

**Research Article****A Prospective Study on Obstetric Performance in Uterine Anomalies****K. Vijaya<sup>1</sup>, N. Vivekanand<sup>2\*</sup>, D. Kiranmai<sup>3</sup>, M. Suvarna<sup>4</sup>**<sup>1,3</sup>Assistant Professor, Gynecology and Obstetrics, Modern Government Maternity Hospital, Petlaburj, Hyderabad, India<sup>2</sup>Associate Professor Pathology, Rajiv Gandhi Institute of Medical Sciences, Adilabad, India<sup>4</sup>Professor, Gynecology and Obstetrics, Modern Government Maternity Hospital, Petlaburj, Hyderabad, India**\*Corresponding author**

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**Abstract:** Developmental anomalies of the mullerian ducts represent some of the most fascinating disorders that the obstetricians and gynecologists encounter. Incidence varies between- 0.1- 10%. Our objective is to study the incidence and reproductive outcome in women with uterine anomalies. Reproductive performance of 74 women with uterine anomalies delivered in Modern Government and Maternity Hospital (MGMH), Petlaburj over a period of 1.5 yrs from Jan 2009-Aug 2010 is analyzed. Total deliveries during the period were 34416. Uterine anomalies were 74(0.25%). Bicornuate uteri were 40(54.05%), unicornuate 12(16.25%), septate 9(12.16%), arcuate 10(13.5%) and didelphys were 3(4.05%). Primigravidae were 37 (50%). Mal-presentation was the commonest indication (50%) for caesarean section followed by Prolonged labor, Impending scar dehiscence, Previous lower segment caesarean section and fetal distress. To conclude women with uterine anomalies have increased incidence of pregnancy wastage like abortions, preterm deliveries and stillbirths. High index of suspicion for uterine anomalies in the reproductive age group prevents dreaded complications and improves obstetric outcome in these women.**Keywords:** Mullerian duct, Bicornuate uteri, Septate, Primigravidae, Mal-Presentations

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**INTRODUCTION**

Developmental anomalies of the mullerian ducts represent some of the most fascinating disorders that the obstetricians and gynecologists encounter. Incidence varies between- 0.1- 10% depending on the study. High incidence of pregnancy wastage (25%) is observed in this group than general population (10%). They may present in emergency ward with dreaded complications like ruptured ectopic, torsion of uterus, obstructed labor, rupture uterus, postpartum haemorrhage and retained placenta.

Normal development of the mullerian ducts depends on the completion of three phases: organogenesis, fusion and septal resorption. Organogenesis is characterised by the formation of both mullerian ducts. Failure of this results in uterine agenesis/hypoplasia or a unicornuate uterus. Fusion is characterized by fusion of the ducts to form the uterus. Failure of this results in a bicornuate or didelphys uterus. Septal resorption involves subsequent resorption of the central septum once the ducts have fused. Defects in this stage result in a septate or arcuate uterus.

The most common classification system is that used by the American Fertility Society of Reproductive Medicine.

**Class I** - uterine agenesis / uterine hypoplasia**Class II** - unicornuate uterus - unicornis unicollis: ~ 6-25 %**Class III** - uterus didelphys: ~ 5-11 %**Class IV** - bicornuate uterus: next commonest type: ~ 10-39 %**Class V** - septate uterus: commonest anomaly: ~ 34-55 %**Class VI** - arcuate uterus: ~ 7 %**Class VII** - in utero Diethylstilbestrol (DES) exposure: T shaped uterus.**MATERIAL AND METHODS**

This study is carried out at our hospital over a period of 1 ½ yr i.e. from Jan-2009-Aug-2010. Total No. of deliveries during this period were 34416. Number of uterine anomalies was 74. Incidence of uterine anomalies in the study was 0.25%. Inclusion criteria-Uterine anomalies detected incidentally during antenatal checkups, by clinical suspicion, ultrasonogram, during caesarean section or by exploration of uterus for retained placenta were considered. Women in the age group of 20-35 yrs & women with one or more previous abortions were included in the study.

## RESULTS

50% of the women were primigravidae (Table 1). 46.15% of the women had 1 previous abortion followed by 2,3,4, abortions respectively 28.20%, 15.38%, 10.25% & 58% had 2<sup>nd</sup> trimester abortions. Bicornuate uterus (Fig. 1) was the most common anomaly in our study group (54.05%) followed by Unicornuate uterus 16.25% (Table 2). Septate uterus 12.16% (Fig. 2). Fortunately maternal mortality was nil in our study. The

maternal outcome in our study abortions 5, ruptured ectopic pregnancy in rudimentary horn was seen in 4 (Fig. 3), torsion of uterus in 3 (Fig. 4). Out of 25 (33.78%) preterm deliveries, maximum number was between 33-36wks (44%) out of which 20% were vaginal & 80% were caesarean deliveries. <28wks 32%, 28-32 wks was 24%. Out of 37 term deliveries (50%), vaginal deliveries were 9 (24.33%) & caesarean sections were 28 (75.67%).



Fig. 2: Septate uterus



Fig. 1: Bicornuate uterus



Fig. 3: Pregnancy in Rudimentary Horn



Fig. 4: Torsion of Unicornuate Uterus



Retained placentae in the study was 6(8.1%). 2 patients came in shock, 3 patients had preterm deliveries & 3 had full term vaginal deliveries. In 4 cases anomaly was bicornuate followed by didelphys in 1 & septate in 1. In these cases anomaly was detected during manual removal & confirmed by USG. One patient had recurrent retained placenta. Of 74 patients under the study, 48 (77.41%) had caesarean deliveries. Malpresentation was the commonest indication (50%) for caesarean section followed by Prolonged labor, Impending scar dehiscence, Previous lower segment

caesarean section and fetal distress. Five patients had problems during surgery, 2 patients had atonic postpartum haemorrhage however controlled by oxytocics & uterine massage, baby delivery was difficult in 2 cases due to abnormal cavity shape & placenta was adherent in 1 case.

Out of 74 cases in the study, number of take home babies was 53. The perinatal survival rate was 85.48% due to good neonatal care at our hospital.

**Table 1: Parity Distribution**

Parity	No.	%
Primigravidae	37	50
2 <sup>nd</sup>	25	33.78
3 <sup>rd</sup>	09	12.16
4 <sup>th</sup>	03	04.06

**Table 2: Type of Anomaly**

Anamoly	No.	%
Bicornuate	40	54.05
Unicornuate	12	16.25
Arcuate	10	13.50
Septate	09	12.16
Didelphys	03	0.05

## DISCUSSION

Uterine anomalies are often asymptomatic and are often discovered during pregnancy or at the time of abortion or during infertility evaluation. Depending on the method of patient selection, the reported incidence of uterine anomalies ranges from 0.1% to 10% [1]. In our study, the incidence of diagnosed uterine anomalies was close to 0.25% (74 out of 34416 pregnancies) of the women who delivered at our department during the study period, 4% in other study [2]. The most common anomalies were bicornuate uteri (54%), and the incidence was similar to that reported in study by Michalas SP [3] (46.78%). Laparotomy or laparoscopy combined with hysteroscopy is more appropriate for distinguishing bicornuate and septate uterus. In the current study, all of the uterine anomalies were diagnosed by USG or during manual removal of placenta & abdominal surgical procedures.

Compared with women with a normal uterus, the women with uterine anomalies had significantly lower gravidity. High incidences of preterm labor, mal-presentations and fetal growth retardation (FGR) rates have been reported by many investigators. Our study supports these findings. Four etiological theories have been suggested to explain the poorer obstetric outcome in patients with uterine anomalies: (a) Abnormal anatomy of the uterine cavity prevents correct rotation of the fetus to cephalic presentation; (b) Abnormal uterine blood flow which caused by an absent or abnormal uterine or ovarian artery might explain FGR; (c) Cervical incompetence; and (d) Diminished muscle mass of the hemi-uterus. We found cervical incompetence in 4% of the patients with uterine anomalies compared to 30% in other studies [4, 5], unicornuate uterus has the highest rate of cervical shortening though cervical cerclage did not improve outcome in these women. Even in our study 2 patients had cerclage but preterm delivery could not be prevented in these cases. Among all types of uterine anomalies, unicornuate uterus had worst prognosis in our study. Ectopic pregnancy in rudimentary horn was seen in 5.4% of cases in our study which was high

compared to frequently quoted figure of 1/76000-1/140000 pregnancies [6].

Fetal mal-presentation was the most common indication for caesarean section in women with uterine anomalies. Caesarean section rate was high in our study with an incidence of 77.41% compared to 53% [7]. Incidence of miscarriages was 6.75% which is low when compared to 26% [2]. In our study incidence of preterm deliveries was 40.3% & in that 44% were between 33-37 weeks, similar to other studies 36% [8] and 40% [9]. However, aside from the lower birth-weight in the uterine anomalies, we did not observe a significant difference in perinatal outcome among the groups of patients with different uterine anomalies. The perinatal survival rate was 85.48% when compared to 61% as in others study [3]. The high survival rate is due to good neonatal care at our hospital.

Inspite of dreaded complications like ruptured ectopic pregnancy in rudimentary horn, obstructed labor, torsion of gravid uterus, abruptio placentae & retained placenta, maternal mortality was fortunately nil in our study due to timely intervention and availability of blood bank facilities at our institute. Blood transfusion was given in total 10 patients.

## CONCLUSION

Incidence of uterine anomalies is underreported as many women are asymptomatic and can have normal obstetric outcome. They may present with life threatening complications. Statistics show improvement in pregnancy rate from 10-58% & decrease in abortion rate from 84-12% following corrective surgery. Awareness, high index of suspicion for uterine anomalies in the reproductive age group, & early intervention helps to prevent dreaded complications & improves obstetric outcome in these women.

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