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Reproductive outcomes of women with uterine anomalies: A retrospective study

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Abstract: *Aim:* To analyse the reproductive performance of women with uterine anomalies. *Materials and Methods:* It is a Retrospective study carried out over a period of one year from April 2022 to April 2023 at the Department of Obstetrics and Gynaecology, Al-Ameen Medical College and Hospital, Vijayapura. Ethical clearance was taken. A total of nine cases were studied. *Result:* Our Study observed that; there were total of 23 pregnancies in 9 patients, which include 4 (17.4%) miscarriage 6 (26.1%) preterm deliveries, 12 term deliveries (52%) and 1IUD. In 9 patients with uterine anomaly; 6 were Unicornuate uterus 6 (67%), 2 were septate (22.2%), and uterine didelphys 1 (11.1%).*Conclusion:* Uterine anomalies are not always associated with poor obstetric outcomes, as many of our patients conceived spontaneously and continued till term. So, reproductive outcomes depend on the type of anomaly and the degree of severity. Hence, patients with uterine anomalies need to be properly counselled and evaluated for a better outcome.

Keyword: Congenital uterine anomalies, Unicornuate uterus, Preterm deliveries, Breech presentation, IUD-intrauterine death.

Introduction

Congenital uterine anomalies (CUA) result from the abnormal formation, fusion, or resorption of the Mullerian ducts during fetal life [1]. The true incidence of uterine anomalies is difficult to assess in a general population as many of them are asymptomatic. Reported prevalence ranges from 0.16 to 10% depending on the population studied [2].In a recent systematic review, the prevalence of CUAs was 5.5 percent in an unselected population, 8 percent in infertile patients, 12.3 percent in patients with a history of miscarriage, and 24.5 percent in patients with miscarriage and infertility[3].

According to the American Society of Reproductive Medicine (ASRM) classification 2021 [4], uterus anomaly categories are identified by descriptive terminologies such as Müllerian agenesis, unicornuate uterus, uterus didelphys, bicornuate uterus, septate uterus, and complex anomalies. Uterine anomalies are associated with normal pregnancy outcomes as well as higher rates of pregnancy complications, including spontaneous miscarriage, ectopic pregnancy, preterm labor, malpresentation, and placental abruption. As they are asymptomatic, most of them are diagnosed during infertility workups or incidentally. Other modalities for diagnosis are pelvic examination, hysterosalpingography, 2D and 3D ultrasonography, MRI, and laparoscopy. This study aimed to improve our understanding of the reproductive outcomes of pregnancies in patients with uterine anomalies.

Material and Methods

It is a retrospective study carried out over a period of one year from April 2022 to April 2023 at the Department of Obstetrics and Gynaecology, Al-Ameen Medical College and Hospital, Vijayapura. Case sheets were retrieved from the medical record department, and the required data was collected. A total of nine cases were studied.

Statistical data analysis: Statistical data was analyzed by IBM SPSS 25.0 version software. Collected data were spread on excel sheet and prepared master chart. Through the master

chart tables and graphs were constructed. For qualitative data analysis frequencies of data and with respective percentage were calculated and described.

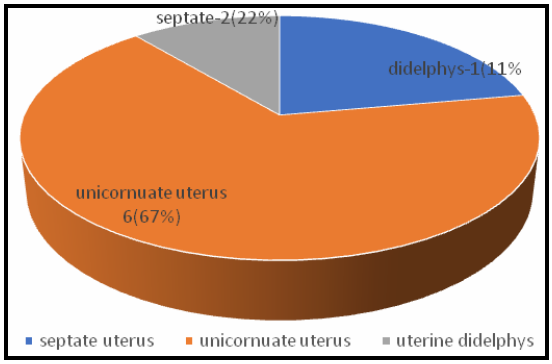
Results

Our study observed that; there were total of 23 pregnancies in 9 patients, which include 4 (17.4%) abortions/ miscarriage, 6 (26.1%) preterm deliveries, 12 term deliveries (52%) and 1IUD (Table-1).In 9 patients with uterine anomaly; 2 (22.2%) type of uterine anomaly were septate, Unicornuate uterus 6 (67%), and uterine didelphys 1 (11.1%) (fig.-1).The 14 (77.8%) had low birth weight.

Table-1: Reproductive outcomes of uterine anomalies compared with associated variables

Variables	Types	Frequency	Percentage
Number of women (N=9)	--	9	100.0%
Total no of Pregnancies (N=23)	--	23	100.0%
Type of delivery (N=23) (100.0%)	Pre-term deliveries	8	34%
	Term deliveries	11	47%
	Abortions	4	17.4%
	IUD	1	4.3%
Mode of Deliveries (N=18) (78.3%)	Caesareans section	11	61.1%
	Normal deliveries	7	38.9%
Presentation breech (N=18) (78.3%)	Breech	5	27.8%
	Cephalic	13	72.2%
Indication (N=11) (47.8%)	Breech	5	45.4%
	Previous LSCS	2	18.2%
	Fetal distress	2	18.2%
	CDMR	1	9.1%
	Preeclampsia	1	9.1%
Type of uterine anomaly (N=9)	Septate	2	22.2%
	Unicornuate uterus	6	67%
	Uterine didelphys	1	11.1%
Birth weight	≤2.5 kg	14	77.8%
	>2.5 kg	4	22.2%

Fig-1: Type of uterine anomaly



Discussion

Out of 9 cases uterine anomaly; 6cases (66%) unicornuate uterus, 2 (22.2%) had septate uterus, and 1 had Bicornuate (11.1%) (fig-1). In our study, there were total of 23 pregnancies in 9 patients, which include 4 (17.4%) miscarriage, 6 (26.1%) preterm deliveries, 12 term deliveries (52%) and 1IUD. (Table-1) and our results were compared with recent literature (Table-2) [5-6]. According to Manne et at 2024 [6], in 14 pregnancies there were 10 preterm deliveries (71%) and 3 term deliveries (23%). According toZhang et at 2010 [5] in 116 pregnancies 23 were preterm deliveries (19%) and 93(81%) were term deliveries.

Table-2: Reproductive outcome of uterine anomalies compared with literature

Variables	Zhang et at 2010 [5]	Manne et al 2024 [6]	Present study
Pregnancies	116	14	23
Abortions	-	1(7%)	4(17.4%)
Preterm deliveries	23(19%)	10(71%)	8(34%)
Term deliveries	93(81%)	3(23%)	11(47%)
Breech presentation	45(38%)	4(30%)	5(27.8%)

Unicornuate Uterus: The association between unicornuate uterus and sub fertility is less clear. In our study, we had 6 patients of unicornuate uterus with 12 pregnancies, 50% of the pregnancies of them had preterm deliveries and 50% had term deliveries and none of them had ectopic pregnancy or

abortion. In our study, the most common indication for caesarean section was breech presentation (57%). The birth weight was ≤2.5 kg (75%).

According to a retrospective observational study including 3181 women reported that 23.7% of the patients with a Unicornuate uterus were diagnosed with subfertility (Chen et al., 2018) [7]. Only one third of the pregnancies of patients with a Unicornuate uterus ended with live births, while a significant portion (~50%) resulted in preterm de livery and 4% in ectopic pregnancy (Chan et al., 2011a) [8]. Single and multiple miscarriages and intrauterine fetal demise were prevalent in these patients (Reichman et al) [9]. The pathological mechanisms involved for low birth weight and preterm deliveries would be single uterine artery, abnormal uterine vasculature, inadequate placental blood flow, uterine muscle insufficiency, and cervical weakness (Khati et al., 2012) [10].

Septate Uterus: In our study patient with septate uterus had preterm labour, breech presentation, spontaneous abortions and IUD.

This class of uterine anomalies constitutes the most frequent uterine malformation (35%), compared with bicornuate uterus and arcuate uterus (Kowalik et al., 2011) [11]. In our study it accounted for 22%. The uterus of these patients is partitioned into two cavities because the midline septum has not been reabsorbed partially or entirely during fetal development (Kowalik et al., [11]; Valle & Ekpo, 2013)[12]. Uterine septum anomaly increases the risk of obstetrical complications, recurrent miscarriage, infertility (Nouri et al., [13]; Seet et al.[14]), preterm birth, fetalmal presentation, and miscarriage before six months (Seet et al., [14]). Two mechanisms with suggested associations with spontaneous miscarriage are decreased septum vascular supply and an abnormal overlying endometrium, resulting in abnormal implantation (Ali et al., 2017; Freud et al., 2015) [15-16].

The management of these anomalies is controversial; thus, proper diagnosis with the aid of different imaging resources – HSG, US, and Magnetic Resonance Imaging (MRI) – is a key element in planning for surgical interventions (Patton et al., [17]; Seet et al., [14]).One of the interventions is hysteroscopic resection (HR) of the uterine septum, a procedure known to provide better reproductive outcomes in patients with a track record of spontaneous miscarriage or premature labors (Freud et al., 2015) [16].

Uterine Didelphys: In our study we had a one patient of uterine didelphys, discovered during a work-up for infertility with history of three spontaneous abortions underwent emergency caesarean section for preterm labour with fetal distress. According to other study women with this condition have risk of miscarriage, intrauterine growth retardation, and high rate of preterm delivery [3].

Conclusion

Our study shows that congenital uterine malformations are not always associated with poor obstetric outcomes, as many of our patients conceived spontaneously and continued till term. So reproductive outcomes depend on the type of anomaly and the degree of severity. Hence, patients with uterine anomalies need to be properly counselled and evaluated for a better outcome.

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