

Original Research Article

A STUDY OF MULLERIAN ANOMALIES IN PREGNANCY: CASE SERIES IN A TERTIARY CARE CENTRE

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ABSTRACT

Background: Mullerian duct anomalies occur due to the abnormal fusion and canalisation of the mullerian (paramesonephric) duct. In mullerian anomalies uterine anomalies are the most common anomalies. Mullerian anomalies occur in 3-4% of population. Mullerian anomalies have low prevalence as they often remain asymptomatic and undiagnosed. Women with uterine anomalies are associated with a higher incidence of infertility, recurrent pregnancy loss (RPL), preterm labour, FGR, PROM, Malpresentations, retained placenta and increased caesarean section rate. This case series aimed to summarize the prevalence of mullerian anomalies, maternal and perinatal outcome of pregnancy in women with mullerian anomalies.

Materials and Methods: This was a case series conducted in tertiary care centre, Government General Hospital, Guntur over a period of seven months (June 2023 to December 2023). Ethical approval was obtained from institutional ethical committee. Out of all the total deliveries, 14 cases of uterine anomalies were studied, either diagnosed before or during pregnancy or as an incidental finding during caesarean section. All detailed data such as demographic data, maternal age, parity, mode of delivery, obstetrical history, obstetric outcome, and foetal outcome were recorded.

Results: In our hospital out of 3680 deliveries, 14 pregnancies were identified to have mullerian anomalies. The prevalence of mullerian anomalies in our study was 0.3%. All the cases have undergone caesarean sections. Preterm labour, malpresentations especially breech presentation and foetal growth restriction were common in the study.

Conclusion: Mullerian anomalies are asymptomatic or often have subtle gynaecological symptoms. Pregnancy with uterine anomalies have an adverse obstetric outcome and hence require proper counselling and close monitoring during antenatal period and during labour. Asymptomatic course, lack of MRI, and less preference for HSG as it is an invasive procedure are the causes of low rate of pre conceptional diagnosis.

Keywords: Mullerian anomalies, preterm, malpresentations, caesarean section, FGR.

INTRODUCTION

Mullerian duct anomalies are congenital anomalies of the female genital tract arising from abnormal embryological development of the Mullerian ducts.^[1] Normal development of the female reproductive tract involves a series of complex processes characterized

by the differentiation, migration, fusion, and subsequent canalization of the mullerian system.^[2] These malformations are believed to result from one or more of the following situations

1. Improper fusion of the paramesonephric ducts
2. Incomplete development of one paramesonephric duct

3. Failure of part of the paramesonephric duct on one or both sides to develop
4. Absent or incomplete canalization of the vaginal plate

Failure in lateral fusion may result in Bicornuate uterus, uterus didelphys or an arcuate uterus. Vertical fusion defects include transverse vaginal septum, cervical agenesis, or atresia.

Mullerian anomalies have an estimated incidence of 1.1% - 3.5%.^[3] Septate uterus is the commonest uterine anomaly with a mean incidence of 35% followed by bicornuate uterus (25%) and arcuate uterus (20%).^[4] Unicornuate and didelphys uterus have term delivery rates of 45%, arcuate uterus is associated with better term delivery rate of 65%.^[5] Renal tract anomalies have been detected in 30-40% of women with specific uterine anomalies such as uterine agenesis and unicornuate uterus.

Mullerian anomalies have adverse pregnancy outcome and may result in abortions, preterm delivery, malpresentations, FGR and increased rate of caesarean delivery. The aim of this study is to evaluate different types of mullerian anomalies in pregnancy, and its obstetric and foetal outcome.

MATERIAL AND METHODS

The study was conducted in a tertiary care Centre in Department of Obstetrics and Gynaecology in Government General Hospital, Guntur from June 2023 to December 2023.

All women who have various types of mullerian anomalies diagnosed prior to pregnancy, during pregnancy or an incidental finding during LSCS, were studied for complications during pregnancy and their maternal and foetal outcome. Approval taken from institutional ethical committee and informed written consent was taken from all patients. Data analyzed under the criteria, Maternal parameters included – Age, parity, gestational age at the time of delivery, type of mullerian anomalies, previous obstetric history, Antenatal, intrapartum, and postpartum events, Mode of delivery, malpresentations and complications. Foetal parameters include – abortions, term/preterm birth, birth weight, FGR, APGAR, NICU admissions and early neonatal deaths.

RESULTS

In our hospital out of 3680 deliveries, 14 pregnancies were identified to have mullerian anomalies. The prevalence of 0.3% of mullerian anomalies in pregnancy was observed.

Age Distribution of Cases

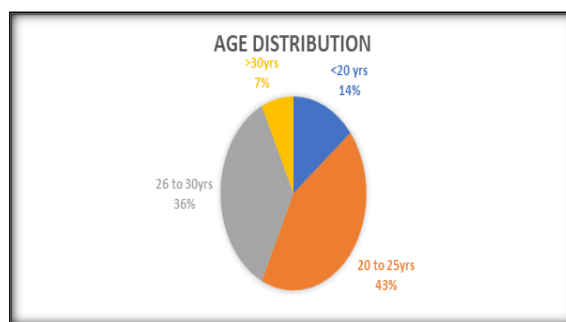


Figure 1: Age Distribution of Cases

Most of the cases belong to age group of 20 to 25 yrs. (6 cases)

PARITY

9 out of the total cases were primigravida (64%), 3 cases were gravida2, one case was gravida 3 and one case of multigravida(G5) with history of recurrent three abortions.

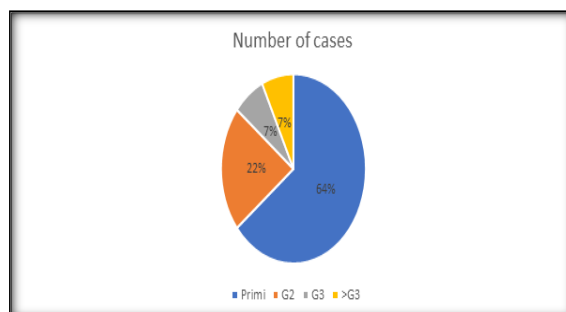


Figure 2: Distribution of Parity Among Cases

Type of mullerian anomalies (Table 1)

Mode of Delivery

One case had spontaneous abortion in the 10th week of gestation and all the other 13 cases were delivered by caesarean delivery either due to malpresentations due to mullerian anomalies and other factors or due to an obstetric indication.

Gestational Age at Delivery (Table 2)

PRESENTATIONS

Malpresentations were observed in 5 cases (38.46%) out of 13 cases.

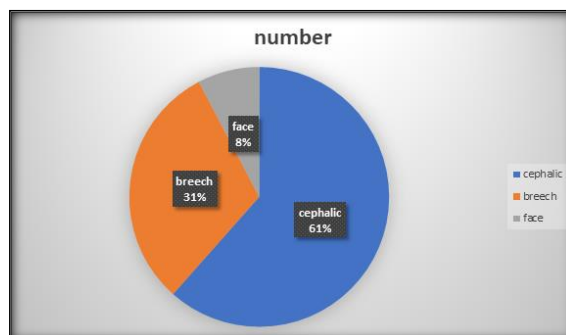


Figure 3: Malpresentations

COMPLICATIONS (Table 3)

Obstetric complications that occurred due to mullerian anomalies- Preterm delivery is the most common complication that occurred in 10 cases

(71.42%) out of 14 cases, followed by malpresentations (35.71%). One case of spontaneous abortion at 10 weeks of gestation. Multiple complications were noted in some cases.

BIRTH WEIGHTS:

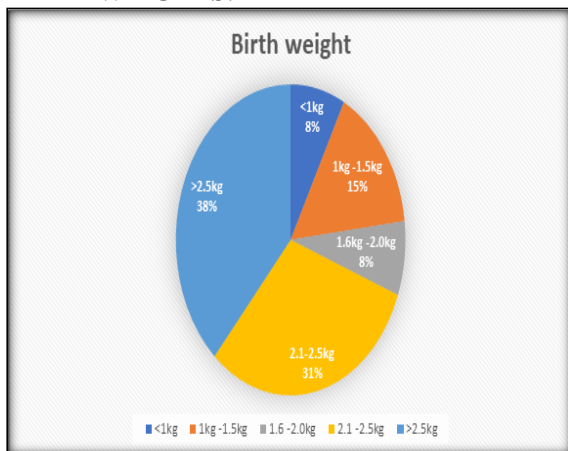


Figure 4: Distribution of birth weight among babies

FOETAL OUTCOME (Table 5):

APGAR is measured at birth .8 babies were admitted in NICU due to low APGAR and preterm birth. Early neonatal death occurred in one case, birth weight <1kg, died within a week.

CASE PRESENTATIONS:

There were **5 cases of unicornuate uterus**: 3 cases of unicornuate uterus without rudimentary horn and other 2 cases associated with rudimentary horn. Two cases presented with breech. All cases were preterm deliveries from 34wks 1 day to 36 weeks 6 days.

Three cases of septate uterus

- A case of elderly primigravida with chronic HTN with left lung fibrosis with heart disease complicating pregnancy, caesarean section was done at 30 weeks gestation in view of uncontrolled blood pressure recordings.
- Another case of septate uterus, presented with breech at 36 weeks with long marital life.
- A case of complete septate uterus underwent spontaneous abortion in the first trimester at 10 weeks.

Three cases of arcuate uterus: one with breech presentation, one with face presentation, one case of severe preeclampsia with polyhydramnios. 2 cases were term deliveries and one preterm delivery (at 35 weeks).

Two cases of Bicornuate uterus: One case of bicornuate uterus with preeclampsia and GDM, pregnancy terminated at 33 weeks due to obstetric indications, the baby was found in the left horn of the uterus. Another case of bicornuate uterus - is a case of multigravida with previous three recurrent abortions and a previous caesarean delivery, caesarean delivery was done at 38 weeks.

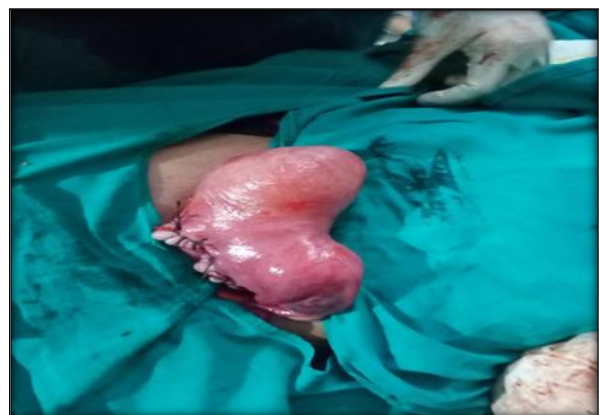
A case of uterine didelphys, complicated with antepartum haemorrhage (abruptio placentae) with a

previous caesarean delivery, caesarean delivery was done at 29 weeks.

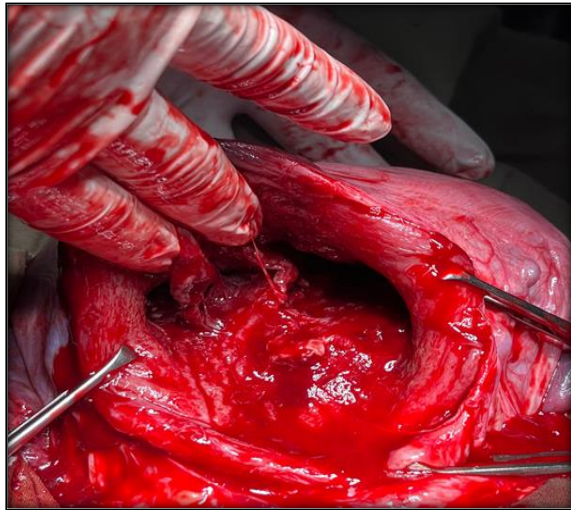
Bicornuate Uterus



Uterine Didelphys



Uterine Didelphys



Partial septate uterus



Unicornuate Uterus with Rudimentary Horn

Table 1: Type of Mullerian Anomalies

Type of Mullerian Anomalies		Number of cases	Percentage
Type II: Unicornuate uterus	A1a: Communicating horn (with endometrial cavity)	0	0
	A1b: Non communicating horn (with endometrial cavity)	0	0
	A2: Rudimentary horn with no endometrial cavity	2	14.2 %
	B: without any rudimentary horn	3	21.4%
Type III: Uterine didelphys		1	7.14%
Type IV: Uterus bicornuate	A: Complete up to internal os	1	7.14%
	B: Partial	1	7.14%
Type V: Septate uterus	A: Complete septum up to internal os	1	7.14%
	B: Partial	2	14.2%
Type VI: Arcuate uterus		3	21.4%
Total		14	100

Table 2: Gestational Age at Delivery

Gestational age at delivery	Number (N = 13 cases)	Percentage
<30wks	1	7.69%
30to 34 wks.	3	23.08%
>34to 37 wks.	6	46.15%
>37 wks.	3	23.08%

Table 3: Complications

Complications	Number	Percentage
Abortions	1	7.14%
Malpresentations	5	35.71%
Preterm	10	71.42%
FGR	2	14.28%
Oligohydramnios	2	14.28%
FGR + Oligo	1	7.14%
PPH	4	28.57%
Polyhydramnios	1	7.14%

Table 4: Distribution of Birth Weight Among Babies

Birth weight	Number(N=13)	Percentage
<1kg	1	7.69%
1kg -1.5kg	2	15.38%
1.6 -2.0kg	1	7.69%
2.1 -2.5kg	4	30.77%
>2.5kg	5	38.47%

Table 5 : Foetal Outcome

APGAR	Number (N)	Percentage (%)
4-6	5	38.46%
>/=7	8	61.54%

DISCUSSION

In this study various mullerian anomalies, complications associated with them, obstetric outcome and the foetal outcome were studied.

The prevalence of mullerian anomalies in our study is 0.3 %. Most of the authors report incidence of 0.1% -3.5%.^[3] The prevalence of Mullerian anomalies in women with recurrent pregnancy loss is 8-10%.^[7]

Mullerian anomalies are often asymptomatic and are found during routine Ultrasound examination done in pregnancy or incidentally during caesarean delivery or during the evaluation for infertility and recurrent pregnancy loss.

In our study most of the women are primigravida (64%) and most of them belong to age group of 20 to 25 yrs. (43%).

Out of 14 cases, one case had spontaneous abortion at 10 weeks of gestation, 10 cases were preterm deliveries and 3 cases were term deliveries.

In our study there were 5 cases unicornuate uterus (35.71%), three cases septate uterus (21.42%), three cases arcuate uterus (21.42%), two cases bicornuate uterus (14.28%) and a case of uterine didelphys (7.14%).

Preterm delivery is the most common complication (71.42%), followed by malpresentations (35.71%). Postpartum haemorrhage occurred in four cases (28.57%). FGR and oligohydramnios are the other complications noted.

Women with mullerian anomalies have higher caesarean section rate mainly due to foetal malpresentations.

Diagnostic modalities for mullerian anomalies mainly are 3D ultrasound and MRI. Hysterosalpingography (HSG) is an invasive procedure done in evaluating the causes of infertility.

CONCLUSION

- Mullerian anomalies have an adverse impact on obstetric outcomes.
- Pregnancy with Mullerian anomalies often have preterm delivery, FGR, and malpresentations.
- Women with infertility, recurrent abortions, preterm labour and malpresentations and bad obstetric history should be evaluated.
- Early diagnosis, regular antenatal follow up and close monitoring during antenatal period may achieve favourable outcomes.

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