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ORIGINAL RESEARCH

Outcomes of singleton pregnancies with fibromyoma and factors and complications of adverse pregnancy outcomes

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ABSTRACT

Background: Fibromyomas constitute the most common tumors in females of the reproductive age group. However, still, very few institutes have guidelines or protocols for managing fibromyomas in pregnant females. **Aim:** The present study aimed to assess the outcomes of singleton pregnancies with fibromyoma and factors and complications of adverse pregnancy outcomes. **Methods:** The present study assessed 200 females who had singleton pregnancies that visited the Institutes within the defined study period and had confirmed diagnosis of uterine fibromyoma. These subjects were assessed for different pregnancy outcomes. **Results:** The study results showed that 46% of subjects were aged 26-30 years and 62% of subjects were primigravida. LSCS and normal vaginal delivery was done in 56% and 36% subjects respectively. Submucous fibroma showed significant association with spontaneous abortion in 8% of subjects with p=0.0001. A significant association was seen for fibromyoma to PPROM, PROM, preterm delivery, and malpresentation with p=0.03, 0.005, 0.03, and 0.0001 respectively. PPH (postpartum hemorrhage) also showed a significant association with multiple fibromyomas with p=0.02. The perinatal mortality rate was 32.94 per 1000 live births. **Conclusion:** The present study concludes that subjects and healthcare providers must be aware of the association of fibromyoma with adverse pregnancy outcomes such as preterm labor, bleeding complications, and spontaneous abortion. Elective cesarean section is not compulsory unless in cases with clear obstetrical indications. The associated neonatal outcomes are also acceptable.

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

INTRODUCTION

Leiomyomas or fibromyomas of the uterus are benign tumors of smooth muscle which is commonly found in females of reproductive age group. The incidence reported for non-pregnant females might not show accurate reflection as fibromyomas are undiagnosed in nearly 50% of asymptomatic females till they are diagnosed on routine ultrasound imaging. However, it is estimated that nearly 3-10% of females from the reproductive age group have fibromyoma.[1]

Nearly 20-50% of subjects present symptoms arising from fibromyomas at one or other stage of their lives. In pregnant females, there are 10-40% chances of encountering obstetrical complications with a rate of hospital admission of 1 among 50 pregnant females. It is essentially composed of smooth muscle tissue, however, there is a varying amount of associated fibrous tissue as well. The work for tissue culture in existing literature reported an origin from cells of smooth muscle. Existing literature data also reports a unicellular origin of fibromyomas.[2]

The etiology of uterine fibromyomas is not known, however, severe predisposing factors are identified including genetics, obesity, nulliparity, and late reproductive age groups. Fibromyomas have higher relevance than before in present obstetric practice owing to changes in the demographic of subjects as many females are delaying childbearing, an increase in the number of subjects attending early antenatal and prenatal checkups, increasing expertise in

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ultrasonography to detect fibromyomas of smaller size, newer treatment modalities are employed and many patients are getting pregnant after such treatments for fibromyomas, and increase in obesity causing frequent fibromyoma detection.[3]

Fibromyomas constitute the most common tumors in females of the reproductive age group. However, still, very few institutes have guidelines or protocols for managing fibromyomas in pregnant females in India.[4] Hence, the present study aimed to understand the course of pregnancies with fibromyoma and complications associated with following singleton pregnancies having uterine fibromyoma till delivery and assessing the incidence of adverse pregnancy outcomes in these pregnancies.

MATERIALS AND METHODS

The present prospective clinical assessment study aimed to understand the course of pregnancies with fibromyoma and complications associated with following singleton pregnancies having uterine fibromyoma till delivery and assessing the incidence of adverse pregnancy outcomes in these pregnancies. The study was done atthe Department of Obstetrics and Gynecology of the Institute. Verbal and written informed consent were taken from all the subjects before participation.

The study assessed 200 female subjects who had uterine fibromyoma detected either during cesarean section or clinically or sonographically. The exclusion criteria for the study were females with hysterectomy, myomectomy, previous surgery history as cesarean section, renal diseases, hypertension, and diabetes mellitus as medical complications in females with fibromyoma and singleton pregnancy.

The study included 200 females who fulfilled the inclusion criteria. The subjects were assessed for different outcomes such as perinatal morbidity and mortality, third-stage complications, rate of cesarean section, prolonged labor, PROM, preterm labor, and spontaneous abortion. Serial ultrasounds were done once in each trimester that were collected preferably from the subjects with fibromyomas uterus to assess if there was any alteration in the size of the fibromyomas.

The characteristics of fibromyoma assessed in the last ultrasound examination before delivery were change in fibromyoma size in the first and last scan, size of largest fibromyoma, number of fibromyomas, location concerning placenta as retroplacental or not, and location in relation to the presenting fetal part as below or above it. Clinical management of labor for females having fibromyomas was not different from non-pregnant females.

During the active labor, partograph analysis was done. Active management of the third stage of labor was done in all females including females that delivered by cesarean section and included three main interventions Controlled cord traction while waiting for spontaneous placental separation and delivery, early cod cutting and clamping, and intramuscular administration of the uterotonic agent (Inj oxytocin 10U i.m.) after delivery of the baby. For quantification of blood loss at delivery, graduated collection bags were used at vaginal delivery, and weighed surgical pads and suction bottles at cesarean delivery. A blood loss of ≥1000ml was considered a severe postpartum hemorrhage.

The data gathered were analyzedstatistically using SPSS (Statistical Package for the Social Sciences) software version 24.0 (IBM Corp., Armonk. NY, USA) for assessment of descriptive measures, Student t-test, ANOVA (analysis of variance), and Chi-square test. Pearson correlation coefficient was used to assess correlation in various parameters. The results were expressed as mean and standard deviation and frequency and percentages. The p-value of <0.05 was considered.

RESULTS

The present prospective clinical assessment study aimed to understand the course of pregnancies with fibromyoma and complications associated with following singleton pregnancies having uterine fibromyoma till delivery and assessing the incidence of adverse pregnancy outcomes in these pregnancies. The present study assessed 200 females who had singleton pregnancies who visited the Institutes within the defined study period and had confirmed diagnosis of uterine fibromyoma. The majority 46% of subjects were aged 26-30 years and least 6% of subjects were aged 36-40 years and 62% of subjects were primigravida. LSCS and normal vaginal delivery was done in 56% and 36% subjects respectively. Intramural, subserosal, and multiple fibromyoma were seen in 56%, 24%, and 12% subjects respectively. Fibromyoma of ≥5cm was seen in 80% of the subjects.

For the pregnancy outcomes in study subjects with >5cm and <5cm fibromyoma, mean birth weight was 2.46 and 2.52 for subjects with >5cm and <5cm fibromyoma, cesarean section was done in 84 and 32 subjects with >5cm and <5cm fibromyoma, and vaginal delivery was done in 60 and 12 subjects with >5cm and <5cm fibromyoma respectively. Retained placenta, PPH, placenta praevia, PROM/PPROM, preterm labor, malpresentation, red degeneration, and spontaneous abortion was not done in any subject with <5cm fibromyoma and in 2, 16, 8, 28, 40, 40, 22, and 16 subjects with >5cm fibromyoma respectively (Table 1).

It was seen that for indications of LSCS in study subjects, the most common indication was fetal distress in 23.21% (n=26) subjects followed by PROM/PPROM in 21.42% (n=24), prolonged labor and malpresentation in 10.71% (n=12) study subjects each, elective LSCS in 14.28% (n=16) subjects, APH and IUGR, oligohydramnios in 7.14% (n=8) study subjects each, fetal movement loss in 3.57% (n=4)

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subjects and cord prolapsed in 1.78% (n=2) subjects respectively (Table 2).

The study results showed that for neonatal outcomes in study subjects, there were 4 neonatal deaths, 6 subjects had low APGAR scores, a congenital anomaly in 2 subjects, no fresh stillbirth, 2 macerated stillbirths, 16 abortions, 2 macrosomic, 102 average, 36 low birth weight preterm, 44 low birth weight at term, and 80 low birth weight (Table 3).

Table 1: Pregnancy outcomes in study subjects with >5cm and <5cm fibromyoma

S. No	Fibromyoma size and outcomes	>5cm (n=160)	<5cm (n=40)
1.	**Mean birth weight (kg)**	2.46	2.52
2.	**Cesarean section**	84	32
3.	**Vaginal delivery**	60	12
4.	**Retained placenta**	2	0
5.	**PPH**	16	0
6.	**Placenta praevia**	8	0
7.	**PROM/PPROM**	28	0
8.	**Preterm labor**	40	0
9.	**Malpresentation**	40	0
10.	**Red degeneration**	22	0
11.	**Spontaneous abortion**	16	0

Table 2: LSCS indications in study subjects with fibromyoma

S. No	LSCS indications	Number (n)	Percentage (%)
1.	**Fetal movement loss**	4	3.57
2.	**Cord prolapsed**	2	1.78
3.	**IUGR, oligohydramnios**	8	7.14
4.	**APH**	8	7.14
5.	**Elective**	16	14.28
6.	**Malpresentation**	12	10.71
7.	**Prolonged labor**	12	10.71
8.	**PROM/PPROM**	24	21.42
9.	**Fetal distress**	26	23.21
10.	**Total**	112	100

Table 3: Neonatal outcomes in study subjects

S. No	Neonatal outcomes	Number (n)
1.	**Neonatal deaths**	4
2.	**Low APGAR score**	6
3.	**Congenital anomaly**	2
4.	**Fresh stillbirth**	0
5.	**Macerated stillbirth**	2
6.	**Abortion**	16
7.	**Macrosomic**	2
8.	**Average**	102
9.	**Low birth weight preterm**	36
10.	**Low birth weight at term**	44
11.	**Low birth weight**	80

DISCUSSION

The present study assessed 200 females who had singleton pregnancies that visited the Institutes within the defined study period and had confirmed diagnoses of uterine fibromyoma. The majority 46% of subjects were aged 26-30 years the least 6% of subjects were aged 36-40 years and 62% of subjects were primigravida. LSCS and normal vaginal delivery was done in 56% and 36% subjects respectively. Intramural, subserosal, and multiple fibromyoma were seen in 56%, 24%, and 12% subjects respectively. Fibromyoma of ≥5cm was seen in 80% of the subjects. These data were comparable to the studies ofM Andreani et al[5] in 2009 and Benson CB et al[6] in 2001 where authors assessed subjects with demographic data comparable to the present study in their respective studies.

Concerning the pregnancy outcomes in study subjects with >5cm and <5cm fibromyoma, mean birth weight was 2.46 and 2.52 for subjects with >5cm and <5cm fibromyoma, cesarean section was done in 84 and 32 subjects with >5cm and <5cm fibromyoma, and vaginal delivery was done in 60 and 12 subjects with >5cm and <5cm fibromyoma respectively. Retained

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placenta, PPH, placenta praevia, PROM/PPROM, preterm labor, malpresentation, red degeneration, and spontaneous abortion was not done in any subject with <5cm fibromyoma and in 2, 16, 8, 28, 40, 40, 22, and 16 subjects with >5cm fibromyoma respectively. These results were consistent with the findings of Noor S et al[7] in 2009 and Chen YH et al[8] in 2009 where pregnancy outcomes in fibromyoma subjects reported by authors in their studies were comparable to the results of the present study.

The study results showed that for indications of LSCS in study subjects, the most common indication was fetal distress in 23.21% (n=26) subjects followed by PROM/PPROM in 21.42% (n=24), prolonged labor and malpresentation in 10.71% (n=12) study subjects each, elective LSCS in 14.28% (n=16) subjects, APH and IUGR, oligohydramnios in 7.14% (n=8) study subjects each, fetal movement loss in 3.57% (n=4) subjects, and cord prolapsed in 1.78% (n=2) subjects respectively. These findings were in agreement with the results ofFlake GP et al in 2003 and Stout MJ et al[9] in 2010 where indications of LSCS in fibromyoma similar to the present study were also reported by the authors in their respective studies.

It was seen that for neonatal outcomes in study subjects, there were 4 neonatal deaths, 6 subjects had low APGAR scores, a congenital anomaly in 2 subjects, no fresh stillbirth, 2 macerated stillbirths, 16 abortions, 2 macrosomic, 102 average, 36 low birth weight preterm, 44 low birth weight at term, and 80 low birth weight. These results were in line with the findings ofBorgfeldt C et al[11] in 2000 and Qidwai GI et al[12] in 2006 where neonatal outcomes in fibromyoma reported by authors in their studies were similar to the results of the present study.

CONCLUSIONS

Within its limitations, the present study concludes that subjects and healthcare providers must be aware of the association of fibromyoma with adverse pregnancy outcomes such as preterm labor, bleeding complications, and spontaneous abortion. Elective cesarean section is not compulsory unless in cases with clear obstetrical indications. The associated neonatal outcomes are also acceptable.

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