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FREQUENCY OF MULLERIAN DEFECTS WITH MALPRESENTATION IN THE OBSTETRICS & GYNECOLOGY DEPARTMENT, KHYBER TEACHING HOSPITAL, PESHAWAR

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ABSTRACT

Introduction: Congenital defects of Mullerian duct are rare gynecological problems of women. They are asymptomatic but usually recognized in reproductive age. This study was conducted to determine the frequency and different types of Mullerian defects among women with Fetal Malpresentation in a public tertiary care hospital of Peshawar, Khyber Pakhtunkhwa.

Materials & Methods: A descriptive cross-sectional study was conducted in the Department of Obstetrics and Gynecology, Khyber Teaching Hospital, Peshawar from August 2012 to February 2013. A total of 205 pregnant women with Malpresentation selected through consecutive sampling were studied for Mullerian duct anomalies. All the collected data were analyzed in SPSS version 11.0. The Chi Square test was used to compare frequencies among groups, keeping $p \leq 0.05$ as significant.

Results: Mullerian anomalies were identified in 05/205 (2.44%) pregnant women with Malpresentation, most of these (03/05, 60%) being at age 20-25years. Of the different types of Mullerian anomalies, Unicornuate uteri were 02/05 (40%), while Bicornuate, Septate, Arcuate uteri were 01/05 (20%) each, with no Didelphys. In terms of gravidity, Primigravida and Multigravida each had 02/05 (40%) Mullerian anomalies, while Grand Multipara had 01/05 (20%).

Conclusion: Fetal Malpresentation shows an increased frequency of detecting Mullerian anomalies; a higher risk may be found with increasing gravidity and parity.

Keywords: Uterine Anomalies; Fetal Malpresentation; Labor Presentation; Infertility, Female.

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INTRODUCTION

Mullerian anomalies are relatively rare congenital malformations of the female reproductive organs.[1] Failure of normal development of Mullerian Duct system at the embryonic stages results in malformations of uterus, fallopian tubes and upper portion of the vagina.[2]

It is very difficult to establish the prevalence of uterine malformations. Some of the studies have reported that it occurs in 0.4 % (0.1–3%), 0.001 to 10%[1,3] in general population, 4% (3.5%) in infertile women and 13% in patients with repeated spontaneous miscarriages; the figures fluctuate between 3% and 38%.[4] Studies have reported the incidence and prevalence of Mullerian duct anomalies very widely but it presents in 1-10% in unselected population, 2-8%[5] in infertile women, and 5–30% of women with a history of miscarriage.[6]

There are different types of Mullerian anomalies i.e. Unicornuate, Bicornuate, Septate, Arcuate uterus and Didelphys.[7] The ratio of these anomalies in their different classes are Unicornuate (2.4-13% of all Mullerian anomalies and 0.06% for the examined population, Didelphys (11% of uterine malformations), Bicornuate (29%),[8] Septate (34%) and Arcuate (7%). Its occurrences vary widely and depend on the study.

In a study on Mullerian anomalies from Faisalabad, Punjab, Pakistan done in 2010,[3] Septate uterus was the commonest anomaly, found in 41.67% of patients. This value is

comparable with the study from China[4] where it was 37%. However, they also reported that among the patients who were pregnant, Malpresentation was the commonest presentation (46%).[3] It is also reported that Malpresentation in Mullerian anomalies are 38.8% which increase the chances of Cesarean Sections.[10] Presentation is that part of fetus that lies on pelvic brim while Malpresentation is any presentation other than vertex. These include breech, shoulder, cephalic presentation with face and brow. The prevalence of Malpresentation in general population was reported as 7.3% breech, 1.86% transverse lie, 0.2% brow and 0.09% face.[5] The Mullerian anomalies patients have Malpresentation in 53.3% (60/103) cases.[12] Further, it is also associated with poor reproductive outcome with fetal survival rate of 6-28% and high rate of spontaneous abortions of 60%.[13] The prevalence ranging from 0.16 to 10% has been reported in women who were investigated with ultrasonography because of non-obstetric indications while prevalence of 8-10% has been reported in women investigated with hysterosalpingography (HSG) due to pregnancy losses.[14] The researcher has not documented the data about Mullerian duct anomalies however they estimated that its occurrence is very rare, 1% exist in general population. Mullerian malformation in women is diagnosed by HSG, ultrasonography and magnetic resonance imaging (MRI), CT-scan.[15] However Malpresentation is usually diagnosed by trans-vaginal scan, abdominal scan and X-Ray Abdomen.[16, 17]

The present study is designed in order to determine the frequency of Mullerian defects and its different types among women with Malpresentation. The results of this study will provide local statistics about magnitude of Mullerian defect in our local population with Malpresentation.

MATERIALS & METHODS

This descriptive cross-sectional study was conducted in department of Obstetrics & Gynecology, Khyber Teaching Hospital Peshawar from August 2012 to February 2013. Sample size was 205 keeping 7% proportion of Arcuate defect among women with Malpresentation, 95% confidence interval and 3.5% margin of error under WHO sample size calculation. Consecutive (non-probability) sampling technique was used for sample selection. The included patients were all pregnant women with Malpresentation, age group between 20 to 45 years and any gravida or parity; while the excluded were those patients who already diagnosed cases of Mullerian defects and women who have undergone any type of surgery on uterus. The above mentioned conditions acted as confounders and if included would have introduced bias in the study results. The study was conducted after approval from the hospital ethics and research committee. All women meeting the inclusion criteria and presenting the fetal Malpresentation was included in the study through OPD of the Department of Gynecology and Obstetrics, Khyber Teaching Hospital Peshawar.

The purpose and benefits of the study was explained to all women and a written informed consent was obtained. All women were subjected to detailed history and clinical examination followed by routine investigations. These women were subjected to transvaginal ultrasound in the radiology Department of the hospital to detect Malpresentation along with Mullerian anomalies and its different types (Unicornuate, Bicornuate, Septate, Arcuate and Didelphys). The ultrasound examination

was performed by a single experienced radiologist having minimum of five years of experience. The questionnaire included: name, age and address, Malpresentation, and different types of Mullerian anomalies recorded in a pre-designed form. All the collected data were analyzed in SPSS version 16.0. Mean ± SD was calculated for numerical variables like age. Frequencies and percentages were calculated for categorical variables like Mullerian defect and its different types (Unicornuate, Bicornuate, Septate, Arcuate and Didelphys). Mullerian defects and its different types were stratified among age to see the effect modifications.

RESULTS

The frequency of Mullerian anomalies among 205 pregnant women (mean age 26 ± 5.19 years) was 05/205 (02.43%), as shown in Table 1. Their age-wise distribution showed Mullerian anomalies in 03/99 (03.03%) pregnant women of ages 20-25 years; at ages 26-30 years there were no anomalies in 63 pregnant women, while at ages 31-35 years, 01/31 (03.22%) pregnant women had Mullerian anomaly; at ages 36-40 years 01/12 pregnant woman had Mullerian anomaly. The Chi-Square test showed no significant differences for age and Mullerian anomalies.

Table 1: Distribution of Mullerian Anomalies by age in subjects (n=205).

Variables	Total	Mullerian Anomalies		p value
		No	Yes	
Age groups (years)				0.314
20-25	99	96	03 (3.03%)	
26-30	63	63	0	
31-35	31	30	01 (3.22%)	
36-40	12	11	01 (8.33%)	
Total	**205**	**200 (97.56%)**	**05 (02.44%)**	

The relative frequency of different types of Mullerian anomalies in Malpresentation is shown in Table 2. Unicornuate uterus was the commonest at 02/05 (40.0%); Bicornuate, Septate and Arcuate uteri were each 01/05 (20.0%); there were no Didelphys anomalies. The relative percentages out of all 205 cases were: Unicornuate uterus at 0.97%, Bicornuate, Septate, and Arcuate uteri at 0.48% each.

Table 2: Distribution of Types of Mullerian Anomalies in subjects (n=05).

Mullerian Anomalies	Frequency	Percentage of anomalies (n=05)	Percentage of all subjects (n=205)
Unicornuate uterus	02	40	0.97
Bicornuate uterus	01	20	0.48
Septate uterus	01	20	0.48
Arcuate uterus	01	20	0.48

The status of gravidity among 205 pregnant women with Malpresentation is shown in Table 3. Mullerian anomalies were found in 02/108 (1.85%) primigravida; 02/78 (2.63%) multigravida and 01/14 (7.14%) grand multipara while 05 cases of great grand multipara had no Mullerian anomalies. The Chi-Square test showed that there were no significant differences for gavidity and Mullerian anomalies.

Table 3: Distribution of Mullerian Anomalies by Gravidity (n=205).

Gravidity	Mullerian Anomalies		Total	p value
	No	Yes		
Primigravida	106	02 (1.85%)	108	0.662
Multigravida	76	02 (2.63%)	78	
Grand multipara	13	01(7.14%)	14	
Great grand multipara	05	0	05	
Total	**200**	**05**	**205**	

DISCUSSION

The overall occurrence of Mullerian anomalies in this study was 2.44% of pregnant females with Malpresentation, with most cases (3/5, 60%) occurring in age group 25-30 years; the result is similar to another study that identified 25 out of 27 cases in age group 13-30 years.[18] Another study reports the prevalence of Mullerian anomalies to be 9.8% (61 of 622).[19] This figure was higher than that of the current study and it may be due to the larger sample size. Some other studies pointed out the prevalence in general population as 6.7% while in the infertile population it was 7.3%.[20] Such pregnancy complications and increase of infertility among female population suggest that antenatal examination facilities should be extended to the rural community.

Findings showed that among the anomalies recorded in the present study, Unicornuate uterus was most common, i.e. 40% as compared to other subtypes of Mullerian anomalies such as Septate uterus (20%), Bicornuate uterus (20%) and Arcuate uterus (20%). According to the American Fertility Society figures, the prevalence of Unicornuate uterus is 5%.[20] Another study reported 0.3% prevalence of Unicornuate uterus (This low prevalence may be due to information collected by questioner from women and likely to have a lot of error). However, they also reported 10% prevalence of uterine anomalies in acute uterine bleeding (AUB) of women. Furthermore, they are associated with significantly higher incidence of spontaneous abortion and lower cumulative live birth rate.[21]

Bicornuate uterus was found in the present study in 20% cases of Mullerian anomalies in 205 pregnant women with Malpresentation. The diagnoses of these anomalies were confirmed by cesarean section. A study having 1600 infertile women subjects with congenital uterus anomalies showed that Bicornuate uterus occurred in 45.83%.[22]

Similarly, a study from China (2010) reported that out of 21961 deliveries, 116 (0.45%) women had uterine anomalies.[23] Patients with uterine anomalies had significantly higher rates of Malpresentation (38.8%) as compared with normal uterus. They reported that Bicornuate uterus was observed in 12 (10.3%) women having uterine anomalies, whereas the current study showed 1/5 (20%) Bicornuate uterus among uterine anomalies, a value higher than reported in the Chinese study.

Findings of the current study showed that Septate Uterus was also present with the rate of 1 out of 5 cases in pregnant women with Malpresentation. A large-scale meta-analysis of 89861 women published in 2011, revealed Septate uterus to be prevalent in 2.3% (95%C.I. 1.8-2.9) of the general population;[24] however a significantly increased prevalence was observed in the miscarriage group (5.3%, p=0.021), and especially when miscarriage was

combined with a history of infertility (15.4%, p<0.001).

The frequency of Arcuate uterus in the current study showed 1 out of 5 cases (20%) of anomalies in pregnant women with Malpresentation. It was also diagnosed after emergency cesarean section. These findings are similar with findings by American Fertility Society,[20] who reported that Arcuate uterus occurred in 7%. The ratio of Arcuate uterus in infertile women was higher (33.33%).[26] Anther study showed the presence of Arcuate uteri as 6.8% (42/622) cases;[19] however, Arcuate uterus was found as 68.8% (42/61) cases of the total women with uterine anomalies. Similarly, another report showed that the occurrence of Arcuate uteri was 11.8%, followed by Septate uterus, Unicornuate uterus and Bicornuate uterus.[22] Further, they also observed that the pregnancy ratio in women with Arcuate uteri was 36/66 (54.5%) and 7/10 (70.0%) in major uterine anomalies. They also reported that the first trimester miscarriages rate were similar between the control group 20/158 (12.7%) and women with Arcuate uteri, i.e., 5/36 (13.9%); however, women with major uterine anomalies experienced a higher miscarriage 3/7 (42.9%). The prevalence of Arcuate uterus of 11.8% in 1385 subject was higher than our finding that is 1/5 out of 205 cases of Malpresentation.

It has been reported that uterine malformation is due to abnormal development of Mullerian duct in early embryogenesis. A case of 25 years old woman has the history of two abortions and diagnosed as Arcuate uterus at the time of cesarean section. However, with proper antenatal care and counseling she has been able to give birth to 2nd baby successfully.[26] Literature, diagnosis, management and reproductive out comes is limited and very conflicting. However, such pregnancy is associated with high risk of miscarriages and premature birth.[26]

Despite the small number of cases in the present study, it was seen that increasing gravidity and parity were associated with a higher frequency of uterine anomalies (Table 3). Antenatal care gained significant importance in health care system to reduce the maternal mortality. The new millennium developmental goal-5 targeted to reduce the maternal mortality up to 75% in the developing world. Improvement in image resolution is one of the best contributions in the advances of fetal ultrasound. Techniques such as pulse wave, color Doppler and MRI imaging play an important role in screening of Malpresentation and Mullerian anomalies. With further developments in screening of pregnancy disorders, these new techniques will enhance the care of pregnant women. Its results warn the patients and clinicians in advance about the normal and complicated pregnancy. Therefore, the clinicians can plan proper management.

CONCLUSION

Fetal Malpresentation carries a substantially increased risk of detecting Mullerian anomalies; the risk appears to increase with increasing gravidity and parity.

RECOMMENDATIONS

Very little research work has been done on the correction of Mullerian anomalies. More research work is required to improve the correction of Mullerian defects so that postoperatively women will be able to have successful reproductive outcome.

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