

## Obstetric Outcomes of Pregnancy with Uterine Fibroids

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### Abstract

Fibroids are the most common benign tumour of the uterus. Prevalence of fibroid during pregnancy is increasing as more and more women delay childbearing to later in life and incidence of uterine fibroid increases with age, few rare, but extremely difficult complications of fibroid include: abortion, APH, dystocia, obstructed labor, PPH, sepsis, sub evolution of uterus. Myomectomy should not be performed in pregnant women because of the increased risk of complications. Pregnancy with fibroid increases the risk of obstetric complications so it is important to have regular antenatal checkup during an antenatal period for proper management of fibroid.

**Keywords:** Fibroid; Pregnancy; Reproductive outcome; Abortion.

## INTRODUCTION

Leiomyoma's are the most common benign tumour of the uterus. Its prevalence is found in almost one third of women in the reproductive age group. Diagnosis of leiomyoma has been increased in the recent times primarily due to the increasing use and availability of ultrasound imaging.

Leiomyoma do not predominantly produce any symptoms in a majority of women, hence mere detection doesn't prove to be a cause for any treatment. However, a hormonal condition such as pregnancy can complicate an asymptomatic uterine fibroid.<sup>1</sup>

There are various factors that decide the effect of the uterine fibroid in pregnancy - such as the size of the fibroid, type of the fibroid- whether it is pedunculated or sessile, its proximity to the placental tissue, vascularity and location of the fibroid.

A physical examination can diagnose 42% of big fibroids (> 5 cm) and 12.5% of smaller fibroids (3-5 cm). The detection of fibroids during pregnancy with ultrasound is even less common (1.4%-2.7%), mostly because it is challenging to distinguish fibroids from normal myometrial thickness.<sup>2</sup>

*Various conditions associated with fibroid in pregnancy*

An extremely small fibroid, which has gone undetected for a long time can suddenly be detected

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during pregnancy due to the increased number of ultrasound screenings a pregnant woman goes through during her routine ante natal checkups. Due to the high estrogen and progesterone state in pregnancy, the fibroid can show an increase in its size. Other factors causing size Inc can be edema and high vascularity of the myometrium due to pregnancy.

A prospective study done by Lee H.J *et al.* conducted on 36 pregnant women with a single fibroid discovered during routine first trimester sonography screening and examined by sonography at 2 to 4 week intervals found that 69% of the women had no increase in fibroid volume throughout pregnancy.

The biggest increase in volume was seen in the 31% of women whose volume was found to have increased before the tenth week of pregnancy. Fibroid growth and starting volume did not correlate during the gestational periods. Four weeks following birth, a decrease in fibroid size relative to baseline values was seen.

Few rare, but extremely difficult complications of a fibroid include:

- abortions
- ante partum hemorrhage
- dystocia
- obstruction of labor
- postpartum hemorrhage
- Sub-involution of uterus
- Sepsis

These complications are seen with myomas more than 3 cm in size. Multiple myomas can also be associated with fetal malposition such as breech, transverse lie. Apart from these complications, red degeneration of the fibroid is a fairly common complication. It includes flaring up of the fibroid, producing symptoms of acute pain and fever in pregnancy or puerperal period. The patient shows leukocytosis on further investigations and the condition is treated conservatively with a wait and watch plan of action with use of NSAIDS to deal with the symptoms of the red degeneration.<sup>3</sup>

According to a study conducted by Lev Toaff *et al.*, seven out of 10 women had severe abdominal pain requiring hospitalization, consistent with clinical symptoms of degeneration. Just 11.7% of the 103 other women reported having similar stomach pain, and no sonography changes were found in them. A small study of women with fibroid-associated pain during pregnancy found

use of ibuprofen shortened the hospital stay and decreased the rate of readmission.<sup>4</sup> A sub-mucosal fibroid may present as post natal sepsis for which a course of antibiotics may be used.

#### ***Influence of Fibroid on pregnancy***

Very rarely does the presence of a fibroid during pregnancy lead to an unfavorable outcomes. Large populations of expectant mothers were studied at the same facility using normal second trimester sonography, as well as follow-up treatment and delivery. In a study of 12,600 pregnant women conducted by Almetiej *et al.* the outcomes of 167 women with fibroids were no different with regard to the incidence of preterm delivery, premature rupture of membranes, fetal growth restriction, placenta previa, placental abruption, postpartum hemorrhage, or retained placenta. Cesarean section was more common among women with fibroids (23% vs. 12%).

Another study that included 401 women with fibroids and 15,104 pregnancies reported no higher risk of chorioamnionitis, surgical vaginal delivery, or early rupture of the membranes or endometritis. However, there were increased risks of preterm delivery (19.2% Vs. 12.7%), placenta Previa (3.5% vs.1.8%). and postpartum hemorrhage (8.3% vs. 2.9%). Cesarean section was again more common (49.1% vs. 21.4%).<sup>5</sup>

Few rate but extremely difficult complications of fibroid include

#### **Retro placental fibroid**

A small retrospective study done by L.M. Coutinho *et al.* found an association between retro placental fibroids and placental abruption; 8 of 14 women with retro-placental fibroids developed abruption compared with 2 of 79 women without retro placental fibroids.<sup>6</sup>

#### **Fertility concerns and fibroids**

The relationship between uterine fibroids and infertility is either casual or as it is often difficult to ascertain the independent contribution of fibroids to infertility, since uterine fibroids are also found commonly in fertile and pregnant women. Uterine fibroids cause infertility by distorting the uterine cavity and hence distorting uterine contraction leading to failure in sperm ascent. Another important cause can be fibroids causing congestion in the endometrial wall making it hostile for implantation, occlusion of the cornua due to stretching of the fallopian tubes over a large fibroid.

Such infertility cases are most commonly seen with a submucosa fibroid, or a combination of pelvic inflammatory disease associated with a fibroid.

## DISCUSSION

### *Early trimester complications associated with fibroids*

Uterine fibroids, are associated with increased risk of early pregnancy loss. Fibroids usually associated with spontaneous abortions are located on the corpus. Possible reasons associated can be existing uterine fibroid include increase in uterine irritability and contractility, the compressive effect of fibroids, and the compromise of blood supply to the developing placenta and fetus. When a woman miscarries, the caretaker bears an additional responsibility if the miscarriage is incomplete or missed. This is particularly true if there is a large cervical or lower uterine segment fibroid nodule that could obstruct the uterus's exit from the uterus. This further complicates into a possible pyometra due to retained products of conception and incomplete evacuation due to obstruction caused by the fibroid.

### *Late trimester complications associated with fibroid*

Research has indicated that, in comparison to women without uterine fibroids, women with uterine fibroids in their late pregnancy are often more likely to experience premature labor and delivery. The dangers of premature labor and delivery are known to increase the use of tocolytic medicines to suppress preterm labor and the use of prenatal corticosteroids to promote fetal lung maturity. If the pregnancy is shorter than 34 weeks, treatments such amniocentesis for fetal lung maturity tests may need to be performed if facilities are available before the baby is delivered. In environments with limited resources, the issues of the baby's prematurity and the necessity of stay in a neonatal critical care unit place additional strain on the system.

When uterine fibroids coexist during pregnancy, placental problems may also develop. Research has indicated that pregnant women with uterine fibroids are three times more likely to experience abruption placentae, particularly if the nodules are sub mucous, retro placental, or have a volume larger than 200 cm<sup>3</sup>. Pregnant women with uterine fibroids have a twofold increased incidence of placenta Previa. Patients with placenta Previa should

be aware of the additional risk of pathological adhesion of the placenta, particularly if they have had a previous myomectomy or cesarean section, as these procedures are independent risk factors for placenta Previa. Placenta Previa raises the likelihood of surgical intervention, which further strains limited resources in low-resource.

Fetal growth appears not to be restricted by uterine fibroids during pregnancy; nevertheless, big fibroids resulting from compression may cause fetal malformations such as limb reduction defects, dolichocephaly and torticollis.

**Effect of Fibroid on ART** - Fibroids cause hindrance in gamete transfer, blockage of fallopian tubes and most importantly compromise endometrial receptivity. Location of fibroids plays an important role in success of ART. When compared to other women receiving ART without fibroids, women with submucosal fibroids that deform the uterine cavity have a relative risk of 0.3 for pregnancy and 0.28 for implantation following ART.<sup>7</sup>

### *Trial of labor post myomectomy*

The risks of surgery, anesthesia, postoperative adhesions, and an increased risk of a subsequent cesarean delivery should all be considered before deciding to do a myomectomy in order to avoid complications during pregnancy.

However rare but one complication of trial of labour post myomectomy is uterine rupture. Trial of labor after myomectomy is associated with a 0.47% risk of uterine rupture. Eleven studies that included 1,034 pregnancies and 756 viable ( $\geq 24$  weeks) deliveries found 7 uterine ruptures after myomectomy (0.93%); the rate was 0.47% (2/426) in women undergoing trial of labor after myomectomy and 1.52% (5/330) in women before the onset of labor. Five of the seven uterine ruptures occurred before 36 weeks. Size, number, and positions of removed fibroids or the type of myometrial closure was not available to determine specific risk factors for rupture. The 0.47% rate of rupture for women with a trial of labor after myomectomy is similar to the 0.5 percent risk of rupture for trial of labor after previous cesarean delivery.

During a laparoscopic myomectomy, different tools, devices, and energy sources may be used than during a laparotomy. Ninety-nine percent of the instances of uterine rupture during pregnancy after laparoscopic myomectomy used surgical techniques different from those used for abdominal myomectomy, according to a research of 19

published and unpublished cases. Seven patients had no uterine defect correction; three had a single suture repair; four had a single layer suture repair; and one instance just had the serosa closed. A multilayered closure was used in just 3 situations. Hemostasis was achieved using monopolar or bipolar energy in 16 of the cases.

Time-tested techniques developed for abdominal myomectomy, such as multilayered closure of myometrium (for other than superficial uterine defects) and limited use of electro surgery for hemostasis, seem prudent for surgeons to follow. However, definitive conclusions and recommendations regarding appropriate technique for laparoscopic myomectomy must wait for proper study of myometrial wound healing. Certain wound-healing traits may predispose to uterine rupture even in the case of perfect surgical technique.

Lower uterine segment may be associated with an increased likelihood of the following complications:

- Fetal malpresentation (breech presentation)
- Cesarean section, cesarean hysterectomy
- Postpartum hemorrhage

#### *Change in the mode of delivery*

Pregnant women with fibroids are significantly more likely to develop preterm labor than women without fibroids. Multiple fibroids and fibroids contacting the placenta appear to be independent risk factors for preterm labor. In contrast, fibroids do not appear to be a risk factor for preterm premature rupture of membranes (PPROM).

Fetal growth restriction and fetal anomalies; Fetal growth does not seem to be affected by the presence of uterine fibroids, Although cumulative data and a population based study suggested that women with fibroids are at slightly increased risk of delivering a growth restricted infant, these results were not adjusted for maternal age or gestational age. Rarely. Large fibroids can compress and distort the intrauterine wall leading to fetal deformities.

The increased risk of malpresentation can lead to complications such as labor dystocia. Hence, changing the mode of delivery to a cesarean section.

In conclusion, Pregnancy with uterine fibroids increases the incidence of obstetric complications in pregnant patients, so it is important to have regular checkup during the antenatal period for proper management.<sup>8</sup>

There is uncertainty regarding the underlying underpinnings of the link between fibroids and unfavorable outcomes. One possible explanation could be the physical hindrance caused by the fibroids, which reduces uterine distension. Additionally, it has been discovered that women with fibroids have decreased oxytocinase activity. This means that increased levels of oxytocin might result in preterm contractions. Sub-mucous fibroids that have broken down may cause persistent infection or inflammation that produces cytokines.

#### CONCLUSION

A normal pregnancy might become a high-risk pregnancy due to uterine fibroids. A uterine pregnancy Pregnancy with fibroids has been linked to PPH in the postpartum phase, PROM in term gestation, and abortion in early pregnancy. Fibroids are frequently asymptomatic and an incidental finding. There is also increased risk of malpresentation. The rate of Caesarean section is high in pregnant patients with uterine fibroid.

Pregnant women with large fibroids should get close monitoring and detailed counseling of the risks associated with adverse obstetric outcomes. These findings allow for the formulation of specific recommendations about the benefits of myomectomy prior to pregnancy in these women.

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