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Fetomaternal Outcome in Pregnancy with Fibroid in a Tertiary Care Centre

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Abstract: *Pregnancy with leiomyoma is associated with number of complications like abortion, preterm labour, PROM, APH, malpresentation, increased operative deliveries and postpartum complications like PPH. Moreover, most of these complications adversely affect the perinatal outcome. The objective of the study is to know the obstetrical and perinatal outcome of pregnant mother having uterine leiomyoma.*
A prospective observational study was done among 51 pregnant women with USG proved uterine leiomyoma as case & 51 cases of pregnancy without leiomyoma as control, in the Department of G&O, CSS, Kolkata during the period 2017-2018. Control cases were matched with age, parity and gestational weeks. Obstetrical and perinatal outcome were compared between cases and controls.
The study showed that pregnancy with leiomyoma is certainly a high risk pregnancy. Significant association present between pregnancy with leiomyoma and adverse obstetric and perinatal outcome. Appropriate planning is required from early antenatal period for better results.

Key word: *Leiomyoma, Prelabour rupture of membrane(PROM), Preterm labour, Malpresentation, Lower segment caesarean section(LSCS),Postpartum haemorrhage(PPH) , Low birth weight(LBW).*

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I. Introduction

Leiomyomas (known as fibroid or myoma) are the most common uterine neoplasm occurring in 20-25% of all reproductive age group women. The prevalence in pregnant women ranges from 0.1 to 3.9%.[1-6] As because of delay in child bearing age the prevalence of leiomyoma during pregnancy is gradualy increasing. Myomas are more common in primipara than in multiparous women and also in those having one child. [7]

A fibroid is an overgrowth of smooth muscle though etiology remains unclear. Myoma has the potentiality to enlarge during pregnancy due to presence of high estrogen receptor. But the accurate prediction of growth is not possible due to variation of response from one individual to another. In pregnancy degenerative changes are reported in two third of all specimen .[8] Malignant degeneration is rare ranging from 0.13 to 0.81%.[9]

Pregnancy with uterine leiomyoma is considered high risk as there is higher incidence of spontaneous abortion, preterm labour, placental abruption, malpresentation, obstructed labour, caesarean delivery and postpartum hemorrhage. The risk of pregnancy complications are influenced by both location and size of myoma.[10] specifically abortion, preterm labour, ante partum hemorrhage and PPH are increased if the placenta is adjacent or implanted over the myoma. Myoma in the cervix or lower uterine segment may obstruct the normal labour process .Moreover women with uterine leiomyoma are at high risk for poor birth outcome like low birth weight babies, lower 5 minutes Apgar scores and malformation compared to normal pregnancy.[11]

II. Materials and Methods

The study was carried out in the Department of G & O, CSS, Kolkata during the period 2017-2018. The study included 51 cases of pregnant women with ultrasonographically confirmed uterine leiomyoma and 51 cases of pregnant women without leiomyoma as control. Control and cases were matched with age, parity and gestational weeks.

Inclusion criteria: Sonographically identified uterine leiomyoma>3cm in size.

Exclusion criteria: Post CS pregnancy, multiple pregnancy, pregnancy with heart disease and pregnancy with leiomyoma<3cm in size.

It was a prospective observational study and parameters to be studied were: 1) Abortion 2) Preterm labour 3) PROM 4) APH 5) Malpresentation 6) Vaginal delivery and Caesarean section 7) LBW babies and 8) PPH.

History, clinical examination, routine hematological investigation and ultrasonography was done in all cases. Labour process was monitored during intranatal period. Vaginal delivery or caesarean operation was done as per requirement and postpartum complications handled by experienced obstetricians.
Data analysis was done using statistical method in the form of chi-square test, Odd ratio (OR) and relative ratio (RR).

III. Results and Analysis

Results are analyzed in the following tables:

Table 1: Age wise distribution of pregnant women with leiomyoma(Case) & without leiomyoma (Control)

Age group (years)	Case(n==51)		Control(n==51)	
	number	%	number	%
Up to 19	1	1.96	1	1.96
20-25	8	15.68	8	15.68
26-30	32	62.74	33	64.70
31-35	7	13.72	7	13.72
Above35	3	5.88	2	3.92
Total	51		51	

From the table it is seen that majority of pregnant women with leiomyoma belong to the age group 26-30 years.

Table2: Gravida wise distribution of Case and Control

Number of pregnancies	Case(n=51)		Control(n=51)	
	number	%	number	%
Primigravida	30	58.82	32	62.74
2nd gravida	15	29.41	15	29.41
3rdgravid onwards	6	11.76	4	7.84
Total	51		51	

From the above table it may be analysed that leiomyoma may cause infertility as most of the patient belong to primigravida group(58.82%)

Table3: Parity wise distribution of Case and Control

parity	Case(n=51)		Control(n=51)	
	number	%	number	%
Nullipara	35	68.62%	36	70.58
Multipara	16	31.37%	15	29.41
Total	51		51	

X^2=0.05; P=0.8296;df=1;OR=0.91;RR=0.96; Non significant
The table showed that majority of pregnant women with leiomyoma belonged to nulliparous group

Table4: Gestational age of termination of pregnant women with leiomyoma (case) & without leiomyoma (control)

Gestational Age(week)	Case(n=51)		Control(n=51)	
	number	%	number	%
Up to 28	8	15.68	4	7.84
29-<37	15	29.41	5	9.80
37 or more	28	54.90	42	82.35
Total	51		51	

X^2=9.13; P=0.01; df=2; Significant.
The table showed that term pregnancy rate is much lower in cases than controls.

Table-5: Percentage wise distribution of obstetric outcome in pregnant women with leiomyoma (case) and without leiomyoma (control)

Outcome	Case(n=51)		Control(n=51)	
	number	%	number	%
LUCS	31	60.78	13	25.49
Vaginal	12	23.52	34	66.66
Abortion	8	15.68	4	7.84
Total	51		51	

X^2=19,22; P=0.0001; df=2; Significant.

The table showed that higher rate of abortion and caesarian section in pregnancy with leiomyoma group compare to normal pregnancy group.

Table-6: Preterm labour wise distribution among Cases & Controls

PRETERM LABOUR			
Case(N=51)		Control(n=51)	
Number	%	Number	%
15	29.41	5	9.80

X^2=6.22; P=0.013; df=1; OR=3.83; RR=1.71; Significant.
From the above table it is seen that preterm labour is higher in pregnancy with leiomyoma group.

Table -7: Prelabour Rupture of Membrane (PROM) wise distribution among Cases and Controls

PROM LABOUR			
Case(n=51)		Control(n=51)	
Number	%	Number	%
12	23.52	8	15.68

X^2=1.00; P=0.3184; df=1; OR=1.65; RR= 1.26; Not Significant.
Table showing higher rate of PROM in pregnant women with leiomyoma than pregnant women without leiomyoma, though it is not statistically significant.

Table-8: Birth weight wise distribution in Cases and Control

Birth weight (gm)	Case(n=51)		Control(n=51)	
	Number	%	Number	%
<2500	15	29.41	8	15.68
2500 or more	28	54.90	39	76.47

X^2=3.77; P=0.052; df=1; OR=2.61; RR=1.56. Significant.
In this table , it is seen that incidence of low birth weight (LBW), i.e.<2500gm, is more in cases over control group.

Table-9: PPH wise distribution among Cases and Control.

PPH wise distribution			
Case(n=51)		Control(n=51)	
Number	%	Number	%
8	15.68	2	3.92

X^2=3.99; P=0.046; df=1; OR=4.56; RR=1.71; Significant.
The table showed significant association between PPH and pregnancy with leiomyoma.

IV. Discussion

Leiomyomas are more common in primiparous women and also those having one child only. It is seen that the prevalence of myoma is associated with advance maternal age.[12] Pregnant woman with myoma is considered high risk as there is increase rate of spontaneous abortion, preterm labour, PROM, breech presentation, LSCS and postpartum complications like PPH.[2,6,10,11,13-16] There is also poor perinatal outcome as there is increase incidence of preterm labour, LBW babies, low Apgar Score and higher chances of neonatal infection due to high incidence of PROM.

Table 1 showed that 62.74% of pregnant women with leiomyoma belong to the age group of 26-30 yrs & 76.46% of cases belong to the age group of 26-35 yrs, whereas only 1.96% of cases are found in the age group below 20 yrs. So,

majority of pregnant women with leiomyoma belong the age group of 26-30 yrs corroborates with other worker[5].

Table2, in this study indicates that majority of pregnant women with leiomyoma belong to primigravida (s58.82%) & 29.41% cases belong to 2nd gravida which may conclude that leiomyoma may cause infertility as most of the patients belong to primigravida.

Table3 showed that pregnancy with leiomyoma in nulliparous women are much higher (68.62%) than multiparous women (31.37%) which corroborates the finding of other working group[4].

Table 4 showed that termination of pregnancy <28 wks is 15.68% in pregnancy with leiomyoma compare to 7.84% in Control. Premature termination of pregnancy (i.e. in between 29- <37 weeks) in pregnancy with leiomyoma is 29.41% whereas in pregnancy without leiomyoma is 9.80%. So it is obvious that the incidence of abortion (15.68% vs 7.84%) and preterm labour (29.41% vs 9.80%) are higher in pregnancy with leiomyoma group. It is also analysed that term delivery in pregnancy with leiomyoma group is 54.90% compare to 82.35% in pregnancy with no leiomyoma group. So pregnancy with leiomyoma causing higher incidence of preterm and LBW baby which indicates poor neonatal outcome.

Regarding caesarean section (Table 5), pregnancy with leiomyoma had higher rate of LSCS compare to no myoma group (60.78% vs 25.49%). LSCS were mostly done due to myomas present in the lower segment, broad ligament or cervical region causing mechanical obstruction. There is also lower vaginal birth in pregnancy with leiomyoma group compare to no myoma group (23.52% vs 66.66%) which is statistically significant (p=0.0001).

Table 6 and 7 showed higher rate of preterm labour and PROM respectively in pregnancy with leiomyoma group compared to control.

Table 8 showed LBW babies (<2500gm) in pregnancy with leiomyoma group is 29.47% compare to 15.68% in Control group. On the other hand , birth weight 2500gm or more in Case is 54.90% and in Control is 76.47% which is statistically significant (p=0.052) in this study.

Table 9 showed that PPH is more common in Case (15.68%) compare to Control(3.92%) which indicates that there is significant (p=0.046) association between pregnancy with leiomyoma and PPH.

V. Conclusion

Pregnant mothers with leiomyoma are in high risk group and there is considerable increase morbidity and mortality both for the mother and baby. Different studies have mentioned different values of complications as there are often confounded with variable like age, ethnicity, parity etc. But most of the world wise current studies showed that that there was statistically significant positive association in pregnancy with leiomyoma with high incidence of preterm delivery, caesarean section, LBW babies, PPH and lower incidence of vaginal birth. Though the parameter like abortion & PROM are non-significant statistically, the incidences are obviously higher in Cases compared to Control group.

Leiomyoma are mostly diagnosed by routine USG during antenatal period. In this study most of the leiomyomas are diagnosed by 2D USG. Sometimes it may be misdiagnosed in early pregnancy in situation like associated ovarian SOL, myometrial hyperplasia & focal myometrial contraction. On the other hand, myoma may be undiagnosed in advanced pregnancy. Currently used 3D USG detect leiomyoma more precisely in pregnancy to avoid false positive or negative result.

In our country, even 2D USG facilities are not available everywhere specially in rural set up, lead to overlooking of high risk pregnancy causing increase incidence of maternal and perinatal adverse outcome.

Accurate planning is required in early antenatal period in diagnosed cases of pregnancy with leiomyoma for better obstetrical outcome.

A long term and continuous observational study is recommended to minimize complications and better obstetrical outcome.

Ethical Compliance: All procedures followed according to the ethical standards of the Institutional Ethics Committee and with the Helsinki declaration of 1975, revised in 2008. Informed consent was obtained from each subject included in this study.

CONFLICT OF INTEREST: The author declare that they have no conflict of interest.

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