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IMPACT OF PATWARDHAN 'S TECHNIQUE ON MATERNAL AND FETAL OUTCOME IN SECOND STAGE CESAREAN SECTION

Gynaecology

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ABSTRACT

Background: Caesarean section at full dilatation with deeply engaged head in the pelvis can be associated with increased maternal and perinatal morbidity .The objective of present study is to compare the maternal and perinatal morbidity between the Patwardhan′s technique and the routine "push" and "pull" method for extraction of the fetus in second stage caesarean.

Method: It is retrospective study including 100 cases of caesarean section performed for obstructed labor in between January 2017 to June 2018 in Obstetrics/Gynae Department,Mahatma Gandhi Memorial Medical College Hospital, Jamshedpur, Jharkhand. All the cases were divided into two groups: group A-where baby delivered by the Patwardhan′s technique and group B- where baby delivered by "push" and "pull" method. Maternal morbidity in terms of uterine extensions, PPH, need for blood transfusions as well as neonatal morbidity was compared between two techniques.

Result: Review of 100 patients shows that there was significant low rates of maternal morbidity in terms of uterine incision extensions, and other related complications with Patwardhan′s technique. However there was no difference in neonatal outcome in both the groups.

Conclusion: The Patwardhan′s technique is superior and quite safe method for delivery of baby in second stage cesarean sections and has minimal complications if anticipated and done skillfully.

KEYWORDS

Cesarean Sections, Second Stage Labor, Patwardhan′s Technique

INTRODUCTION

The incidence of second stage caesarean sections is more common in developing countries, where babies are delivered at home by traditional birth attendants and where the mothers report to the hospital vary late in hospital, when traditional birth attendants fails in their endewovers.

Cesarean deliveries done in second stage of labor account for one fourth of all primary cesarean sections.[1]Obstructed labor affects more than 6 million women worldwide. It accounts for 8% of the approximately 500,000 annual maternal death which occur mostly in low resource country.[2]Impactation of fetal head is a manifestation of an unduly prolonged second stage when the obstetrician has to decide upon mode of delivery whether instrumental or a cesarean delivery .[3]Cesarean section at full dilatation are associated with higher rate of maternal and neonatal complications.[4]

There is a risk of trauma to the thinned lower uterine segment and adjacent structure along with increase in hemorrhage and infections .Maternal complications include extension of the uterine wound, uterine artery laceration, broad ligament hematoma and a higher risk of post-partum hemorrhage requiring blood transfusion, direct trauma to the bladder or due to prolonged pressure by fetal head. Trauma to the bladder during vaginal or instrumental delivery may lead to stress incontinence. The most distressing long term complication of the forceful vaginal delivery is obstetric fistulae. In developing countries, fistulae are commonly the result of prolonged labor which result in pressure necrosis caused impactation of the presenting part against the pubic symphysis.

Fetal complications include injuries, poor APGAR scores and admission to the neonatal ICU unit ,asphyxia leading to still birth ,brain damage .[5]

So, aim of this study was to compare the Patwardhan technique with the conventional method in term of selected maternal and neonatal morbidities.

MATERIAL AND METHOD

This is a retrospective analysis of 100 selected second stage cesarean sections performed late in labour, with the head deeply wedged in pelvis at MGM Medical College, Hospital, Jamshedpur, Jharkhand from January 2017 to June 2018.The cases were divided into two groups; Group A was assigned to all cases in which deliveries of babies were done by the Patwardhan ′s technique and Group B was assigned to patients in whom deliveries of babies were either done by vertex or by breech extractions.

Inclusion criteria

Women with single fetus at term in anterior vertex position and obstructed labor, with the head deeply impacted in pelvis and needing cesarean delivery were included in the study.

Exclusion criteria

1. Intrauterine fetal death
2. Congenital fetal anomaly
3. Multiple pregnancies
4. Ruptured uterus
5. Previous cesarean section
6. Fetal head more than 2 finger breadths palpable per abdomen

Patwardhan Technique [6] -This technique was first introduced by Dr Patwardhan in 1957 .

1) In cases of occipito- anterior and transverse position, with the head deeply impacted in the pelvis, incision is made in the lower uterine segment, at the level of 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 the pelvis.

RESULTS

A total 100 selected patients underwent second stage second stage Caesarean sections from Jan 2017 to June 2018. A total of 74 patients belonged to Group A and 26 patients belonged to Group B.

The majority of patients in the study were in the age group of 20 to 25 years (76% in the Gr A and 64% in Gr B).Majority of the patients were primigravida (70% in Gr A and 76% in Gr B).

TABLE 1: Period of Gestation

Gestation (in weeks)	Group A (n=74)	Group B(n=26)
<37	3(4%)	2(7.6%)
37-40	64(84%)	20(76.9%)
>40	7(9.4%)	4(15.3%)
Total	74(100%)	26(100%)

84% patients in the Gr A and 76.9% in Gr B were mostly between 37 to 40 weeks of gestation.

TABLE 2: OUTLINES THE CASES OF FETAL DISTRESS, INCLUDING THOSE WITH FETAL BRADYCARDIA AND MECONIUM STAINED LIQUOR.

Fetal Bradycardia	Gr A	Gr B	Total
YES	46(55.4%)	12(46%)	58(68%)
NO	28(38%)	14(53.8%)	42(32%)
Colour of Liquor	**GrA**	**GrB**	**Total**
CLEAR	39(52.7%)	7(26.9%)	46(46%)
MSL	35(47.2%)	19(73%)	54(54%)
TOTAL	74(74%)	26(26%)	100(100%

TABLE 3: INTRA OPERATIVE COMPLICATIONS

Complications	Gr -1	Gr-2
None	58(78%)	6(23%)
PPH-Atony	6(8%)	5(20%)
PPH-Traumatic	2(2.7%)	15(60%)
Vertical Extension	0	6(23%)
Lateral Extension	2(2.7%)	15(60%)
Bladder Injury	0	1(3.8%)
Blood transfusion	27(20%)	11(42%)

The intra-operative uterine features and complications of both the studies are shown in Table -3.The study shows that only 22% of the patients of Gr-A and 77% of Gr -B suffered complications. In both the groups, PPH was a major surgical complication (10.7% in Gr -A and 80% in Gr-B). No vertical extension and only 2(2.7%) lateral extension was seen in study group A, in Gr B 23% had vertical extension &60% had lateral extension .One patient in control group had bladder injury while no case of bladder injury was seen in study group.

TABLE 4: FETAL MORBIDITIES

	GROUP-A (n=74)	GROUP-B (n=26)
APGAR at 5 min	≤7=22(31%) ≥7=34(50%)	13(50%) 7(27%)
Need for NICU care	12(16%)	6(23%)
Fetal injuries (Fracture of Humerus bone)	1(1.3%) (Humerus)	1(3.8%) (Femur)
Still births	8 (10.8%)	6 (23%)

The APGAR score at the end of 5 mintues was relatively similar in both the groups.50%babies in the study groups and 27% control group had a normal score at the end of 5 minutes. Need for NICU care has been given in Table 4 and it was found to be less in study group when both the groups were compared. In Gr A 1 cases (1.3%) of humerus fracture and 1 femur fracture (3.8%) were noted and treated in Orthopedics Department,MGMMCH , JSR with POP and splint for 3 weeks. These two cases were badly obstructed labor referred late from rural area. One case of injury of the shaft of humerus was in reported in 50 cases delivered by Patwardhan method is reported by Mukhopadhyay et al.

TABLE 5: TOTAL NUMBER OF DELIVERIES AND CESAREAN SECTIONS DURING GIVEN PERIOD IN MGMMCH, JAMSHEDPUR

PERIOD	No.	Vaginal delivery	Cesarean section	Cesarean Section for obstructed labor
2017	6046	4143 (69%)	1903 (31%)	312 (16%)
Jan - June 2018	3300	1725 (75%)	845 (26%)	115 (14%)
Total	9346	5868 (63%)	2748 (29%)	427 (15%)

In MGMMCH Jamshedpur, Jharkhand, total deliveries during January 2017 to June 2018 are 9346 and during that period 2748 cesarean section have been done. Out of which 427 were done for obstructed labor.

DISCUSSION

Caesarean sections done in second stage of labour with impacted fetal head are associated with increased trauma to lower uterine segment and associated with increased trauma to lower uterine segment and associated structures as well as increased hemorrhage and infections. Obstructed labor accounts for 9.5% of total deaths in India.[7] Being a tertiary care center, number of referred cases of obstructed labor are high in the Medical College Hospital. The high incidence of obstructed labour could be due to traditional beliefs and practices, neglected obstetric care, poor utilization of health services and poor transport facilities.

In present study, 78% patients of the study group and 23% of control group had no intra-operative complications. This is in comparison with various studies on Patwardhan′s technique first by Patwardhan et al (1957), Desai et al(2001), Mukhopadhyay et al (2005), and Khosla et al (2003).

Our study got 83% lateral and vertical uterine extensions in the‟ push″ and ‟ pull″ group (Gr B) as compared to Patwardhan group (Gr A) where only 2.7% had lateral uterine extensions which was comparable to other studies of Mahapatra M et al ,Mukhopadhyay P et al and Khosla et al Hence the lateral extensions were less in Patwardhan technique. Extension of incision has long -term implications on the patient′s future obstetrics and it is a contraindication to subsequent vaginal delivery.[8]

In the study group A only 2.7% had traumatic postpartum hemorrhage while 8% had atonic PPH. In contrast in the Gr B 60% of the patients had traumatic PPH due to extension of incision and only 20% had atonic PPH .These findings correlate with improved maternal prognosis after using Patwardhan technique. In the study conducted by Mukhopadhyay et al only 2% patients experienced a traumatic PPH in the study group, as compared to 42% in the control group.[9]

There were mild differences in the neonatal outcome in both the groups in our study. Babies born by second stage caesarean sections have increased incidences of birth asphyxia caused by prolonged second stage. Our study shows that there was no increased risk of neonatal injuries or asphyxia with this technique, as was compared to that seen in Gr B, 23% babies in the Gr A were free from birth asphyxia and this study is comparable to the study conducted by Mukhopadhyay et al, 16% babies in the control group were free of birth asphyxia.[9]

CONCLUSION

This study shows that Patwardhan technique is safe, easy and an appropriate method of delivery during lower segment cesarean section in patients with deeply impacted head, to reduce the maternal and fetal morbidity .This technique can be learnt easily by practice.

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