

A clinical study of complications of delivery of ‘afterbirth’ in rural population

¹Dr. Swati kagne, Assistant professor, department of obstetrics and gynecology, SRTRGMC, Ambajogai.

²Dr. Akshaja giridhar, junior resident, department of obstetrics and gynecology, SRTRGMC, Ambajogai.

³Dr. Sambhaji chate, Professor, HOD, department of pediatrics, SRTRGMC, Ambajogai.

Corresponding Author: Dr. Swati kagne, Assistant professor, department of obstetrics and gynecology, SRTRGMC, Ambajogai.

Citation this Article: Dr. Swati kagne, Dr. Akshaja giridhar, Dr. Sambhaji chate, “A clinical study of complications of delivery of ‘afterbirth’ in rural population”, IJMSIR- March - 2022, Vol – 7, Issue - 2, P. No. 96 – 103.

Type of Publication: Original Research Article

Conflicts of Interest: Nil

Introduction

The third stage of labour starts after expulsion of foetus and continues till expulsion of placenta. It can be sub categorized as phase of separation and phase of expulsion of placenta. The average time of third stage is 15 min. Postpartum haemorrhage is defined as the blood loss of >500 ml of blood after completion of the third stage of labour [1] PPH may occur due to failure of uterus to contract adequately (atonicity), trauma- either cervical or vaginal lacerations and tears, uterine rupture, retained placental tissue and maternal bleeding disorders. Uterine atony is the cause in 50% cases. With the separation of placenta, the uterine sinuses, which are torn, cannot be compressed effectively due to imperfect contraction and retraction of the musculature. Retained placenta means failure to deliver placenta within 30 minutes using active management of third stage and 60 minutes by physiological management.[2] The incidence of retained placenta is 2% at term and markedly increases during preterm.[2] Retained placenta can be either trapped placenta or adherent placenta. Adherent placenta (placenta accreta spectrum), refers to the range of pathologic adherence of the placenta, including placenta

accreta, placenta increta, placenta percreta. The incidence of placenta accrete spectrum is increasing due to increasing caesarean section rate. [3-5] Puerperal uterine inversion is a rare, but potentially life threatening obstetric emergency. Patients may present with sudden postpartum collapse. It is imperative that the condition be recognized quickly and promptly managed in order to minimize the potential for maternal morbidity and mortality. The incidence of uterine inversion varies and ranges from 1:2500 [6] to 1:20000 [7,8] Being a tertiary referral Centre, there is a high incidence of uterine inversion observed with different clinical presentations.

Aim and objectives

Aim

To assess the various complications, management and prevention of Complications of after birth

Objectives

1. To assess the incidence of the various complications of afterbirth.
2. To retrospectively evaluate the clinical determinants involved in the causation of complications.

3. To study the management done in the various complications.
4. Evaluation of various preventive measures to avoid the complications.

Material and methods

- Study Design- A hospital based cross-sectional study.
- Study Settings- Obstetrics and Gynecology department of tertiary care hospital.
- Period of Study- November 2019- November 2021
- Study Population- All patients undergoing normal delivery or caesarean section during study period.
- Study subjects- Patients undergoing normal delivery or caesarean section during study period and satisfying inclusion criteria.
- Sampling Method- Consecutive sampling method was used.
- Sample size- With reference to study by Agarwal T et al (2018) [9] Incidence of complications in third stage of labor was 6.45% Formula for sample size: $N = 4 \times P \times Q / L^2$ Where $P=6.45$ $Q=100 - P =93.55$ $L=Allowable$ error (4 % Absolute error) $N= 4 \times 6.45 \times 93.55 / 16$ $N=150.84$ However 200 subjects were included in the study. $N=200$

Inclusion Criteria

- All cases delivered at our institution.
- All cases with obstetric complications.

Exclusion Criteria

- Any patient with a pre-gestationally existing medical comorbidity such as hypertension, diabetes mellitus, hypothyroidism.
- Patients not willing to participate in the study.

Ethical Clearance

Ethical Clearance was obtained from institutional ethics committee.

Research methodology specified for data collection: Study subjects were enrolled after obtaining clearance from ethics committee. All the subjects were explained in detail about study procedure in language she understands. Informed written consent was obtained from study participants. Predesigned and pretested study proforma was used as a tool for data collection. Data was collected retrospectively about sociodemographic characteristics, past obstetric history, events in all three stages of labor, duration of third stage, past medical history, active management of third stage, complications encountered in third stage and management of complications.

Data analysis

All the data collected was entered in excel spreadsheet and analyzed using SPSS version 21 software. Chi square test was used to study associations. $P < 0.05$ was considered as significant.

Result and observations

Table 1: Distribution of study participants as per age (N=200)

Age (In years)	Frequency	Percentage
18-25	063	31.5
26-34	103	51.5
≥35	034	17
Total	200	100

Above table shows that, majority of study subjects were from age group 26-34 yrs. Contributing 103 (51.5%) followed by 18-25 yrs 63 (31.5%) and 34 (17%) were ≥35 yrs of age. Mean age of study participants was 28.55 ± 0.737 Years.

Table 2: Distribution of study subjects according to Education (N=200).

Education	Frequency	Percentage
Illiterate	16	8

Primary	53	26.5
Secondary	66	33
Higher*	65	32.5
Total	200	100

Illiterate: Person above 7 yrs of old who cannot read or write in any language with understanding

Primary: 1-5 th std

Secondary: 6 -10 th std

Higher*: > 10 th std

Above table shows that, majority of study subjects were educated upto secondary level contributing 66 (33%) followed by Higher* level 65 (32.5%), Primary 53 (26.5%) and 16 (8%) were illiterate.

Table 3: Distribution of study subjects according to occupation (N=200)

Occupation	Frequency	Percentage
Homemakers	74	37
Farmers	38	19
Employed	24	12
Shop Keeper	23	11.5
Labourers	23	11.5
Business	18	9
Total	200	100

Above table shows that, most of the study subjects were Homemakers contributing 74 (37%) followed by Farmers 38 (19%), Employed 24 (12%), Shop Keeper and Laborers 23 (11.5%) and Business 18 (9%) respectively.

Table 4: Distribution of study subjects according to socioeconomic status (n=200)

Socioeconomic class	Frequency	Percentage
I	19	9.5

II	33	16.5
III	72	36
IV	51	25.5
V	25	12.5
Total	200	100

Above table shows that, most of the subjects were from lower socioeconomic classes (III, IV, V) contributing 148 (74%) and 52 (26%) were from Upper classes (I, II)

Table 5: Distribution of subjects according to gravid status (N=200)

Gravid status	Frequency	Percentage
Primigravida	76	38
Multigravida	124	62
Total	200	100

Above table shows that, most of the study subjects were Multigravida contributing 124 (62%) and 76 (38%) were Primigravida.

Table 6: Distribution of study subjects as per mode of present delivery

Mode of present delivery	Frequency	Percentage
Vaginal Delivery	141	70.5
LSCS	44	22
Vacuum Assisted	15	7.5
Total	200	100

Above table shows that, most of study participants delivered by Vaginal Delivery contributing 141(70.5%) followed by LSCS in 44 (22%) and vacuum assisted in 15 (7.5%) respectively.

Table 7: Distribution of study subjects as per past obstetric history

Past obstetric history	Frequency	Percentage
H/o Retained placenta	01	0.5
H/o Miscarriages	04	2
Not significant	195	97.5
Total	200	100

Above table shows that, H/o Miscarriage in previous pregnancies was present in 04 cases (2%) and H/o Retained placenta in 01 (0.5%).

Table 8: USG findings among study participants (N=200)

USG findings	Frequency	Percentage
Polyhydramnios	05	2.5
Transverse Lie	05	2.5
Placenta Previa	02	1
Placenta accreta	02	1
Macrosomia	02	1
Normal	184	92
Total	200	100

Above table shows that, Polyhydramnios and Transverse Lie were present in 05 cases (2.5%) followed by Placenta Previa, Placenta accreta and Macrosomia in 2 cases (1%) each. USG was within normal limits in 184 (92%) of cases.

Table 9: Preeclampsia among study participants (n=200)

Preeclampsia	Frequency	Percentage
Present	19	9.5
Absent	181	90.5

Total	200	100
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Above table shows that, Preeclampsia was present in 19 (9.5) study subjects.

Table No.10: Duration of third stage of labor among study participants (n=200)

Duration of third stage	Frequency	Percentage
Prolonged	39	19.5
Normal	161	80.5
Total	200	100

Prolonged: > 30 Min

Above table shows that, third stage of labor was prolonged in 39 (19.5%) study subjects. Normal duration was seen in 161 (80.5%) cases.

Table 11: Overall incidence of Afterbirth complications among study subjects. (N=200)

Afterbirth complications	Frequency	Percentage
Present	17	8.5
Absent	183	91.5
Total	200	100

Above table shows that, overall incidence of afterbirth complications among study subjects was 17 (8.5%).

Table 12: Afterbirth complications among study subjects. (N=200)

Afterbirth complications	Frequency	Percentage
Traumatic PPH	06	3
Retained Placenta	04	2
Atonic PPH	03	1.5
Perineal Tears	03	1.5
Uterine Inversion	01	0.5

No complications	183	91.5
Total	200	100

PPH: Post-partum haemorrhage.

Above table shows that, Traumatic PPH was most common afterbirth complication in study subjects contributing 06 cases (3%) followed by Retained Placenta 4 (2%), Atonic PPH 3(1.5%), perineal tears 3(1.5%) and Uterine Inversion was seen in 1 case (0.5%) respectively.

Table 13: Association between maternal age and afterbirth complications among study subjects (N=200)

Age (Years)	Afterbirth complications				Total	P value
	Present		Absent			
	N	%	N	%		
<35	12	7.22	154	92.78	166	0.15
≥35	05	14.71	29	85.29	34	
Total	17	8.5	183	91.5	200	

Chi square=2.028, Df=1; Not significant at p<0.05

Above table shows that, proportion of Afterbirth complications was high in subjects with age ≥35 yrs (14.71%) as compared to subjects with age <35 yrs (7.22%). However no statistical significant association was seen between maternal age and afterbirth complications in present study. (p>0.05)

Table 14: Association between gravid status and afterbirth complications among study subjects (N=200)

Gravid status	Afterbirth complications				Total	P value
	Present		Absent			
	N	%	N	%		
Primigravida	11	14.47	65	85.53	76	0.01
Multigravida	06	4.83	118	95.17	124	

Total	17	8.5	183	91.5	200
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Chi square=5.624, Df=1; significant at p<0.05

Above table shows that, proportion of afterbirth complications was significantly high in Primigravida subjects (14.47%) as compared to multigravida (4.83%). A statistical significant association was seen between gravid status and afterbirth complications in present study. (p<0.05)

Table 15: Association between preterm delivery and afterbirth complications among study subjects (N=200)

Preterm delivery	Afterbirth complications				Total	P value
	Present		Absent			
	N	%	N	%		
Yes	9	22.5	31	77.5	40	0.0003
No	8	5	152	95	160	
Total	17	8.5	183	91.5	200	

Chi square=12.60, Df=1; significant at p<0.05

Above table shows that, proportion of afterbirth complications was significantly higher in subjects with preterm delivery (22.5%) as compared to subjects with full term (5%). A statistical significant association was seen between preterm delivery and afterbirth complications in present study. (p<0.05)

Table 16: Association between duration of third stage of labor and afterbirth complications among study subjects (N=200)

Third stage of labor	Afterbirth complications				Total	P value
	Present		Absent			
	N	%	N	%		

Prolonged	9	23.07	30	76.93	39	0.0002
Normal	8	4.97	153	95.03	161	
Total	17	8.5	183	91.5	200	

Chi square=13.236, Df=1; significant at p<0.05

Above table shows that, proportion of afterbirth complications was significantly higher in subjects with preterm delivery (23.07%) as compared to subjects with full term (4.97%). A statistical significant association was seen between preterm delivery and afterbirth complications in present study. (p<0.05)

Table 17: Association between preeclampsia and afterbirth complications among study subjects (N=200)

preeclampsia	Afterbirth complications				Total	P value
	Present		Absent			
	N	%	N	%		
Present	9	47.36	10	52.64	19	< 0.00001
Absent	8	4.42	173	95.58	181	
Total	17	8.5	183	91.5	200	

chi-square= 40.7811. Df=1; Significant at p < .05.

Above table shows that, proportion of afterbirth complications was significantly higher in subjects with preeclampsia (47.36%) as compared to subjects without preeclampsia (4.42%). A statistical significant association was seen between preeclampsia and afterbirth complications in present study. (p<0.05)

Summary

This hospital based cross sectional study was conducted among 200 pregnant women undergoing either normal delivery or LSCS at rural tertiary care hospital during a period of 2 years with the aim to study afterbirth complications. Simple random sampling was used to select study subjects as per inclusion criteria. A pretested

and predesigned study proforma was used as a tool for data collection.

Data was collected about sociodemographic factors, past obstetric history, preeclampsia, obstetric score, general examination, duration of all three stages of labor, complications encountered during third stage and management of third stage complications. All the data collected was entered in an excel spreadsheet and analyzed using SPSS version 21 software. Chi square test was used to study association<0.05 was considered as significant. Present study revealed following findings
 Mean age of study participants was 28.55 ± 0.737 Years
 Majority of study subjects were from age group 26-34 yrs contributing 103 (51.5%) followed by 18-25 yrs 63 (31.5%) and 34 (17%) were ≥35 yrs of age. Majority of study subjects were educated upto secondary level contributing 66 (33%) Most of the study subjects were Homemakers contributing 74 (37%) followed by Farmers 38 (19%) Most of the subjects were from lower socioeconomic classes (III, IV, V) contributing 148 (74%) Most of the study subjects were Multigravida contributing 124 (62%) and 76 (38%) were Primigravida. Most of study participants delivered by Vaginal Delivery contributing 141(70.5%) followed by LSCS in 44 (22%) and vacuum assisted in 15 (7.5%) respectively. H/o Miscarriage in previous pregnancies was present in 04 cases (2%) and H/o Retained placenta in 01 (0.5%). Polyhydramnios and Transverse Lie were present in 05 cases (2.5%) followed by Placenta Praevia, Placenta accreta and Macrosomia in 2 cases (1%) each. Preeclampsia was present in 19 (9.5%) study subjects. Third stage of labor was prolonged (> 30 Min) in 39 (19.5%) study subjects. Normal duration was seen in 161 (80.5%) cases.

Overall incidence of afterbirth complications among study subjects was 17 (8.5%). Traumatic PPH was most

common afterbirth complication in study subjects contributing 06 cases (3%) followed by Retained Placenta 4 (2%), Atonic PPH 3(1.5%), perineal tears 3(1.5%) and Uterine Inversion was seen in 1 case (0.5%) respectively. Proportion of afterbirth complications was significantly high in Primigravida subjects (14.47%) as compared to multigravida (4.83%). A statistical significant association was seen between gravid status and afterbirth complications in present study. ($p < 0.05$) Proportion of afterbirth complications was significantly higher in subjects with preterm delivery (22.5%) as compared to subjects with full term (5%). A statistically significant association was seen between preterm delivery and afterbirth complications in present study. ($p < 0.05$).

Proportion of afterbirth complications was significantly higher in subjects with preeclampsia (47.36%) as compared to subjects without preeclampsia (4.42%). A statistical significant association was seen between preeclampsia and afterbirth complications in present study. ($p < 0.05$) proportion of Afterbirth complications was high in subjects with age ≥ 35 yrs (14.71%) as compared to subjects with age < 35 yrs (7.22%). However no statistical significant association was seen between maternal age and afterbirth complications in present study. ($p > 0.05$)

Conclusions

This cross, sectional study was conducted among 200 pregnant women undergoing vaginal or LSCS delivery at rural tertiary care hospital with aim to study afterbirth complications. Mean age of study participants was 28.55 ± 0.737 Years.

Overall incidence of afterbirth complications among study subjects was 8.5%. Most of the study participants were delivered by vaginal delivery. Polyhydramnios, malpresentations, preeclampsia, H/o Miscarriage and

retained placenta in previous pregnancy, placenta praevia, placenta accreta, macrosomia, preterm delivery, primigravida and prolonged third stage of labor (> 30 min) were associated factors in cases of afterbirth complications. Finally, to conclude, active management of third stage of labor (AMTSL) with use of uterotonic drugs, massage of the uterine fundus and controlled cord traction can prevent most of the afterbirth complications.

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