

A Prospective Study of Maternal and Fetal Outcomes of Pregnancy with Uterine Fibroids and their Associated Complications

Preeti Pushpam¹, Amarjeet Patel², Seema³

¹Senior Resident, Department of Obstetrics and Gynaecology, Darbhanga Medical College and Hospital (DMCH), Laheriasarai, Bihar.

²Senior Resident, Department of Pediatrics, Darbhanga Medical College and Hospital (DMCH), Laheriasarai, Bihar.

³Associate Professor, Department of Obstetrics and Gynaecology, Darbhanga Medical College and Hospital (DMCH), Laheriasarai, Bihar.

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Corresponding author: Dr. Amarjeet Patel

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Abstract

Background: The most prevalent benign tumours of the female reproductive system, uterine fibroids develop from the smooth muscle cells of the uterus. It affects 20–40% of women, although pregnancy is thought to increase the rate by 0.1–3.9%. The objective is to investigate the maternal and foetal outcomes of pregnancies with fibroids and the issues that go along with them.

Methods: From August 2021 to January 2022, the current prospective study was carried out at the DMCH in Laheriasarai, Bihar, in the Department of Obstetrics and Gynaecology. There were 38 pregnant women who had fibroids that were investigated. In the study, uterine fibroid detected prenatally or antenatally by USG was taken into account in pregnant women. Women who had previously undergone caesarean sections, surgeries of any kind, uterine malformations, or chronic conditions like diabetes or hypertension were not taken into consideration for this study.

Results: The study included 38 pregnant women who had fibroid during pregnancy. The age groups with the highest percentage of patients were 26–30 years old (17; 44.74%) and 31–35 years old (10; 26.32%). 44.74 percent of patients were gravida 2–3 (17). We observed that the majority of patients had 2-3 fibroids on USG examination 18(47.37%), were subserous fibroids 26(68.42%), positioned at the fundus area 28(73.68%). In the current study, the majority of cases were delivered between weeks 38 and 40 (84.21%). Two cases were aborted (5.26%). The most frequent delivery method was a caesarean section, which was followed by vaginal delivery 7(18.42%). In addition to threatened preterm labour six times (15.79%), blood transfusion five times (13.16%), postpartum haemorrhage four times (10.53%), antepartum bleeding three times (7.89%), and threatened miscarriage twice (5.26%), patients in 60.52 percent of cases were asymptomatic throughout their pregnancies. Common problems included low APGAR score at minute four (10.53%), need for resuscitation (10.53%), need for NICU hospitalisation (13.16%), and low birth weight (5.26%). Abortion (5.26%), new-born stillbirth (2.63%), and neonatal mortality (2.63%) were the three foetal outcomes.

Conclusion: Pregnancies with fibroids are high-risk pregnancies that are more likely to result in caesarean deliveries and PPH as well as difficulties in the antepartum, intrapartum, and postpartum periods.

Keywords: Uterine Fibroids, Pregnancy Complications, Maternal Complications, Postpartum Hemorrhage.

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Introduction

Fibroids are benign smooth muscle cell tumours of the uterus, often known as leiomyomas. The exact cause of uterine fibroids is still unknown, despite the fact that they are exceedingly frequent, with an overall frequency of 40% to 60% by age 35.[1] It is not easy or simple to diagnose fibroids during pregnancy.

Physical examinations can only diagnose 42% of big fibroids (> 5 cm) and 12.5% of smaller fibroids (3-5 cm).[2] Because it is difficult to distinguish between fibroids and normal thickening of the myometrium, ultrasound's ability to identify fibroids in pregnancy is even more limited (1.4%–2.7%).[3]

Data on the connection between obstetric outcomes and uterine fibroids are inconsistent, and it is unknown how fibroids affect obstetric results. Uterine fibroids have been linked to pregnancy issues such preterm birth, premature rupture of the membranes (PROM), foetal malpresentation, placental abruption, and intrauterine foetal death, according to certain research.[4-6] In order to better understand the maternal and foetal outcomes of pregnancies with fibroids and their related problems, the current study was carried out.

Material and Methods

The current prospective hospital-based study was carried out at the Darbhanga Medical College and Hospital, Laheriasarai, Bihar, in the department of obstetrics and gynaecology. For this investigation, cases between August 2021 and January 2022 were taken into consideration. In the study, uterine

fibroid detected prenatally or antenatally by USG was taken into account in pregnant women.

Women who had previously undergone caesarean sections, surgeries of any kind, uterine malformations, or chronic conditions like diabetes or hypertension were not taken into consideration for this study.

In the case record proforma, the following information was recorded: demographic information, a complete antenatal, intrapartum, and postpartum history (maternal age, gravidity, parity, number and size of fibroids, gestational age at delivery), clinical examination findings, laboratory investigations, Ultrasonography findings (foetal assessment and change in fibroid size or any complications), and outcome.

In the prenatal era, preterm birth, malpresentation, placenta previa, placental abruption, low birth weight (LBW), mode of delivery, foetal birth weight, neonatal outcome, morbidity, and mortality related to the management of pregnancy with fibroids were all noted. Data was entered into Microsoft Excel and shown for discrete variables as numbers and percentages. Descriptive statistics were used in the statistical analysis.

Results

The study included 38 pregnant women who had fibroid during pregnancy. The age groups with the highest percentage of patients were 26–30 years old (17; 44.74%) and 31–35 years old (10; 26.32%). 44.74 percent of patients were gravida 2–3 (17).

Table 1: Demographic Data of 76 pregnant women with Fibroid during pregnancy

Demographic characters	No. of cases	Percentage
Age in years		
19-25	3	10.53%
26-30	17	44.74%
31-35	10	26.32%
36-40	7	18.42%
≥41	1	2.63%
Gravida status		
Primigravida	12	31.58%
Gravida 2-3	17	44.74%
Gravida ≥4	9	23.68%

We observed that the majority of patients (68.42%) had subserous fibroids. Located in the fundus region 28 (73.68%), the USG examination on 18 (47.37%) revealed 2-3 fibroids.

Table 2: Features of uterine Fibroids

Features of uterine fibroids	No. of cases	Percentage
Type of fibroid		
Intramural	4	10.53%
Submucous	8	21.05%
Subserous	26	38.42%
Location of fibroid		
Cervix	1	2.63%
Fundus	28	73.68%
Tubes	1	2.63%
Pedunculated	8	21.05%
No. of Fibroids		
1	12	31.58%
2-3	18	47.37%
>3	8	21.05%

In the current study, the majority of cases were delivered between weeks 38 to 40 (84.21%). Two cases were aborted (5.26%). The majority of births (26, 68.42%) were by Caesarean. Vaginal delivery was the most common mode of delivery 7(18.42%). In 2 cases (5.26%), hysterotomies were necessary; in one case, suction and evacuation were performed. A caesarean section was frequently indicated by PROM with a low Bishop score of 6(15.79%), placenta previa 5(13.16%), uterine inertia 5(13.16%), and foetal discomfort 4(10.53%).

Table 3: Obstetric outcome

Pregnancy outcome	No. of cases	Percentage
Gestational age at termination of pregnancy (in weeks)		
≤28	2	5.26%
28-32	1	2.63%
33-37	2	5.26%
38-40	32	84.21%
≥40	1	2.63%

Mode of delivery		
Caesarean section	26	68.42%
Normal vaginal delivery	7	18.42%
Outlet forceps	1	2.63%
Assisted Breech delivery	1	2.63%
Hysterectomy	2	5.26%
Suction and evacuation	1	2.63%
Indication for LSCS (n=26)		
PROM with poor Bishop score	6	15.79%
Placenta previa	5	13.16%
Uterine inertia	5	13.16%
Fetal distress	4	10.53%
Non progressive labor	3	7.89%
Malpresentation	3	7.89%

In addition to threatened preterm labour 6(15.79%), blood transfusion 5 (13.16%), postpartum haemorrhage 4(10.53%), antepartum bleeding 3(7.89%), and threatened miscarriage 2(5.26%), patients in 60.52 percent of cases were asymptomatic throughout their pregnancies.

Table 4: Complications during pregnancy

Complications	No. of cases	Percentage
Threatened preterm labour	6	15.79%
Blood transfusion	5	13.16%
Postpartum hemorrhage	4	10.53%
Antepartum bleeding	3	7.89%
Threatened miscarriage	2	5.26%
Abdominal pain needing admission	2	5.26%
Laparotomy due to pain	1	2.63%

Common problems included low APGAR Score at 5 minutes 4(10.53%), required resuscitation 4(10.53%), required NICU hospitalisation 5(13.16%), and low birth weight 2(5.26%). The results of the pregnancy were 2 abortions (5.26%), 1 stillbirth (fresh), and 1 neonatal death (2.63%).

Table 5: Fetal outcome

Fetal Outcome	No. of cases	Percentage
Abortion	2	5.26%
Low birth weight	2	5.26%
Low APGAR Score at 5 min	4	10.53%
Required resuscitation	4	10.53%
Required NICU admission	5	13.16%
Fresh still born	1	2.63%
Neonatal death	1	2.63%

Discussion

The delay in childbearing, which is increasingly common currently due to many circumstances, would certainly result in a rise in the frequency of uterine fibroids in

pregnancy throughout the world. Leiomyoma size and location are the two key variables that affect morbidity during pregnancy.[7] In particular, miscarriage, preterm labour,

placental abruption, and post-partum haemorrhage are all enhanced if the placenta is next to or placed over a leiomyoma.

This is due to the proximity of myomas to the placental site. On the other hand, a cervix or lower uterine segment tumour may prevent labour from starting. Breech presentations in particular are thought to be common, and the size and position of the leiomyoma may be able to predict how high the risk will be.[8,9]

It has been suggested that uterine rupture during pregnancy may be due to the lack of multilayer closure in cases of deep intramural leiomyoma or to the careless use of electrosurgical energy during myomectomy.[10,11]

Pullemalla SS[12] studied 40 patients with fibroid-related pregnancies aged 21 to 45; 15 patients experienced threatened miscarriage, 12 experienced preterm labour, two experienced antepartum bleeding, three required admission for abdominal pain, two underwent laparotomies for pain, one experienced postpartum haemorrhage, and only one required a blood transfusion.

There were 2 patients with spontaneous abortion, 15 with premature birth, 37 with delivery between 37 and 41 weeks, 5 with vaginal delivery, and 44 with caesarean section. 15 individuals with big fibroids (>5 cm) complicating pregnancies received caesarean births in a prospective study by Dasgupta A *et al.*[13] 87% of the women had a history of infertility, and 53% of them were above the age of 34. Premature births were 46%.

13.33% of women needed preventive bilateral internal iliac artery ligation and myomectomy to deliver the baby but avoided caesarean hysterectomies because their largest fibroids, measuring up to 16 and 24 cm, respectively. 60% of pregnant mothers suffered birth defects. 87% required blood transfusions, and 60% suffered from

postpartum haemorrhage. Cervical fibroids with a posterior location bled more than those with an anterior location.

Fifty percent of the women with retained uteri had puerperal pyrexia. Afzal A *et al.* study with 85 individuals had an average age of 32.56 ± 4.3 years, a primigravida rate of 27.05%, and a multigravida rate of 72.94%. 75.29% of pregnancies were spontaneous, while 24.70% used assisted reproductive technology. Premature birth occurred in 18.7% of cases, spontaneous abortion in 11.76%, and full-term delivery in 81.3% of cases.

In 74.67% of cases, a Caesarean section was done, and in 25.33% of cases, a normal vaginal delivery was done. Preterm labour occurred in 18.7% of cases, 12.9% of cases, placenta previa caused antepartum haemorrhage in 5.3%, and postpartum haemorrhage occurred in 11 cases (14.67%).

Contrary to sub serosal fibroids and single fibroids, intramural location and multiple fibroids were linked to an increased risk of caesarian section. In a multicenter study by Zhao R *et al.*[15], 3,012 (2.68%) of the 112,403 women evaluated had at least 1 fibroid. Uterine fibroids were found to be substantially linked with caesarean birth, breech presentation, and postpartum haemorrhage in both univariate and multivariate analyses.

The kind of delivery was significantly influenced by the size and location of the uterine fibroids. The rates of PPH increased significantly ($P < 0.001$) with the size of the uterine fibroid. Additionally, the risk of PPH is statistically affected by the location of the fibroid (intramural, submucosal, or subserosal) (5.6% [subserosal] vs. 4.7% [submucosal] vs. 8.6% [intramural]). The effects of many or big (5 cm in diameter) fibroids that were sonographically discovered on obstetric outcomes were investigated by Ciavattini A *et al.*[16]. A total

of 219 women with uterine fibroids participated in the study.

Those with numerous fibroids (n=34) were found to have a considerably greater rate of preterm delivery, caesarean section, and breech presentation when compared to those without fibroids. Preterm birth and PPRM rates were increased in women (n = 48) with big fibroids. According to their research, big fibroids are linked to a higher risk of PPRM, whereas many fibroids are linked to a significantly increased risk of premature birth and caesarean delivery. Pregnancy-related fibroids are often treated conservatively.

Myomectomy while pregnant is debatable. In carefully chosen patients, surgical therapy of uterine leiomyomas during pregnancy may be accomplished successfully, improving pregnancy outcomes.

Conclusion

Even though the majority of pregnancies with fibroids are asymptomatic the entire time, these pregnancies nonetheless have a high risk of difficulties throughout the antepartum, intrapartum, and postpartum periods. They are also more likely to result in caesarean deliveries and PPH.

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