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A Comparative Study of Maternal and Neonatal Morbidities between Patwardhan Technique and Conventional Method for Caesarean Delivery in Second Stage of Labour

Authors
Titol Biswas[1], Nibedita Jana[2], Souvik Kumar Das[3]

[1]RMO cum Clinical Tutor, Dept. of Obstetrics & Gynaecology,Midnapore Medical College, West Bengal, India
[2]Junior Resident, Dept. of Obstetrics & Gynaecology, Midnapore Medical College, West Bengal, India
[3]Senior Resident, Dept. of Obstetrics & Gynaecology, Institute of Post Graduate Medical Education and Research, Kolkata, India
Correspondence Author
Titol Biswas
61, Vivekananda sarani Kolkata- 700078 West Bengal, India
Email- *titolbiswas@yahoo.com*

ABSTRACT

Objective: *To compare the maternal and neonatal morbidities between the Patwardhan technique and the conventional method for extraction of the fetus in second stage caesarean sections.*

Method: *In this prospective study 80 caesarean sections in second stage of labour were analysed.*

All the cases were divided into two groups. One was Patwardhan technique group and another was conventional method group where baby was delivered as cephalic. Maternal and neonatal morbidities were compared between the two groups.

Results: *In this study it was found that extension of uterine incision, uterine artery injury, excessive bleeding and need for blood transfusion were significantly less in patwardhan group. However, there were no differences in neonatal outcomes in both the groups.*

Conclusion: *Patwardhan technique is a safe, easy and preferred method of delivery during lower segment caesarean section in second stage of labour and needs to be employed more widely.*

Key words: *Patwardhan technique, Second stage caesarean sections.*

INTRODUCTION

Caesarean deliveries done in second stage of labour account for one-fourth of all primary caesarean sections. 1 And are associated with significant maternal and neonatal morbidity.2, 3

This situation rare in developed countries where labour is well supervised but is common in developing countries where women like to be delivered at home by the traditional birth attendant (TBA) and report to the hospital late in labour if the TBA fails in her endeavours.

Caesarean sections done in second stage of labour with impacted fetal heads are technically difficult. In these cases the lower uterine segment becomes stretched and oedematous. Potential maternal complications include extension of the uterine incision, uterine artery injury, broad ligament haematoma, bladder injury, excessive bleeding. Delay in extraction of baby can be associated with increased risk of birth asphyxia, neonatal intensive care unit (NICU) admission, and neonatal death. Patwardhan technique is a unique technique which is used for delivering babies in caesarean sections during second stage of labour.4, 5

MATERIAL AND METHODS

This prospective comparative study was conducted over 1 year period (JAN 2013 to DEC2013) in Midnapore Medical College & Hospital, Midnapore. West Bengal, India. Eighty gravid women with singleton pregnancy at term in anterior vertex position and in second stage of labour, with the head deeply impacted in the pelvis and needing caesarean sections were included in the study. Lower Segment Caesarean Sections (LSCS) with transverse incision was done in all these women. 50 women were delivered by Patwardhan's technique and 30 women by conventional method (delivered as head). Maternal and neonatal morbidities in terms of extension of the uterine incision, uterine artery injury, broad ligament haematoma, bladder injury, excessive bleeding, birth asphyxia, neonatal intensive care unit (NICU) admission, neonatal death were compared.

PATWARDHAN TECHNIQUE[4, 5]

1. In case of occipito-transverse or occipito-anterior positions with the head deeply impacted in the pelvis, incision is made in the lower uterine segment, at the level of the anterior shoulder, which is delivered out.
2. With gentle traction on this shoulder, the posterior shoulder is also delivered out.
3. Next, the surgeon hooks the fingers through both the axillae and with gentle traction, aided by fundal pressure applied by assistant, the body of the fetus is brought out of the uterus.
4. Now the baby's head which is the only part of the fetus which is still inside the uterus is gently lifted out of the pelvis.

Statistical analyses of categorical variables were performed by Fisher exact test and the non paired Student t test to compare continuous variables. All P values were two-tailed, and $P < 0.05$ was considered statistically significant. Quickcalcs-GraphPad software was used for all analyses.

RESULTS

A total of 80 patients underwent second stage Caesarean sections from JAN 2013 to DEC 2013. A total of 50 (62.5%) patients belonged to Patwardhan Technique and 30 (37.5%) patients belonged to conventional method. There was no significant difference found in the age, parity, duration of pregnancy and preoperative Hb status of the two groups.

Table-I:

Neonatal Morbidities	Patwardhan Technique (n=50)	Conventional Method (n= 30)	P value
Birth asphyxia (apgar score <7 at 5 min.)	6 (12%)	5 (16%)	0.7387
NICU admission	10 (20%)	7 (23%)	0.7815
Neonatal death	1 (2%)	2 (6.6%)	0.5527

Table-I shows that birth asphyxia (12% vs. 16%, p=0.7387), NICU admission (20% vs. 23%, p=0.7815), neonatal death (2% vs. 6.6%), p=0.5527) were more in conventional method group but the differences did not reach statistical significance.

Table- II:

Maternal Morbidities	Patwardhan Technique (n=50)	Conventional Method (n=30)	P value
Extension of the uterine incision	0 (0%)	8 (26.66%)	0.0002
Uterine artery injury	1 (2%)	12 (40%)	0.0001
Broad ligament haematoma	0 (0%)	2 (6.66%)	0.1377
Bladder injury	0 (0%)	1 (3.33%)	0.3750
Excessive bleeding (traumatic & atonic)	4 (8%)	16 (53.33%)	0.0001
Blood transfusion needed	2 (4%)	14 (46.66%)	0.0001

Table-II shows extension of uterine incision (0% vs. 26.66%, p=0.0002), uterine artery injury (2% vs. 40%, p=0.0001), excessive bleeding (8% vs. 53.33%, p=0.0001), blood transfusion needed (4% vs. 46.66%, p=0.0001) all were significantly higher in conventional method group indicating the superiority of Patwardhan technique as compared to that of the conventional method. Broad ligament haematoma and bladder injury occurred in 2 and 1 patients respectively in conventional method group and none in Patwardhan technique group. But the differences did not reach statistical significance (p=0.1377 and p=0.3750 respectively).

DISCUSSION

Caesarean sections done in second stage of labour with impacted fetal heads are associated with increased trauma to lower uterine segment and associated structures, as well as, increased haemorrhage and infections.6 A prolonged second stage of labour increases the attenuation of lower uterine segment and impaction of fetal head, which gives rise to a thin, easily lacerated lower uterine segment and cervix, which is predisposed to more extensions while delivering fetal head.7 Extension of the uterine incision and ensuing haemorrhage are the main problems at LSCS in second stage of labour.

The incidence of extension of incision in second stage caesarean sections seen in conventional method used for extraction of fetus, has been found to be about 15% to 50% in various studies.6-10 In our study, extension rate was 26.66% in conventional method and no extension was noted while Patwardhan technique was used as method of extraction of fetus thus indicating the safety and efficacy of this technique. Less extension led to decreased chances of traumatic haemorrhage and thus, decreased need for blood transfusions. Our study shows blood transfusion needed significantly less in Patwardhan technique group (4% vs. 46.66%, p=0.0001). The results of our study were similar to those of studies done by Khosla et al.5, Mukhopadhyay P et al.11, Pradip Kumar Saha et al.10 In these studies too, no extensions occurred and significantly less blood transfusion needed while Patwardhan technique was used. Incidence of uterine artery injury was significantly less in Patwardhan group (2% vs. 40%, p=0.0001), almost similar to Mukhopadhyay P et al., 11 (0% vs. 28%). Only 1 case of bladder injury noted in conventional method but none in patwardhan group and difference was not statistical significance. Mukhopadhyay P et al.11 also found 2 bladder injury in conventional method and none in patwardhan group.

In our study there were no differences in the neonatal outcomes in both the groups. Babies born by second stage caesarean sections have increased incidences of birth asphyxia caused by prolonged second stage labour.2, 9, 12

However birth asphyxia and neonatal death rates were almost similar in our two groups indicating that the technique of delivery was not responsible for these. But Desai P et al.13 reported that the incidence of birth asphyxia was significantly more common, where this method was not used.

CONCLUSION

During second stage lower segment caesarean sections, when the hand is forcibly introduced into the pelvis to deliver the head which is impacted in the pelvis, extension of the uterine incision and injury to the surrounding structures occur due to oedematous and fragility of the lower uterine segment. Patwardhan technique avoids this and needs to be employed more widely.

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