

RESEARCH

Outcome of pregnancy in fibromyoma: An observational study

Gargi Sharma¹, KK Das², AK Bhattacharyya³

¹Post Graduate Student, Department of Obstetrics and Gynaecology, Gauhati Medical College, Guwahati, Assam. ²Associate Professor, Department of Obstetrics and Gynaecology, Gauhati Medical College, Guwahati, Assam. ³Assistant Professor, Department of Obstetrics and Gynaecology, Gauhati Medical College, Guwahati, Assam.

Correspondence: Gargi Sharma, Post Graduate Student, Department of Obstetrics and Gynaecology, Gauhati Medical College, Guwahati, Assam. Email- aksharma2013.aks@gmail.com

ABSTRACT

Objective: The aim our study is to follow up singleton pregnancies with fibromyoma and look for complications and factors responsible for adverse pregnancy outcomes. **Methodology:** An observational study was performed on 100 women with singleton pregnancies attending the Antenatal Out Patient Department (ANOPD) of Gauhati Medical College Hospital (GMCH) diagnosed with uterine fibromyoma over a period of one year. The patients were followed up for various pregnancy outcomes. **Results:** Most of the patients were of the age group 26-30 years (46%) and 62% patients were primigravida. 36% patients had normal vaginal delivery and 56% underwent lower segment caesarian section (LSCS). Submucous fibromyoma were found to be associated with spontaneous abortion (8%, $p=0.0001$). Malpresentation (14%, $p=0.0345$), preterm delivery (20%, $p=0.0051$) and premature rupture of membrane (PROM)/preterm premature rupture of membrane (PPROM) (14%, $p=0.0345$) were found to be significantly associated with large fibromyoma. Postpartum hemorrhage (PPH) was found to be associated with multiple fibromyoma (8%, $p=0.0213$). Perinatal mortality rate was 32.96 per 1000 live births. **Conclusion:** Patients and health care providers both should be made aware of the association of fibromyoma with adverse pregnancy outcomes like spontaneous abortion, bleeding complications and preterm labour. Elective caesarean section is not necessary unless there is clear obstetrical indication for the same. Neonatal outcomes are not disappointing from our study.

Keywords: Pregnancy outcome, malpresentation, fibromyoma, preterm birth, spontaneous abortion.

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Fibromyomas or leiomyomas of uterus are benign smooth muscle tumors found commonly in women for reproductive age group. The incidence quoted for non-pregnant female population may not be an accurate reflection because fibromyomas remain undiagnosed in about 50% of asymptomatic women until they

undergo routine ultrasound imaging, but is estimated to be around 3-10% in reproductive age group women [1-6]. Of the 64,000 women with complete obstetric follow up at a single US university institution, fibromyomas were identified in more than 2000 (3.2%) at routine second trimester ultrasound examination.

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Approximately 20-50% suffers from symptoms generated by fibromyomas at some stage of their lives. In pregnancy there is 10-40% incidence of obstetrical complications [7], with a hospital admission rate of 1 in 50 pregnant women [8, 9].

It is composed essentially of smooth muscle tissue, although there is a variable amount of fibrous tissue as well. The tissue culture work of Miller and Ludovici [10] suggested an origin from smooth muscle cells. The studies of Townsend and associates suggest a unicellular origin for fibromyomas [11].

Etiologies of uterine fibromyomas are unknown but several predisposing factors have been identified including age (late reproductive years), African-American ethnicity, nulliparity, obesity and genetics [12, 13].

The topic is more relevant than ever before in current obstetric practice due to changes in the patient demography- many women are delaying childbearing, obesity is on the rise, newer treatment modalities are employed and many patients are falling pregnant after such treatments for fibromyomas, increasing expertise in ultrasonography to detect fibromyomas of smaller size and increasing number of patients attending outpatient department for prenatal and early antenatal check up leading to more frequent detection of fibromyomas.

Even though fibromyomas are the most common tumors in women of reproductive age group, very few hospitals have institutional protocols or guidelines for the management of fibromyomas in pregnancy.

The present study is done with the aim to help understanding the course of pregnancies with fibromyomas and the complications associated by following-up singleton pregnancies with uterine fibromyoma until their delivery and estimating the incidence of adverse pregnancy outcome in these pregnancies.

Materials and methods

The present study entitled "Outcome of pregnancy in fibromyoma" was carried out in the Department of Obstetrics and Gynecology, Gauhati Medical College and Hospital (GMCH), Guwahati, for a period of one year from 1st June 2012 to 31st May 2014.

Singleton pregnancies at any trimester attending OPD (Out Patient Department) and labour room of Dept of Obs & Gynae, GMCH noted to have uterine fibromyoma sonographically or clinically or during caesarean section were included in the study. Singleton pregnancies with fibromyoma having medical complications like diabetes mellitus, hypertension, and renal disease, history of previous surgery like caesarean section, myomectomy, hysterotomy were excluded from the study. A total of 100 patients fulfilling the inclusion criteria were included in the study.

The patients were followed up for various outcomes like spontaneous abortion, preterm labour, PROM, prolonged labour, rate of caesarean section, third stage complications, perinatal mortality and morbidity, etc.

Serial ultrasounds, one in each trimester were preferably collected from the patients with fibromyomas uterus to see if there was any change in the size of the fibromyomas. The following fibromyomas characteristics were looked for in the last ultrasound examination before delivery: - location in relation to the presenting fetal part (above or below it), location in relation to the placenta (retroplacental or not), number of fibromyomas, size of the largest fibromyomas and the change in size between the first and the last scan.

The clinical management of labour for women with fibromyomas did not differ from that of the general population. Partographic analysis of labour was done in active labour.

Active management of the third stage of labour was performed in all cases including in women who had delivered by caesarean section and incorporated three main interventions:-

1. Intramuscular administration of uterotonic agent (Inj oxytocin 10U i.m.) after delivery of the baby
2. Early cord clamping and cutting
3. Controlled cord traction while awaiting for spontaneous placental separation and delivery

Blood loss at delivery was quantified with the use of graduated collection bags at vaginal delivery, and using suction bottles and weighed surgical pads at caesarean delivery. Severe

postpartum hemorrhage was defined as blood loss ≥ 1000 ml.

The data was entered in an excel sheet and data analysis was performed using INSTAT3.

Results and Observations

Most of the patients were in the age group of 26-30 years (46%) and minimum numbers of patients were found in the age group of 36-40 years (6%) in the present study. 62% of the patients were primigravida. 56% of the patients had intramural, 24% subserosal and 12% had multiple fibromyoma. 80% of the patients had fibromyoma of ≥ 5 cm.

Size of fib-romyoma	>5 cm (n=80)	<5 cm (n=20)
Spontaneo-us abortion	8	0
Red deg-eneration	11	0
Malpres-entation	20	0
Preterm labour	20	0
PROM/PPROM	14	0
Placenta praevia	4	0
PPH	8	0
Retained placenta	1	0
Vaginal delivery	30	6
Caesarian section	42	16
Mean birth weight	2.48kg	2.54kg

The table 1 shows outcome of pregnancies in patients with fibromyomas >5 cm and <5 cm. 8 patients had spontaneous abortion during the study, all at second trimester. All the patients had fibromyoma of ≥ 5 cm in size, though the association of spontaneous abortion and size of fibromyoma was not found to be significant ($p=0.3518$). But a significant association was seen between fibromyomas causing cavity distortion and spontaneous abortion ($p=0.0001$). 14 were found to have malpresentation, 10 with breech and 4 with transverse lie. There was significant association between presence of large fibromyoma (≥ 5 cm) and incidence of malpresentation ($p=0.0345$).

All the patients with red degeneration and pain abdomen were managed conservatively with nonsteroidal anti inflammatory drugs (NSAIDS), bed rest and sedatives except for one patient with

Indications for LSCS	No of cases	percentage
Fetal distress	13	23.21%
PROM/PPROM	12	21.42%
Prolonged labour	6	10.71%
Malpresentation	6	10.71%
Elective	8	14.28%
APH	4	7.14%
Oligohydramnios, IUGR	4	7.14%
Cord prolapsed	1	1.78%
Loss of fetal movement	2	3.57%
Total	56	100%

2 large pedunculated subserosal fibromyoma who had to undergo myomectomy (suspecting torsion of the fibromyoma) at 17 weeks of gestation as the symptoms were not responding to conservative management.

The pregnancy then continued till term and the patient delivered by Caesarean section at 38wks. 20 patients delivered preterm (<37 wks) and the risk of preterm delivery was significantly associated with presence of large fibromyoma (≥ 5 cm), i.e. $p=0.0051$. No association was found with type of fibromyoma ($p=0.1051$) and location of fibromyoma ($p=0.1487$).

We had 14 patients who were diagnosed to have premature rupture of membranes/ preterm premature rupture of membranes (PROM/PPROM) and all of them had a fibromyoma of size ≥ 5 cm. There was found to be strong association between presence of large fibromyoma (≥ 5 cm) and incidence of PROM/PPROM ($p=0.0345$).

There were 4 cases of placenta praevia and no increased risk was seen with the presence of large fibromyoma ($p=0.5731$). 36% of the patients delivered vaginally, 4 of them required instrumental delivery. 56% of the patients had LSCS (Lower Segment Caesarean Section), the most common indication being fetal distress followed by PROM/PPROM. The various indications for LSCS are shown in table 2.

No increased risk of LSCS was associated with large fibromyoma ($p=0.4408$). One patient underwent Caesarean myomectomy as the fibromyoma was in the line of incision.

Post Partum Hemorrhage (PPH) was noticed in 8 cases. Incidence of PPH was found to be significantly associated with the presence of

Low Birth Weight	40
Low Birth Weight at Term	22
Low Birth Weight Preterm	18
Average	51
Macrosomic	1
Abortion	8
Macerated Still Birth	1
Fresh Still Birth	0
Congenital anomaly	1
Low APGAR Score	3
Neonatal Deaths	2

multiple fibromyoma ($p=0.0213$) but no association was seen with large fibromyoma ($p=0.1932$). Only one case of retained placenta was seen with 14×11 cm of large retroplacental intramural fibromyoma with subserosal extension. The placenta was removed manually under general anesthesia. No maternal mortality has been observed in our study.

The mean birth weight of newborns was 2.515 kg. Table 3 shows the neonatal outcome in our study. Hence, in our study 40 out of 92 newborns were low birth weight and 22 of those were born at term. 51 babies were of average weight, 1 was macrosomic (>3.5 kg). Out of the 3 babies with low Apgar score one baby had congenital anomaly (omphalocele, weighing 2.5kg), one was preterm very low birth weight (VLBW) and one had LSCS due to cord prolapse (3.3kg), 2 of them expired in neonatal intensive care unit (NICU) (anomalous baby and VLBW). In our study only one macerated still born baby was delivered. Perinatal mortality rate was 32.96 per 1000 live births.

Discussion

Pregnancy along with fibromyoma is a high risk pregnancy, which may lead to complications with unequal gravity although it is the commonest tumor of the reproductive age group, but adequate evidence on fibromyoma and pregnancy outcome is lacking as the available information consists largely of observational case series and case report that are limited by different patient population. Fibromyomas in pregnancy are more frequently observed finding in present scenario. It has thus become necessary to determine the various problems, an obstetrician may face due to its coexistence in

pregnancy to get prepared to manage them and counsel the patient accordingly.

In the present study, the maximum number of patients belonged to the age group of 26-30 years (46%). The result is comparable to the study done by Yi-Hua Chen et al [14] (50%) in the year 2001-2003, published in 2009 and Shehla Noor et al [15] (50%) in the year 2006-07. The percentage of primigravida in the present study was 62%. Our study showed presence of intramural (IM) fibromyoma in 56% and subserosal (SS) in 24%.

The result of the present study is comparable with those of the study done by Shehla Noor et al [15] and Tayyaba Majeed et al [16] with a spontaneous abortion rate of 10% and 11% respectively.

Our study showed that the risk of spontaneous abortion is unrelated to the size of fibromyoma but strongly associated with fibromyomas causing cavity distortion which is the same as that shown by Benson et al [17]. Shehla Noor et al [15] observed a comparable rate of abortion and was attributed to multiple uterine fibromyomas and implantation in relation to submucous fibromyoma.

The incidence of malpresentation in the present study is observed to be 14% which is comparable to 12% found in the study done by Andreani M et al [18]. In our study we also found a significant association between the presence of malpresentation and a fibromyoma of >5 cm size.

Our study observed a preterm birth rate of 20% which is almost similar to the results of Andreani M et al who observed 19% preterm birth rate in women with fibromyoma. In our study we also observed that the size of fibromyoma has a significant impact on preterm labour.

The incidence of PPROM/PROM (14%) in our study is comparable to the study done by Shehla Noor et al (10%) [15]. In our study we also found a significant association between the risk of PROM/PPROM and the size of the fibromyoma, though no association was found with type and location of fibromyoma.

The rate of cesarean section in our study (56%) was comparable to study done by Tayyaba

Majeed et al [16] (52%). The commonest indication of LSCS in our study was fetal distress in first stage of labour (23.21%). Fetal distress along with prolonged labour make indication for 33.92% of LSCS, which is comparable to that observed in Shehla Noor et al where 38.09% of LSCS were performed for failure to progress and fetal distress [15]. So, elective Caesarean Section is not necessary unless there is a clear obstetrical indication for the same.

In our present study incidence of atonic PPH was 8% and retained placenta was 1% which is comparable to the study of Andreani M et al who reported incidence of atonic PPH and retained placenta 9.6% and 2.4% respectively. In our study we found a significant association of PPH and presence of multiple fibromyoma which is same as that observed by Andreani M et al [18].

The incidence of low birth weight (LBW) baby in our study was found to be 40% which is much higher than observed in any of the other study. This may be attributed to the poor maternal nutrition, lower socioeconomic status and insufficient antenatal checkups amongst the patients attending the health facility. The higher incidence of LBW in our study may also be due to higher number of preterm births as compared to different studies done by different authors as well as smaller number of study population.

The perinatal mortality rate in our study was 32.96 per 1000 live births which is comparable to that observed by Shehla Noor et al (37 per 1000 live births). So, neonatal outcome is not disappointing from our study.

Conclusion

A complete workup should be done in patients presenting with pregnancy along with fibromyoma for the size, number, location, presence or absence of endometrial cavity distortion and relationship of fibromyoma with the placenta. Elective caesarean section is not necessary unless there is clear obstetrical indication for the same.

Our study is based on a smaller number of populations with only 100 cases of pregnancy with fibromyoma. It is therefore not possible to synthesis a robust evidence grade based on the available data in the literature. A larger study is

hence required for better understanding of the subject. However, available data suggest some good practice points for specialists in the management of pregnancy, labour, and puerperium.

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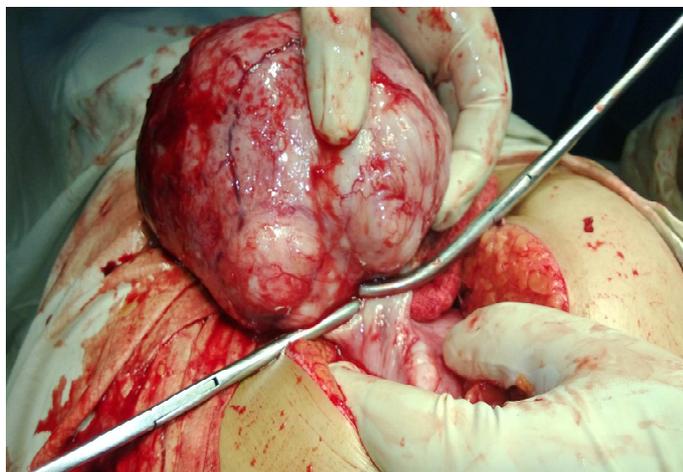
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Picture 1



Picture 2

Pictures 1 and 2 are showing Myomectomy being done in a patient with degenerated pedunculated subserosal fibromyoma at 17 wks of gestation. The pregnancy continued till term and the patient delivered by Caesarean section at 38 weeks.