MATERNAL AND NEONATAL OUTCOME ON INSTRUMENTAL DELIVERY

SUBMITTED BY GROUP B
(Prasuti Griha)
2056/09/30.

ADVISOR
Dr Laxmi Nani Shrestha
Dr Lata Bajracharya

MAIN INVESTIGATOR
Dr Amila Shrestha

DATA ENTRY
Dr Narisa Maila
Dr Deeb Shrestha
Dr Shanti Shrestha

DATA ANALYSIS
Dr Amila Shrestha
Dr Sabina Shrestha
Dr Indira Poudel

ACKNOWLEDGEMENT

I would like to express my sincere gratitude to paropakar shree panch Indra Rajya Laxmi Devi, Prasuti Griha and the director, Dr. Saraswati Maiya Padhye for providing opportunity to conduct this study. I am also indebted to the research committee prasuti Griha for providing the interesting topic for the study.

I am also very thankful to Dr. Laxmi Nani Shrestha and Dr. Lata Bajracharya for their guidance and support throughout the study. The credit also goes to Dr. Nafisa Malla, Dr. Deeb Shrestha, Dr. Shanti Shrestha, Dr. Sabina Shrestha and Dr. Indira Poudel for helping me with the collection and analysis of data.

Last but not the least, I also appreciate the computer services provided by Mrs. Gyanu Rana and New National Computer Center, Putali Sadak.

Your Sincerely

Dr. Amila Shrestha

Prasuti Griha

MATERNAL AND NEONATAL OUTCOME ON INSTRUMENTAL DELIVERY

INTRODUCTION

Instrumental delivery is one of the quickest and safest deliveries in prolonged second stage of labour, foetal distress and maternal distress in second stage of labour. It shortens the second stage of labour in conditions like previous cesarean section, heart disease in mother, pre-eclampsia toxemia and other medical conditions. This procedure reduces the number of cesarean section. It is not very expensive and can be performed easily even by medical officers. It is not only in the tertiary hospitals that it is used but also in the areas where other facilities are not available. In Maternity Hospital at Thapathali instrumental delivery has been performed since a long time back. However vacuum delivery is observed to be more popular than forceps delivery in this hospital.

Previous studies shows vacuum delivery is almost as efficient as forceps delivery but vacuum delivery is associated with significantly more foetal cephalhematomas while maternal injuries are more common with the forceps delivery.

The objective of this study is to asses the number of instrumental deliveries (vacuum/forceps), to find out outcomes of instrumental delivery on mother and neonates, to analyze the indication of instrumental delivery in relation to outcome.

METHODOLOGY

This was a prospective study on instrumental delivery and its outcome on neonates and mothers. This study was performed in Paropakar Shree Panch Indra Rajya Laxmi Devi Prasuti Griha. Duration enrolled was during Shrawan to Aswin 2056. 169 cases were studied during three month of time period. Only 155 cases were included in this study as 14 cases being failed vacuum but their outcome was mentioned in this study. A detailed structured questionnaire (personal background, social and economic details, general health status, obstetric condition during pregnancy, labour and purperium, foetal and neonatal health status) were properly filled up by medical officers. Direct observation of both neonates and mother were done and its outcome was noted in detail. Prompt treatment to both neonates and mother were given during their hospital stay. All data were analyzed manually.

RESULTS AND DISCUSSION

This study was performed in Paropakar Shree Panch Indra Rajya Laxmi Devi Prasuti Griha with annual deliveries around 14500(i.e. 90% of total obstetric

admissions), out of which forceps deliveries being 0.81% and vacuum deliveries being 3.19%..

In our study period, out of 3201 deliveries 0.75% were forceps delivery and 4.09% were vacuum delivery.

INSTRUMENTAL DELIVERY ON THE BASIS OF SOCIO-ECONOMIC STATUS

In order to see which ethnic group the patients or cases of instrumental delivery belonged to, to find out their economic status and to know whether they are working or housewives, the data regarding these aspect of the cases were collected. The number of cases of vacuum and forceps delivery on the basis of ethnic groups to which they belonged is presented in the following table.

ETHNIC GROUP WISE DISTRIBUTION OF VACUUM AND FORCEPS DELIVERY

Ethnic Group	Vacuum	Forceps
Brahmin and Chetri	52 (39.69%)	8 (33.3%)
Newar	33 (25.19%)	3 (20.83%)
Rai\Lama	35 (26.72%)	8 (33.33%)
Others	11 (8.40%)	3 (12.5%)
Total	131 (100.0%)	24 (100.0%)

The above data reveals that out of 131 cases in which vacuum delivery was performed, majority % belonged to the Brahmin and Chetri group i.e. 39.69% of total cases. About one fourth of total cases of vacuum delivery belonged to the Newar and Rai\ Lama group each. The remaining cases belonged to other ethnic groups.

Out of 24 forceps delivery performed, 8 cases each belonged to the Brahmin and Chetri and Rai \Lama ethnic groups. About 20% cases belonged to the Newar and the remaining few to the other groups.

VACUUM AND FORCEPS DELIVERY ON THE BASIS OF THE OCCUPATION OF THE WOMEN

Occupation of women	Vacuum	Forceps
Service holder	13 (9.92%)	3 (12.5%)
Housewife	118 (90.08%)	21 (87.5%)
Total	131 (100.0%)	24 (100.0%)

The instrumental delivery was performed in maximum number of housewives, i.e. vacuum delivery in 90.08% and forceps delivery in 87.5% of total cases. Only a few women in whom instrumental delivery was performed were working.

The number of cases of vacuum and forceps delivery on the basis of economic status are presented in the following table:

NUMBER OF VACUUM AND FORCEPS DELIVERY ACCORDING TO ECONOMIC STATUS

Economic status	Vacuum	Forceps
Low	82 (62.60%)	16 (66.67%)
Intermediate	34 (25.95%)	5 (20.83%)
High	15 (11.45%)	3 (12.5%0
Total	131 (100.0%)	24 (100.0%)

The economic status of most of the cases of vacuum and forceps delivery was not very good, i.e., in 62.6% of total vacuum delivery cases and 66.67% of total forceps delivery cases. About 26% of vacuum delivery cases and about 21% of forceps delivery cases belonged to intermediate type of economic status. Only a few cases were of high economic status.

The majority of the cases were from economically backward groups. It implies that majority of the cases brought in the hospital for delivery belonged to low economic status. The cases from high economic status are very few. The economic status was analyzed according to bed occupied in the hospital, e.g. Cabin, semi cabin, or general beds.

DISTRIBUTION OF VACUUM AND FORCEP DELIVERY ACCORDING TO OBSTETRIC HISTORY OF WOMEN

In order to know the obstetric history of women in whom instrumental delivery was performed the data regarding the following aspects are studied:

- Age of women
- ANC
- Parity
- Period of gestation
- Type of labour

NUMBER OF VACUUM AND FORCEPS DELIVERY ACCORDING TO MATERNAL AGE

Age (In Years)	Vacuum	Forceps
<19	33 (25.19%)	3 (12.5%)
20 – 24	47 (35.88%)	11 (45.83%)
25 – 29	32 (24.43%)	7 (29.17%)
30 – 35	16 (12.21%)	3 (12.5%)
>35	3 (2.29%)	0
TOTAL	131 (100%)	24 (100%)

The above table reveals that vacuum delivery was performed in maximum no. Of women with age ranging from 20 – 24 years of age. Similarly forceps delivery was performed in maximum no. Of women with age ranging from 20 – 24 years of age.

About ¼ of vacuum delivery seemed to be performed in women belonging to the age group below 19 years and 25 – 29 years. Only few cases of vacuum delivery belonged to women above 30 years of age.

It implies that majority of the cases who come to the hospital to deliver the child belong to the age group of 20 – 24 years of age. Women above 35 years are found to be very few.

NUMBER OFVACUUM AND FORCEPS DELIVERY ACCORDING TO NUMBER OF ANC

ANC	Vacuum	Forceps
No ANC	31 (23.66%)	2 (8.33%)
1 – 2 Visits	12 (9.16%)	7 (29.17%)
3 – 5 Visits	38 (44.27%)	15 (62.5%)
> 5 Visits	30 (22.9%)	0
TOTAL	131 (100%)	24 (100%)

The above table reveals that the majority of cases with instrumental delivery paid antenatal visits ranging from 3 – 5 times. In other words 44.27% of cases of vacuum delivery and 62.5% of cases of forceps delivery (i.e. 2 cases out of 24) and a few of vacuum (i.e. 31 out of 131) received more antenatal care.

Hence from above discussion it is quite obvious that patients in whom instrumental delivery was performed received adequate number of antenatal check ups.

PARITYWISE DISTRIBUTION OF VACUUM AND FORCEPS DELIVERY

Parity	Vacuum	Forceps
Primi	92 (70.23%)	19 (79.17%)
Multi	39 (29.77%)	5 (20.83%)
Grand multi	0	0
TOTAL	131 (100%)	24 (100%)

Most of the vacuum delivery and forceps delivery was performed in Primi gravida group i.e. 70.23% of vacuum delivery and 79.17% of forceps delivery cases. The remaining cases belonged to multi-gravida group. However, there was no grand multi gravida group in which instrumental delivery was performed.
It implies that vacuum extractor and forceps had to be used to aid the delivery of baby in majority number of primi gravida. It may be due to the fact that delivery of baby is more difficult in case of primi gravida than in case of multi gravida and grand multi gravida. On a few cases of multi gravida these instruments had to be used.

NUMBER OF VACUUM AND FROCEPS DELIVERY ACCORDING TO PERIOD OF GESTATION

Period of Gestation	Vacuum	Forceps
37 – 40 Weeks	77 (58.78%)	24 (100%)
> 40 Weeks	50 (38.17%)	0
Gestational age not mentioned	4 (3.05%)	0
TOTAL	131 (100%)	24 (100%)

In majority of cases with gestational period in between 37 – 40 Weeks the instrumental delivery was performed i.e. in 58.78% of total cases of vacuum delivery and in 100% of total forceps delivery cases. Similarly in about 38.17% of total vacuum delivery cases gestational period was found to have exceeded above 40 weeks.

NUMBER OF VACUUM AND FORCEPS DELIVERY ACCORDING TO TYPE OF LABOUR

Type of labour	Vacuum	Forceps
Spontaneous	67 (51.13%)	13 (34.17%)
Augmentation	44 (33.59%)	7 (29.17%)
Induction	20 (15.27%)	4 (16.67%)
TOTAL	131 (100%)	24 (100%)

In 51.15% of total cases of vacuum delivery and 54.17% of total cases of forceps delivery the type of labour was found to be of Spontaneous type. Similarly, in 33.59% of total vacuum delivery cases and 29.17% of total forceps delivery cases, type of labour was of augmented type. In remaining few cases of vacuum and forceps delivery labour had to be induced.
It implies that more of instruments had to be applied in case of spontaneous type of labour.

DISTRIBUTION OF VACUUM AND FORCEPS DELIVERY ACCORDING TO MEDICAL HISTORY AND INDICATIONS FOR SUCH DELIVERY

Normally instrumental delivery is performed when the cases present with certain medical conditions. Hence the medical history is also sought for. Hence data regarding medical history of the cases was studied. Similarly indications due to which instrumental delivery was performed was also studied. The following table also presents the number of cases of vacuum and forceps delivery on the basis of medical history that was provided.

NUMBER OF VACUUM AND FORCEPS DELIVERY ACCORDING TO MEDICAL HISTORY

Medical history	Vacuum	Forceps
Hypertension	3 (8.11%)	0
PET	3 (8.11%)	3 (25%)
Anemia(Hb%<10gm)	30 (81.08%)	8 (66.67%)
Others	1(2.7%) VDRL+ve	1 (8.33%) UTI
TOTAL	37 (100%)	12 (100%)

37 cases of vacuum delivery and 12 cases of forceps delivery presented certain medical history. Majority of them presented with medical history of anemia i.e. 30 cases of vacuum and 8 cases of forceps delivery. Similarly 3 cases of vacuum delivery presented with medical history of hypertension and another 3 cases with that of PET. 3 cases of forceps delivery also presented with PET. 1 case if vacuum delivery was VDRL +ve and 1 case of forceps delivery had UTI.

The following table presents the number of forceps and vacuum delivery according to the indications presented:

NUMBER OF VACUUM AND FORCEPS DELIVERY ACCORDINGLY TO THEIR INDICATIONS

Indication	Vacuum	Forceps
Foetal * Foetal distress	69 (52.67%)	16 (66.67%)
Maternal * Prolonged labour * Maternal distress * PET * Severe anemia	 30 (22.9%) 23 (17.56%) 3 (2.29%) 2 (1.53%)	 2 (8.33%) 2 (8.33%) 3 (12.5%) 0
Previous C/S	3 (2.29%)	2 (4.17%)
Accidental hemorrhage	1 (0.76%)	0
TOTAL	131 (100%)	24 (100%)

The instrumental delivery was performed due to certain indication, which can be classified into two types:

1. Fetal indication
2. Maternal indication

Out of total cases of vacuum delivery 52.67% of it were performed due to foetal distress. Similarly 66.67% of total cases of forceps delivery was performed due to the same cause. About 23% of vacuum delivery and about 18% cases of forceps delivery was performed due to prolonged labour and maternal distress. Similarly in two cases each, which presented with prolonged labour and maternal distress, forceps delivery was performed. 3 cases each of vacuum and forceps delivery presented with PET. 3 cases of vacuum delivery and 1 case of forceps delivery presented with history of previous C/S. Similarly 1 case of vacuum delivery was performed due to accidental hemorrhage.

MATERNAL OUTCOME OF INSTRUMENTAL DELIVERY

Instrumental delivery is one of the safest deliveries performed today. It has certainly decreased the rate of maternal morbidity due to complications in delivery. At the same time, no such danger has been found with relation to these types of deliveries. No maternal morbidity has been found as such till now.

In order to throw some light in this aspect, data regarding maternal outcomes of instrumental deliveries, the amount of blood loss during such deliveries and the hemoglobin % are studied.

MATERNAL OOUTCOME OF VACUUM AND FORCEPS DELIVERY

Maternal outcome	Vacuum	Forceps
No. Episiotomy/ Tear	2 (1.54%)	0
Episiotomy	111 (84.73%)	17 (70.83)
Extended Episiotomy	2 (1.53%)	2 (8.33%)
Tear 1* 2* 3*	 5 (3.82%) 8 (6.11%) 2 (1.53%)	 1 (4.17%) 0 3 (12.5%)
Hematoma	0	1 (4.17%)
Cervical tear	1 (0.76%)	0
TOTAL	131 (100%)	24 (100%)

In majority of cases, episiotomy was found to have been performed i.e. out of 84.73% cases of vacuum and 70.83% of forceps delivery only 2 cases of vacuum delivery were safe without any episiotomy or tear.

First and second degree tear was seen in only a few cases. As for instance, 5 cases presented with 1* tear and 8 cases with 2* tear in case of vacuum delivery, only 1 case of forceps delivery presented with 1* tear. There was no case of forceps delivery who presented with 2* tear.

The number of cases who presented with sever complications like 3* tear, extended episiotomy, haematoma and cervical tear was very few. 2 cases of vacuum and 3 cases of forceps delivery presented with 3* tear. Similarly 2 cases each of vacuum and forceps delivery resulted with extended episiotomy. However only 1 case of vacuum and forceps delivery show up with complications as hematoma formation and cervical tear. Therefore liberal episiotomy should be given in allcases of instrumental delivery to avoid maternal injury.

AMOUNT OF BLOOD LOSS IN VACUUM AND FORCEPS DELIVERY

Amount of blood loss	Vacuum	Forceps
<300 ml	129 (98.47%)	23 (95.83%)
>500 ml	2 (1.53%)	1 (4.17%)
TOTAL	131 (100%)	24 (100%)

The amount of blood loss was not so significant in vacuum and forceps delivery. Almost all the cases of forceps and vacuum delivery showed that amount of blood loss was less than 500 ml, which was almost similar to cases of normal delivery. In 98.47% of vacuum delivery and in 95.83 cases of forceps delivery, amount of blood loss was <500 ml. Only 2 cases of vacuum delivery and 1 case of forceps delivery lost >500 ml blood.
Hence vacuum and forceps delivery were quite safe with regard to the amount of blood loss observed in these cases.

HAEMOGLOBIN % IN CASES OF VACUUM AND FORCEPS DELIVERY

Hemoglobin %	Vacuum	Forceps
<10	30 (22.9%)	8 (33.33%)
=&>10gm	69 (52.67%)	15 (62.5%)
Not done	32 (24.43%)	1 (4.17%)
TOTAL	131 (100%)	24 (100%)

Tests were done to determine the hemoglobin % in the cases of vacuum and forceps delivery. In 22.9% of cases of vacuum delivery and 33.33% of cases of forceps delivery, hemoglobin % was found to be <10 gm. However in majority of cases i.e. 52.67% cases of vacuum and 62.5% cases of forceps hemoglobin level was above 10 gm% . In few other cases i.e. 32 cases of vacuum delivery and 1 case of forceps delivery this test was not performed.

FOETAL OUTCOME OF INSTRUMENTAL DELIVERY

Instrumental Delivery is quite safe taking into account the effect it produced in the neonates delivered via it. Hence, in order to study this aspect of instrumental delivery, the following aspects are studied -

* Number of neonates delivered via instrumental delivery admitted in SBCU and no. of days they are admitted there.
* Complications seen in these neonates.
* Weight of these neonates.

NUMBER OF NEONATES ADMITTED IN SBCU

Admission in SBCU	Vacuum	Forceps
Yes	60 (45.80%)	9 (37.50%)
No	71 (54.20%)	13 (62.50%)
Total	131 (100.0%)	24 (100.0%)

Out of 131 neonates delivered by vacuum delivery, 45.80 percent were admitted in SBCU. Similarly, only 37.5 percent of 24 neonates delivered via forceps delivery were admitted in SBCU including for observation.

TOTAL STAY OF NEONATES IN SBCU

Admission of SBCU (no. of days)	Vacuum	Forceps
Less than 24 hours	50 (2 in NICU) (83.33%)	7 (77.78%)
24 to 48 hours	5 (1 in NICU) (8.33%)	2 (22.22%)
2 to 7 days	5 (2 in NICU) (8.33%)	-
Total	60 (100.0%)	9 (100.0%)

Out of 60 neonates delivered by vacuum delivery and admitted in SBCU, most of them (83.33%) were admitted for less than 24 hours. However, a few such neonates i.e. 5 neonates each had to be admitted for 24 – 48 hours and 2 – 7 days. Similarly 7 out of 9 neonates delivered via forceps delivery were admitted in SBCU for a few hours i.e. less than 24 hours. The remaining 2 were admitted for 24 – 48 hours.

It implies that through some instrumental neonates had to be admitted in SBCU, the severity of complication was not that great that they had to be admitted for a long period of time. There were only few such neonates who had to be admitted for about a week. No neonatal death was noted in our study.

NUMBER OF COMPLICATIONS IN NEONATES DELIVERED BY INSTRUMENTAL DELIVERY

Complications seen	Vacuum	Forceps
Yes	10 (7.63%)	3 (12.5%)
No	121 (92.37%)	21 (87.5%)
Total	131 (100.0%)	24 (100.0%)

The above data reveals that only few instrumental neonates showed signs of complication. For instance, neonates delivered via vacuum delivery showing complications was only 10 i.e. 7.63% and those delivered via forceps delivery showing complications were 3 i.e. 12.5%.

NUMBER OF NEONATES SHOWING DIFFERENT COMPLICATIONS

Complications	Vacuum	Forceps
Diarrhea	-	1 (33.33%)
MBA	-	1 (3.33%)
SBA	2 (20.0%)	-
Grunting	5 (30.0%)	1 (33.33%)
Neonatal Jaundice	2 (20.0%)	-
Septicemia	1 (10.0%)	-
Total	10 (100%)	3 (100%)

A few instrumental neonates showed complications like diarrhea, moderate and severe birth asphyxia, grunting, neonatal jaundice, septicemia etc. Majority of neonates showing complications and delivered through vacuum delivery presented with grunting i.e. 5 out of 10 neonate. Two such neonates presented with SBA and neonatal jaundice, while one such neonate presented with septicemia.
With 3 neonates delivered via forceps delivery and showing complication, one each presented with diarrhea, MBA and grunting.

WEIGHT OF NEONATES DELIVERD BY INSTRUMENTAL DELIVERY

Wt. of neonates (kg)	Vacuum	Forceps
2.5 – 3 kg	77 (58.78%)	23 (95.83%)
>3 kg	34 (41.22%)	1 (4.17%)
Total	131 (100.0%)	24 (100.0%)

The weight of the neonates delivered via instrumental delivery was found to be within normal limits. Majority of them had wt. between 2.5 – 3 kg, i.e. 58.78% of neonates delivered via vacuum and 95.83% delivered via forceps delivery, 41.22% neonates delivered via vacuum delivery had above 3 kg wt. However, there was only one neonate delivered via forceps with wt. above 3 kg.
Hence, the neonates delivered via instrumental delivery were quite healthy in terms of the weight they possessed.
Instrumental deliveries are quite quick and safe as compared to other deliveries. At the same time, they are also found to be east to perform and can be performed by paramedical. Hence, in order to access the safety, quickness and easiness of instrumental delivery, the following data were taken and studied.
The following table presents the number of cases of vacuum and forceps delivery on the basis of number of pulls applied.

NUMBER OF VACUUM AND FORCEPS DELIVERY ACCORDING TO THE NUMBER OF APPLICATION:

Number of Application	Vacuum	Forceps
One	106 (80.92%)	23 (95.83%)
Two	22 (16.79%)	1 (4.17%)
Three	3 (2.29%)	-
Total	131 (100.0%)	24 (100.0%

In majority of cases of vacuum delivery and forceps delivery, even one application of force was enough to deliver the baby i.e. 80.92% of vacuum and 95.83% of total forceps delivery were performed successfully with only one application. Force was applied twice in 16.79% of total case of vacuum delivery and 4.17% cases of total forceps delivery. The number of cases of vacuum delivery in which force was applied thrice was 3 out of 131 total cases. There were no cases of forceps delivery where force had to be applied thrice.

The above discussion reveals that the vacuum and forceps deliveries were performed quite quickly in most of the cases. Only a few cases took a long time and more force.

Total 169cases were studied in this study, out of which 14 cases were not included in this study due to failed vacuum. This is due to some errors in instrument and proper assessment of patient earlier. Those cases were performed as follow.

	Vacuum	Forceps
Episcotomy	6 (42.86%)	-
Forceps	4 (28.57%)	-
CS	4 (28.57%)	-
Total	14 (100%)	-

All of the cases of forceps delivery and almost all the cases i.e. 89.31% cases of total vacuum delivery were successful. Only a few cases of vacuum delivery i.e. 14 out of 131 cases failed and hence, deliveries in these cases were performed in some other way. Other remaining failed vacuum cases forceps and caesarian sections were performed.

CONCLUSION

Instrumental delivery (vacuum/ forceps) is one of the quickest and safest delivery performed which reduces the number of cesarean section. Patient is almost as safe as normal delivery. Out of total 3201 deliveries, the total number of vacuum delivery performed were 131 i.e. 4.09% while the total number of forceps delivery were 24 i.e. 0.75%

Instrumental deliveries were performed maximum in reproductive age group (i.e. 20-24 years of age), mostly being primi gravida group. Most of the cases have attended adequate number of antenatal visits (i.e.3-5 visits). Instrumental deliveries were performed only after 38weeks of gestation, the major indication being fetal distress, prolonged second stage of labour and maternal distress. Fewer other indications was PET, Heart disease in pregnancy, hypertension, severe anemia, previous cesarean section and accidental hemorrhage.

In majority of cases, vacuum and forceps deliveries were performed quite easily i.e. one application was enough to result in successful delivery. However in few cases vacuum delivery failed due to some errors in instrument and proper assessment of patient earlier. These cases were further proceeded by forceps delivery or by performing cesarean section. No significant blood loss was observed in these procedures.

60 out of 131 babies delivered via vacuum and 9 out of 24 babies delivered via forceps were admitted in S.C.B.U. Majority of them were admitted for observation and were discharged within 24 hours. Only a few babies (8.3%) were kept in S.C.B.U. for a longer period of time for a complication like moderate birth asphyxia, severe birth asphyxia, septicemia, neonatal jaundice, respiratory distress e.t.c. No neonatal death and still birth were reported during this study period.

Episiotomy was performed in 84.73% of vacuum delivery and in 70.83% of forceps delivery. Perineal tear was observed in 11.5% of vacuum delivery and in16.7% of forceps delivery. Maternal complications like extended episiotomy, perineal hematoma, cervical tear was seen on 3.9% of instrumental delivery. Comparing in between vacuum and forceps delivery more maternal complications was observed in forceps delivery (i.e.29.17%) in compared to vacuum delivery (i.e. 13.74%).

RECCOMENDATION

- Proper assessment of patients (i.e. gestational age, size of baby, position of head, pelvic outlet e.t.c.) should be done in time.
- Proper and adequate number of instrument should be available in labour room as well as in Operation Theater.
- Liberal episiotomy should be given to all cases irrespective of parity.
- Partogram should be maintained in this hospital.
- Pediatrician should be available during instrumental delivery in this hospital.

REFERENCES

- American journals of obstetric and gynecology, volume-180, no.-6, June 1999
- British journals of obstetric and gynecology, vol-106, no.-6, June 1999
- British journals of obstetric and gynecology, edited by John M Grant, 1999
- Core journal in obstetric and gynecology, vol-18, no-1, October, 1994
- Core journal in obstetric and gynecology, vol.-21, no-2, February,1997
- Dennen's Forceps deliveries, third edition, Philip C Dennen, Japee brothers
- Progress in obstetric and gynecology vol-8, Edited by John Sudd, Churchill Livingstone.
- Progress in obstetric and gynecology, vol-10, Edited by John Sudd, Churchill Livingstone
- Text book of obstetric, J.P.Dutta.
- The ventouse, the obstetric vacuum extractor , J.A. Chalmers.

17. Vaccum delivery :
- No.of application
- No. of pull
- Indication - Maternal ☐ Foetus ☐
- Difficulty ☐ Easy ☐

18. Forceps
Indication - Maternal ☐ Foetal ☐
- Difficulty ☐ Easy ☐

19. Foetal outcome : Alive/S.B/NND
Wt of Neonates 2kg ☐ 2 - 3kg ☐ 3kg ☐
Apg Score 0 - 3 ☐ 4 - 6 ☐ 7 ☐ in 1 min
Apg Score 0 - 3 ☐ 4 - 6 ☐ 7 ☐ in 5 min

20. Admission in SBCU: Yes ☐ No ☐
If yes 24hr's ☐ 48 hr's ☐ 7days ☐

21. Neonatal death : Yes ☐ No ☐
If yes cause of death

22. Neonatal complication specific : .....

23. Maternal outcome : Episitomy No of stitches
Perineal tear I° ☐ II° ☐ III° ☐
ND with out / Epi Tear ☐

24. Amount of blood loss within 24 hr's of delivery :
500ml ☐ 500ml ☐
3rd stage management - Methergin - Syn - Met + Syn

25. Any complication specify : Failed Vac Forcep

26. Investigation : Hb

27. Prophylactic Antibiotics : Given ☐ No ☐
If yes: Specify.....

28. Maternal Morbidity : P. Sepsis ☐ Anemia ☐
Extensive Perneal injury ☐
Lact. failure ☐

29. Maternal Mortality : Yes ☐ No ☐
If yes cause of death .....

30. Comments short summary of case : .....

: nsequences of Instrumental Delivery Ventouse or Forceps Delivery and Its Outcome
n Neonates and Mother at Maternity Hospital

1. Surname : Age : R. No :
2. Address : Occupation : ☐ Wife ☐ Husband
3. Education : Wife Husband
4. Economic status : Minimum charge ☐ Intermediate ☐ High ☐
5. Parity : Primi ☐ Multi ☐
6. Date of Admission : Date of Discharge :
7. ANC : Yes ☐ No ☐
   If Yes 1 - 2 Visit ☐ 3 - 5 ☐ 5 ☐
8. Medical History Hypertension : Anemia ☐ Heart disease ☐
   Jaundice ☐ Diabetes ☐
   Any others ☐
9. Drug History:.....
10. Prev Obst. History : .....
    No. of F. T ☐ No. of Prem ☐ No.of Abo ☐
11. Type of Delivery : N.D ☐ Vcc ☐ Forcep ☐ C/S ☐
12. Any complication specify: .....
13. Period of gestation : 36 weeks ☐ 37 - 40 weeks ☐ 40 weeks ☐
14. Type of labour : Spontaneous ☐ Induction ☐ Augmentation ☐
15. Duration of labour : 1st SOL in hours ☐
    2nd SOL in hours ☐
    3rd SOL in hours ☐
16. Type of delivery : Vacuum ☐ Forcep ☐