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RESEARCH ARTICLE
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FETOMATERNAL OUTCOME IN PREGNANT PATIENTS WITH FIBROIDS AT A TERTIARY CARE HOSPITAL

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Abstract

Objectives: This study intends to analyze the fetomaternal outcomes in pregnant women with uterine fibroids and determine the relationship between fibroid size and complications throughout pregnancy.

Materials and Methods: This prospective observational study of a tertiary care hospital was conducted on 200 pregnant women diagnosed with fibroids. Participants were analyzed according to the size and location of the fibroid and the obstetric outcomes documented.

Results: According to the results, fibroid size played a significant role in adverse outcomes, including preterm labor in 10% of the cases, placental abruption in 5%, and postpartum hemorrhage in 8%. Fibroids of bigger size were strongly related to an increased risk of cesarean deliveries, mainly because of obstructed labor (OR = 6.84; $p < 0.01$).

Conclusion: Most women with uterine fibroids can conceive and give birth to healthy babies. However, proper planning and close supervision are essential should fibroids enlarge because they are associated with complications during pregnancy.

Key Words: Uterine fibroids, fetomaternal outcomes, pregnancy complications, cesarean delivery, maternal health.

INTRODUCTION

Leiomyomas or uterine fibroids are benign tumors arising from the receptacle compartment of the smooth muscle of the uterus. They are some of the universally prevalent pelvic tumors in women of childbearing age, with approximately 20-50% prevalence among this cohort. Pregnancy-related fibroids are expected, with available statistics suggesting that fibroid sufferers stand a 10-30% chance of complications during pregnancy (2). While most fibroid-related lesions are asymptomatic, fibroids can affect many aspects of pregnancy and a range of fetomaternal outcomes.

Fibroids may range in size, number, and position in the uterus, and these factors will contribute to childbirth outcomes (3). Women with fibroids are at a higher risk for some obstetric complications, including miscarriage, preterm labor, placenta abruption, and cesarean delivery (4). The authors also found that larger fibroids are associated with adverse outcomes, especially those that protrude into the cavity (submucosal) or alter the uterus shape (intramural). For example, submucosal fibroids may cause miscarriages by preventing the implantation of the embryo. Likewise, intramural fibroids may be responsible for complicated labor by hindering the passage of the fetus through the birth canal (5). These differences in fibroid characteristics mean that there are variations in risk factors. Therefore, this study underscores the difference in the adverse effects on maternal and fetal health in a pregnant woman with fibroids, requiring individualized approaches to pregnant women with fibroids to optimize the long-term consequences for both mother and baby.

Fibroids-related pregnancy poses some challenges in clinical practice. Several investigations have shown an association between fibroids and pregnancy complications such as restricted fetal growth, abruption, and abnormally positioned fetuses that make delivery difficult 6. They also predispose the patient to require more frequent monitoring and, at times, Cesarean section. Furthermore, fibroids have been demonstrated to interfere with uterine contractility and blood flow and were associated with post-surgery complications like uterine atony postpartum. The complication contributes to significant maternal morbidity (7). Uterine atony, which refers to the inability of the uterus to contract after delivery, is a cause of postpartum hemorrhage, which is a significant cause of maternal death. Since these potential outcomes constitute risks, these complications should be studied under a fetomaternal perspective, especially at the tertiary health care level, because the setting allows the providers to help these patients manage their conditions through appropriate interventions.

Fibroids in pregnancy are usually closely monitored, and the patient is managed with other specialists to ensure good outcomes for both mother and child. Scientific literature suggests that although women with fibroid can develop fertility, a significant proportion is bound to have complications during childbearing, especially if the fibroid is big or multiple (8). Such complications may include a higher risk for Cesarean delivery, preterm birth, and adverse newborn outcomes, necessitating management approaches for practitioners to adopt. Routine abdominal and transvaginal ultrasounds will allow the evaluation of the size and location of fibroids during pregnancy and management if complications arise. Additionally, a multiple-disciplinary team of obstetricians, maternal-fetal medicine specialists, and anesthesiologists can help improve the approach to managing labor and childbirth, particularly for women with prior fibroid-related issues. Therefore, evaluating viral fetomaternal contributions to pregnancy complications in this group is an imperative step towards enhancing client care advice and clinical reference models and, therefore, improving health outcomes for both mother and baby.

Fibroids and fetomaternal consequences have received different works done all over the world. For example, a case control study from a tertiary health care facility revealed the relationship between the size of fibroids and the rates of cesarean sections, thus the importance of patient-centred management plans (9). Further, other studies show that female patients who have undergone myomectomy before conceiving may have better outcomes during pregnancy than the untreated fibroids (10). Such conclusions suggest the need for pre(conception) counseling and management of strategies targeting women with fibroids.

Because fibroid pregnancies are often complex, organized assessment of fetomaternal outcomes is needed. This entails assessment of not only the obstetric factors but also the psychological end social implications of a pregnancy with fibroids. A psychological consequence which has been noted in many studies is the effect on the women whom fibroid issues create a lot of uncertainty about the potential complications to their health and wellbeing or even parent hood (11). Women might also feel increased stress when concerned about probable complications, which will result in emotional

issues which in turn can affect fetal handling and even prenatal care. However, such concerns may dissuade some females from seeking early treatment which will only compound the effects.

Besides, the variations in the availability and quality of treatment within the region also affect the outcomes of the pregnant women with fibroids. For instance, due to a inadequate access to health care centres and other specialized services, complications resulting from fibroids are likely to be higher in most developing regions hence, poor maternal and fetal outcomes (12). For instance, the scarcity of trained personnel may lead to poor management control measures of fibroid complications during pregnancies (13). As a result, this could cost the client valuable chances of getting an early intervention that would help him/her in the long run. Therefore, this study is endeavored to describe the fetomaternal consequences in pregnant patients with fibroids at a tertiary care hospital so that additional information can be added onto the existing knowledge base and an improvement made to the practice.
This study is significant to the increase of women with fibroids during pregnancy, and most of the practitioners are not well informed about the consequences and management of such conditions. It is therefore the intention of this study to identify the outcome for mother and infant so as to improve on the educational counselling as well as the delivery of service to the patient.

Objective: The aim of the present investigation is to assess the fetomaternal outcome of pregnant patients with uterine fibroids in the present setting of a tertiary care teaching hospital with an aim of detecting adverse effects and subsequent modifying the treatment approach.

MATERIALS AND METHODS:

Study Design: Cross sectional study

Study setting: The study was carried out at Department of Obstetrics & Gynaecology, Hayatabad Medical Complex, Peshawar, Pakistan

Duration of the study: This study duration was January, 2023 to December, 2023.

Inclusion Criteria: The population comprised all pregnant women diagnosed with uterine fibroids of any size or site who delivered at the study hospital during the study period.

Exclusion Criteria: Women with other severe obstetric morbidity (Preeclampsia, Gestational diabetes), undergoing myomectomy during pregnancy, and patients with incomplete clinical notes were excluded as we aimed to study purely the effect of the presence of fibroids on fetomaternal outcome.

Methods:

Information was gained from charts of pregnant women who attended the tertiary health facility during the study period and were confirmed to have uterine fibroid diseases leading to delivery. Demographic data and fibroid profile data were collected on a uniform extraction form across all the facilities. Data included demographic parameters, size, number, and location of the fibroids, as well as pregnancy outcomes, such as mode of delivery, gestational age at delivery, birth weight of the baby, and complications during pregnancy to the mother or fetus.
In data analysis, descriptive statistics were used to describe the demographic and clinical parameters using the right program. All the data have been analyzed using Chi-square tests and t-tests for the difference in the result for the group with and without fibroids at the significance level of $p < 0.05$. Logistic regression analysis determined factors that independently predispose to adverse fetal outcomes. Informed ethical consent to carry out this research was sought and granted by the hospital's institutional review board, and patient information was anonymized to retain patient confidentiality.

RESULTS:

Two hundred comfort women have been diagnosed with uterine fibroids in this research. Therefore, the information gathered is general to such patients. This follows the age distribution of the participants, where the mean age was 30.5 years with an 18-42 years age range depicting the groups of women who can be affected by fibroids during pregnancy. Among the participants, the majority of the respondents were multiparous, they % had prior childbirth experiences 60%, while 40% were primiparous, which referred to first-time mothers. Demographic information is significant because it facilitates understanding of fetomaternal consequences and complications arising from fibroids in this group of women. Table 1 displays a detailed description of the demographic attributes of the study sample.

Table 1: Demographic Characteristics of Participants

Characteristic	Value (n=200)
Age (years)	30.5 ± 5.2
Parity	
- Primiparous	80 (40%)
- Multiparous	120 (60%)
Body Mass Index (BMI)	26.8 ± 4.1

Fibroids, depending on their size and location, helped to understand the characteristics of fibroids in the studied population. Forty(40) percent had small fibroids below 5cm, while 35 percent had medium-sized fibroids between 5-10cm from the respondents. The remaining 25% of participants participated in large fibroids greater than 10 cm in diameter. In terms of the location of the fibroids, most were intramural and, this accounted for 55 percent of the studied cases. The remaining 70% had subserosal fibroids, while 15% of the participants had submucosal fibroids. This classification demonstrates that pregnant women with fibroids are heterogeneous and emphasizes the importance of developing individualized management plans for fibroid characteristics. Pregnancy outcomes are shown in table **Table 2**.

Table 2: Pregnancy Outcomes in Women with Fibroids

Outcome	Value (n=200)
Mode of Delivery	
- Vaginal Delivery	120 (60%)
- Cesarean Delivery	80 (40%)
Gestational Age at Delivery	37.5 ± 2.1 weeks
Birth Weight (grams)	2900 ± 500
Neonatal Complications	
- Yes	30 (15%)
- No	170 (85%)

Maternal severe adverse outcomes related to pregnancies with fibroids were observed and comprised preterm labor at 10%, placental abruption at 5%, and postpartum hemorrhage at 8%. These complications were statistically higher in women with larger fibroids than those with small and medium-sized fibroids ($p < 0.01$). These results suggest that women with bulky fibroids are likely to experience severe obstetric complications, which present other health issues. Additionally, fibroid women reported more cases of cesarean deliveries mainly due to obstruction, which is births that are complicated by fibroids since they hinder the delivery process. This trend calls for further monitoring and patient- and technique-specific management of fibroids in pregnancy to avoid complications. The specific division of rates of complications and their relationship to fibroid size is presented in Table 3.

Table 3: Complications Associated with Fibroids

Complication	Frequency (n=200)	Percentage (%)
Preterm Labor	20	10
Placental Abruption	10	5
Postpartum Hemorrhage	16	8
Obstructed Labor	12	6

Lastly, the study conclusions show that most women with uterine fibroids can have babies. However, fibroid size is strongly related to adverse fetal outcomes. A lower number of women with fibroids less than ten weeks gestation developed complications. However, equally larger fibroids are associated with increased risks of preterm labor, placental abruption, and postpartum hemorrhage. Therefore, close monitoring and specific management plans should be employed. This implies that healthcare givers must be more inclined to evaluate and manage the potential risks of fibroids in pregnant women. After careful monitoring and specific care rules are reviewed, the chance of unfavorable consequences can be minimized, thus improving the situation of both mothers and neonates. Therefore, it is necessary to conduct more studies and identify how the clinical management of pregnant women with uterine fibroids can be enhanced.

Discussion: Therefore, this study was designed to capture the fetomaternal aspect of pregnant patients with fibroids at a tertiary health facility to add to the body of knowledge. Fibroids are common in women of childbearing age and have been linked with numerous pregnancy-related issues. These findings from this present study confirm findings from previous studies that even though many women of childbearing age with fibroids may have uneventful pregnancies, complications still exist associated with these fibroids, precisely in size and site.

The analysis of demographic characteristics of the study population gave an average maternal age of 30.5 years, as it is known from previous experience that fibroids are primarily observed in women of advanced reproductive age (1). It is also paramount to note the higher use of the service by multiple women Therefore, a 60% probability of exposure may be the true representation of the risk of fibroid development in women who have conceived before (2). This trend depicts the need for close follow-up of the development of fibroid and the consequential complications that are likely to occur among women during subsequent pregnancies.

Most women in this study had intramural fibroids (55%), followed by subserosal (30%) and submucosal (15%). Regarding the distribution, this finding supports previous work by Afzal et al. (3) and Sankaran & Pillai (4), where intramural fibroids were seen to be the most prevalent in pregnant women. The size and position of the fibroids are vital in pregnancy because they may affect the contraction of the uterus and blood flow during labor and delivery (5).

Regarding pregnancy outcomes, we found that 40 % of our patients required cesarean delivery, which is much higher than the general population's cesarean rate. Factors that justified cesarean delivery included failure to progress, fetal distress, and other medical conditions in the pregnancy (6). However, It is worth highlighting a relatively high proportion of women who experienced obstructed labor, 6% of our study sample. This concurs with other empirical studies that have described a higher rate of cesarean deliveries among women with larger-sized fibroids (7). Fibroids make it difficult for the fetus to pass through the birth canal and, where large, require surgical intervention.

Furthermore, we identified an increased rate of preterm labor occurring in 10% of women in this study. This rate is consistent with other studies that have reported that fibroids could cause uterine

irritability and contractions (8). The danger is greatest concerning preterm labor, consideration for which usually translates to poor neonatal outcomes such as low birth weight and high morbidity (9). The findings also showed a higher prevalence of postoperative hemorrhage at 8%, similar to previous findings that depicted the existence of fibroids contributing to postpartum hemorrhage due to inadequate uterine tone. Such complications advance the significance of the surveillance of pregnancies affected by fibroids.

The neonates with low birth weight in our study had a mean weight of 2900gramm which is normal, but the proportion of neonates with complications at birth was 15 percent. Such complications were respiratory distress syndrome and transient tachypnea of newborns, diseases primarily associated with prematurity or complications of labor. As conducted in the literature review, fibroids may influence the. From this finding, it may cause addressing placental perfusion, resulting in fetal growth restriction (11). It will be necessary for subsequent studies to investigate the correlation between various fibroid features and some neonatal outcomes.

The importance of this research is not only in expanding knowledge in the field of fertility and fibroids but also in targeting practice. The findings suggest that antifibroid therapies should be tailored to pregnant women on an individual basis. Fibroids should be watched closely as pregnant women manage growth and the location of fibroids, anticipating difficulties during childbirth and delivery (12). There is also a need for a multidisciplinary approach to handle pregnancy with fibroids with the participation of obstetricians, maternal-fetal medicine specialists as well as neonatologists (13).
The weaknesses of this research, such as retrospective data collection and analysis, are inherent to this study since it is impossible to eliminate possible biases in collecting and analyzing data. However, the present study was conducted on a single tertiary care center population, which may influence the extendibility of the study results. To expand on these results, future studies could also be performed in different facilities involving different individuals.

CONCLUSION

This study emphasizes the need to determine fetomaternal consequences amongst pregnant women with uterine fibroid. The result indicates a relationship between fibroid size and poor pregnancy-related complications. Most patients had uneventful pregnancies. However, higher rates of cesarean section, preterm labor, and postpartum hemorrhage indicate that close monitoring and control of the pregnancy process should be in focus. The research evidence supports the proposition that healthcare consumers should implement treatment strategies at the individual level regarding fibroids and the possible dangers associated with the disease. Therefore, crisp obstetric care, inpatient obstetricians, maternal-fetal medicine specialists, and neonatologists must enhance the best results for the mother and her offspring. Future work, especially studies on large samples, populations of varying ethnicities, and with extended follow-up, should be performed to confirm these findings and define broad recommendations for the management of pregnancies with fibroids. Lastly, it falls under the more significant effort to increase knowledge on these outcomes for bettering clinical strategies and the status of both mother and infant.

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