

# A Retrospective Study To Find The Incidence Of Uterine Anomalies In Patient Undergoing Cesarean Section, And Their Obstetrical Outcome.

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## Abstract

**Background:** Congenital uterine anomalies occur due to abnormal fusion of mullerian duct during embryonic life. It is associated with high incidences of reproductive failures and adverse obstetrical outcomes. It may be associated with malpresentation, preterm labour, or recurrent pregnancy losses. 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. Hence, this study aims to summarize the clinical characteristics and perinatal outcome of pregnancy in third trimester in women with congenital uterine anomalies undergoing cesarean section.

**Method:** This is a retrospective study which was conducted on women who underwent cesarean section at Sardar Patel Medical college and associated group of hospitals, Bikaner, Rajasthan between time period of march 2019 to july 2019.

**Result:** out of total 502 cesarean undergoing patients, 8 patients were found to have uterine anomalies. Out of 8 patients, 6 (75%) patients were associated with malpresentation, 3 (37.5%) patients had preterm delivery and 3 (37.5%) patients had low birth weight babies. Hence it can be said that women with congenital uterine anomalies are at higher incidence of malpresentation and preterm deliveries.

**Conclusion:** Presence of congenital uterine anomalies are associated with adverse 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 to improve the obstetrical and perinatal outcome in patients with uterine anomalies.

**Key words-** congenital uterine anomaly, malpresentation, preterm labour, low birth weight babies.

## Introduction

Congenital uterine malformations are uterine abnormalities caused by abnormal embryologic formation, fusion or resorption of mullerian ducts which are primordial analogue of female reproductive tracts<sup>1</sup>. Its prevalence is 2-4 % in reproductive age group<sup>2-3</sup> and 5-25% in women with adverse reproductive outcomes<sup>3-4</sup>. In a general population, the most common finding is arcuate uterus followed in descending order by septate, bicornuate, didelphic, and unicornuate uterus<sup>3</sup>. Buttram and Gibbons first proposed classification of congenital uterine

anomalies based on degree of failure of normal development of mullerian duct in 1979,<sup>5</sup> which was revised and modified by American fertility society in 1988. Modified American fertility society classification is<sup>6</sup>-

Class I - uterine agenesis / uterine hypoplasia

Class II - unicornuate uterus – unicornis unicollis

Class III - uterus didelphys

Class IV - bicornuate uterus

Class V - septate uterus: commonest anomaly

Class VI - arcuate uterus

Class VII - in utero Diethylstilbestrol (DES) exposure: T shaped uterus.

These uterine anomalies are potential causes of infertility, recurrent pregnancy losses and adverse outcome in third trimester like malpresentation, preterm delivery and landing up in cesarean section<sup>7-12</sup>. These outcomes are principally due to abnormal uterine blood flow, cervical incompetency, diminished cavity size or muscle mass of uterus. Relationship between uterine anomalies and recurrent pregnancy losses or infertility is well documented. But its association with third trimester adverse outcomes are not well elucidated. So we conducted a study to add on upon the existing data regarding association of congenital uterine anomalies and third trimester adverse obstetrical outcomes.

### Method

It is a retrospective study which was carried out at Sardar Patel Medical college and associated group of hospitals, Bikaner, Rajasthan between time period of march 2019 to july 2019. All pregnant women that were taken for cesarean section during above mentioned time period were included in the study. Maternal demographic data , obstetrical history, maternal and fetal outcomes datas were obtained from hospital records.

### Statistical analysis

All data was coded and entered into Microsoft excel datasheet to make data retrieval easy. Statistical analysis was performed using epi info software and represented in form of tables and figures.

### Result

During the study period out of total 502 cesarean undergoing patient, 8 patients were found to have uterine anomalies with pregnancy making incidence to be 1.59%.

Table 1- Distribution of utrine anomalies

Type of anomaly	Number of patients	Percentage
Arcuate uterus	1	12.5
Septate uterus	1	12.5
Unicornuate uterus	2	25
Bicornuate uterus	4	50
Total	8	100

Out of 8 cases which were having uterine anomalies arcuate uterus was present in 1 patient, septate uterus in 1 patient, unicornuate uterus in 2 patients and bicornuate uterus in 4 patients.

Table 2- demographic characteristics of women

<b>Age group</b>	<b>Number of patients</b>	<b>Percentage</b>
15-20 years	1	12.5
>20-25 years	2	25
>25-30 years	3	37.5
>30 years	2	25
<b>Gravida</b>	<b>Number of patients</b>	<b>Percentage</b>
Primi gravida	5	62.5
Second gravida	1	12.5
Third gravida	Nil	Nil
Fourth gravida or more	2	25
<b>Previous pregnancy outcomes</b>	<b>Number of patients</b>	<b>Percentage</b>
Previous abortion	1	33.3
Previous live birth	2	66.7

Out of 8 patients included in the study 3 patients were in age group of 25-30 years. 5 patient (62.5%) were primigravida and among rest 3 patients, 1 patient had previous first trimester abortion and rest 2 have previous 1 or more live children.

Table 3-Fetal presentation

<b>Presentation</b>	<b>Number of patients</b>	<b>Percentage</b>
Cephalic	2	25
Oblique	2	25
Breech	3	37.5
Transverse	1	12.5

Among 8 patients that were studied 6 patients had malpresentation, among which 2 (25%) had oblique lie, 1 (12.5%) had transverse lie, and 3(37.5%) had breech presentation. And rest 2 patients (25%) had cephalic presentation.

Table 4- Gestational age at time of delivery

<b>Gestational age</b>	<b>Number of patients</b>	<b>Percentage</b>
Preterm	3	37.5
Term	5	62.5

Out of the total patients studied 5 (62.5%) patients carried the pregnancy till term and 3 patients (37.5%) had preterm delivery.

Table 5- Fetal outcomes

Sex of baby	Number	Percentage
Male	5	62.5
Female	3	37.5
Birth weight	Number	Percentage
1.5-2 kg	1	12.5
>2-2.5 kg	2	25
>2.5-3 kg	2	25
>3-3.5 kg	3	37.5

Fetal outcome was measured in terms of birth weight. Out of total 8 babies 3 were below 2.5 kg. There were no incidence of intrauterine fetal demise or still birth.

### Discussion

This retrospective study confirmed a strong association between uterine anomalies and third trimester adverse pregnancy outcome. According to other studies incidence of preterm delivery, malpresentation and low birth weight baby is higher in patients with uterine anomalies. . A meta-analysis by Chan et al. (2011)<sup>7</sup>, combined patient from multiple prior studies and reported risks of adverse pregnancy outcomes in third trimester based on the specific type of uterine anomaly. Their studies reported higher incidence of malpresentation, preterm deliveries in patient with uterine anomalies. A study by Ludmir et al<sup>9</sup> showed that pregnancy beyond 25 weeks of gestation had improved obstetrical outcomes but are associated with increased incidence of malpresentation and cesarean rate. Another study by Hua et al.(2011)<sup>12</sup> also showed that uterine anomaly was associated with increased incidence of preterm birth, cesarean delivery and IUGR (defined as a birth weight less than the 10th percentile). Liston P et al.(2017)<sup>13</sup> also found higher incidence of malpresentation , preterm delivery and low birth weight babies in pregnant females with uterine anomalies. All these studies findings are similar to our study results in which out of total patients 8 patients were found to have uterine abnormality. Among all patients most common abnormality encountered was bicornuate uterus in 4 patients(50%) similar to that reported in study by Michalakis SP<sup>14</sup>(46.78%). 6 (75%) patients were associated with malpresentation. And 3 (37.5%) patients had preterm delivery. Limitation of this study was small sample size and short duration of study. This study included patient with incidental finding at time of cesarean section, hence patient with uterine anomalies who had normal delivery were not included in study. Strength of the study was that it considered only third trimester pregnancy outcome hence the study was specific.

### Conclusion

Congenital uterine anomalies are common but their effect on reproductive outcome is unclear. Many studies were conducted which showed relation between uterine anomalies and infertility or recurrent pregnancy losses, but its effect on later trimester of pregnancy is less studied. From this study it was found that occurrence of malpresentation, preterm deliveries and low birth weight is higher in women with congenital uterine anomalies. Hence it can be concluded that presence of uterine anomalies are a risk factor for preterm delivery, malpresentation and low birth weight baby. This knowledge can be used to recommend screening for uterine anomalies in women with recurrent pregnancy losses, previous low birth weight babies or malpresentation in previous pregnancy.

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