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CLINICAL EVALUATION OF POTAKI OIL IN THE MANAGEMENT OF CERVICAL DYSTOCIA

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ABSTRACT

Childbirth is a transformative event in a woman's life. It is one of the most tremendous and worthwhile event for mother. Normal labour is the process by which the complete products of conception are expelled out through the parturient canal. An abnormal labour or dystocia simply means difficult labour or childbirth. From a functional perspective, the only essential features of labour are cervical dilation and foetal descent. In cervical dystocia, cervix fails to dilate .Cervical dystocia if not diagnosed and treated, can lead to maternal/foetal morbidity and even the mother's mortality. According to *Ayurveda*, The whole process of *Prasava* is completely based on *Prasuti Maruta or Apana Vayu*. It has got precise role in stimulation, regulation of myometrial contractions and expulsion of fetus in normal labour. *Potaki* have *Madhura Rasa, Snigdha Guna, Madhura Vipak* and*Vatta-Pitta nashak* action. Due to these properties *Potaki* pacifies vitiated *apana vayu*, and helps in easy and smooth delivery. Thus in the present study, *Potaki taila* application inside vagina has been done to facilitates smooth delivery in cases of cervical dystocia.

Keywords: Labour, Dystocia, Cervix, ApanaVayu

INTRODUCTION

Normal labour is the process by which the complete products of conception are expelled out through the parturient canal. Various factors facilitate this process are normal presentation, position, size of foetus, normal anatomy and physiology of female reproductive organs. According to *Ayurveda* balanced *Apana Vayu* are responsible for the achievement of Eutocia. Abnormalities in either of these may result in Dystocia or abnormal labour.

Labour occurs in 3 stages. Spontaneous vaginal delivery is the expected outcome for most pregnancies, but dystocia can occur in any birthing environment (hospital, birth center or home) with any birthing attendant (physician or midwife) and at any time during the labour. This label may be used after a "failed induction," where the mother has been given cervical ripening agents or pitocin for induction or augmentation of labour. The result is a slowed or stopped labour with no progress in site. There may be cervical dystocia (slowness or inability of the cervix to dilate or efface). Identifying women at risk for dystocia prepares physicians for on time treatment and enables them to minimize maternal-foetal trauma that accompanies the midwifery emergency. Therefore, one of the main objectives of pregnancy care is the identification of high risk women for dystocia.

Cervical dystocia is one of the most common indications for Caesarian Section. It accounts for about 30% of use

all cesarean section.In cervical dystocia there is failure of progress of labor. As we know 2nd stage of labor starts with full dilatation of cervix. In cervical dystocia labour is arrested in first stage. One of the main causes of cervical dystocia is inadequate uterine contraction known as functional cervical dystocia.

In *Ayurvedic* texts, role of *Vayu* especially *Apana Vayu* is considered in stimulation and regulation of normal labour. It acts on myometrium causing regular uterine contractions associated with coordinate dilatation of cervix and laxity of perineum. Labour is accomplished by *Vayu*. If *Vayu* is functioning normally and there is no other pathology in passage and passenger the labour complete with least pain without discomfort and complication.

Potaki has *Madhura Rasa, Snigdha Guna, Madhura Vipak* and *Vatta-Pitta nashak* action. Due to these properties *Potaki* pacifies vitiated *Apana vayu* and helps in easy and smooth delivery *(Su.S.Su 46/256). Bhavaprakasha* has also mentioned that application of *Potakimool kalka* with *Til Taila* inside vagina facilitates smooth delivery. *(Bhavaprakash Chikitsa 70/108)*

This study is a preliminary effort in the direction to evaluate the efficacy of vaginal application of *Potaki Tail* (*Basella alba L.*) in cervical dystocia, where cervix fails to dilate.

Aim of study: 1. The aim of present work is to evaluate efficacy of *Potaki taila* in Cervical Dystocia.

2. To reflect an overview of cervical dystocia in *Ayurveda*.

Selection of cases: Pregnant women having gestational period more than 36 wks, with labour pains reached in labour room of Department of *Prasuti Tantra*, Sir Sunder Lal Hospital, Banaras Hindu University, were registered for the present study.

Inclusion criteria

1. Age between 18-36 years
2. Nulliparous to 4thgravida.
3. Gestational age between 36 – 40 weeks.
4. Height between145 – 170cm.
5. Hemoglobin more than 7 gm.
6. No progress of labour without any pathological dysfunction.
7. Primi with cervical dilatation < 1.5cm for more than 10 hours in latent phase of labour.
8. Multi with cervical dilatation ≤ 1.5cm for more than 4 hours in latent phase.
9. Primi or multi having no change in cervical dilatation for at least two hours in active phase of labour.

Exclusion criteria

1. Women of age less than 18 years and greater than 36 years
2. Parity more than 5
3. The women with cephalo-pelvic disproportion.
4. Any other indication for elective caesarean section.
5. Women having Hb% less than 7gm%.
6. Women with any systemic diseases, Diabetes, Tuberculosis, Bronchial Asthma, Renal disease, Pregnancy induced hypertension, Eclampsia Cardiac diseases, Blood disorders etc.
7. Women with organic pathology like uterine or cervical fibroid, benign or malignant tumour, history of cervical tear during previous delivery, cervical stenosis etc causing cervical fibro

Obstetric History: Detailed information about last menstrual period, expected date of delivery, gravidity, parity, number of live births, abortions were taken and noted.

Clinical examination: In selected32cases complete general and systemic examinations, per abdomen and per vaginal examinations were performed and noted.

Bishop score was calculated on the basis of per vaginal examination.

After complete examination 10 women were excluded from the study due to cephalopelvic disproportion.

Investigations

Following investigations where done in total 22 cases:-

1. Hbgm%, Total Leucocytes count and Differential Leucocytes count, platelet count.
2. Blood group and Rh factor of both partners
3. VDRL, HIV, HBsAg for both partners
4. Fasting Blood Sugar (FBS) and blood urea
5. Urine test for routine and microscopic examination
6. USG was done to know exact gestational age, placental site, Amniotic Fluid Index and Bio Physical Profile or any other foetal congenital anomalies.
7. X ray and ECG were also done whenever needed

After all investigations 2 cases were dropped from the study because their Hbgm% was less than 7.

Method of scoring

Progress of labor was assessed on the basis of bishop's score by paravaginal examination.

Table 1: Showing scoring according to Bishop's score

Parameter	Score			
	0	**1**	**2**	**3**
Position of cervix	Posterior	Intermediate	Anterior	-
Consistency of cervix	Firm	Intermediate	Soft	-
Effacement of cervix	0-30%	31-50%	51-80%	>80%
Dilation of cervix	0 cm	1-2 cm	3-4 cm	>5 cm
Station of foetal head	-3	-2	-1, 0	+1, +2

Mode of administration

Pichu of diameter 4 to 6 cm were prepared by using cotton and gauze piece and autoclaved. Size of *pichu* varies in primi and multi patient according to laxity of vaginal canal.*Pichu* was soaked with *Taila* and inserted into vagina in aseptic conditions under normal body temperature. Before insertion of *pichu* p/v examination done and bishops score was assessed and noted.

Total 4 follow-ups were done, two with medication and two without medication. The *pichu* was inserted and removed after 2 hours and p/v examination done to assess the bishop's score and progress of cervical dilatation. If there is no progress in cervical dilation *pichu* was inserted again and removed after 2 hours and p/v examination was done. The *pichu* was inserted only two times.

Observations and effects of drug were analyzed and noted. Results were assessed on the following basis –

1. Anterior position of the cervix
2. Soft consistency of the cervix
3. More than 80% Effacement of the cervix
4. 8-9 cm Dilatation of the cervix

Satisfactory - When all of the above 4 parameters were fulfilled.

Non-satisfactory - When1 or 2 from the above 4 parameters were fulfilled.

Therapeutic Studies and Clinical Trial

Table 1: Showing Position of cervix initially and during subsequent Follow-ups

Position of cervix	INITIAL	FU I	FU II	FUIII	FU IV
Posterior	11(55%)	0(0%)	0(0%)	0(0%)	0(0%)

Intermediate	7(35%)	10(50%)	6(30%)	6(30%)	6(30%)
Anterior	2(10%)	10(50%)	14(70%)	14(70%)	14(70%)

Table 2: Showing comparison of Position of cervix between initial and different follow ups

Comparison between initial and different Follow-ups	Z-value (Wilicoxon signed Ranks Test)	P-value
Initial vs FU I	4.010	<0.001 H.S.
Initial vs FU II	3.844	<0.001 H.S.
Initial vs FU III	3.844	<0.001 H.S.
Initial vs FU IV	3.844	<0.001 H.S.

Table 3: Showing Consistency cervix initially and during subsequent Follow-ups

Consistency of cervix	Initial	Follow-ups			
		FU I	FU II	FU III	FU IV
Firm	9(45%)	0(0%)	0(0%)	0(0%)	0(0%)
Intermediate	9(45%)	11(55%)	0(0%)	0(0%)	0(0%)
Soft	2(10%)	9(45%)	20(100%)	20(100%)	20(100%)

Table 4: Showing comparison of Consistency of cervix between initial and different follow-ups

Comparison between initial and different Follow-ups	Z-value (Wilicoxon signed Ranks Test)	P-value
Initial vs FU I	4.000	<0.005 S
Initial vs FU II	3.834	<0.001 H.S.
Initial vs FU III	3.834	<0.001 H.S.
Initial vs FU IV	3.834	<0.001 H.S.

Table 5: Showing Effacement of cervix initially and during subsequent Follow-ups

Effacement of cervix (in (percentage)	Initial	Follow-ups			
		FU I	FU II	FU III	FU IV
10-30	13(65%)	0(0%)	0(0%)	0(0%)	0(0%)
31-50	7(35%)	6(30%)	3(15%)	3(15%)	3(15%)
51-80	0(0%)	14(70%)	5(25%)	3(15%)	3(15%)
80-100	0(0%)	0(0%)	12(60%)	14(70%)	14(70%)

Table 6: Showing comparison of Effacement of cervix between initial and different follow-ups

Comparison between initial and different Follow-ups	Z-value (Wilicoxon signed Ranks Test)	P-value
Initial vs FU I	4.185	<0.001 H.S.
Initial vs FU II	4.035	<0.001 H.S.
Initial vs FU III	3.921	<0.001 H.S.
Initial vs FU IV	2.811	<0.001 H.S.

Table 7: Showing Dilatation of cervix initially and during subsequent Follow-ups in both the groups.

Dilatation of	Initial	Follow-ups

cervix (in cm)		FU I	FU II	FU III	FU IV
1.5-2.5	20100%)	6(30%)	6(30%)	6(30%)	6(30%)
2.5-3.5	0(0%)	8(40%)	3(15%)	1(5%)	0(0%)
3.5-4.5	0(0%)	6(30%)	2(10%)	2(10%)	0(0%)
4.5-5.5	0(0%)	0(0%)	8(40%)	3(15%)	0(0%)
5.5-6.5	0(0%)	0(0%)	1(5%)	3(15%)	0(0%)
6.5-7.5	0(0%)	0(0%)	0(0%)	3(15%)	0(0%)
7.5-8.5	0(0%)	0(0%)	0(0%)	2(10%)	0(0%)
8.5-9.5	0(0%)	0(0%)	0(0%)	0(0%)	14(70%)

Table 8: Showing comparison of Dilatation of cervix between initial and different follow-ups.

Comparison between initial and different Follow-ups	Z-value(Wilicoxon signed Ranks Test)	P-value
Initial vs FU I	4.185	<0.001 H.S.
Initial vs FU II	3.921	<0.001 H.S.
Initial vs FU III	3.820	<0.001 H.S.
Initial vs FU IV	2.811	<0.001 H.S.

Table 9: Showing Duration of uterine contraction initially and during subsequent Follow-ups.

Duration of uterine contraction in second	Initial	Follow-ups			
		FU I	FU II	FU III	FU IV
25-30	19(95%)	1(5%)	0(0%)	0(0%)	0(0%)
30-35	1(5%)	14(70%)	11(55%)	9(45%)	6(30%)
35-40	0(0%)	5(25%)	8(40%)	10(50%)	12(60%)
40-45	0(0%)	0(0%)	1(5%)	1(5%)	1(5%)
45-50	0(0%)	0(0%)	0(0%)	0(0%)	1(5%)

Table 10: Showing comparison of Duration of uterine contraction between initial and different follow-ups.

Comparison between initial and different Follow-ups	Z-value (Wilicoxon signed Ranks Test)	P-value
Initial vs FU I	4.146	<0.001 H.S.
Initial vs FU II	3.963	<0.001 H.S.
Initial vs FU III	2.820	<0.001 H.S.
Initial vs FU IV	2.811	<0.001 H.S.

Table 11: Showing Number of uterine contractions in ten minutes initially and during subsequent Follow-ups.

Number of uterine contractions in 10 min.	Initial	Follow-ups			
		FU I	FU II	FU III	FU IV

1-2 cont.	12(60%)	2(10%)	0(0%)	0(0%)	0(0%)
2-3 cont.	8(40%)	13(65%)	11(55%)	9(45%)	6(30%)
3-4 cont.	0(0%)	5(25%)	9(45%)	11(55%)	14(70%)

Table 12: Showing comparison of Number of uterine contractions in ten minutes between initial and different follow-ups.

Comparison between initial and different Follow-ups	Z-value(Wilicoxon signed Ranks Test)	P-value
Initial vs FU I	3.906	<0.001 H.S.
Initial vs FU II	4.179	<0.001 H.S.
Initial vs FU III	4.820	<0.001 H.S.
Initial vs FU IV	3.811	<0.001 H.S.

Table 13: Showing results in total cases.

Result	(n=20)
Satisfactory	**14(70%)**
Non-Satisfactory	**6 (30%)**

DISCUSSION

Mean age group was 25-50 years in total cases, while mean gravidity and parity were 1.60 & 0.42 respectively. Majority of women (67.5%) were non working and only 32.5% of women were working, majority of women complained of pain and tightness in abdomen i.e. 75% and 70% respectively, while complained of blood with mucus discharge and backache were seen in 35% and 32.5% of women respectively.

Vata-pittaj, *pitta-kaphaj*, *vata-kaphaj* and *sannipataj prakriti* were seen in 30%, 25%, 25% & 20% of women respectively.

Most of the women (87.5%) were of *madhyama sara*, majority of women (90%) had *madhyama samhanana*

In this examination fundal height, foetal lie, presentation and uterine contraction were observed and noted. Fetus was found in longitudinal lie and cephalic presentation in all of the women. fundal height 36-37 wks was seen in 70% of women, duration of uterine contraction was 25-30 seconds in 85% of women, while it was found 30-35 seconds only in 15% of women

Station of foetal head was seen -3 and membrane was present in all of the women.

During P/V examination *adequate pelvis* was noted in all of the women.

Change in position and consistency of cervix was seen from the 1st follow-up. Anterior position of cervix was seen initially in 2 women, while it was seen in 14 women after 1st follow-up. Anterior position of cervix was seen initially in 2 women, while it was seen in 14 women after 1st follow-up. Effacement of cervix was increased gradually and reached up to 51-80% in 14 women during 1st follow-up.

Initially 1.5-2.5 cm dilatation of cervix was seen in all of the women. Dilatation of cervix increased gradually and reached upto 2.5-3.5 cm in 8 women during 1st follow-up. Further dilatation of cervix was seen 4.5-5.5 cm in 8 women during 2nd follow-up. Dilatation of cervix was seen 6.5-7.5 cm in 3 women during 3rd follow-up, while 8.5-9.5 cm dilatation of cervix was seen in 14 women during 4th follow-up.

Satisfactory results were seen when all of the above 4 parameters were fulfilled.Non-Satisfactory results were

seen when 1 or 2 from the above 4 parameters were fulfilled.Satisfactory and non-satisfactory results were seen in 70% and 30% of women respectively.

Probable mode of action of *Potaki oil*

Potaki has *Madhura Rasa, Snigdha Guna, Madhura Vipaka* and *Vatta-Pitta nashak* action. Due to these properties *Potaki* pacifies vitiated *Apana vayu* and maintain normal *Apana vayu*, thus helps in easy and smooth delivery. Bhawaprakasha has also mentioned that application of *Potakimool kalka* with *til taila* inside vagina facilitates smooth delivery. According to *Ayurvedic*literature proper function of *Apana vayu* is responsible for expulsion of fetus, while vitiated *Apana vayu* is responsible for *Garbhasanga*. This vitiated *vayu* after obstructing the vaginal orifice moves inward and obstructs the aperture of *asaya* causing cervical spasm, resulting in cervical dystocia. The whole process of *Prasava* is completely based on *Prasuti Maruta* or *Apana Vayu*. It has got precise role in stimulation, regulation of myometrial contractions and expulsion of fetus in normal labour. Thus by maintaining normal function of *Apanavayu, Potaki* facilitates cervical softening and dilatation and increases uterine contraction. *Til taila* acts as Snehana and make the consistency of cervix soft. By virtue of these qualities, drugs medicated *taila* is showing good results.

CONCLUSION

From a functional perspective, the only essential features of labour are cervical dilation and foetal descent.Now days; there is increased incidence of caesarean section. There are many factors leading to deviation from normal spontaneous vaginal delivery, one of the most common cause in primi patients is cervical dystocia.Inadequate uterine contraction is one of the main causes of cervical dystocia.According to *Ayurvedic* texts vitiation of *Apana vayu* causes dystocia. Thus, by pacifying *Apana vayu* and increasing contractions *Potaki oil* improves cervical dilatation.It also facilitates easy and smooth labour.

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