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Original Research Article

Obstetrical outcome in women with congenital uterine anomalies

Poonguzhali Liston*, Gomathy E.

Department of Obstetrics and Gynecology, SDUAHER, Tamaka, Kolar, Karnataka, India

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***Correspondence:**

Dr. Poonguzhali Liston,

E-mail: sw_81989@hotmail.com

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ABSTRACT

Background: Congenital uterine anomalies are associated with higher incidence of reproductive failure and adverse obstetrical outcomes. The association of congenital anomalies and early pregnancy loss has been well established but its adverse effect on late pregnancy in form of malpresentation, preterm deliveries has not yet been elaborated. Thus, this study aims to summarize the clinical characteristics and perinatal outcome of pregnancy in women with congenital uterine anomalies.

Methods: This is a retrospective study evaluating the obstetric outcomes of 32 patients with congenital abnormalities.

Results: Among 32 women with uterine anomalies 6 delivered preterm, 16 malpresentations were seen (50%). Infants born to mothers having congenital uterine anomalies were of lower birth weight. Therefore, it can be concluded the women with congenital uterine anomalies had a higher risk of malpresentation and preterm deliveries. They also had a higher incidence of small for gestational age neonates.

Conclusions: Presence of congenital uterine anomalies has adverse effect on obstetrical outcome. This knowledge warrants the need for a larger case control study to extrapolate these findings to the general population and also to recommend the need for universal Prenatal Screening for uterine anomalies so as to improve the obstetrical outcome in patients with uterine anomalies.

Keywords: Congenital uterine anomalies, Malpresentation, Preterm birth, Small for gestational age babies

INTRODUCTION

Congenital uterine anomalies arise from the abnormal formation, fusion or resorption of Mullerian ducts during fetal life.¹

It is present in 1-10% of unselected population, 2-8% of infertile women and 5-10 % of women with the history of miscarriage.²⁻¹² The wide range of difference in the prevalence rate is presumably because of use of different classification systems and non-uniform diagnostic tests.¹³

Normal development of the female reproductive tract involves a series of complex processes which includes differentiation, migration, fusion and canalization of the Mullerian system.¹³ Uterine anomalies occur when these

processes are interrupted. Mullerian agenesis, characterized by absence of the female genital organ, results in inability to conceive.

On the other hand, arcuate uterus, characterized by mild concave indentation towards the uterine cavity is a subtle abnormality and is often overlooked. The other subtypes of uterine anomalies are positioned between these two extremes

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)
- Bicourruate uterus (Incomplete fusion of the uterine horns at the level of the fundus)
 - Complete
 - Partial
- 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)

All of the above mentioned congenital anomalies have been implicated as a potential cause of infertility, recurrent pregnancy loss. But its association with adverse outcomes in the third trimester is less well studied. Relation between uterine anomalies and fetal malpresentation and preterm delivery has not been elucidated extensively.

Therefore, through this study we aim to improve upon the existing data regarding the association of congenital uterine anomalies with adverse third trimester pregnancy outcomes.

METHODS

It is a Retrospective study carried out from January 2013 to June 2015 at R.L Jalappa Hospital and Research Centre, Tamaka, Kolar after obtaining appropriate ethical clearance from the Institutional Ethical committee.

All singleton pregnancy with incidental finding of uterine anomalies delivering at the hospital during the above mentioned time period were included in the study. Maternal demographic data, Obstetric history, pregnancy complications (fetal malpresentation), presence of associated maternal complications, present pregnancy outcomes (including preterm) were obtained from the parturition registry of the of the hospital.

Fetal outcomes were measured using birth weight, IUGR, Fetal distress, presence of congenital anomalies and need for NICU admission.

Statistical analysis

All collected data was coded and entered into Microsoft excel datasheets to make data retrieval easy. Statistical analysis was performed using SPSS Inc version 20 and represented in the form of tables and figures.

RESULTS

During the study period from January 2013 to June 2015 a total of 32 pregnancies complicated by uterine anomalies were identified.

Total number of deliveries during this time period was 7920, making women with congenital uterine anomalies 0.4% of the population.

Table 1: Congenital uterine anomalies in study group.

Uterine anomalies	Number of women (n)	%
Arcuate	8	25.0
Subseptate	7	21.9
Septate	2	6.3
Unicornuate	1	3.1
Bicourruate	14	43.8
Total	32	100.0

Distribution of anomalies:

- Arcuate uterus-8 (25%),
- Subseptate uterus-7 (21.9%),
- Septate uterus-2 (6.3%),
- Unicornuate uterus - (3.1%)
- Bicourruate uterus-14 (43.8%) (Table 1).

Out of the 32 women included in the study 56.3%(n=18) of women belonged to the age group of 20-25 yrs and 20%(n=8) were less than 19 yrs, the mean age of the women being around 24yrs (Table 2).

Table 2: Maternal and pregnancy characteristics in patients with uterine anomalies.

Maternal characteristics	Total no. of women (N=32)	%
Age Group		
15-20 yrs	8	25
>20-25 yrs	18	56.3
>25-30 yrs	5	15.6
>30-35 yrs	1	3.1
Obstetric Index		
Primi	15	46.9
Gravida 2	11	39.4
Gravida 3	4	12.5
Gravida 4	2	6.2
Previous pregnancy outcome		
1 st trimester abortion	6	18.7
Prev live birth	11	34.3

Of those included in the study 15 presented as primigravida (46.9%), 11 out of 32 had atleast 1 previous successful pregnancy with a living issue whereas 6 of the studied 32 women had more than 1 first trimesters abortions with no previous living issues (Table 2).

Table 3: Fetal presentation at time of delivery.

Fetal presentation	Total number	%
Breech	14	43.8
Cephalic	16	50
Transverse	2	6.3

It was noticed that 6 women presented as Breech presentation and 2 as transverse lie and rest were cephalic presentation (Table 3).

Table 4: Distribution of uterine anomalies in patients with breech presentation.

Uterine anomalies	Total number
Arcuate uterus	2
Subseptate	4
Septate	2
Unicornate	1
Bicornate	5

Out of the 14 patients with breech presentation 2 had arcuate, 4 had subseptate uterus, 2 had septate uterus, 1 unicornate and 5 had bicornate uterus (Table 4).

Table 5: Gestational age at time of delivery.

Gestational Age	Total no of women	%
Preterm	6	18.8
Term	21	65.6
Post-term	5	15.6

The number of women who carried their pregnancy to term were 21(65.6%) whereas 6 women (18.8%) had preterm deliveries (Table 5).

Table 6: Associated maternal complication seen the study group.

Associated maternal complication	Total number of women	%
Abruptio placentae	1	3.1
Contracted pelvis	3	9.3
PPROM	1	3.1
IUGR	2	6.2
Antepartum eclampsia	2	6.2

Fetal outcomes was measured in terms of still birth, birth weight, preterm IUGR babies, presence of any congenital anomalies.

Out of the 32 babies born 1 was a still birth. The birthweight of the babies ranged from 1.9 kgs to 3.5 kgs,

of which total of ten babies were below 2.5 kgs. 6 babies were admitted to NICU for Low birth weight care and 3 for fetal distress and all 9 babies were shifted to mother side within 1 week (Table 7).

Table 7: Fetal outcomes.

Fetal outcome	Total number	%
Still birth	1	3.1
Live births	31	96.9
Sex of the baby		
Male	14	43.8
Female	18	56.2
Birth weight		
1.5-2.0kg	4	12.5
>2.0-2.5kg	6	18.8
>2.5-3.0kg	15	46.9
>3.0-3.5kg	7	21.9
CTEV	1	3.1
Fetal distress	4	12.4
IUGR	3	9.3

DISCUSSION

This retrospective study confirmed a strong association between uterine anomalies and adverse outcomes. As suggested by other studies even in our study group the incidence of preterm deliveries, malpresentation and low birthweight was higher.

In present study, out of the 8 women with arcuate uterus 2 presented as breech and 1 as transverse lie. All 7 women carried their pregnancy to term and 1 had a preterm delivery due to PPROM. Out of all the anomalies arcuate uterus seemed to have the most favourable outcome.

9 women had septal anomalies out of which 7 were classified as subseptate uterus and 2 were septate. Both the women with septate uterus had preterm deliveries with breech presentation being present in one of these women. Both the babies were low birth weight. 4 women with subseptate uterus presented as breech presentation and 1 presented as transverse lie. 4 women with the history of previous 1 trimester loss had septal anomalies of uterus

Bicornate uterus was diagnosed in 14 women out of which 5 presented as breech. Out of the anomalies bicornate had the best obstetric outcome come with all 14-pregnancy continuing upto to term with no associated fetal and maternal complications.

The women presenting with unicornate uterus had a preterm delivery of a still born male baby and associated abruptio placentae.

The Limitation of this study would be the small sample size, short duration of study and absence of a control

group to compare the results. Present study only included patients with incidental finding uterine anomalies diagnosed at time of section and therefore women with anomalies who had a normal delivery are unaccounted for. The strengths being that it only takes into consideration the adverse outcome in the 3rd trimester of pregnancy, hence it is specific.

CONCLUSION

Congenital Uterine anomalies are common but their effects on reproductive outcome is unclear. Many studies have elucidated the effect of uterine anomalies on fertility. But the effect of these anomalies on later part of pregnancy has been less studied. From present study, it is seen that the occurrence of preterm deliveries, malpresentation, low birth weight, small for gestation age babies is more in women with congenital uterine anomalies when compared to its generalized occurrence in normal population. Hence it can be concluded that congenital uterine anomaly is a risk factor for preterm, low birth weight and malpresentations. This knowledge could be used as a basis to recommend screening for uterine anomalies in women with recurrent pregnancy losses, previous small for gestation age baby, or malpresentation in previous pregnancy.

Hence it can be concluded that presence of congenital uterine anomalies has adverse effect on obstetrical outcome. This knowledge warrants the need for a larger case control study to extrapolate these findings to the general population and also to 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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