

A retrospective study on feto-maternal outcome of forceps delivery in JNM Hospital, Kalyani

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Abstract

Background: The obstetric forceps was designed to assist the extraction of the fetal head. Less than 15% of all deliveries in the western countries are accomplished by either vacuum or forceps. Forceps helps in avoiding some unnecessary Caesarean sections and thus help in reducing the rising number of Caesarean sections. The aim of the study was to evaluate the maternal and neonatal outcome in a tertiary care hospital over a period of one year. **Methods:** This study was a retrospective observational study conducted over a period of one year from 1st May 2017 to 30th April 2018 in the labour room and maternity ward of College of medicine and JNM Hospital, Kalyani. All forceps deliveries conducted on singleton fetus in cephalic presentation were included in the study after applying the exclusion criteria. Maternal demographic data, various indicators for operative vaginal delivery and neonatal outcomes were recorded. **Results:** A total of 10408 deliveries took place in the study period of which 588 cases (5.65%) were forceps delivery. The most of the patients were within 20 to 30years(79.2%). The numbers of primigravida constituted about68.2% of the study group. The most common indication for application of outlet forceps was fetal distress (55.4%). Maternal morbidity was found in 174 women. Most of the neonates were term 88.6% and majority having birth weight between 2.5 to 4.5kg.were appropriate for gestational age (61.53%). Only 12.4% required SNCU admission and 10.1% had birth injuries. **Conclusions:** The forceps is an important tool to reduce the caesarean sections when applied judiciously.

Key Words: forceps, outlet, maternal outcome, cephalic presentation.

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INTRODUCTION

Rising rates of caesarean delivery worldwide is the cause of concern among obstetricians for increased maternal and perinatal morbidity, its attendant's uterine scar and alarming implications on future pregnancies. Assisted vaginal delivery with obstetrical forceps, has been the

instrument of choice from the time of Chamberlain family in the seventh century. This will help to control the rate of Caesarean sections and enable us to offer women aiming for vaginal delivery suitable alternatives rather than caesarean section during complications in labour. There are different rates of maternal and neonatal complications listed in the literature. The dreaded maternal complications include severe perineal lacerations and issues of litigation make the use of forceps controversial. Although operative vaginal delivery rate has not changed over the years, the rate of forceps use has decreased, and the rate of vacuum use has risen. Many obstetricians have even abandoned the use of latter. The incidence varies from country to country and even in the same country from one obstetrician to other. In the RCOG Consultant Conference, the instrumental vaginal delivery rate of 10.5 % was reported with a range of 4- 20%. The consensus at the conference was to aim to lower the rate to an average

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of 8.5% (range 5-15%). The incidence of instrumental vaginal delivery in the United States is 4.5% and that in United Kingdom is between 10%-15%.¹ Many modifications were done to attain its current form. Extreme care in patient selection, skilful use of obstetric forceps with strict adherence to universal guidelines can avert or reduce the maternal and neonatal complications. This will thus help reintroduce this dying art by removing the prejudice associated with it.

AIMS and OBJECTIVES

The aim of the present study was to evaluate the maternal and neonatal outcome in a tertiary care hospital over a period of 1 year and review the role of Forceps in modern day obstetrics.

MATERIALS and METHODS

This study was a retrospective observational study conducted over a period of one year from 1st May 2017-30th April 2018 in the labour ward of College of Medicine and J.N.M Hospital, Kalyani, Nadia, West Bengal.

Inclusion criteria

All operative vaginal deliveries conducted on singleton fetus in cephalic presentation and after coming head of breech were included in the study. All deliveries were performed by experienced residents under the supervision

of a consultant. After the case selection, written valid and informed consent was obtained, and obstetrical examination performed to confirm fulfilment of criteria for the same. In our setting, Forceps deliveries were performed by application of the Short Curved/ Straight Outlet forceps (e.g. Wrigley s Forceps/ Simpsons Forceps). Maternal demographic data such as maternal age, parity, religion, blood group, gestational age at delivery and birth weight, indication of forceps delivery, rate of augmentation of labour, condition during delivery, any history of peripartum blood transfusion were noted. Indications for which Forceps were applied in our study was according to ACOG published guideline on Operative vaginal delivery aid as summarised in below table²: ACOG indication for the assisted vaginal delivery Neonatal outcome was evaluated with respect of birth weight, term or preterm, alive or stillborn, APGAR and admission to sick neonatal care unit were recorded. Study mothers were followed on 2nd day of Delivery before discharge and following parameters were noted: pain present or not, stool passed or not, spontaneity of urination or prolonged catheterisation, lochial nature were noted and PV examinations were done.

Statistical Analysis

Statistical analyses in this study were conducted using descriptive analysis.

RESULTS

Table: ACOG indication for the assisted vaginal delivery

Indication	Definition / Detail
Prolonged second stage of labour	Defined as in nulliparous as lack of progress of labour for 3 hrs with regional anesthesia or 2 hrs without anesthesia. In multiparous as lack of progress of labour for 2 hrs with regional anesthesia or 1 hrs without anesthesia.
Non Reassuring fetal testing	Suspicion of immediate or potential fetal compromise is an indication for the operative vaginal delivery
Elective shortening of second stage of labour Maternal exhaustion	In maternal cardiovascular / neurological disorders that preclude pushing Largely subjective and not well defined

Table 1: Incidence of Forceps delivery

Total number of deliveries (May 2017-April 2018)	Total number of Forceps delivery	Incidence of Forceps delivery	Proportion of Forceps delivery among VD
10408	588	5.65 %	6.89%

Table 2: Socio-Demographic Datamber

		Forceps Delivery
Age in years	<20	12.92%
	20-30	79.2%
	30-40	15%
	>40	0.2%
Gravidity	Primi	68.2%
	Multi	31.7%
Religion	Hindu	61.5%
	Muslim	38.4%
	Others	0

Table:3 Indications of forceps application

Indications	Number	Percentage
Fetal Distress	325	55.4
Poor maternal efforts	127	21.6
Prolonged second Stage	83	14.2
Medical comorbidities	27	4.6
Cut short second stage	24	4.2

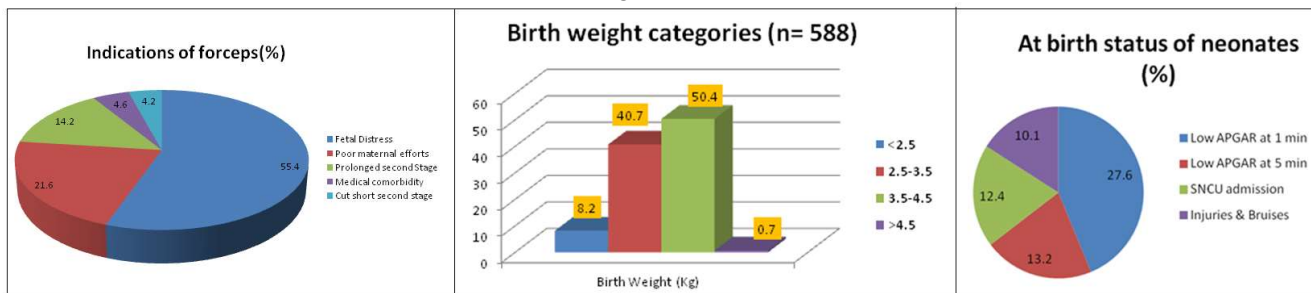


Figure 1

Figure 2

Figure 3

Table 4: Maternal injuries

Morbidity conditions	Number of cases	Percentage
Episiotomy extension	46	7.8
Vaginal and cervical laceration	18	3.06
Atonic PPH requiring blood transfusion	12	2.04
Complete perineal tear	12	2.04
Increased hospital stay >48 hrs	40	6.8
Post partum hysterectomy	1	.17
Urinary retention with prolonged catheterisation	45	7.8

Table 5: Term/Preterm

	Number	Percentage
Term neonates	521	88.6
Preterm neonates	67	11.4

Table 6: Birthweight categories

Birth Weight (Kg)	Number	Percentage
<2.5	48	8.2
2.5-3.5	239	40.7
3.5-4.5	296	50.4
>4.5	5	0.7

Table 7: Neonatal morbidity

Morbidity	Number of newborns	Percentage
Low APGAR at 1 min	162	27.6
Low APGAR at 5 min	77	13.2
SNCU admission	72	12.4
Injuries and Bruises	59	10.1

DISCUSSION

A total of 10408 deliveries took place in the study period ,of which 588 cases (5.65%) were of instrumental delivery (forceps). The mean age of the patients was 34.2 years.(table 1)The percentage of primigravida was

68.2%(325) and multigravida was 31.7% (127) out of a total of 588 forceps delivery. The most frequent indication for forceps application in a Bulgarian study was fetal distress (78.1%), which is the most common indication in modern obstetrics for the past 15 years,

similar results were found in the present study (55.4%)³. However, the next most frequent indication in the aforementioned study was prolonged 2nd stage (23.6%) (i.e., where delivery is delayed for more than 2 h in primigravida and 1 h in multigravida after full dilatation of the cervix), whereas it was poor maternal efforts (21.6%) in this study as shown in figure 1. In another study in Cameroon, the most common indication was prolonged 2nd stage of labor⁴. In a study in Texas University the most common indication was fetal distress followed by poor maternal efforts, which agrees with our present study⁵. In another Indian study, cutting short of 2nd stage of labor (i.e., where prolonged bearing down is detrimental for the mother in cases of hypertension, heart disease etc.) was the chief indication followed by prolonged 2nd stage⁶. The maternal morbidity associated with forceps were found in 174 women (29.6%). There were patients who had episiotomy extension, vaginal or cervical lacerations or both complete perineal tears and postpartum haemorrhage. All the cases of PPH were due to atonicity of uterus. Maternal injuries are given in Table 4. The above results are similar to those of a study conducted in Pondicherry⁷. Table 5, figure 2 shows that mostly appropriate weight for age babies were born in 91.1% and only 8.2% were low birth weight. Regarding the neonatal outcome about (13.2 %) had low Apgar score <5 and (12.4%) required SNCU care. There were 10 neonatal deaths in our study which were due to fetal distress and meconium stained amniotic fluid.

CONCLUSION

Forceps delivery since historic era have secured a prominent place in contemporary obstetric practice. It definitely will further help us to reach the WHO recommendation of a 10–15% caesarean section rate. In order to ensure optimal maternal and perinatal safety it should be used with great caution and the delivery should be supervised by trained personnel. Our study analysed maternal and fetal outcomes in Forceps deliveries with

the aim to encourage women and obstetricians to achieve a spontaneous vaginal delivery in a subsequent pregnancy after forceps delivery than after caesarean section. Women who have instrumental vaginal deliveries typically have a shorter hospital stay and fewer readmissions than women who have caesarean sections. This art of delivery is a reasonable option to the obstetrician to reduce the rising cesarean section rates. However, extreme caution and judicial use of this instrument is required in expert hands to prevent risks for mother and fetus. Training programs should be conducted to impart knowledge about its indications, technique of use and quality control. Worldwide, this to some extent will mitigate the economic burden and also prove to be a social boon to the women of developing country like India

REFERENCES

1. Ameh CA, Weeks AD. The Role of Instrumental Vaginal delivery in low resource settings; BJOG 2009;116(1):22-5.
2. Johanson RB, Menon BKV, Vacuum extraction The American College of Obstetricians and Gynecologists (ACOG). Operative vaginal Delivery . Washington DC:ACOG: 2000.
3. Nikolov A, Nashar S, Atanasova M, Dimitrov A. Indications for vaginal delivery with forceps application. *Akush Ginekol (Sofia)* 2011;50:3–12.
4. Nkwabong E, Nana PN, Mbu R, Takang W, Ekono MR, Kouam L. Indications and maternofetal outcome of instrumental deliveries at the University Teaching Hospital of Yaounde, Cameroon. *Trop Doct.* 2011;41:5–7.
5. Yeomans ER. Operative vaginal delivery. *Obstet Gynecol.* 2010;115:645–53.
6. Singh A, Rathore P. A comparative study of fetomaternal outcome in instrumental vaginal delivery. *J Obstet Gynaecol India.* 2011;61:663–6.
7. John LB, Nischintha S, Ghose S. Outcome of forceps delivery in a teaching hospital: A 2 year experience. *J Nat Sci Biol Med.* 2014;5(1):155–157. doi:10.4103/0976-9668.127316.

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