

Study of Feto-Maternal Outcome in Abnormal Foetal Presentation

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Abstract

Background: Spontaneous normal vaginal delivery is most common in the cephalic presentation in 96.5%. Abnormal foetal presentation occurs when the part of the foetus which is closest to the pelvic inlet is non-vertex. The breech is the most common malpresentation occurring in 3-4% of all pregnant women. Shoulder presentation in the transverse or oblique lie (0.12%), cord presentation-1.4 to 6.2 per 1000; compound presentation -1 in 600. Abnormal foetal presentation leads to greater risk of caesarean delivery, prolonged labour, increased perinatal morbidity. Good maternal and perinatal outcomes depend on the provision of good antenatal care like early screening and elective caesarean section for some cases.

Aims and Objectives The study aimed to determine the incidence of abnormal foetal presentation, etiological factors. Mode of delivery foetal outcome in abnormal foetal presentation.

Materials and Methods Study design: Observational study. Sample size: 70. Study period: 1st December 2021 to 31st May 2022. Place of study: Government Victoria hospital, Andhra medical College.

Methodology: Type of abnormal presentation, gravid uterus, period of gestation, age of mother, uterine anomalies, mode of morbidities, neonatal intensive care unit admissions. Inclusion criteria: Singleton pregnancy, Gestational age 30-42 weeks. Pregnant women who are willing to participate in the study. Exclusion criteria: Multiple pregnancy, Gestational age less than 30 weeks, Pregnant women who refused to participate in the study.

Results: Abnormal foetal presentation accounted for 2.4% in this study among which breech was the most common. Most common mode of delivery was a caesarean section, NICU admissions are less with elective caesarean section thus good antenatal check-ups and planned sections are preferred, early neonatal deaths were less with elective caesarean sections so planned caesarean sections are preferred, Early diagnosis with regular antenatal check-ups for effective planning of mode of delivery can decrease perinatal morbidity and mortality.

KEYWORDS: Normal Vaginal delivery, Caesarean section, Abnormal foetal presentation, NICU admissions

Date of Submission: 14-01-2023

Date of Acceptance: 29-01-2023

I. Introduction

Obstetric management of breech presentation at term is heterogeneous, and whether to recommend caesarean section or vaginal delivery is still a subject of debate. Moreover, studies on the neonatal mortality and morbidity of infants with breech presentation depending on the method of delivery have yielded inconsistent results. A major change in the clinical practice of breech presentation occurred after the publication of the Term Breech Trial study, which suggested that perinatal and neonatal mortality and serious neonatal morbidity were increased in breech pregnancies delivered vaginally, despite similar maternal outcomes(1)

Spontaneous normal vaginal delivery is most common in the cephalic presentation in 96.5%. Abnormal foetal presentation occurs when the part of the foetus which is closest to the pelvic inlet is non-vertex. The breech is the most common malpresentation occurring in 3-4% of all pregnant women. Shoulder presentation in the transverse or oblique lie (0.12%), cord presentation-1.4 to 6.2 per 1000; compound presentation -1 in 60. Abnormal foetal presentation leads to a greater risk of caesarean delivery, prolonged labour, and increased perinatal morbidity. Good maternal and perinatal outcomes depend on the provision of good antenatal care like early screening and elective caesarean section for some cases(2)(3).

Malpresentations usually ends increasing operative delivery, leading to increased adverse outcome for mother and baby. The incidence of cord prolapse is 5-10% in transverse lie, 3% in breech (flexed leg) and 10% in compound presentation. Taking prompt action may save life of mother and baby if the delivery becomes obstructed due to abnormal presentation. The risk of cord prolapse is 1 in 300 deliveries which decreases with elective caesarean section. Malpresentation is quite common in multiple pregnancies (10%)(4)

The incidence of breech presentation is highest in very preterm deliveries and decreases as gestational age advances, it is also more common in moderately and late preterm deliveries than term deliveries. Furthermore, as most preterm deliveries consist of late preterm deliveries and morbidity is still higher than in term deliveries, their impact on the healthcare system is considerable(5).

II. Aims And Objectives

The study aimed to determine.

- The incidence of abnormal foetal presentation
- Etiological factors
- Mode of delivery
- Foetal outcome in abnormal foetal presentation

III. Materials And Methodology

STUDY DESIGN: Observational study •Sample size: 70

STUDY PERIOD: 1st December 2021 to 31st May 2022

PLACE OF STUDY: Government Victoria hospital, Andhra Medical College

INCLUSION CRITERIA:

- Singleton pregnancy
- Gestational age 30-42 weeks
- Pregnant women who are willing to participate in the study

EXCLUSION CRITERIA:

- Multiple pregnancy
- Gestational age less than 30 weeks
- Pregnant women who refused to participate in the study

STUDY PROCEDURE:

In this observational study conducted at Government Victoria Hospital, Andhra Medical College at Visakhapatnam from 1st December 2021 to 31st May 2022, Pregnant women with more than 30 weeks period of gestation with abnormal foetal presentation who presented as an outpatient and in labour room were tracked and data such as the age of mother, gravid status, period of gestation type of abnormal foetal presentation were noted. Cases are then followed for the mode of delivery, and birth weight of the baby. APGAR of the baby. Perinatal morbidity, Neonatal intensive care unit admission and early neonatal deaths.

STATISTICAL ANALYSIS

Data was entered in Microsoft excel and analysed using SPSS version 21. Descriptive data was described in absolute numbers and percentages. Chi-square and Fisher's exact tests were performed to test for differences in proportions of categorical variables between two or more groups. The level $P < 0.05$ was considered as the cut-off value or significance.

STUDY RESULTS

Table 1: age of the mother

Age of mother	Frequency	Percent
18-20	3	4.28
20-29	63	90
More than 30	4	5.71
Total	70	100

Most of the ante-natal mothers are between the age group of 20-29 years (90%), and 5.7% mothers are of more than 30 years of age

Table 2: parity of the mother

Parity	Frequency	Percent
Primi	40	57.14
Multiparous	30	42.85
Total	70	100

Majority of the study population were primipara (57%), followed by multi para (42%)

Table 3: gestational age of the mother

Gestationalage	Frequency	Percent
Term	53	75.71
Preterm	17	24.28
Total	70	100

Majority of the ante-natal mothers delivered at term (75%), and rest were preterm

Table 4: uterine anomaly incidence among the ante-natal mothers

Uterineanomalies	Frequency	Percent
Yes	5	7.14
No	65	92.85

Majority of the study population did not have any uterine anomalies (92.85)

Table 5: oligohydramnios incidence among the ante-natal mothers

Oligohydramnios	Frequency	Percent
Yes	7	10
No	63	90

Majority of the study population did not have any hydramnios (90%)

Table 6: ante-natal check-ups among the ante-natal mothers

Antenatalcheck-up	Frequency	Percent
Yes	64	91.42
No	6	8.57

Majority of the study population had ante-natal check-ups (91.42%)

Table 7: post-partum haemorrhage incidence among the ante-natal mothers

Postpartumhaemorrhage	Frequency	Percent
Yes	2	2.85
No	68	97.14

Majority of the study population did not have any post-partum haemorrhage (97%)

Table 8: gender of the new-born babies

Sex	Frequency	Percent
Male	32	45.71
Female	38	54.28
Total	70	100

Majority of the new-born babies were female (54.2%), followed by male (45.7%)

Table 9: birthweight of the new-born babies

Birthweight	Number	Frequency
<2500 grams	25	35.71
2500-3999grams	45	64.28
>4000 grams	0	0

Majority of the new-born babies were having adequate birth weight (64.2%), followed by low birth weight (35.7%)

Table 10: outcome of the pregnancy

Outcome	Frequency	Percent
Alive	68	97.14
Early neonatal death	2	2.85
Total	70	100

Majority of the new-born babies were born alive (97%)

Table 11: incidence of jaundice among of the new-born babies

Jaundice	Frequency	Percent
Yes	15	21.42
No	55	78.57

Majority of the new-born babies had no incidence of neonatal jaundice (78.5%)

Table 12: asphyxia incidence among the new-born babies

Asphyxia	Frequency	Percent
Yes	16	22.85
No	54	77.14

Majority of the new-born babies had no birth asphyxia (77%)

Table 13: APGAR1 of the new-born babies

Apgarin1stminute	Frequency	Percent
Less than or equal to 3	2	2.85
4-6	5	7.142
More than or equal to 7	63	90

Majority of the new-born babies had APGAR1 >7, (90%)

Table 14: APGAR5 of the new-born babies

Apgarin5thminute	Frequency	Percent
4-6	3	4.28
More than or equal to 7	67	95.7

Majority of the new-born babies had APGAR5 >7, (95.7%)

NEONATAL MORBIDITY

Table 15: congenital anomalies among of the new-born babies

Congenital anomalies	Frequency	Percent
Yes	3	4.28
No	67	95.7

Majority of the new-born babies had no congenital anomalies (95.7%)

Table 16: foetal presentation during gestation

Foetal presentation	Frequency	Percent
Breech	57	81.4
Transverse lie	6	8.57
Oblique lie	4	5.7
Cord	2	2.8
Compound (head and hand)	1	1.4

Majority of the new-born babies presented with breech presentation (81.4%), followed by transverse lie (8.57%)

Table 17: NICU admission rate among of the new-born babies

Neonatal intensive care unit admissions	Frequency	Percent
Yes	32	45.71
No	38	54.28
Total	70	100

Majority of the new-born babies had need for NICU admission (54.28%)

Table 18: mode of delivery

Mode of delivery	Frequency	Percent
Vaginal delivery	4	5.71
Total caesarean section	66	94.28
Total	70	100
Emergency caesarean section	50	71.42
Elective caesarean section	16	22.85
Total	66	

Majority of the deliveries were caesarean sections, n = 66, of which 71% were emergency sections

Table 19: presenting part v/s mode of delivery.

Presenting part	Vaginal delivery		Emergency section		Elective section		Total
	Frequency	Percent	Frequency	Percent	Frequency	Percent	
Breech	4	7.01	40	57.14	13	22.8	57
Transverse lie	0	0	4	66.6	2	33.3	6
Oblique lie	0	0	3	75	1	25	4
Cord	0	0	2	100	0	0	2
compound	0	0	1	100	0	0	1
Total	4	5.71	50	71.42	16	22.85	70

Transverselie had most incidence of caesarean section (both elective and emergency), but it was not statistically significant.

chi-square-0.12

p-value -0.94 Not significant

Table 20: mode of delivery v/s asphyxia

Mode of delivery	Asphyxia		No Asphyxia		Total
	Frequency	Percent	Frequency	Percent	
Vaginal delivery	3	75	1	25	4
Emergency caesarean section	12	24	38	76	50
Elective caesarean section	1	6.25	15	93.75	16
Total	16	22.85	54	77.14	70

Elective caesarean section had low incidence of birth asphyxia which was statistically significant
p -0.012 significant

Table 21: mode of delivery v/s birth outcomes

Mode of delivery	Alive		Early neonatal death		Total
	Frequency	Percent	Frequency	Percent	
Vaginal delivery	3	75	1	25	4
Emergency caesarean section	49	98	1	2	50
Elective caesarean section	16	100	0	0	16
Total	68	97.14	2	2.85	70

Caesarean section had better birth outcomes than vaginal delivery which was statistically significant.
chi-square-7.4944
p-0.006 significant

Table 22: mode of delivery v/s NICU admission

Mode of delivery	NICU Admission		Healthy		Total
	Frequency	Percent	Frequency	Percent	
Vaginal delivery	3	75	1	25	4
Emergency caesarean	25	50	25	50	50
Elective caesarean	4	25	12	75	16
Total	32	4	38	54.28	70

Elective Caesarean sections had less NICU admissions which was not statistically significant.
Chi-square-4.51
P value-0.10 Not significant

Table 23: presentation v/s birth outcomes

Presentation	Alive		Early neonatal death		Total
	Frequency	Percent	Frequency	Percent	
Breech	56	98.24	1	1.75	57
Transverse	6	100	0	0	6
Oblique	4	100	0	0	4
Cord	1	50	1	50	2
Compound	1	100	0	0	1
Total	68	97.14	2	2.85	70

Very few neonatal deaths occurred to comment on any causality regarding the birth outcomes based on presentation.
chi square-1.34; p value-0.246 Not significant

IV. Discussion

Among 2862 deliveries malpresentation constituted (70)2.4%. Breech was commonest at 81.4%, followed by transverse lie-8.57%, oblique lie – at 5.7%, cord presentation-2.8%, and compound presentation (head and hand) at -1.4%. Common in women aged between 20-29 years (90%). Most seen in primi gravida-57.14%. Term delivery rate was 75.71% (37-42 weeks); preterm (<37 weeks) delivery rate-24.28%. Uterine anomalies are seen in 7.44% Oligohydramnios is present in 10%. Postpartum haemorrhage occurred in 2.85% of women. 91.4% of patients with good antenatal visits were diagnosed and managed effectively leading to an improved neonatal outcome. The majority of neonates (64.2%) were of normal birth weight (2500-3999gms)

while 35.71% are of low birthweight. Apgar in 1st minute was <7 in 10% of neonates and after 5 minutes was <7 in 4.28% of neonates. Congenital anomalies are present in 4.28% of neonates. 2.85% of neonates died within a few hours of delivery.

Out of all women with breech presentation 7.01% were delivered vaginally, 70.17% by emergency section and 22.8% by elective section. All women with other malpresentation were delivered by caesarean section. Neonatal mortality in vaginal delivery-25%, emergency caesarean-2%, elective zero. Neonatal mortality in cord-50%, breech-1.75%. Neonatal mortality in transverse, oblique, compound presentations – zero

Common malpresentation in the current study, Alalaf et al(6) Smriti maskey(4) et al was breech presentation. Common age of the study population current study, Alalaf et al(6) Smriti maskey(4) et al was 20-29 years. Common parity in the current study and Smriti maskey(4) et al was primi and in Alalaf et al(6) was multi gravida. Common presentation for Vaginal delivery in the current study, Alalaf et al(6) Smriti maskey(4) et al was breech(5.71%), (12.6%), (15.8%) respectively. The proportion of Emergency caesarean among all deliveries was in the current study was 71.42%, Alalaf et al(6) was 71.66%, Smriti maskey(4) et al was 66.4%. The proportion of Elective caesarean among all deliveries was in the current study was 22.85%, Alalaf et al(6) was 15.6%, Smriti maskey(4) et al was 17.8%. The proportion of jaundice among all neonates was in the current study and Alalaf et al(6) was 21.42%, Smriti maskey(4) et al was 21.3%. The proportion of jaundice among all neonates was in the current study and Alalaf et al(6) was 22.85%, Smriti maskey(4) et al was 13.7%. The proportion of asphyxia among all neonates was in the current study and Alalaf et al(6) was 22.85%, Smriti maskey(4) et al was 13.7%. The proportion of APGAR<7 among all neonates was in the current study and Alalaf et al(6) was 21.42%, Smriti maskey(4) et al was 21.3%. The proportion of NICU admissions among all neonates was in the current study was 45.71% and Alalaf et al(6) was 23.3%, Smriti maskey(4) et al was 14.5%. The proportion of neonatal mortality among all neonates was less in elective caesarean section among the current study and Alalaf et al(6), and Smriti maskey(4) et al. The proportion of neonatal morbidity among all neonates was less in elective caesarean section among the current study and Alalaf et al(6), and Smriti maskey(4) et al. The maternal mortality was nil the current study and Alalaf et al(6), and Smriti maskey(4) et al. Good Antenatal check-ups reduced perinatal morbidity and mortality in all 3 studies.

V. Conclusion

Abnormal foetal presentation accounted for 2.4% in this study among which breech was the most common. The most common mode of delivery was a caesarean section. NICU admissions are less with elective caesarean section thus good antenatal check-ups and planned sections are preferred. Early neonatal deaths were less with an elective caesarean section so planned caesarean sections are preferred. Early diagnosis with regular antenatal check-ups for effective planning of mode of delivery can decrease perinatal morbidity and mortality.

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