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INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI:10.21474/IJAR01/20956
DOI URL: http://dx.doi.org/10.21474/IJAR01/20956

RESEARCH ARTICLE

ANALYSIS OF ETIOLOGICAL FACTORS AND MATERNAL OUTCOMES IN VARIOUS MALPRESENTATIONS: A RETROSPECTIVE STUDY

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Manuscript Info

Manuscript History
Received: 27 March 2025
Final Accepted: 30 April 2025
Published:May 2025

Key words:-
Malpresentation, Breech, Transverse Lie, Face Presentation

Abstract

Background: Any presentation apart from the vertex is called a malpresentation. This includes brow, face, breech, shoulder and compound presentations. Malpresentation typically cause in increased caesarean sections, which has adverse outcomes for both mother and baby. Early analysis and management can save the obstetricians from complications.

Objective: To recognize the causative factors and effect of malpresenta tion on maternal outcome amongst pregnant women delivering in tertiary care centers

Methods: This became a retrospective observe carried out in the Department of Obstetrics and Gynaecology at Basaveshwarateaching and general hospital and sangameshwar teaching hospital, Kalaburagi for a length of twelve months from 1/10/2023 to 31/9/2024. A total of a 140 pregnant women out of 2869 total delivered women were included in this study

Results: Among the 140 women analyzed among the total 2869 deliveries between oct2023-sept2024, breech presentation was the most common malpresentation (4.49%) followed by transverse lie 0.24% and face presentation 0.13%, most common in the age group between 20-29 years(53.57%).The commonest etiological factor for breech presentation in this study was preterm (30.2%), for transverse lie and face presentation it was multiparity (71.4% and 75% respectively).The mode of delivery preferred for all the malpresentations was mostly Lower Segment Caesarean section.

Conclusion: Management of malpresentation is anongoing challenge for obstetricians. Education regarding the early diagnosis of malpresentation and identification of etiological factors can allowearly referral to tertiary centres for specialist services. Centres which have expertise in conducting vaginal delivery in malpresentations with good intrapartum monitoring and with facilities for caesarean section for better fetomaternal outcome.

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Introduction:-

Any presentation apart from vertex is named malpresentation. This consists of brow, face, breech, shoulder and compound presentations(1). Many studies have been performed to find out the causes of malpresentation and maternal/fetal outcomes focusing on gravida, malpresentation, and their association with the route of delivery

Breech is the commonest form of malpresentation, occurring in 3-4% of all women at the onset of labor. The incidence of face presentation is 1 in 1000. Brow occurs in 0.14% deliveries.Transverse lie of the fetus occurs in approximately 0.12% deliveries(3). Compound presentation has an incidence of approximately 1 in 1000 (4). There are 3 varieties of breech presentation – Frank breech, complete breech and footling or incomplete breech. Frank breech is the commonest seen mostly in primiparous women while complete breech is more commonly seen in multiparous women. The etiological factors associated with breech presentation are – prematurity (incidence decreased from 24% at weeks 24–27 to 2.5% at term), contracted pelvis, placenta praevia and space-occupying lesions in the pelvis are found in only about 7%, congenital uterine malformations (23.6%), fetal malformations. Other causes were advanced maternal age, nulliparity, small for gestational age, PROM, oligohydramnios and female baby. The causes for transverse lie include placenta previa, septate or a subspetate uterus, multiparity, pelvic masses. Causes for face and brow presentations are preterm fetuses, high parity, fetal malformations, oligohydramnios.

Malpresentation generally outcomes in an extended threat of cesarean delivery, ensuing in negative consequences for both mother and baby(2). Maternal complications include preterm rupture of membranes, cord prolapse, increased chance of instrumental delivery, caesarean section, obstructed labour, and uterine rupture, with increase in morbidity and mortality. Fetalcomplications encompass low 5-minute Apgar scores, meconium aspiration, hypoxic-ischemic encephalopathy, and birth trauma (1).

Early diagnosis and management can prevent complications of prolonged labor such as hemorrhage, sepsis and long-term problems of pelvic floor dysfunction, in particular with prolonged 2nd stage. Hence this particular studywas conducted to recognize the etiological factors and effect of malpresentation on maternal outcome.

Material and Methods:-

This is a retrospective study conducted in the department of Obsteterics and Gynecology at Basaveshwara teaching and general hospital and Sangameshwar teaching hospital, Kalaburagi over a period of 12 months from 1/10/2023 to 31/9/2024.

A total of 140 pregnant women among 2869 total delivered women were included in this study with a gestational age >24 weeks with malpresentation were included in this study. Exclusion criteria included <24 weeks gestational age and any incomplete records.

Data was collected from the hospital records and included patient demographics, obstetric history, gestational age, type of malpresentation, etiological factors, delivery mode, birth weight and apgar scores.

Data was analysed using the statistical package for the social sciences(SPSS) version 16.0 (SPSS Inc., Chicago, IL, USA). Descriptive statistics were used to calculate frequencies and percentages

Results:-

This study included 140 pregnant women who presented with malpresentation, eleven patients presented with intrauterine fetal death. Data analysis yielded the next results:

Age Distribution

Most patients(53.57%) belonged to 20-29 years.<20 years(32.14%) and >30 years(14.28%).

AGE	NUMBER	PERCENTAGE
<20 years	45	32.14%
20-29years	75	53.57%
>30years	20	14.28%

Distribution via Gestational Age

Most of the patients belonged to the gestational age <37 weeks(55.71%) indicating that prematurity is one of the most common causes of malpresentation.

GESTATIONAL AGE	NUMBER	PERCENTAGE
<37 weeks	78	55.71%
37-40 weeks	57	40.71%
>42weeks	05	3.57%

Distribution According To Type Of Malpresentation

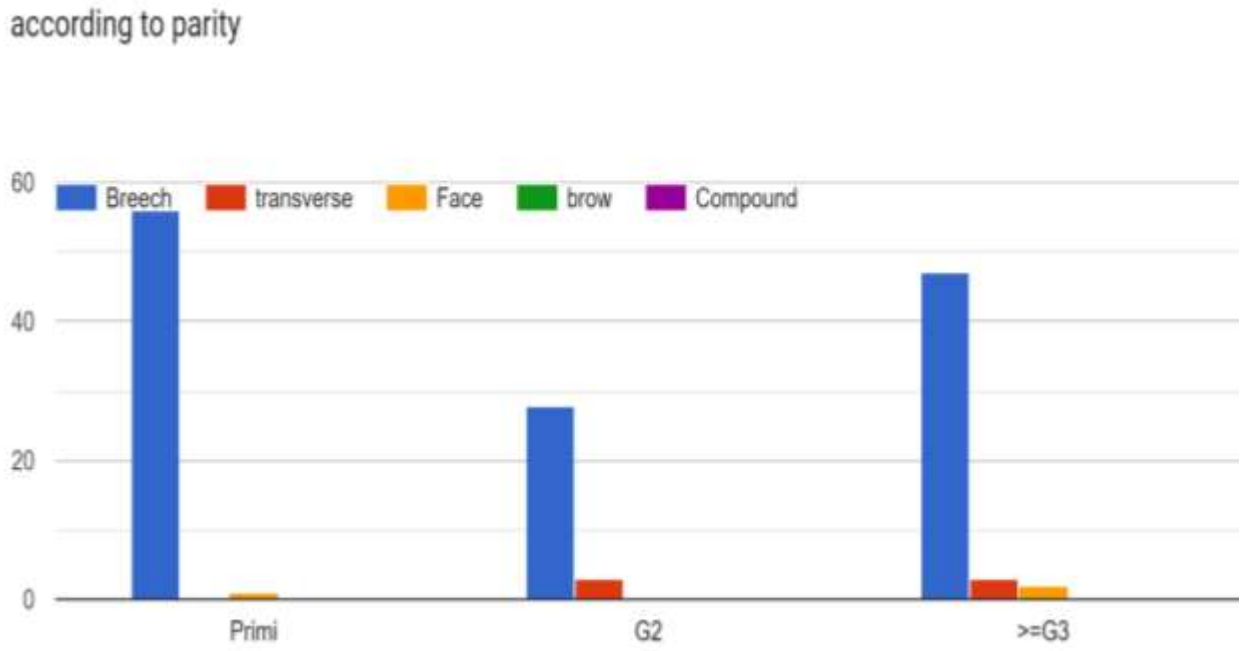
Among the total 2869 deliveries, breech was the commonest malpresentation accounting to 4.49% followed by transverse lie 0.24% and face presentation 0.13%.

TYPE	NUMBER(n=2869)	PERCENTAGE
BREECH	129	4.49%
TRANSVERSE LIE	07	0.24%
FACE PRESENTATION	04	0.13%

Parity Distribution

Breech presentation was the commonest malpresentation, being the highest (43.41%) in primigravidas followed by multigravidas(>=G3). Transverse lie was more common in G2 (57.14%). Face presentation was more common in >=G3.

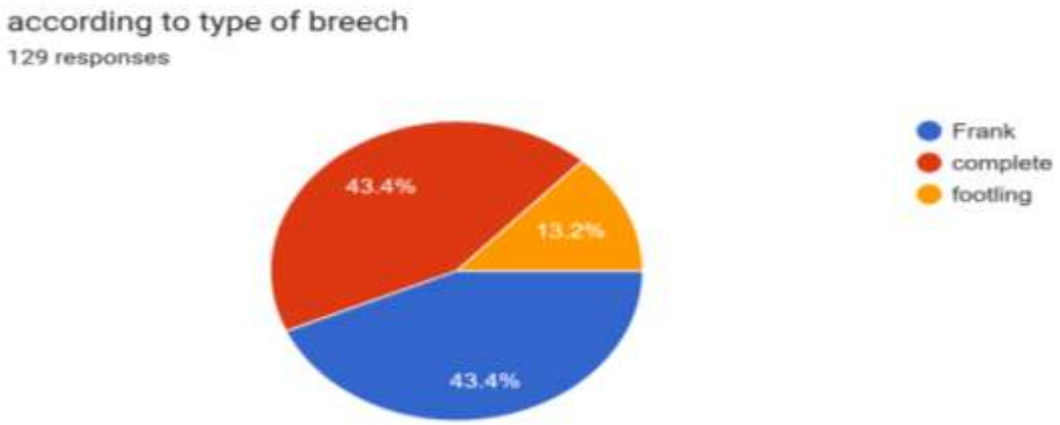
	PRIMIGRAVIDA	G2	>=G3
BREECH	56(43.41%)	28(21.7%)	47(36.43%)
TRANSVERSE	00	04(57.14%)	03(42.85%)
FACE	01(33.33%)	00	02(66.67%)



According To Type Of Breech

In this study, frank and complete breech were found in equal numbers.(43.4%)

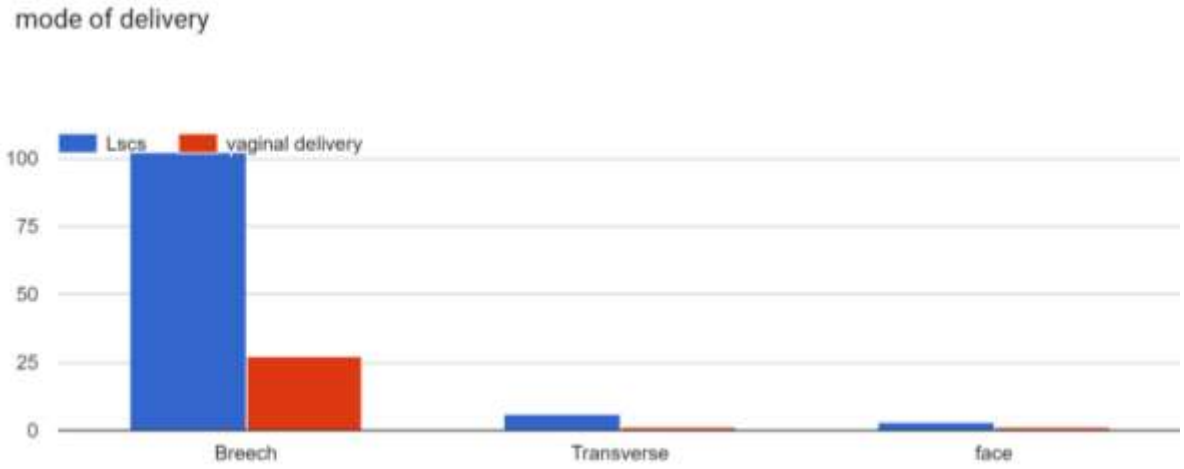
	NUMBER	PERCENTAGE
FRANK	56	43.4%
COMPLETE	56	43.4%
FOOTLING	17	13.2%



Mode Of Delivery

The preferred mode of delivery for all the malpresentations was mostly Lower Segment Caesarean section (breech – 79.06%, transverse- 85.71%, Face -75%). One patient with transverse who was extremely preterm and presented with Intrauterine Fetal demise delivered vaginally by breech presentation.

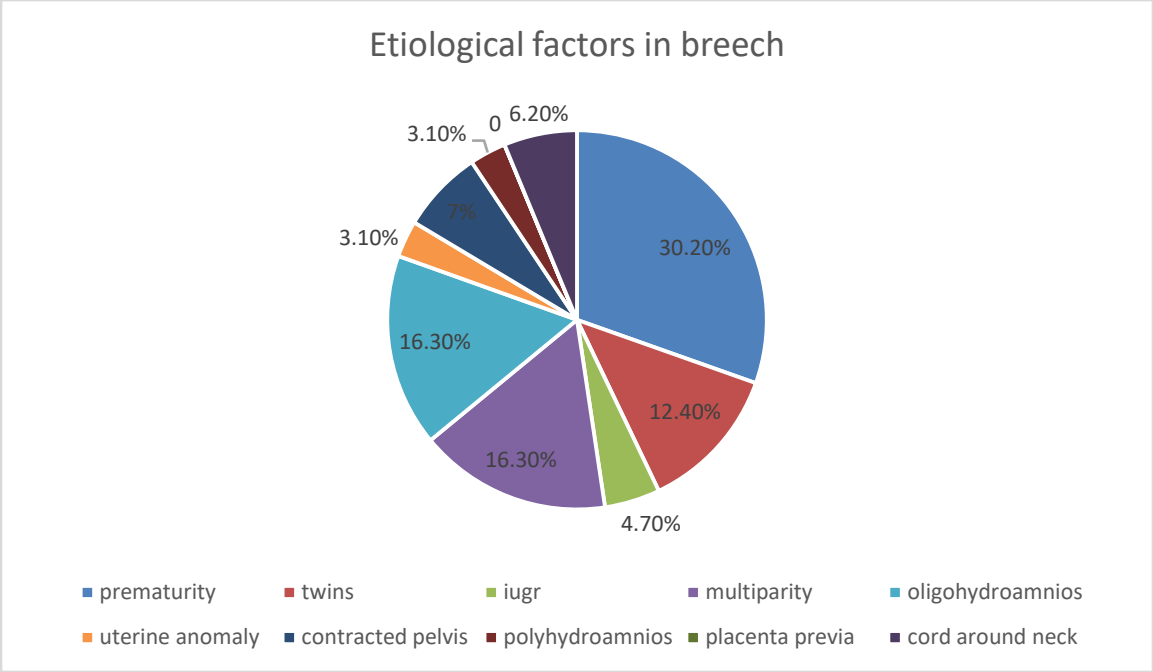
	BREECH	TRANVERSE	FACE
LSCS	102(79.06%)	6(85.71%)	3(75%)
VAGINALDELIVERY	27(20.93%)	1(14.28%)	1(25%)



Analysis Of Etiological Factors In Breech Presentation

The commonest etiological factor for breech presentation in this study was preterm or prematurity (30.2%), followed by multiparity (16.3%),oligohydramnios (16.3%) and twins(12.4%). Polyhydramnios, IUGR, contracted pelvis, uterine anomaly (bicornuate uterus), cord around neck were among the other causes.

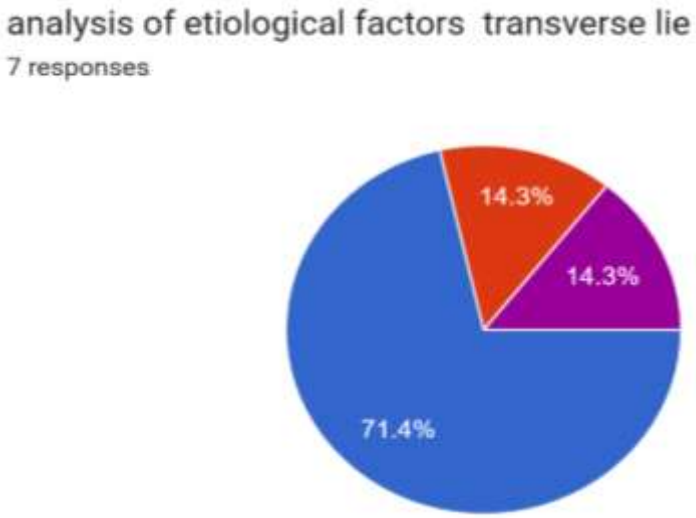
	NUMBER	PERCENTAGE
PREMATURITY	39	30.2%
TWINS	16	12.4%
IUGR	06	4.7%
MULTIPARITY	21	16.3%
OLIGOHYDRAMNIOS	21	16.3%
UTERINE ANOMALY	04	3.1%
CONTRACTED PELVIS	09	7%
POLYHYDRAMNIOS	04	3.1%
PLACENTA PREVIA	01	0.8%
CORD AROUND NECK	08	6.2%



Analysis Of Etiological Factors In Transverse Lie

The maximum common etiological component for transverse lie on this study was multiparity(71.4%). Preterm and placenta previa were many of the various reasons.

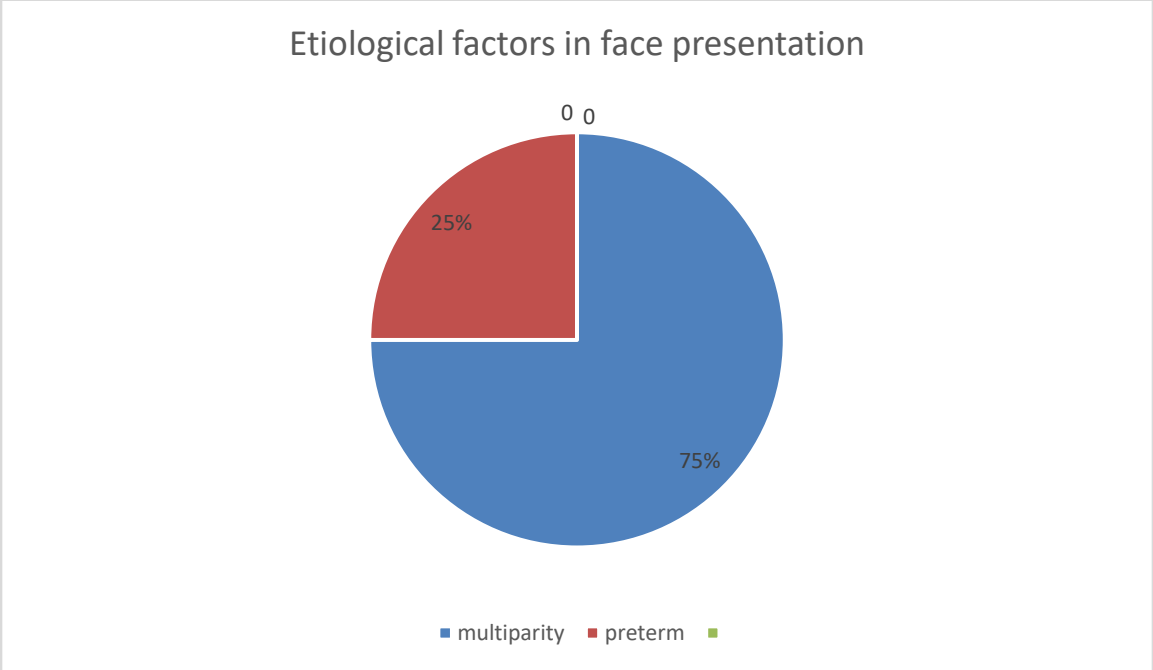
	NUMBER	PERCENTAGE
MULTIPARITY	05	71.4%
PRETERM	01	14.3%
PLACENTA PREVIA	01	14.3%



Analysis Of Etiological Factors In Face Presentation

The commonest etiological factor for face presentation was multiparity (75%) followed by preterm(25%).

	NUMBER	PERCENTAGE
MULTIPARITY	03	75%
PRETERM	01	25%



Discussion:-

Malpresentation poses unique challenges in obstetric care due to its associated risks for both the mother and fetus. This retrospective study analyzed 140 cases at a tertiary care center to assess the etiological factors and maternal outcomes linked to malpresentations, with an emphasis on comparing findings with those of other published studies.

Among the 140 women analyzed among the total 2869 deliveries between oct2023-sept2024, breech presentation was the most common malpresentation (4.49%) followed by transverse lie 0.24% and face presentation 0.13%, most common in the age group between 20-29 years(53.57%).The incidence of breech was higher in this study as preterm births were also included in this study. These findings align with Indian studies by Anjali et al(5).Most commonly the patients belonged to the gestational age <37weeks (55.71%) indicating prematurity as one of the most common causes of malpresentation.

In the present study, 40.71% occurred in primigravidae. Anjali et al showed 45.38% of the cases were in primigravidae(5) and Vijayalakshmi et al reported 75% of the cases were in multipara(6).11 cases among 140 presented with intrauterine fetal demise

The commonest etiological factor for breech presentation in this study was prematurity (30.2%), followed by multiparity (16.3%),oligohydramnios (16.3%) and twins(12.4%). Polyhydramnios, IUGR, contracted pelvis, uterine anomaly (bicornuate uterus), cord around neck were among the other causes.Prematurity (28.48%) was also the most common cause of breech in the study by Bhati RS, Choudhary SI.(7)

The commonest etiological factor for transverse lie in the present study was multiparity (71.4%).90.81% of transverse lie were seen in multiparous women in the study by S.Shrutietal.(1)

The commonest etiological factor for face presentation was multiparity (75%) followed by preterm(25%).Zayed et al, showed 65.8% of multiparous womenhad face presentation(8).

Cesarean section was the chosen delivery mode in 79.28% of cases. This reflects the global trend toward cesarean section formalpresentations. Other Indian studies have reported cesarean rates as high as 84.2% for malpresentations(2).

These findings underscore the need for individualized care and institution-specific protocols. While caesarean remains the preferred option for malpresentations in most centres, training in vaginal breech delivery, where feasible, may offer a safe alternative in selected cases

Conclusion:-

Management of malpresentation is an ongoing challenge for obstetricians. Education regarding the early diagnosis of malpresentation and identification of etiological factors can allowearly referral to tertiary centres for specialist services. Centres which have expertise in conducting vaginal delivery in malpresentations with good intrapartum monitoring and with facilities for caesarean section for better fetomaternal outcome.

Limitations:-

With the study being limited to asingle center, we may not be able to generalize the findings to other populations or settings.

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