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Maternal and Fetal Outcome in Mullerian Uterine Duct Anomalies

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ABSTRACT

Objective: *To study incidence, maternal and fetal outcome in mullerian uterine duct anomalies.*

Methods: *It is a retrospective study conducted at ESIC-PGISMR Bangalore from January 2018 to December 2020. All pregnant women who were diagnosed to have mullerian uterine anomaly antenatally and intra operatively during cesarean section are included in the study.*

Discussion: *Mullerian duct anamolies have higher incidence of adverse obstetrical outcome and most of the women has history of infertility and recurrent abortions. Majority ends with preterm delivery, malpresentations, intra uterine growth restriction, cesarean section, retained placenta. They are associated with others organ anomalies most common is renal anomaly.*

Results: *The total number of cases was 64 out of 9260 deliveries in this period. The incidence of mullerian uterine anomaly in this study is 0.69%. In our study bicornuate uterus was present in 31.2% of the cases, arcuate uterus28.1%, septate uterus20.3%, unicornuate uterus18.7%, uterus didelphis1.56%. most of the patients were presented with malpresentation breech(43.7%), transverse(10.9%), oblique(1.56%).majority were primigravida (53%) and they were term gestation(38-40weeeks) 51.56%. majority were 26-30 years of age. cesarean section(65.6%)majority is due to mal presentation. Majority babies were between 2.5-3 kg(40.62%). Nine babies were shifted to NICU. Two patients were having renal anomalies.*

Conclusion: *Most of the Mullerian anomalies has adverse obstetrical outcome. Pre pregnancy meticulous pelvic ultrasound or MRI may be of immense help to avoid many catastrophes in the structurally abnormal gravid uterus.*

Key words: *Mullerian anomalies, Bicornuate uterus, Malpresentation, Renal anomalies, caesarean section.*

INTRODUCTION

Congenital uterine anomalies results from the abnormal formation, fusion or resorption of Mullerian ducts during embryonic period [1]. Incidence varies of about 1-10% of unselected population, 2-8% of women with history of infertility and 5-10 % of women of miscarriage [2]. Normal development of the female reproductive tract involves a series of complex processes which includes differentiation, migration, fusion and canalization of the Mullerian system [3]. There are various severities of uterine anomalies that range from complete agenesis to different phenotypes. The most

common müllerian anomalies include uterine septum, unicornuate uterus, bicornuate uterus, and uterine didelphys. These abnormalities can be diagnosed using a combination of ultrasound, hysteroscopy and/or laparoscopy. While müllerian anomalies can be successfully diagnosed using three-dimensional ultrasound [4]. Normal pregnancies can occur in patients with müllerian duct anomalies, but obstetric complications such as spontaneous abortion, stillbirth and preterm birth, Preterm premature rupture of membranes (PPROM), Breech presentation and Cesarean section.

MATERIAL AND METHODS

It is a retrospective study conducted at ESIC-PGISMR Bangalore from January 2018 to December 2020. All pregnant women who were diagnosed to have mullerian uterine anomaly antenatal and intra operatively during cesarean section are included in the study. The case were traced from the Labour room register and the medical records of the cases were collected for various parameters like demographic characteristics, parity, gestational age, antenatal complication, mode of delivery, birth weight, NICU admission. Data was analyzed using SPSS version 10.

INCLUSION CRITERIA

All pregnant women admitted and managed at ESIC MC PGIMSR, Bengaluru during the study period were included in this study.

There were a total of 64 cases.

RESULTS

The total number of cases was 64 out of 9260deliveries in this period. The incidence of mullerian uterine anomaly in this study is 0.69%. Majority were 26-30 years age group (48.4%).53% were primigravida while 47% were multigravida.

Table 1: Mullerian Uterine Anomalies in Relation to Age

Age group (Years)	No. of Cases	Percentage
20-26	20	31.12
26-30	31	48.43
31-35	8	12.5
>35	5	7.81
Total	64	100

Table – 2: Distribution of Cases According to Parity

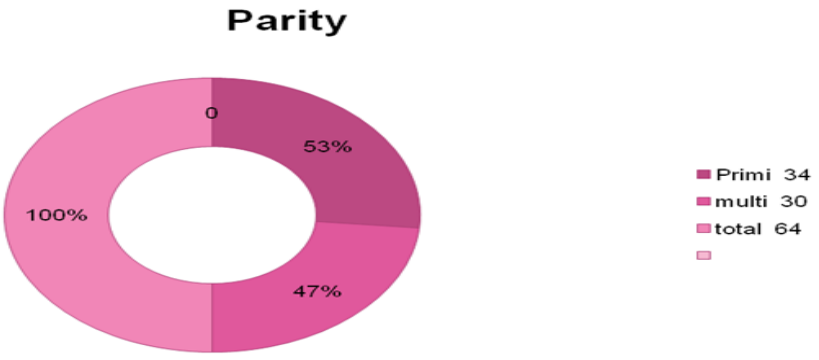
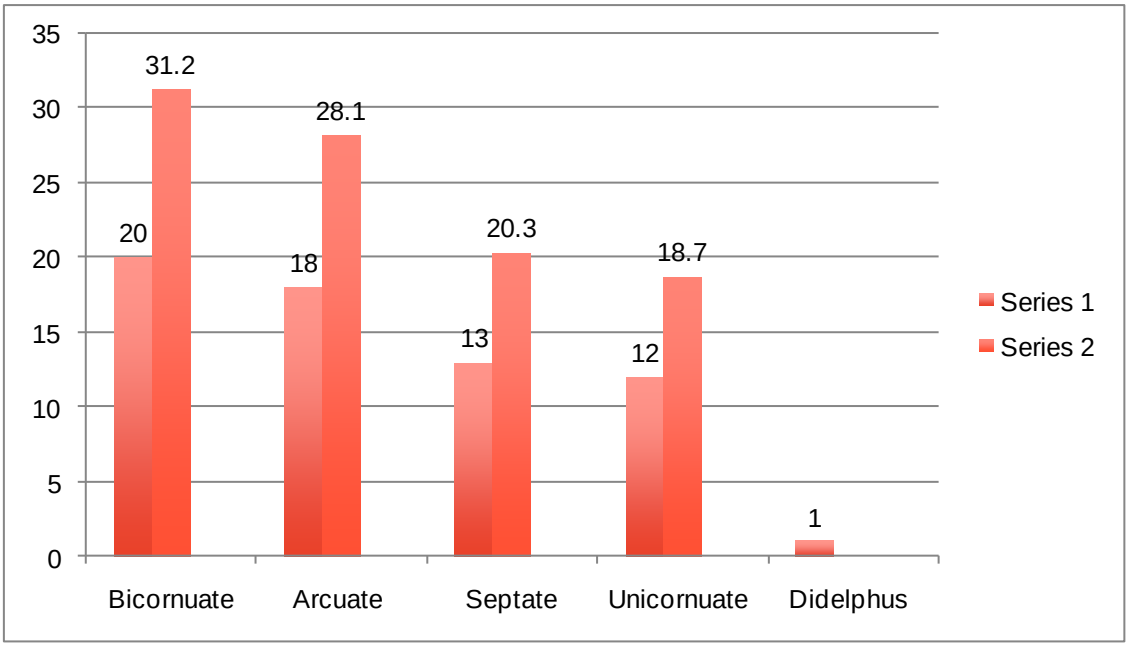


Table 3. Distribution of Cases According to Gestational Age

Gestational Age in weeks	No. of cases	Percentage
32-35	4	6.25
36-38	27	42.18
38-40	33	51.56
Total	64	100

The most of them diagnosed in term pregnancy at 38-40 (51.56%) weeks.

Table 4. According to Type of Mullerian Anomalies



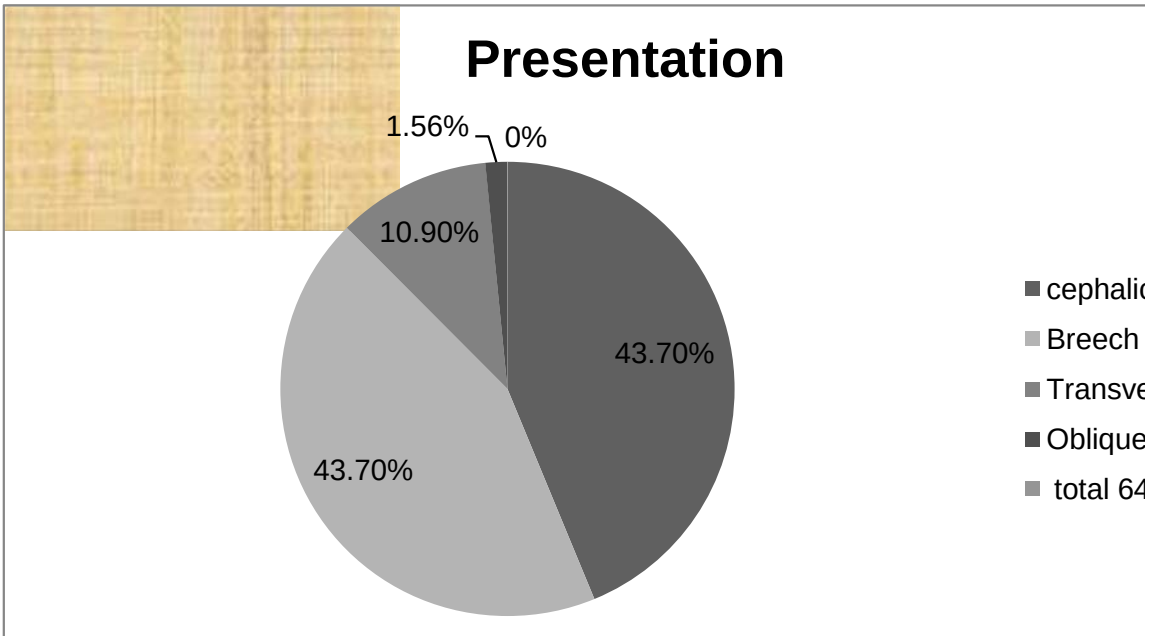
Bicornuate uterus is 20(31.2%) seen among the majority in our study, arcuate uterus is about 28%,septate uterus is being 13(20.3%), Unicornuate is 12(18.7%), Didelphus 1(1.56%).

Table 5: Percentage Distribution of Associated Comorbidities

Associated Comorbidities	No. of Cases	Percentage
Hypothyroidism	10	28.57
Hypertensive disorders	4	11.42
Gestational diabetes	3	8.57
Anemia	5	14.2
Premature rupture of membranes	3	8.57
Intrauterine growth retardation	5	14.2
Oligohyramnios	5	14.2

The antenatal complications noted were hypothyroidism in 10(28.57%), Hypertensive disorders in 4(11.42%), Gestational Diabetes in 3(8.57%), Premature rupture of membranes in 3(8.57%) Anemia in 5(14.2%), oligohydramnios in 5 (14.2%), IUGR in 5(14.2%). Commonest presentations in our study is same in both cephalic and breech presentation in 23(43.7%), transverse in 7(10.9%), oblique in 1(1.56%).

Table 6: Distribution of Cases According to the Presentation

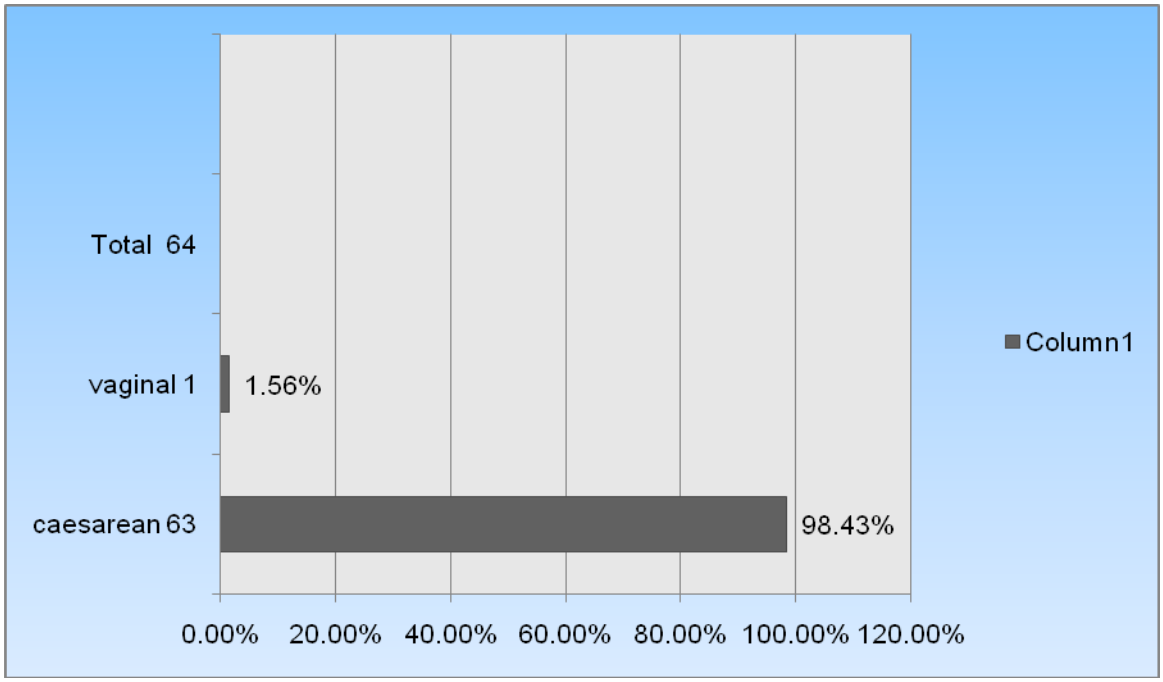


The incidence of vaginal delivery was only 1(1.56%), majority delivered by Caesarean section in 63(98.43%),The most common indication for Caesarean section was breech presentation in 23(38.9%), Otherindication were Previous LSCS in 21(35.59%), foetal distress in 5(8.47%) , CPD in 3 (5.08%), transverse in 5(8.47%),severe oligohydramnios and fetopacental insufficiency in 1(1.69%).

Table 7: Indication for Caesarean Section

Indication	No. of cases	Percentage
Breech	23	38.9
Previous LSCS	21	35.59
Foetal distress	5	8.47
CPD	3	5.08
Transverse	5	8.47
Sever oligohydramnios	1	1.69
Feto-placental insufficiency	1	1.69

Table 8: Mode of Delivery



About 26 babies (40.62%) had birth weight 2.5 to 3kg while 16(25%) had birth weight <2.5 kg and 2 (3.1%) babies had<1.5 kgs where as 12(18%) babies were>3kg, and 8(12.5%)babies were>3.5kgs.

Table 9: Birth Weight

Birth Weight in Kg	Number	Percentage
<1.5	2	3.1
1.5 -2.5	16	25
2.5-3	26	40.62
3-3.5	12	18
>3.5	8	12.5

DISCUSSION

The incidence of mullerian uterine anomalies in present study is 0.69%, similar incidence was reported by YanZ et al 01 to 10%.[6]The most common anomalies noted were Bicornuate uterus 20(31.2%), and Arcuate uterus is 18(28.1%).When examining the various types of uterine anomalies, our most common finding was bicornuate uterus; the second most common was septate uterus. This distribution reflects that which Nahum [7] reported among fertile women.

However, the incidence of uterus didelphys was 1(1.56%) in the study group, similar than that reported in other studies [8]. Laparotomy or laparoscopy is more appropriate for distinguishing bi cornuted and septate uterus [9]. In the current study, all of the uterine anomalies were diagnosed by antenatal assessment and majority during abdominal surgical procedures.

The women with uterine anomalies associated with PTB (Pre term birth), PPROM(pre term premature rupture of membranes), breech presentation, severe IUGR and cesarean section.

In our study shows most of the cases have undergone cesarean section (98.4%) and majority is due to due malpresentation. Four etiological theories have been suggested to explain the poorer obstetric outcome in patients with uterine anomalies:

1) Abnormal anatomy of the uterine cavity prevents correct rotation of the fetus to cephalic presentation.
2) Abnormal uterine blood flow which caused by an absent or abnormal uterine or ovarian artery might explain FGR.
3) Cervical incompetence.
4) Diminished muscle mass of the hemi-uterus [10].

In Our study IUGR is about 5% which is comparable Reichman et al[12] study due to abnormal uterine blood flow and decreased muscle mass may be the reason to IUGR babies in uterine anamolies [11].

Buttram and Gibbons first proposed a classification of congenital uterine anomalies based of the degree of failure of normal development of Mullerian ducts in 1979.13 This was revised and modified by the American fertility Society in 1988.This consists of seven groups with further subdivisions:

Mullerian agenesis or hypoplasia

- Vaginal
- Cervical
- Fundal
- Tubal
- Combined

Unicornuate Uterus (agenesis or hypoplasia of 1 Mullerian ducts)

- With communicating rudimentary horn
- With non-communicating rudimentary horn
- With rudimentary horn with no cavity
- With absent rudimentary horn

Didelphy uterus (failure of the lateral fusion of the vagina and uterus)

Bicournuate uterus (Incomplete fusion of the uterine horns at the level of the fundus)

Septate uterus (absent or incomplete resorption of the utero-vaginal septum)

- Complete
- Partial

Arcuate uterus

DES exposed uterus (T-shaped uterus due to in-utero exposure of DES)

In our study Primigravid patients (53%) had the higher number of uterine anomalies as compared to multigravida patients(47%). Most of the uterine anomalies asymptomatic and diagnosed in the primigravida intraoperatively.

Uterine anomalies will usually associated with SGA babies. Women with uterine anomalies had significantly higher rates of preterm birth (28-32 weeks, and 33-37 weeks. A malformed uterus has been reported to be a risk factor for gestational hypertension and preeclampsia.[13]may be due to unilateral renal agenesis. Unilateral renal agenesis occurs as a result of failure in the formation of the mesonephric duct. A single mesonephric ductal abnormality might result in both renal and subsequent uterine anomalies .Differences in the rate and pattern of pregnancy complications observed in the different types of uterine anomalies [13]. However, we did not find

such differences between the specific type anomalies.

In our study 25% of babies had birth weight between 1.5-2.5 kg, Study by Yan Z et al [6] reported 18% of babies with birth weight between 1.5-2kg. Discordance can result due to various types of uterine anomalies and associated risk of PPROM, Preterm delivery, IUGR, Malpresentation.

CONCLUSION

The preterm deliveries, malpresentation, low birth weight, small for gestation age babies is more in women with congenital uterine anomalies. Hence it can be concluded that congenital uterine anomaly is a risk factor for preterm, low birth weight and malpresentations. Recommend the need for universal Prenatal Screening for uterine anomalies so as to improve the obstetrical outcome in patients with uterine anomalies.

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