



INSTRUMENTAL DELIVERIES - IMPACT ON OUTCOME

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ABSTRACT

INTRODUCTION: Operative vaginal birth rates internationally are 5% to 20%¹. Indian studies suggest rates of 4% to 20%².

OBJECTIVE: To assess perinatal outcome with respect to mortality, NICU admission and morbidity in a Tertiary care Institute in all cases of operative vaginal birth over one year period.

MATERNAL AND METHODS: All instrumental deliveries occurring during October 2016 – September 2017 were retrospectively studied with respect to labour outcomes, mortality, NICU admission and morbidity.

RESULTS: Total 3083 patients delivered at our institute during the study period. Instrumental deliveries were 43 (1.4%), of which 37 (86%) were forceps delivery, 06 (14%) were vacuum deliveries. 12 babies required NICU admission. There was no neonatal mortality.

DISCUSSION: Operative vaginal delivery is a useful tool in the obstetrician’s armamentarium and if selected wisely, there is very low morbidity and mortality.

KEYWORDS : Instrumental delivery, Stillbirth.

INTRODUCTION

Healthy mother and newborn is the goal of every obstetrician. There has been a trend towards rising caesarean rates worldwide and reduced usage of instrumental vaginal births in modern obstetrics. The important factors deciding the outcome of a delivery are passage, passenger, psyche and the power. In the second stage of labour, availability and application of Vacuum or Forceps can be a useful option. If the case is chosen wisely, the complication rates observed are very minimal.

Maternal injuries are more common with the use of forceps. Neonates delivered with forceps have more facial injuries, whereas those delivered with vacuum have more cephalohematomas³. Other neonatal complications observed are asphyxia, cerebral palsy and neonatal death.

We have gone through many phases in the last few decades. At present there are many obstetric trainees who may have never have applied a forceps.

MATERNAL AND METHODS

Ours is a peripheral referral hospital and all patient records with DSM coding are kept in the medical records section.

All instrumental deliveries occurring during October 2016 to September 2017 (1 year) were retrospectively studied from hospital records and patients files, descriptively with respect to labour outcomes, NICU admission maternal morbidity and neonatal morbidity and mortality.

Inclusion criteria – All instrumental deliveries within the study period.

Exclusion criteria – Deliveries conducted by caesarean section or normal vaginal birth.

Due to confounding factors, statistical analysis could not be applied.

RESULTS

Over a period of one year, there were total 4424 New ANC registrations, of these, 3083 patients delivered at our institute.

The LSCS rate was 31.4 %, Total instrumental deliveries were 43 (1.4%), the rest were vaginal deliveries 2070 (i.e. 67.1 %).

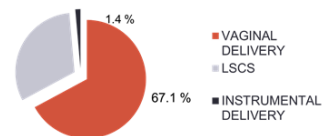


Figure 1: Percentage of instrumental deliveries

Of the total 43 instrumental births, 37 (i.e.:86%) forceps delivery, and 06 (i.e.:14%) vacuum deliveries were observed in the study population.

TABLE 1: Number of Forceps and Vacuum deliveries

INSTRUMENTAL DELIVERY	NUMBER	PERCENTAGE
FORCEPS	37	86
VACCUM	06	14

The results when compared showed that there were 38 primigravida and 5 multigravida patients in the study group.

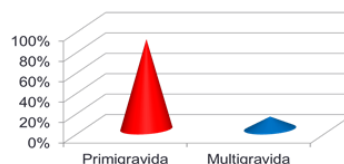


Figure 2: Gravida status of the cases in the study population

Out of the total 43 cases, 40 babies were of term gestation and 3 were preterm deliveries.

TABLE NO 2: Relationship with period of gestation

GESTATION	NUMBER
TERM	40
PRETERM	03
TOTAL	43

Analysis of the data showed different indications for instrumental delivery with Maternal exhaustion in 24 cases (57.2 %), Maternal medical conditions in 03 (7.1 %), and 15

(i.e. 33.3%) for fetal distress and one forceps was applied for Fresh still birth with big baby (2.3 %). Out of the maternal medical condition, two were severe anaemia and one was heart disease.

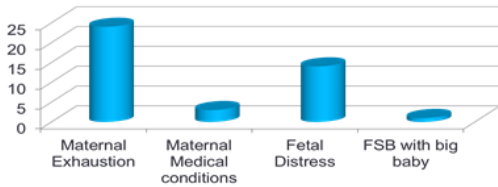


Figure 3: Indications for instrumental deliveries.

Maternal complications when compared showed that only one patient (2.3%) in the study group had traumatic postpartum haemorrhage after a forceps delivery, which required vaginal exploration and blood transfusion. In other cases, no complications were observed either intrapartum or in the postpartum period. No maternal mortality was observed.

Total 12 babies (27.9%) delivered by instrumental delivery required NICU admission. There was no mortality, either attributable to the delivery, nor in the NICU, in the study group.

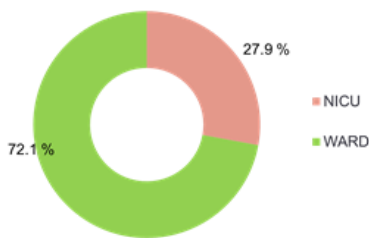


Figure 4: NICU Admissions

Neonatal complications observed in the study group were Birth asphyxia seen in 6 babies, Hypoxic ischemic encephalopathy and Neonatal convulsions in 3 neonates, Hyperbilirubinemia in 2 and Injury to the eye in one newborn. Most of these complications except hyperbilirubinemia and injury to the eye were mostly attributed to the preceding indication for which the instrumentation was done.

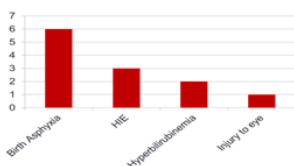


Figure 5: Neonatal complications

The data on analysis showed that 24 deliveries conducted by the Lecturer, 18 by the registrar and only 1 by the junior resident. These figures depict the need for training the junior residents to assess the

situations in which instrumental delivery can be conducted and to conduct the instrumental deliveries, as well as to identify and manage the complications associated.



FIGURE 6: Number of deliveries conducted by the lecturer, Registrar and the junior resident.

DISCUSSION

Operative vaginal birth rates internationally of 5% to 20% , have been quoted. Indian studies suggest 4% to 20% 2. Our study shows a lower rate i.e. 1.4 % of operative vaginal birth, factors identified included, hesitancy of juniors, lack of training, issues regarding working of the vacuum apparatus. Overall PNMR for our hospital for this period was 30.8 per 1000 total births. The PNMR in the study group was 0.3 per 1000 total birth. The comparison with mortality data for caesarean and vaginal birth was done, however due to confounding factors, statistical analysis could not be applied.

There were total 43 i.e. 1.4 % of instrumental deliveries during the study period of 1 year. Most of the patients in the study group were primigravida 38 (88.3%), maternal exhaustion (24 cases i.e. 54.7%) was the most common indication of instrumentation, followed by fetal distress (33.3%). Only one case of postpartum haemorrhage was observed and there were no neonatal mortality in the study group. Birth asphyxia was the most common neonatal morbidity observed (13.9%), but this was also attributed to the antecedent indication for which the instrumental vaginal delivery was conducted. The study showed that the maximum number of forceps application were by senior residents or above, this emphasises the need for training of junior residents in instrumental vaginal delivery as they are the obstetricians of tomorrow!.

CONCLUSION

Operative vaginal delivery is a useful tool in the obstetrician's armamentarium. If selected wisely, there is very low morbidity and mortality. It is very necessary to make instrumental vaginal delivery available and accessible in a low resource country like India. Healthcare personnel should be trained in identifying correctly the indication, method of application and identifying and managing the complications of instrumental vaginal birth. We must be more proactive in using this tool.

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