

Original Article

**Effects of uterine leiomyoma
on the course of pregnancy and labour**

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ABSTRACT

Objective: To evaluate the effects of uterine leiomyoma on the course of pregnancy, mode of delivery and frequency of complications during pregnancy and labour.

Methods: The study was conducted at Department of Obstetric and Gynecology, Shifa International Hospital, Islamabad. Fifty booked antenatal patients having uterine leiomyoma were studied during a period of two years from July 2005 to June 2007.

Results: Out of 50 patients, 31 (62 %) had no significant change in the size of myoma throughout gestation. Eleven (22 %) had abortion, seven (14 %) developed premature rupture of membranes and five (10 %) went into preterm labour. Red degeneration occurred in two patients (4 %). Abnormal presentation occurred in six patients (12 %). Fifteen patients (30 %) remained asymptomatic throughout pregnancy. Out of 50 patients, 37 patients (74 %) remained asymptomatic during labour. Twenty one (53.8 %) were delivered vaginally and caesarean section had to be performed in 18 (46.1 %) patients.

Conclusion: Uterine leiomyoma may adversely affect the course of pregnancy and labour depending on their location and size. The changes in size during pregnancy have no significant effect on the course of pregnancy. (Rawal Med J 2009;34:79-81).

Key Words: Uterine leiomyoma, abortion, premature rupture of membranes, preterm labour, complications during labour, operative delivery.

TNTRODUCTION

At least 20% of all women and 40% of women over the age of 40 years have uterine leiomyomas.¹ They distort the overlying endometrium and can become extruded or pedunculated (fibroid polyp) in the endometrial canal.^{1,2} Most tumors occur in the fundus and body of the uterus, and only 3% occur in the cervix.³ Both oestrogen and progesterin receptors are present in leiomyoma. Elevated oestrogen level may cause its enlargement during first trimester of pregnancy, thus 15-30% myomas may enlarge during pregnancy and shrink during puerperium.⁴ Generally, pregnancies accompanied by myomas proceed without serious complications, but at times, they may adversely affect the course of pregnancy.^{4,5} Leiomyomas, especially located in the cavity of uterus, may increase the chance of miscarriage, premature prelabour rupture of membranes (PPROM) and preterm labour.⁵ During first and second trimester, they may cause red degeneration leading to severe lower abdominal pain.⁶ They also increase the risk of malpresentation and intrauterine growth restriction (IUGR), abnormal implantation of placenta and may obstruct the birth canal and increases the caesarean section rate.⁷ Women having leiomyomas have caesarean rate of 39%, as compared with 17% for the general population.⁸ This descriptive study was performed to asses the outcome and complications of pregnancy in women with uterine leiomyoma.

PATIENTS AND METHODS

The study was conducted at department of obstetric and gynecology in Shifa International Hospital, Islamabad, after taking approval from Ethic Committee and Institutional Board Review during a period of two years from July 2005 to June 2007. Fifty booked antenatal patients having uterine leiomyoma were selected. They were followed during their antenatal periods, clinically and ultrasonically. Pregnant women having myoma less than 3cm in size were excluded. Complications that occurred during each trimester were noted and their impact on pregnancy outcome was observed. Changes in size were analyzed on the basis of trimesters. The number and locations of myomas were observed with their impact on the pregnancy outcome. Maternal age, parity, any complication during pregnancy, labour or delivery, size of myoma, mode of delivery and indications of cesarean section were noted.

Table 1. Size Changes of Myoma during Pregnancy (N=50).

Size of myoma	No of patients	% age
Unchanged	31	62%
Increased	12	24%
Decreased	07	14%

RESULTS

The age ranged from 20 to 40 years (mean 33 years). Out of 50 patients, 31 patients (62 %) had no significant change in the size of the myoma throughout the gestation. In 12 patients (24 %), the size increased during 1st and 2nd trimester and remained unchanged during 3rd trimester. In seven patients (14 %) the size remained unchanged in 1st trimester and slightly decreased in 2nd and 3rd trimester (table1).

Table 2. Complications during pregnancy (n=50).

Complications	Number of patients	% age
None	15	30 %
Abortion	11	22 %
PTL	05	10 %
PROM	07	14 %
Malpresentation	02	04 %
Red degeneration	06	12 %
Placenta previa	02	04 %
IUGR	02	04 %

PTL: Preterm labour, PROM: Prelabour rupture of membranes,
IUGR: Intrauterine growth restriction.

Out of 50 patients, 11 (22%) had abortion, seven (14%) had PROM and 5 patients (10 %) had preterm labour, while 15 (30%) remained asymptomatic throughout pregnancy (table 2).

Table 3. Complications during Labour (N=50).

Complications	Number of patients	% age
None	37	74%
Obstructed labour	01	02 %
PPH	07	14 %
Adherent placenta	05	10 %
Dystocia	0	0 %
Uterine inversion	0	0 %

PPH: Postpartum hemorrhage.

Out of 50 patients, 37 (74%) remained asymptomatic during labour. Primary Post Partum Hemorrhage occurred in seven patients (14 %) and placenta was adherent in five (10 %) of them (table-3). Twenty one patients (53.8 %) delivered vaginally and C section was performed in 18 patients (46.1%)

DISCUSSION

The mean maternal age of our patients came out to be 33 years which is similar to international studies showing their occurrence in the 3rd and 4th decades of life.⁹ About 50 % of our patients were primigravidas and several had history of previous one or more miscarriages. The association of fibroid with nulliparity has been reported¹⁰ but may occur in multiparous female with the same frequency.¹¹ In the present study, 62 % of myomas did not change significantly in size, as has been shown previously.¹² Small myomas tend to increase in size during the first and second trimesters and decrease in size during the third trimester.¹³ On the other hand, large myomas tend to increase in size in the first trimester and decrease in size during the second and the third trimesters,¹⁴ as Myoma cells are more responsive to the increased concentrations of oestrogen present during pregnancy.¹⁵ Progesterone on the other hand may inhibit the growth of myoma and even induce degenerative changes.¹⁶

During antenatal period, complications occurred in 70% patients and 30% patients remained asymptomatic, as reported in other studies.¹⁷ Our study also confirmed the finding of prior studies demonstrating that spontaneous pregnancy loss rates were higher in women with fibroids.¹⁸ Recurrent pregnancy loss may be caused by increased uterine irritability, either because of rapid growth of fibroid or its degeneration thus interfering with the normal pregnancy and its maintenance and compressive effect of the myoma may alter the endometrium directly and disrupt the normal growth process of the conceptus mechanically.³² The compressed endometrial vascular supply affects the fetus adversely resulting in abortion.¹⁹ In our study, we also found increased risk of preterm delivery and PROM. Myoma may distort the shape of the uterine cavity which may

account for higher rates of preterm birth and malpresentation.²⁰ As pregnancy advances, myometrium having fibroid are over stretched and this mechanism can initiate labour and thus result in increased rate of preterm labour.²¹

We observed red degeneration and IUGR in 4% of patients as has been reported by others.²¹ A three fold increase of breech presentation and increased rate of C-section in our study is same as shown earlier.²² Cesarean myomectomy should be resisted unless the fibroid was unavoidably in the line of incision, as uncontrollable hemorrhage and need of hysterectomy may occur. In our study, no cesarean hysterectomy had to be performed. In conclusion, most common complication of uterine leiomyoma during pregnancy was abortion followed by PPROM and preterm labour. The changes in size during pregnancy had no significant effect on the course of pregnancy. Myomas can result in complications during labour and increases the C-section rate, mainly due to malpresentation.

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