

## NEONATAL OUTCOME IN FORCEPS DELIVERIES

By

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### SUMMARY

In 50 cases of forceps delivery neonatal outcome and wellbeing was studied till 6 months i.e. early infancy. Various factors like parity, age of the mother, indication, type and result of forceps, foetal outcome, baby weight, injuries and perinatal mortality were studied and discussed. Low perinatal mortality (4%) was explained on the basis of selection criteria adopted. Of 48 surviving babies, 8 (16%) had soft tissue injury and 1 (2%) had bone injury. At the end of 6 months slow weight gain was observed in 15 (30%) of cases, frontal bone deformity persisted in one baby but no baby showed deviation in developmental milestones.

### Introduction

In modern Obstetric practice high, mid-cavity and difficult forceps deliveries are replaced by caesarean section not only to avoid injuries to the maternal passage but also in favour of better neonatal outcome. Forceps are applied when the natural process of delivery of the head fails or leads to maternal and foetal distress or prophylactically in certain maternal complications like heart disease, P.I.H., severe anaemia etc. All these conditions along with the process of delivery itself are likely to influence neonatal outcome. The aim of the present study is to find out neonatal outcome and residual effect of forceps delivery in early infancy.

### Material and Methods

The study includes 50 cases of forceps deliveries from all the 4 obstetric units at

Zanana Hospital, Udaipur from Sept., 1985 to June, 1986.

Only those cases who were personally conducted and supervised and those who agreed to report to the hospital with their babies for follow up for 6 months were included in the study.

Cases admitted with absent FHS or with moribund condition due to handling at home were excluded.

In each case detailed history taking and examination was done. Cases were followed and observed for various problems during and after forceps delivery. Details of the various factors affecting foetal well being like foetal heart sounds alterations, excessive caput formation and moulding, cord around the neck, meconium stained liquor etc. were noted down. Intensive neonatal care, resuscitation and after care was done by the paediatrician as per our hospital practice. Apgar score at 1 to 10 Min, degree of asphyxia, injuries, maturity, birth weight,

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delayed manifestations of intracranial injuries, any septicemia and jaundice, average hospital stay, developmental milestones and wellbeing at 6 months follow up etc. were noted down in each case.

#### *Observation and comments*

Out of 50 cases 41 (82%) were booked and 9 (19%) were unbooked similarly 41 (82%) cases were urban and 9 (19%) were rural.

#### *Age and parity*

Majority of the cases (23 or 46%) were in 20-25 year age group. Three cases were 30 years and above and one fifth of the cases (10 or 20%) were below 20 years of age.

Maximum cases 36 (72%) were primigravida and rest were gravida 2 and above.

#### *Indication of forceps and other maternal factors*

Commonst indication for forceps application was foetal distress (25 or 50%). Prophylactic forceps were applied in 13 (26%) cases. In 12 cases, it was applied for maternal exhaustion. In 20 cases, there was more than one indication. Prophylactic forceps were applied in cases of Preeclampsia (9 cases), severe anaemia (1 case), A.P. eclampsia (1 case) and heart disease (1 case).

Hence in majority of cases 36 (72%) there was evidence of possible stress of foetus was present.

Labour was prolonged more than 24 hours in 12 (24%) cases, 25 (50%) had syntocinon infusion for induction and acceleration, 16 had PROM and 15 (30%) had ARM for various indications.

#### *Type and result of forceps*

In our series almost equal number had low mid cavity (26 cases) and outlet (24 cases) forceps delivery.

Higher number of low midcavity forceps deliveries indicate that an attempt was made or trial was given to deliver the case vaginally rather than resorting to L.S.C.S. This is because ours is a teaching government hospital where unlike in private nursing and maternity homes, sufficient time and chance is given for delivery per natural passage.

But this might have affected the foetal outcome as more force is applied on the foetal head and that too for a longer time in midcavity forceps as compared to outlet forceps. But when the head is engaged in the pelvis, liquor has drained away, moderate caput has formed with II stage of labour, foetus showing signs of distress, will the baby stand further trial lasting a minimum of 30-45 min. before undergoing L.S.C.S. and stress and strain of anaesthesia during L.S.C.S. We have calculated the average time taken for preparation of the patient, O.T., anaesthesia and staff etc. in our hospital set up is 30 to 45 min. Hence low mid cavity forceps was favoured as compared to L.S.C.S. at most of the occasions by Obstetricians of our hospital for the reasons explained.

Out of 50 cases, 49 were successful and in one case forceps failed. The cause of failed forceps was deep transverse arrest of head. Similar observation was made by Devi *et al* (1958).

#### *Foetal outcome*

There were 50 live births and no still birth in our study. Apgar score at 1 and 10 min. is as shown in Table I.



TABLE I  
One Minute and Ten Minute Apgar Score  
(50 cases of forceps deliveries)

S. No.	Apgar 1 min. and 10 min. score	Number of cases	Percentage
1	Between 7/9-10/10	44	88.0
2	5/7-6/8	4	8.0
3	Less than 5	2	4.0

Similar foetal outcome in cases forceps deliveries was reported by Wexler and Burnhill (1970).

#### Baby weight

Baby weight in our cases is as shown in Table II.

TABLE II  
Birth Weight  
(50 cases of forceps deliveries)

S. No.	Birth weight in Kg.	Number of cases	Percentage
1.	2 or less	4	8.0
2.	2.1-2.5	7	14.0
3.	2.6-3.0	23	46.0
4.	3.1-3.5	12	22.0
5.	3.6-4.0	4	8.0

Only 11 (22%) babies had low birth weight while majority of the babies (78%) had average and above average baby weight.

#### Birth Injuries

Injuries sustained at birth by forceps deliveries in our series is as shown in Table III.

Only 20% of the babies showed evidence of birth injuries. The most serious one was intracranial haemorrhage in a baby born by L.S.C.S. after failure of forceps, due to deep transverse arrest.

TABLE III  
Birth Injuries  
(50 cases of forceps deliveries)

S. No.	Nature and site of injury	Number of cases	Percentage
1	Soft tissue injury (mark of forceps on forehead and face)	8	16.0
2	Bony injury to the occipital bone	1	2.0
3	Intracranial haemorrhage	1	2.0

The baby succumbed to injuries half an hour after delivery.

The incidence of major injuries in our series can be compared with 1-4% in series of 64 and 63 cases by Schroeder (1962) and Hingorani *et al* (1963) respectively.

#### Perinatal mortality

In our study there were no still births. But 2 neonatal deaths occurred one due to intracranial haemorrhage due to failed forceps and second had deep birth asphyxia and died due to pyogenic meningitis on 6th day of birth.

This low perinatal mortality (4%) is not reflecting perinatal mortality in general and of all forceps deliveries in particular but it is mainly reflective of

our selection criteria. Cases handled outside and with absent FHS were excluded. Those who agreed to come for follow up to 6 months of the deliveries were the cases of better socioeconomic class, who had awareness, who were residing in the city and hence got better paediatric care. In such cases, perinatal mortality is likely to be lower.

#### *Follow up in early infancy*

Follow up of the cases at well baby clinic is as shown in Table IV.

TABLE IV  
*Follow up in Early Infancy*

Delayed manifestations	After 15 days	3 months	6 months
1. Slow weight gain in babies	4	15	15
2. Recurrent infections	23	18	9
3. Bony deformities	1	1	1
4. Mile stones (developmental)	Normal	Normal	Normal

Slow weight gain was observed in 15 (30%) even at the end of 6 months, one baby had bony deformity of frontal bone. Developmental milestones were normal in all the cases.

Of the survived 48 babies, 9 (18%) had soft tissue and bone injuries but no resi-

dual effect of the same was seen on developmental milestones at the end of 6 months.

This shows that forceps when judiciously used by experienced Obstetrician in properly selected cases can lead to better neonatal outcome. However, a study including larger number of cases and longer follow up is necessary to find out its real residual effects on the brain in infancy and childhood.

#### *References*

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