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Case Study

OVERCOMING PRIMARY CERVICAL DYSTOCIA WITH AYURVEDA THERAPEUTIC STRATEGY- CASE STUDY

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ABSTRACT

Background: We report a case of primary cervical dystocia managed successfully with Ayurveda therapy. The classical Ayurveda lexicons comprise detailed descriptions regarding *Prasava* (labor) and its management based on which the present case was intervened which resulted in achieving progressive improvement in cervical dilatation and achieving normal labor.

Case Presentation: The case reported in this study is primigravidae, 25 years' old visited prasutitantra OPD, NIA hospital with 37.2 weeks gestational age complaining of labor pains. Since her contraction and per vaginal findings were suggestive of onset of labor, she was hospitalized for further monitoring and awaited spontaneous progress of labor. Repeated Per vaginal examination revealed no progress in cervical dilatation even after 28 hours and she was diagnosed with primary cervical dystocia. Intervention of *Kebuka taila yonipichu*-25ml 2 hourly was made which resulted in remarkable cervical dilatation equivalent to mean standard rate following 3 interventions of *yonipichu* within 6 hours.

Conclusion: The status of the cervix during labor is a significant determinant of mode and ease of labor. Ayurveda therapeutic strategy of *Kebuka taila yoni-pichu* can effectively prime the cervix due to the *Garbhashayaka sankochaka* and estrogenic properties of *Kebuka* and the activation of Ferguson's reflex by *Yoni-pichu*.

INTRODUCTION

India accounts around 25 million child birth every year. Out of these birth approximately 78% women give birth vaginally[1]. 5%-22% of these women need induction of labor[2] and at least 50% of these population show cervical dystocia and are candidates for cervical ripening. The uses of cervical ripening methods have been associated to reduce the rate of cesarean delivery because of failed induction. Spontaneous labor and vaginal delivery is a cascade of synchronized events that are preceded by cervical ripening. As sir Calder remarked, ripening of the cervix governs the ease and success of labor[3].

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Cervical ripening is the process wherein the cervix undergoes preparatory mechanisms to expel the baby out including softening and dilatation of cervix. The basic components of cervix include proteoglycans, glycosaminoglycans, fibrillary collagen and cellular components. Most of the cervical ripening methods incorporate breakdown or rearrangement of these components[4]. There are many different cervical ripening methods available[5]. However, various methods have been associated with risks such as uterine hyperstimulation and fetal distress so must be used assessing risk-benefit ratio.

A detailed description of *Prasava* is given in Ayurvedic samhitas, which greatly helps us in understanding the concept of *Prakrit prasava* (normal labor). A short regimen for each phase (*Prasava Paricharya*) is also outlined in texts, which aids in the prevention of any unexpected events during labor. Acharya Kashyapa highlighted *Yoni audarya* (cervix and vagina) dilation as a sign of the second stage of labor[6]. In the ninth month of pregnancy, the regimen

includes the administration of *Matra basti* and *Yoni-pichu*, which aid the ladies by giving *Snehana*.

In the present case, *Yoni-pichu* soaked in oil medicated with *Kebuka* was administered vaginally 2 hourly in a parturient with protracted cervical dilatation rate which offered remarkable improvement in dilatation. The present report offers the encouraging result of intra vaginal application of *Kebuka taila* in management of primary cervical dystocia.

Patient Information

A 25 year old primigravidae, 5'1'' tall female visited Prasutitantra OPD, NIA Hospital on with the complaints of intermittent labor pain since morning. Her LMP was 03/12/2020 and EDD was 10/009/2021. Her hematological, biochemical investigations were found within normal limits and Ultrasound examination revealed a healthy fetus of corresponding gestation without any abnormality. The fetal head had been found engaged at her previous visit at 37.2 weeks of gestation. Per vaginal examination performed at the time revealed no any abnormality so the patient was considered to have an adequate pelvis.

The patient was admitted to the WARD NO. 18, IPD, NIA hospital. On monitoring the vitals, her BP was 110/70mmHg, PR was 82/min. Per vaginal examination performed on the same day revealed cervix was not taken up admitting only tip of finger inside. On contraction monitoring for 30 minute she had strong contractions of duration 40-45 sec and another with 35-40sec with moderate intensity and interval of 4-5min.

Vaginal examination performed after 20 hours revealed that her cervix was effaced and thinning showing dilatation of one finger width. Membranes were found intact with the head tightly applied over it. Vaginal examination performed after 24 hours revealed cervix thin and dilated to one-two fingerbreadth.

The condition was unchanged after 28 hours in labor. The uterus was contracting strongly and regularly every two to three minutes, and vaginal examination did not show any increase in dilatation of the cervix.

Diagnosis

Since the patient had no previous history of cervical scarring, strong and regular uterine contraction of sufficient duration, pregnancy with cephalic presentation, thin effaced cervix with external os failing to dilate progressively and head tightly lying down over membranes, a diagnosis of primary cervical dystocia was made.

The patient's overall condition remained satisfactory, and no evidences of fetal distress were observed on fetal heart monitoring, therefore it was decided to wait further and intervene with an Ayurveda regimen for cervical dilatation.

Intervention

Intra vaginal administration of *Yoni-pichu* soaked in around 25 ml of *Kebuka taila* was done every 2 hourly and the assessment of cervical ripening was done performing per vaginal examination.

Drug	*Kebuka Taila* (Costus speciosus Koen Sm.)
Family	Zingiberace
Dosage	25ml
Mode of administration	*Yoni-pichu* of size 2-4cm
Route of administration	Per vaginal application
Duration of administration	Every 2 hourly Till

Sop of *Yoni-Pichu* Administration

Purvakarma

1. Consent of the patient
2. Autoclave of *Pichu* for use
3. Voiding of urine and rectum before the procedure
4. Pre-heating the medicated oil in a water bath up to lukewarm temperature

Pradhana Karma

1. Lithotomy Position given to the patient on the procedure table
2. Aseptic cleaning of the vulva and perineal area with betadine/savlon
3. Immersion of *Pichu* in preheated oil
4. Administration of *Pichu*

   Labia minora separated with the left hand, and the head of the *Pichu* was inserted into the vagina neither too shallow nor too deep holding it between the index and thumb of the right hand. The tail of *Pichu* is kept outside so as to allow its easy removal

Paschata Karma

1. Rest in the left lateral position advised to the patient for around 20 minutes
2. Patient is advised to remove it by holding its tail 2 hours following the procedure or whenever she feels the urge to micturition. She is also advised not to reinsert it.

Method of Assessment

Progress of cervical dilatation and subsequently labor was assessed using Per vaginal examination noting dilatation, effacement, status of membranes and station of fetal head 2 hourly at the time of application of *Pichu*.

RESULTS

Timeline of evolution of progress of labor and intervention

Date	Contractions	P/V findings	Intervention
08/09/2021 2.00 pm	Frequency- 2 Duration – 35sec, 40 sec Interval –3-4 min Intensity - Moderate	Cervix- Not taken up admitting tip of finger	Not done
09/09/2021 10.00 am	Frequency- 3 Duration – 35,40, 35 sec Intensity - Moderate	Cervix – 50-60% Effaced, thin Dilatation- 1 finger width Membrane – intact, head tightly applied over it	
2.00 pm	Frequency - 3 Duration - 40, 50, 55 sec Intensity - Moderate	Dilatation- 1-2 finger width Cervix – thin, 70-80% effaced	
6.00 pm	Frequency - 3 Duration - 50, 50, 55 sec Interval 2-3 min Intensity - strong	Dilatation- 1-2 finger width thin, 70-80% effaced	*Kebuka taila yoni-pichu* and *Yoni lepana*
8.00 pm	Frequency 3 Duration 50, 50, 55 sec Interval 2-3 min Intensity – strong	Dilatation 3-4 cm Effacement -Fully effaced. Membrane – present making loose bag during contractions	*Yoni-pichu* was repeated removing old *Yoni-pichu*
10.00 pm	Frequency 3 Duration 50, 50, 60 sec Interval 1-2 min Intensity – strong	Dilatation - 5-6 cm Forming tense bag of membrane	*Yoni-pichu* was repeated removing old *Yoni-pichu*
12.00 am	Frequency 3 Duration 50, 55, 60 sec Interval 1-2 min Intensity – strong	Fully dilated, fully effaced Membrane ruptured spontaneously at 1.00 pm	*Yoni Lepana*
1.55 am	Patient delivered an alive male child of 2.7 kg with Episiotomy		

DISCUSSION

Cervical dystocia is a state where cervix fails to dilate progressively. The exact etiology is not known, yet following causes may be implicated to cause cervical dystocia as 1. Inefficient uterine contractions (b) Malpresentation, malposition, (c) contraction (spasm) of the cervix.[7] It is categorized as primary and secondary that has the previous history of scarring over cervix. Primary cervical dystocia is prevalent mostly in primigravidae and diagnosed on the basis of following features – Presence of Strong uterine contractions, fetal head deeply engaged and is intact over membranes and completely effaced cervix with external os failing to dilate. The condition needs to be diagnosed earlier and adequate management steps should be initiated as early as possible as it may further lead to complication like annular detachment of cervix.

A brief regimen for each month *(Prasava Paricharya*) is also outlined in Ayurveda *Samhitas*, which aids in the prevention of any adverse events during labor. Complications can be avoided by understanding the process and mechanism of labor and sticking to the *Prasava paricharya*. Acharya Charaka has advocated the use of *Basti* and *Pichu* along

with *Madhura aushadha siddha taila* in ninth month which benefits the woman by providing *Snehana* to *Garbhasthana* and *Marga* i.e., birth canal.

Probable Mechanism of Action of Drug

Kebuka[8] (*costus speciosus* koen sm.) is a medicinal plant widely distributed in Asia and has numerous benefits indicated in Ayurveda herbal compendium such as *Raja nighantu. Kebuka* functions as *Garbhashaya sankochaka* i.e., oxytocic through its *Prabahva* (special potency)[9] as well as works as an abortifacient effect[10]. On pharmacological screening, it is reported to have an estrogenic activity[11] which is responsible in initiating labor process and cervical remodeling. Clinical studies suggest that it has the potential to assist in the augmentation of estrogen receptors in the endometrium and cervical priming[12]. Considering the knowledge of these facts, *yoni-pichu* with oil medicated with *Kebuka* (*Costus speciosus* koen sm.) rhizome was planned as an intervention in the present case.

Administration of drug into vaginal canal

▼

Sustained release of drug molecules into vagina

▼

Easy Absorption of low-molecular weight drug through highly vascular vaginal mucosa

▼

Lipophilic nature of vaginal mucosa allowing maximum dissolution of oil which is chemically poly unsaturated fatty acids

▼

Maximum bioavailability achieved since first pass metabolism is by-passed

▼

Prolonged contact of the drug with the vaginal walls and cervical tissue probably functions as Ferguson's reflex.

▼

Aiding in remodeling of cervical components and preparatory modification in birth canal

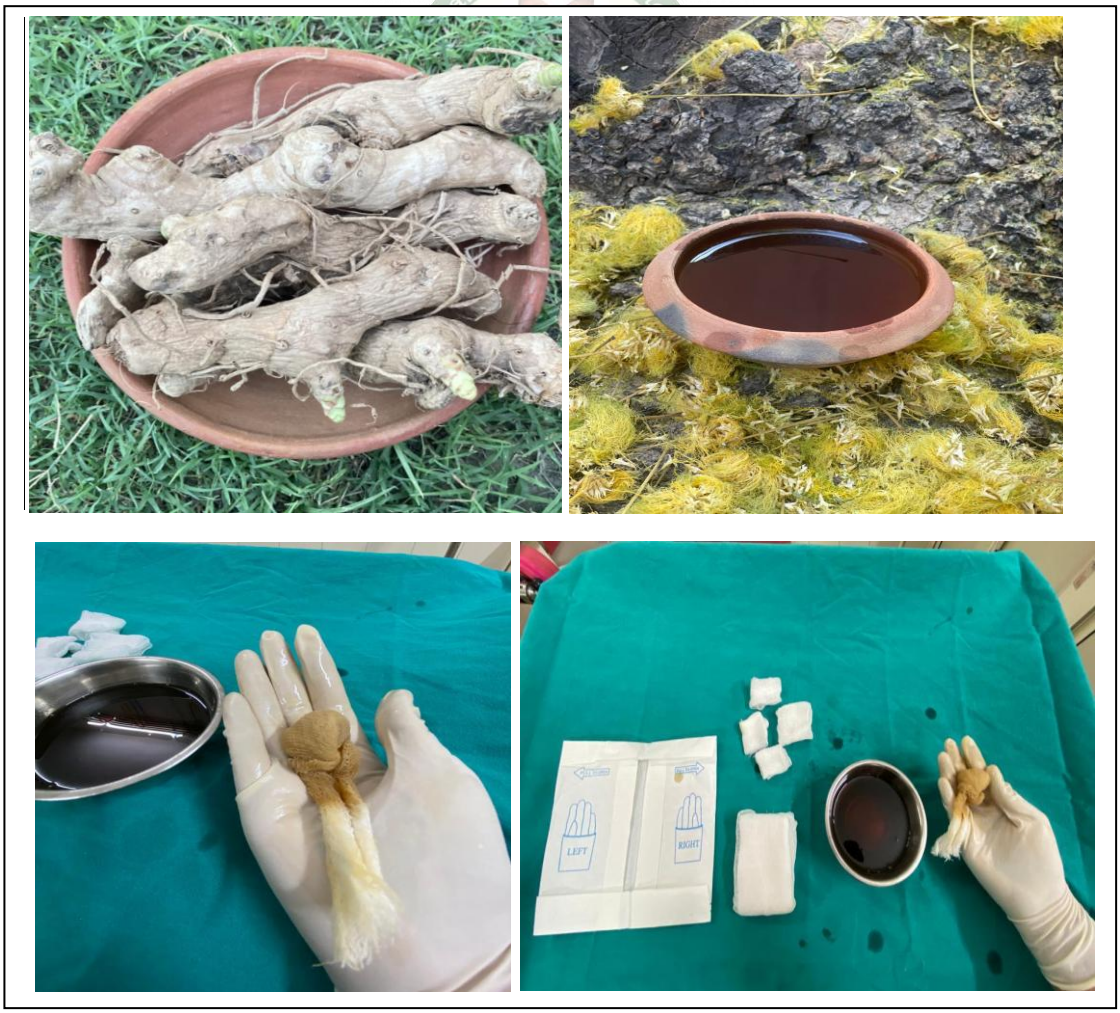

Figure 1. Administration of *Kebuka Taila Yoni-Pichu*

Lepana is a common type *Sthanika chikitsa*, or local therapy, in which the medications used come into direct touch with the area or structure where an expected response is needed. Therefore, *Yoni lepana* was performed in this case to increase the amount of drug delivery locally.

The present case showed remarkable improvement in cervical dilatation from 1-2 finger width dilatation till completed dilatation of cervix with the intervention of *Kebuka* taila *yoni-pichu* with rate being equivalent to standard rate in primi. The effect of *Kebuka* and *Yoni-pichu* might have cumulatively and synergistically worked to enhance cervical dilatation resulting in normal delivery of a male child of wt. 2.7kg following 3 interventions within 6 hours duration.

Every obstetrician's goal has been to identify the optimal delivery timing and take proactive steps to prevent anticipated feto-maternal morbidity. Having said that status of cervix determines the ease of labor, cervical dystocia must be managed to prevent patient landing into lower segment cesarean section and other hazards. Present case report offers encouraging results of Ayurveda therapy in case of primary cervical dystocia.

CONCLUSION

The status of the cervix during labor is a significant determinant of mode and ease of labor. Priming of cervix can be successfully achieved using Ayurveda therapy of *Kebuka taila yoni-pichu* by virtue of *Garbhashaya sankochaka* and estrogenic property of *Kebuka* and stimulating Ferguson's reflex by *Yoni-pichu*.

Recommendations for Future Study

A larger trial can be conducted using a larger sample size using the same intervention to assess its role in cervical remodeling comparing it with standard control intervention in another group at multiple centers for the wellbeing of womankind.

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