A One year Randomised Clinical Trial to Study the Effect of Paracervical Block in Accelerating the Active Phase of Labour in Primigravidas.

Jyotsna C. Shravage, Rachana Sinha

[illegible] Assistant Professor, J. N. Medical College, Nehru Nagar, Belgaum.

Summary

The Aim of the study was to acertain the effectiveness of Paracervical block in acceleration of active stage of labour in primigravidas and to compare the result with controls. The degree and duration of pain relief provided by Paracervical block and its effect on the fetus was studied. Randomized clinical trial with double blinding was done. The period of study was from February 1997-February 1998. Time taken from Paracervical block to full dilatation was significantly shorter ($p<0.01$) in the study group than in the control group. The degree of pain relief was complete in 88% of the study cases. The mean duration of pain relief was 2 hours 14 minutes. Fetal bradycardia was noted in 9% of study cases but they were all transient. Neonatal outcome was not affected. These data suggest that Paracervical block accelerates labour and provides adequate pain relief without any adverse effect on the fetus.

Introduction

The human is unique among mammals because during the process of labour and birth, the mother appears to require the assistance of other individuals for optimal outcome. Duration is the kernel of the problem in the management of labour. Cervical factors play an important role in determining the progress and duration of labour in first stage. Paracervical nerve block abolishes the parasympathetic inhibitory effect on the cervix and relieves the spasm of the cervix and helps in faster cervical dilatation and hence accelerates labour. Apart from accelerating labour it also serves the dual purpose of pain relief. Although introduced in 1992 its popularity waned because of fears of fetal bradycardia, which it was thought to produce. Recent studies do not support this view and with proper technique, Paracervical block enjoys the position of a simple and very effective procedure.

Materials and Methods

A total of 200 cases of uncomplicated primigravidas with full term pregnancy in established early labour admitted to Civil Hospital, Belgaum during the period February 1997-February 1998 were selected for the study and were randomly allotted to the study and control group. Patients with condition predisposing to the utero-placental insufficiency diabetes, PIH, malpresentation, chronic Hypertension and suspected IUGR were excluded from the study. The study was conducted using 20ml of 2% Xylocaine in 100 study cases and 20ml of distilled water in 100 control cases. Injections were given at 2,5,7 and 11 o clock positions in the lateral vaginal fornix with paracervical block needle with guide. 5ml of xylocaine was instilled at each position. Patients were monitored every fifteen minutes for 30 minutes and then every 30 minutes. Partogram was maintained to assess the process of

Table I
Mean Labour Data

	Study	Control	P Value
Mean active Phase of Labour	3 hr 8 min	6 hr 12 min	<0.01
Mean Duration of Second Stage	37 min	38 min	N.S.
Mean duration of third stage	7 min	8 min	N.S.
Mean rate of cervical-dilatation	2.86 cm/hr	1.7 cm/hr	<0.01
Mean injection – delivery interval	3 hr 50 min	6 hr 52 min	<0.001

labour. Time taken for the administration of block to full dilatation was noted. Efficacy of pain relief was noted. Patients were questioned regarding pain relief and graded as –
Complete relief (4+); Satisfactory with residual backache (3+); Failure on one side (2+);
Complete failure (1+). Mode and outcome of delivery was noted. Neonatal condition was assessed by APGAR score, at 1,5 and 10 minutes. Any adverse material side effect was noted.

Results

The mean active phase of labour in the study group was 3 hours 8 minutes whereas it was 6 hours and 12 minutes in the control group, which was statistically significant ($p<0.01$). There was no difference in the second and third stage of labour in the two group as compared to controls (1.7cm/hour). The injection delivery was also less in the study group mainly because of short active phase of labour. (Table I) Degree of pain relief in the study and control groups are shown in Table II.

Table II
Degree of Pain Relief

	Study	Control
Excellent / complete relief (4+)	88	Nil
Satisfactory with residual backache (3+)	7	3
Failure on one side (2+)	1	Nil
None / Complete failure (1+)	2	97

Table III
Effect on Foetal Heart Rate

Effect on FHR	Study	Control
Increased	-	1
Decreased	9	0
No effect	91	99

Effect on fetal heart rate: There were nine cases in the study group who had post paracervical block bradycardia. There was a decrease in the fetal heart rate by 15-20 beats / minutes which lasted from between 5-11 minutes. All patients were given oxygen inhalation and left lateral position. The bradycardia was transient in all the nine cases and the fetal heart rate picked up. The APGAR scores of these babies were normal. (Table III).

Fetal outcome is shown in (Table IV) none of the babies were asphyxiated in the study group

Table IV
Neonatal Outcome

APGAR score at 5 minutes	Study	Control
<4	Nil	2
5-7	4	5
>8	96	93

Maternal side effect : Most of the patients receiving paracervical block were confortable. In the study group, 5 patients complained of giddiness, sweating and tingling of lower limbs for a short period of time.

Discussion

The present study was planned to find out the efficacy of paracervical block in accelerating the first stage of labour in primigraavidae.

Several studies have found a statistically significant reduction in the injection-delivery interval. Baken et al 1962, Chebab 1968 Padubidri Bajpayee 1987, Deshpande et al 1989, Jina et al 1990 and Nagal et al 1995 found a considerable reduction in the time for the injection to delivery. In the control group the injection delivery varied from 4 hr 47 minutes (Chebab 1968) to 6 hr 52 minutes (Present study). However in the Paracervical group it varied from 2 hr 30 minutes (Nagal et al) to 3 hr 50 minutes (present study). The effect of paracervical block on fetal heart rate has been studied extensively. Lefevre Michael in 1984 studied 300 cases and got a rate of post Paracervical block bradycardia of 11.3%. He found that restricting the use of paracervical block to cases with reassuring fetal heart rate patterns should minimize this complication of obstetrical anesthesia. In the present study 9 cases had transient bradycardia lasting from 5-11 minutes.

The APGAR score is not affected by paracervical block as was shown by the study of Nagal et al 1995 and the present study.

Several studies have confirmed the efficacy of this method in pain relief. Complete relief ranged from 80% (Deshpande et al 1989) to 93% (Baken et al 1962). In the present study complete relief was present in 88% of cases.

No appreciable change in pulse rate or blood pressure was noted. Uterine contractility was also not affected. Occasional reports of hematoma or nerve palsies have been mentioned in literature but they were not encountered in this study.

Conclusion

Paracervical block is a simple, easy method, which does not require any expertise for administration and is helpful for patient. The study supports the hypothesis that paracervical block accelerates labour.

References

1. Baken M.P. Freeman D.W., and Barens A. Surg Gynaec and Obste 144, 379, 1962.
2. Chebab HE Am J of Obst and Gyn 102, 920, 1968
3. Deshpande PS, Nitwe P and Walekar B.R, J Obst and Gyn India 39, 314, 1989.
4. Jina, R., Aggarwal V and Kar J; J. Obst and Gyn India 41, 201, 1996.
5. Lefevre Michael L., Obst and Gynae volume 64, No. 3, 343, 1984.
6. Nagal P. Maheshwari M & Sethi S. J. of Obst & Gyn India. 42, 506, 1995.
7. Padubidri V, Bajpai S, J. Obst and Gyn India 37 385 1987.