

## CERVICAL RIPENING BY NIPPLE STIMULATION

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### SUMMARY

Seventy five patients near, at or post-term were selected to study the effectiveness of breast stimulation for ripening the cervix. Gentle breast stimulation was done in 50 patients in the study group. A significant change in the Bishop cervical score, decrease in induction delivery interval, no uterine hypertonus, no maternal or fetal complications were noted. Lactation was found to be better and easier in the study group.

### INTRODUCTION

Induction of labour has been practised since ancient times. By induction is meant the adoption of measures designed to initiate labour earlier than it would take place as a natural event. There is a close relationship between the physical state of the cervix and successful induction of labour.

Many agents have been investigated and found to induce cervical ripening with varying success. Estradiol and Relaxin gel, Laminaria tents, Foley's catheter, Oxytocin and prostaglandins have been used to ripen the cervix or induce labour but all these have significant drawbacks. Nipple Stimulation

for ripening the cervix in term gestation is a simple and safe procedure based on physiological principles of milk ejection reflex. This reflex acts on the hypothalamus-pituitary axis and causes release of oxytocin from the posterior pituitary.

### MATERIAL AND METHODS

Seventy five patients near, at or post-term were selected for the present study. Fifty were in the study and 25 in the control group. After detailed history & general physical examination, obstetrical examination undertaken and cervical score determined by standard Bishop Scoring System. The patients in the study group were instructed to gently massage the breast alternately specially around the nipples using

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alternate hands. Moist towel, powder or lubricating cream could be used. Only one breast was stimulated at one time. The procedure was done for 15 min. on alternate breast upto one hour and for 3 times a day for 3 days. Cervical score was assessed before commencement of the study and subsequently after 24, 48 and 72 hours. All patients were closely monitored throughout the study period. Patients in the control group were asked to avoid any breast

stimulation.

### OBSERVATIONS

In the study group, 25 cases were normal term pregnancy. Among the 25 abnormal cases, 17 had postdated pregnancy, 5 had PIH, 2 had intrauterine fetal death and one had Rh iso-immunisation.

As seen in Table I, there was a significant change in the mean cervical Bishop scoring in the study group in all primigravidae

**Table I**  
**MEAN CERVICAL SCORE AT DIFFERENT PERIODS**  
**(DISTRIBUTION ACCORDING TO PARITY)**

Parity	Study Group (50)					Control Group (25)				
	Total	0hr	24 hr	48 hr	72 hr	Total	0 hr	24 hr	48 hr	72 hr
Primi gravidae	21	0.88	3	5.3	6.1	9	0.2	0.2	0.21	0.34
Multi gravidae (2-4)	24	2.2	5.1	7.2	7.3	13	1.2	1.2	1.4	1.4
Grand multi gravidae (5 or more)	5	2.8	7.6	9.0	-	3	1.5	1.5	2.0	2.2

**TABLE II**  
**AVERAGE CHANGE IN BISHOP SCORE**

Initial Bisshop Score	Average Change in Bishop Score	
	Study Group	Contral Group
0-1	2.40	0.48
2-4	5.48	0.62

**TABLE III**  
**MODE OF DELIVERY WITHIN STUDY PERIOD**

Mode of Delivery	Study		Control	
	No.	%	No.	%
Spontaneous Vaginal delivery	25	50	1	4
Forceps	1	2	-	-
LSCS	2	4	1	4
<b>Total</b>	<b>28</b>	<b>56</b>	<b>2</b>	<b>8</b>

**TABLE IV**  
**MODE OF DELIVERY AFTER STUDY PERIOD**

Mode of Delivery	Study Group		Control Group	
	No.	%	No.	%
Spontaneous Vaginal	2	9.1	1	4.3
Oxytocin induction	16	72.7	18	78.2
	IDI 7.64 hrs		IDI 10.33 hrs	
LSCS	4	18.2	4	17.5
<b>Total</b>	<b>22</b>	<b>100</b>	<b>23</b>	<b>100</b>

**TABLE V**  
**AVERAGE DURATION OF LABOUR IN STUDY & CONTROL GROUPS**

Parity	Study Group (hrs)	Control Group (hrs)
Primigravidae	10.08	12.55
Multigravidae (2-4)	7.10	8.30
Grand multigravidae (5 or more)	5.0	6.30

multigravidae and grand multigravidae as compared to controls. The response to nipple stimulation was maximum in multiparae and grand multigravidae. Table II shows the favourable response in the form of average increase in Bishop scoring in study group as compared to controls.

As shown in Table III, 50% of the cases in the study group went into spontaneous labour and delivered normally within the study period of 72 hours as compared to only 4% (one case) in the control group. In the study group, one had forceps delivery and 2 had LSCS for uncontrolled PIH.

Table IV depicts the management of undelivered cases after the study period of 72 hours. Oxytocin induction was done in 16 cases of study group who had induction delivery interval of 7.64 hrs and 18 cases of control group who had IDI of 10.33 hrs. LSCS was done in 4 cases each of study & control group for F.D. & incoordinate uterine action.

Table V shows that there was a significant decrease in the duration of labour in all the primigravidae multiparae and grand multigravidae in the study group.

### DISCUSSION

Late pregnancy is characterised by preparatory changes in cervix. A ripe cervix presages an earlier onset and shortened duration of labour as compared to an unripe cervix.

Nipple stimulation is the safest method for ripening the cervix as it is a physiological process which does not involve the introduction of foreign bodies or drugs in the body.

The present study showed that the procedure of nipple stimulation was ef-

fective in ripening the unfavourable cervix in all primigravidae, multigravidae and grand multigravidae. The mean change in Bishop score was 4.32 points. Our result is comparable to the result of similar studies by Elliott & Flaherty (1980) Salmon et al 1986 and Damania et al 1988.

52% patients of the study group delivered vaginally in our study. In a study conducted by Jhirad Vago, 1973 69.6% of cases delivered vaginally. The cause of this discrepancy is that they used a breast pump for nipple stimulation.

The patients who remained undelivered after the study period were given IV infusion of Oxytocin. It was seen that there was a significant decrease in the induction delivery interval. In the control group, IDI was 10.33 hrs whereas in the study group it was 7.64 hrs.

Uterine hyperstimulation was not observed in our study. Wegatsuma T et al 1983, Viegas OAC et al 1984, and Lenke & Nemes 1984 reported uterine hyperstimulation in significant number of cases in their studies. The cause was bilateral mammary stimulation by breast pump, manually or by nipple battery vibrators. On the contrary, when one nipple was stimulated gently at one time, no such hyperstimulation was noted in any study.

No fetal complication was noticed in our study. It was observed that there was striking absence of breast engorgement and the presence of plentiful secretion of milk in the study group.

The exact mechanism is not known

but it is believed that nipple stimulation activates endogenous oxytocin which results in physiological uterine contractions.

### CONCLUSION

Nipple stimulation for cervical ripening is the most effective natural method. The incidence of LSCS can be reduced if nipple stimulation is routinely used in cases with unfavourable cervix. Induction delivery interval is also significantly reduced. Fetal and Maternal complications are negligible.

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