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Research Article

Fibroid Placenta Relationship and its Impact on the Pregnancy Outcome

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Abstract

This study explores the impact of the presence of fibroid placenta on pregnancy risk, and maternal and fetal outcomes. During the two years study period, 8557 deliveries took place, of which 114 or 1.33% of pregnancies had fibroid placenta. Of the 114 pregnancies, 12 or 10.5% ended in abortion. We analyzed the fibroid placenta relationship and the obstetric outcome in the remaining 102 pregnancies over 22 weeks. Of these pregnancies, 41.2% had complications including premature rupture of membranes, which was the most common complication and seen in 22.5% of patients. No case of preeclampsia or antepartum haemorrhage occurred in the 'no contact' category. Amongst the cases where the placenta was either in contact or superimposed on the fibroid, 85.5% -87.5% developed one or more complication. The fibroid placenta relationship was found to be statistically significant, p value < 0.001. 39.3% were caesarean deliveries. Overall 37.25% were low birth weight neonates. There were two stillbirths, both in the superimposed category.

Keywords: *Fibroid Placenta Relationship; Pregnancy Outcome*

Introduction

Over the past years, there has been an increase in the prevalence of the association of fibroid/myoma with pregnancy; an apparent increase, attributed to the availability of diagnostic imaging modalities and a true increase in the incidence of myoma because of the changing lifestyles of women.

The prevalence of myoma with pregnancy has been reported as 1.6 to 10.7% [1-5]. While pregnancy is still not fully understood despite significant research and medical advancement, pregnancy with a coexistent fibroid is still less understood. That said, it is well established that for a successful pregnancy outcome, the health of the placenta is critical. Against this background, if a space occupying lesion like a fibroid exists in the uterus, it could impact the contour, function and vasculature of the placenta, as well as, the distensibility of the uterus, which in turn could affect the obstetric outcome. With this in mind, the study was planned.

Methodology

Study design

This was a two years prospective observational study carried out in the Department of Obstetrics and Gynecology, Goa Medical College. All consecutive cases of pregnancy with fibroid were enrolled. In each case, the clinical and the sonographic findings were recorded on a pre-structured proforma.

Myometrial muscular contraction was excluded by repeat ultrasonography (USG) before enrolling those diagnosed as pregnancy with fibroid by USG in the first trimester.

The myoma placenta relation was categorized as:

1. No contact: Placenta and fibroid were not in contact with each other.
2. Contact: Placenta only partially covering the fibroid.
3. Superimposition: Placenta completely covering the fibroid Registered/booked antenatal, and referred cases were included.

Termination of pregnancy before 22 weeks/fetus weighing less than 500 gms was considered as an abortion; beyond 22 weeks to less than 37 weeks was considered as preterm; 37 weeks to 42 weeks was considered as term. The subjects were followed till the termination of pregnancy.

Observations and Results

During the two years study period, 8557 deliveries took place, of which 114 were pregnancies with fibroids giving the incidence of coexistent fibroid with pregnancy as 1.33%. There was no case of multiple fibroids in this series.

12 of the 114 pregnancies i.e. 10.5% ended in abortion. In 102 women pregnancy continued beyond 20 weeks of gestation and their maternal and fetal outcome was analyzed.

Of the 102 pregnancies, in 80 there was no contact between the fibroid and the placenta, in 14 there was contact, and in 8, the placenta was superimposed on the fibroid (Table 1).

On analyzing the maternal outcome (Table 1), it was observed that there was no case of preeclampsia in the 'no contact' category; while 3 of the 14 cases (21.4%) in the "contact' category and 3 of the 8 cases (37.5%) in the 'superimposed' category developed preeclampsia.

No antepartum haemorrhage (APH) was seen in the 'no contact' category, while it occurred in one of the 14 cases in the 'contact' category i.e. 7.14% and 1 of the 8 cases in the superimposed category i.e. 12.5%. Postpartum hemorrhage (PPH) was seen only in the 'superimposed' category Thus, the risk of APH and PPH was more in the 'contact' and 'superimposed' category.

Interestingly, of the 6 malpresentations in this series, 5 occurred in the 'no contact' category. Of the 23 cases of premature rupture of membranes (PROM), 16 occurred in the 'no contact' category.

Overall, of the 102 pregnancies, 60 i.e. 58.8% had no maternal complications while 42 cases (41.2%) had maternal complications. 23 out of 80 cases (28.8%) in the 'no contact' category, 12 of the 14 cases (85.7%). in the "contact' category, and 7 of the 8 cases (87.5%), in the 'superimposed' category developed complications, the difference reached statistical significance, p value 0.001 (Table 1).

MP[R]*	Total Cases	Cases w/o Complications	APH	PROM	Pre-eclampsia	Malpr**	Dys-funct. Labor	PPH	Cases w/ Complications	MPR Category %	Chi-Square Test
No contact	80	57	0	16	0	5	2	0	23	28.8%	Ref
Contact	14	2	1	6	3	1	1	0	12	85.7%	X^2 = 16.54, P < 0.001
Superimposed	8	1	1	1	3	0	1	1	7	87.5%	X^2 = 11.17, P < 0.001
Total cases	102	60	2	23	6	6	4	1	42	41.2%	-
% (n = 102)	NA	58.8%	2.0%	22.5%	5.9%	5.9%	3.9%	1.0%	41.2%	-	-

Table 1: *Fibroid placenta relationship and maternal complications.*

Of the 102 pregnancies 40 (39%) were caesarean deliveries while 62 delivered vaginally. Of the latter, 59 (58%) delivered spontaneously while 3 (3%) were instrumental vaginal deliveries (Table 2). There was no maternal mortality in this series.

Mode of delivery	Total Cases	% (n = 102)
Spontaneous Vaginal Delivery	59	58%
Instrumental Vaginal Delivery	3	3%
LSCS	40	39%
Classical Caesarean Section	-	-
Total	102	100%

Table 2: *Mode of delivery.*

It is seen from table 3 that 38 of the 102 neonates (37.25%) were low birth weight babies. In the 'superimposed' category all 8 neonates (100%) were low birth weight of which two were stillbirths; 11 of the 14 neonates (78.57%) in the 'contact" category while 19 of the 80 babies (23.75%) in the 'no contact' category were low birth weight neonates which was statistically significant, p value < 0.001.

Myoma placenta Relation Category	No. of Cases	Birth weight >= 2.5 kg		Birth Weight < 2.5 kg		Chi Square Test
		No.	% of Category	No.	% of Category	
No Contact	80	61	76.25%	19	23.75%	Reference
Contact	14	3	21.43%	11	78.57%	$X^2 = 16.48$, $p < 0.001$
Superimposed	8	-	-	8	100.00%	$X^2 = 19.88$, $p < 0.001$
Total Cases | % of Total	102	64 | 62.74%	-	38 | 37.25%	-	

Table 3: *Myoma placenta relationship and weight of the newborn.*

Discussion

The exact prevalence of coexisting fibroid and pregnancy is not exactly known. The prevalence has been reported as 1.6 to 10.7 [1-5] while Sheiner., *et al*. [6] have reported the prevalence as 0.1% to 4%.

In our study, the incidence of myoma with pregnancy was 1.33% closely comparable to 1.4%. Reported by Benson., *et al* [7]. However, our incidence was higher when compared to 0.37% reported by Coronado., *et al*. [8], who attributed their low incidence to under reporting.

The present study showed, that pregnancy with a myoma, is a high risk pregnancy as 42 of the 102 cases (i.e. 41.2%) had one or more complications while only 58.8% were without complication (Table 1).

With regard to the type of maternal complications, we observed that the myoma placenta relationship was of significance. In our series, APH and preeclampsia occurred where the placenta was either in contact with the fibroid or was superimposed. Similarly, Exacoutous., *et al*. [2] found that 71% of the cases with abruptio placenta had a myoma with placental contact or superimposition in their series. Coronado., *et al*. [8] opined that the risk of abruption of the placenta was four times more when the fibroid was retroplacental.

Interestingly, in our study, the majority of PROM occurred in the 'no contact' category i.e. 16 of the 23 cases giving the incidence of PROM as 22.5% (Table 1) Zaima., *et al*. [10] found 19% risk of PROM which is closely comparable to our result. It is hypothesized that

possibly the altered localized distensibility and the mechanical effect of the myoma might be the underlying mechanisms for the increased risk of PROM.

Myomas have been reported to be associated with 10 - 40% antenatal complications [9]. We found complications in 41.2% of the cases and excluding PPH, 40.2% antenatal complications (Table 1).

The Caesarean section rate in our study was 39% (Table 2). Benson., *et al*. [7] reported a Caesarean section rate of 38% which is closely comparable to our study. Zaima., *et al*. [10] found uterine fibroids to be associated with 49% risk of caesarean delivery. Klatsky., *et al*. [11] in 2008, reported that women with fibroids had a 3.7 times increased risk of caesarean delivery.

Most studies report increased rate of preterm deliveries [12]. In this study, 38 of the 102 newborns were low birth weight babies (< 2.5 Kg) of which 17 were preterm i.e. 44.7% of the 102 neonates (Table 3).

The present study showed that the fibroid placenta relationship is an important determinant of maternal and fetal outcome and that pregnancy with myoma has a higher chance of adverse obstetric outcome.

The limitation of the study was that amongst the enrolled consecutive cases of pregnancy with fibroid, there was no case of multiple fibroids and no case of multiple gestation. Also, it was an observational study.

Conclusion

The coexistence of a fibroid, adds a new dimension to the complexity and dynamics of pregnancy since the uterus gets shared between the two entities. This coexistence of the fibroid and pregnancy could alter the dynamics within the endometrium, the decidua, the molecular signaling, the vascular architecture, which are not fully understood, and need further research for unravelling the complexities.

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Conflict of Interest

None declared.

Ethical Approval

Approval obtained.

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