Original Research Article

Uterine Didelphys pregnancy management

ABSTRACT

Introduction: Didelphys uterus is a rare Mullerian duct abnormality affects 1-3 in 3000 women worldwide. It is usually asymptomatic. There is many patients with this diagnosis in Saudi Arabia, and this compel us to study this condition.

Aims: to describe the management and outcomes of pregnant women diagnosed with uterus didelphys.

Study design: This is a multicenter prospective cohort.

Place and Duration of study: This study was conducted in Saudi Arabia in 4 cities, 8 hospitals over a period of five years.

Methodology: 286 patients joined this study, all diagnosed previously to have didelphys uterus, pregnant and willing to join, follow up and deliver in one of the research hospitals. Patients consented to join the search and every 2 weeks follow up and management done.

Results: 15 (5.2%) patients aborted during the first half of the pregnancy. 139 (48.6%) patients had cervical cerclage done. 79 (27.6) patients had preterm labor pains which was managed. 231 (80.8%) patients delivered by cesarean section and 17 (5.9%) delivered spontaneous vaginal delivery. Added to that, 38 (13.3%) had operative vaginal delivery. 271 neonates delivered. Unfortunately, three (1.1%) had intrauterine fetal death (IUFD) at 30-32 weeks gestational age due to multiple congenital anomalies. All remaining neonates were normal and healthy except 25 (9.2%) admitted to NICU for various causes, but discharged eventually in good condition.

Conclusion: Although, women with didelphys uterus are rare patients, they needs especial attention in antenatal care, but, have a good chance to compete pregnancy to the end and can deliver like any other normal patient with little higher cesarean section rate.

Keywords: *Didelphys, Mullerian, Vaginal Septum, Cesarean, Cervical Cerclage, Preterm Labor.*

1. INTRODUCTION

Didelphys uterus or double uterus is a rare condition due to failure of fusion of Mullerian ducts. It affects one to three in 3000 women worldwide [1, 2]. This condition is a congenital anomaly, which can be isolated but more frequently associated with vaginal anomalies including double vagina, septated vagina and semi-septated vagina. Moreover, this condition may be associated with renal or skeletal anomalies. Usually, each uterus is attached to ipsilateral tube and these patients have healthy ovaries [1-4].

At age of 6 weeks of fetal life Mullerian ducts develop and by the end of 9th week, they start process of fusion in the middle part of the tube in caudal cephalic fashion leading to the formation of the uterus. If for any reason, this fusion disturbed, it leads to the formation of didelphys uterus [1, 4-6]. Usually, patients of didelphys uterus have no symptoms, and it is discovered during investigation for recurrent abortion, or preterm labor [7-9]. Nevertheless, some patient may complaint of dysmenorrhea or dyspareunia. This condition may be discovered during transvaginal ultrasound, hysteroscopy, hysterosalpingogram, abdominal laparoscopy and laparotomy [1, 10, 11].

This condition is associated with recurrent abortion, preterm labor and abnormal lie of the fetus [4, 6, 7]. Most of the pregnancies of women with didelphys uterus ends by cesarean section [4, 8, 9, 11]. It was noticed that, there is many women with this abnormality are present in Obstetrician practices and management of these patients differ from one practice to another.

This research aims to describe the management and outcomes of pregnant women diagnosed with uterus didelphys.

2. METHODS

This is a multicenter prospective observational cohort conducted in four cities in Saudi Arabia and included eight major hospitals. In Holy city of Makkah, Maternity and children Hospital (MCH) and Hera'a Hospital. In Holy city of Madinah, Maternity and children Hospital (MCH) and Uhod Hospital. In Jeddah city, Mesadiah Maternity and children Hospital and North Jeddah Hospital. In Al-Baha area, King Fahad Hospital and Prince Meshari Hospital in Baljurashi.

This research conducted over five years, started on first of February 2013 and ended in 31st of January 2018. This research was ethically approved (Approval number 34-0012-678-10034) by Saudi Ministry of Health central ethical approval office governing all these government hospitals. All above-mentioned hospitals are government hospitals servicing patients free and are the main administrator for Obstetrical and Gynecological services in above mentioned areas and cities. The average number of deliveries in all above-mentioned hospitals is 50,000 thousand deliveries per annum and the average rate of cesarean sections is 24%.

to be included in the study the patient should have been diagnosed with pregnancy with uterine didelphys, give written consent to participate in study and come for follow up as advised and should be ready to deliver in one of the hospitals included in study. If any of the above-mentioned conditions not met patient will be opt out of the research.

In first antenatal visit, patients comes to perform first ultrasound and start the follow up in the clinic. If she is known or diagnosed to have didelphys uterus then she is offered to join the research. If all the conditions are applicable then patient consented using special written form to join the search. Every 2 weeks follow up and management is granted.

Outcomes included, incidence of didelphys uterus among the population Saudis and non-Saudis (Saudi patients, represents the national population of the country, while Non-Saudis, represent people who are living in Saudi Arabia from any other origin and working, studying or living in the country), incidence of cervical cerclage, incidence of abortion among those patients, rate of preterm labor. Also, rate of cesarean section among them and rate of vaginal and operative vaginal delivery among them, rate of admission to Neonatal Intensive Care Unit (NICU) for their neonates. Added to that, types of neonatal problems among infants of those mothers. Data presented as frequencies and percentages.

3. RESULTS

During the five years period of this study 371345 patients were seen in the antenatal clinics and 243746 patients completed their follow up and delivered in participating hospitals. There were 286 patients diagnosed to have didelphys uterus, representing 0.12% of patients completed follow up and delivered (Table 1).

Table 1: Patient distribution during the study

	Saudis N (%)	**Non-Saudis N (%)**	**Total N (%)**
Patients seen in antenatal clinic	295622 (79.6%)	75723 (20.4%)	371345 (100%)
Patients completed follow up and delivery	215729 (88.5%)	28017 (11.5%)	243746 (100%)
Didelphys patients pregnancies	275 (96.2%)	11 (3.8%)	286 (100%)

There were 211 (73.8%) patients with didelphys uterus and single vagina, 72 (25.2%) patients with didelphys and double vagina and 3 (1%) patients with didelphys and incomplete vaginal septum (Table 2).

Table 2: distribution of patients according to type of anomaly

	Saudis N (%)	Non-Saudis N (%)	Total 286 N
Didelphys uterus and single vagina	205 (97.2%)	6 (2.8%)	211
Didelphys uterus and double vagina	67 (93.1%)	5 (6.9%)	72
Didelphys uterus and vaginal septum	3 (100%)	0	3

15 (5.2%) patients aborted during the first half of the pregnancy. 139 (48.6%) patients had cervical cerclage done because of history of recurrent abortions before. 79 (27.6) patients had preterm labor pains, which was managed according to guidelines. All delivered at term. While, 231 (80.8%) patients delivered by cesarean section and 17 (5.9%) delivered spontaneous vaginal delivery. Added to that, 38 (13.3%) had operative vaginal delivery (Table 3).

Table 3: management during antenatal care and method of delivery

	Saudis N (%)	Non-Saudis N (%)	Total 286 N
Cervical cerclage	131 (94.2%)	8 (5.8%)	139
Preterm labor	76 (96.2%)	3 (3.8%)	79
Cesarean deliveries	223 (96.5%)	8 (3.5%)	231
Spontaneous vaginal delivery	17 (100%)	0	17
Forceps delivery	20 (100%)	0	20
Vacuum extraction delivery	18 (100%)	0	18

Regarding neonates, 271 neonates delivered. Unfortunately, 3 (1.1%) had intrauterine fetal death (IUFD) at 30-32 weeks gestational age with no obvious cause, but, when examined post-delivery, multiple congenital anomalies discovered in them (These, 3 patients missed there anomaly scans. Anomalies include cardiac and renal anomalies). All remaining neonates were normal and healthy except 25 (9.2%) admitted to NICU for various causes, but discharged eventually in good condition (Table 4).

Table 4: neonatal outcomes

	Saudis N (%)	Non-Saudis N (%)	Total 286 N
Lost as abortion	12 (80%)	3 (20%)	15
IUFD	2 (66.7%)	1 (33.3%)	3
Asphyxia at delivery	1 (100%)	0	1
Respiratory distress	3 (75%)	1 (25%)	4
Meconium aspiration	7 (53.8%)	6 (46.2%)	13
Sever prematurity	3 (42.9%)	4 (57.1%)	7

4. DISCUSSION

Didelphys uterus is a rare Mullerian duct anomaly affects 0.03-0.1% of women in the fertile age group [1, 2, 4]. Usually, fertility of these patients preserved and it is considered better than patients of other Mullerian duct anomalies [2, 4, 9]. These patients suffer from multiple fetal loos due to abortion or preterm labor [2, 4, 5]. They usually needs especial attention during antenatal care and delivery [2]. This is a multicenter multiracial prospective observational cohort, conduct over 5 years to study the best management method for pregnant women diagnosed with uterus didelphys. 286 women diagnosed to have didelphys uterus and pregnant joined the study, with a result of 268 babies born alive and discharged in good condition.

On literature review, this condition is associated with excellent results of the pregnancy, and this is can be seen in this study. Paying special care for these patients with close follow up paid off in this group of patients. This results agreeing with most of the studies in these women [3-11]. Only one large study was against all other studies including this study, and concluded that women with didelphys uterus has the highest rate of preterm delivery, spontaneous abortion, and the lowest rate of having a term delivery [2].

In this study, we found women with didelphys uterus have a chance of preterm delivery and may need cervical cerclage, but they have a good chance of completing the pregnancy to term.

5. CONCLUSION

Women with didelphys uterus are rare patients who needs especial attention in antenatal care, but, have a good chance to compete pregnancy to the end and can deliver like any other normal patient with little higher cesarean section rate.

More studies are needed for this group of women, but should be larger studies and focusing on follow up, cost effectiveness and outcomes of their pregnancy.

ETHICAL APPROVAL

Author hereby declare that this study have been approved by Saudi Ministry of Health central ethical approval office (Approval number 34-0012-678-10034) and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

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