimate aspiration of every expectant mother is to deliver a healthy baby through a normal delivery. The process of labor is a crucial stage in a woman's life, and requires meticulous care.

According to the *Kashyap Samhita*, a woman in labor is said to be in a precarious state, as if one leg is in the depths of hell while the other remains rooted on earth. This vivid metaphor underscores the intense struggle between life and death that she must endure during this critical phase of childbirth [17].

Ayurveda provides a comprehensive and lucid explanation of the process of labor. During the onset of labor as a result of *Prasuti maruta (Apana vata*), the fetal head undergoes a process of rotation and descent, ultimately culminating in its expulsion through the vaginal canal. *Apana vata* referred to as *Prasuti maruta* due to its crucial role in facilitating the delivery of the fetus[18]. There is a clear mention in *Charak* of *"Parivrutyavak shira*" (internal rotation) "*Nishkramat apatya pathena*" which means the expulsion of *shira* through the birth canal cannot be accomplished without the influence of *Apana vata* [19]. *Vikruta vata* can result in irregular labor patterns and a host of other maternal and fetal complications. To prevent these potential complications *Basti karma* has been mentioned by our *Acharyas* in such condition Through *Asthapana basti Sodhana* of *Purana pureesha* (faeces) and *Anulomana* of *Vayu* (normal neuro-hormonal

function) are accomplished, leading to *Sukha* and *Nirupadrava Prasava* [20].

Here, in this case patient arrived at hospital experiencing labor pains at 38th week of her gestational period on 7th June 2023 at 8:00am. Contraction episodes exhibited a persistent pattern of irregular intervals with poor duration and intensity. On P/V examination it was noted that show was present with adequate pelvis. After a 12 hours period of monitoring, the contractions persisted as mild with unsatisfactory descent of the fetal presentation. So, we augmented the process of labor by administration of *Shatahvadi Asthapana basti* mentioned by *Acharya Vagbhata* in the management of *Garbhsanga*. *Garbhsanga* means cessation in the progress of labor. Contents of *Basti* were *Katu-tikta* in *Rasa, Kat*u in *Vipaka* and *Ushna* in *Veerya* which accelerates the process of labor as mentioned by table no.3. It showed good increase in duration of contractions with descent of fetal head per abdominally within 1 hour, rate of cervical dilatation was satisfactory.

Acharya Sushruta explains the nose as the gateway to *Shiras* in *"Nasa hi shirasodwaram"*[21]. As per his statement, the drugs administered through the nasal cavity will effectively target the cerebral centres of the brain. In this study we administered *Dhum Nasya* in the active stage of labor with drugs such as *Bhurjapatra, Nameru* and *Guggul* as prescribed by the *Acharya Kashyap* for the effective management of *Anagataprasava*. Since these drugs are volatile with *Katu rasa* and *Ushna Veerya*, they can affect the hypothalamus part of the brain. By doing so, it may impact the production of the vital oxytocin hormone, which is crucial for facilitating normal delivery.

Chankramana and *Jhrumbhana* also helped in the descent of fetus by regulating the *Vata Dosha.*

Sthanik abhyanga promote the relaxation of pelvic muscles, enhance blood circulation, and regulate the *Apana Vata*. Here in this case study *Sthanika abhyanga* of *Parshva, Prustha, Kati, Sakthi* was done with *Tila Taila* throughout labor which eased her pain. By gently massaging the tract in the downward direction, *Aptyamarga abhyanga* reduced genital tract injuries and resulted in a smoother, less complicated delivery without episiotomy.

CONCLUSION

The utilization of *Shatahvadi Asthapana Basti* during latent phase and *Dhum Nasya* during the active phase of labor has demonstrated effective outcomes in reducing the duration of labor stages, as well as improving cervical effacement, dilatation, consistency, position, and head station of Bishop's score by thorough *Vata Anulomana*. Overall, this intervention augments labor progress, thereby promoting a smooth and successful delivery resulting in *Sukha Prasava*. This study implies that for *Sukha Prasava*, *Vatanulomana* is crucial, and this can be accomplished by recommending the *Basti* and *Dhum Nasya.*

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