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Case Series

Antenatal myomectomy: when to intervene and why?

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ABSTRACT

Uterine myomas affect 2-10% of pregnant women. In every one out of ten patients, myomas complicate the course leading to adverse pregnancy outcomes such as placental abruption, premature rupture of membranes, placenta previa, preterm labor, fetal malpresentation, Myomectomy is rarely performed during pregnancy because of fear of miscarriage and the risk of uncontrolled hemorrhage. Surgical management is needed in selected cases where conservative management fails to manage symptoms and there is a substantial risk of adverse pregnancy outcomes. This article provides insight into the safety, risks and benefits of antenatal myomectomy. This is a retrospective analysis of 6 patients who underwent myomectomy between 16-19 weeks of gestation at our tertiary care centre. Decision for surgical management was based on large fibroid size and refractory pain. Myoma was enucleated via transverse incision and reconstruction of uterine wall was done in double layer. None of the patients in our study had miscarriage, preterm labour, premature rupture of membranes, placental abruption. All patients delivered at term with median gestational age of 37 weeks, 5 by elective caesarean section and one patient delivered vaginally after induction of labour. None of the patients delivered a growth-restricted fetus or a fetus with a congenital anomaly. No adverse maternal or fetal outcome was reported. Antenatal myomectomy should not be done as a routine procedure. However, in carefully selected patients in skilled hands it is a safe procedure and gives good pregnancy outcomes while avoiding the complications typically linked to the presence of myomas.

Keywords: Fibroid, Myoma, Myomectomy, Caesarean section

INTRODUCTION

Uterine fibroids are the most common benign, smooth muscle tumors, with a prevalence of 2-10% during pregnancy. They consist of smooth muscle cells and fibroblasts, which secrete extracellular matrix.[1] Although usually asymptomatic, complications may occur in about one out of ten women with myomas during the antenatal period.[2,3] The surge in placental hormones and increased uterine blood flow during pregnancy results in an increase in fibroid volume which may complicate the pregnancy. The most common complications are abdominal pain, fever and vaginal bleeding. Frequency of pain increases with size, especially with fibroids >5 cm in diameter.[3,4] Uterine fibroids may increase the risk of adverse pregnancy outcomes, such as miscarriage, fetal growth restriction, fetal malpresentation, placental abruption, premature rupture of membranes, placenta previa, preterm labor and caesarean delivery. Moreover, uterine fibroids can lead to complications during labor and delivery, such as abnormalities of uterine contractile activity, fetal distress, uterine atony, and postpartum haemorrhage.[1]

Overall, the management of severe symptoms and signs caused by uterine fibroids during pregnancy poses a challenge, because pharmacological approaches for alleviating pain during pregnancy are limited.[1] In selected cases, when other treatment strategies fail to manage symptoms or there is a huge myoma filling the abdominal cavity and restricting the growth of the fetus and there is a

substantial risk of adverse pregnancy outcomes, a surgical approach during pregnancy might be considered. Myomectomy is usually not advocated during pregnancy because of possible complications such as severe haemorrhage, uterine rupture, miscarriage and preterm labor.[5,6] However, complication can be prevented in a well optimised surgery by a skilled surgeon, with comprehensive peri-operative preparation and counselling.

CASE SERIES

This study was conducted as a retrospective single centre case series of 6 patients. Records of patients who underwent antenatal myomectomy at our tertiary care centre between January 2023 to March 2024 were collected. Informed consent was taken from all the patients.

The antenatal course, clinical characteristics, perioperative management and pregnancy outcome are discussed.

The following criteria was used for myomectomy in our study: gestational age >14 weeks; large(>15 cm) size of uterine fibroid that prevented proper continuation of pregnancy; symptomatic uterine fibroids(severe abdominal pain, rapid growth); a distance between the leiomyoma and the endometrial cavity >5 mm, in order to avoid opening of the endometrial cavity; and the provision of a signed consent form, after the patients had been informed of the risks of surgical intervention.[1,7]

Surgical approach was deferred in patients fulfilling following criteria: patients who refused surgery or did not sign informed consent; presence of chromosomal abnormalities and/or congenital malformations of the fetus, and absence of urgent indications for myomectomy during pregnancy.[1]

All patients were admitted to hospital between 10-16 weeks of gestation for clinical evaluation, laboratory workup, transvaginal and abdominal ultrasonography and electrocardiography. Fibroid characteristics such as size, location, distance from the lower pole of the myoma to the uterine cavity, and presence of areas degeneration were studied (Figure 1).

Doppler ultrasonography and magnetic resonance imaging (MRI) was further used to study vascular supply and mapping of leiomyoma, when needed. Blood typing and cross matching was done. One unit of blood was readied as a precautionary measure to mitigate the risks associated with significant blood loss during surgery. Laparotomy was performed via midline vertical incision that extended over the umbilicus under regional anaesthesia (or endotracheal anaesthesia when needed), after ruling out congenital malformations and chromosomal anomalies. Myoma was enucleated via transverse incision given over fibroid capsule followed by blunt and sharp dissection. Following myomectomy reconstruction of uterine wall was done in double layer via polyglactin no.1-0 suture material (Figure 2).

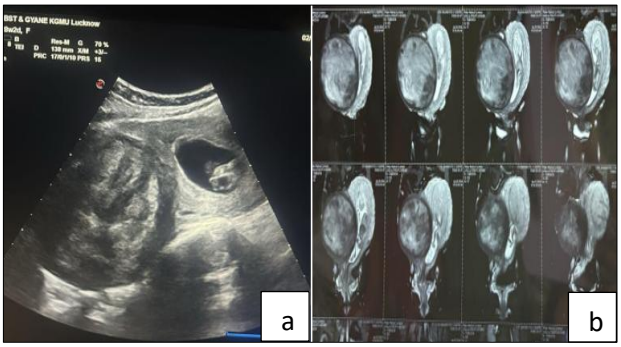

Figure 1 (a and b): Ultrasonography and MRI film showing large sub-serosal uterine fibroid in relation to fetus.

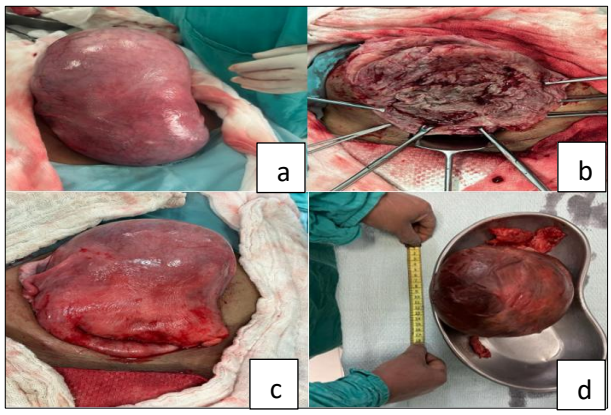

Figure 2 (a-d): Perop image during myomectomy showing sub-serosal myoma, base of myoma after enucleation, uterine wall after reconstruction and gross image of removed myoma.

Haemostasis was achieved via multiple sutures at myoma base. In postoperative period tocolytics were given to prevent uterine contractions. Intravenous Isoxsuprine Hydrochloride drip was started intraoperatively and continued for 48 hours which was then tapered and patient put on oral medication for 1 week. Progesterone support in form of hydroxyprogesterone hexanoate 500 mg given intramuscularly before surgery and every week till 36 weeks to prevent possible miscarriage and preterm labour. All patients were given antibiotics and analgesics for 5 days postoperatively. Fetal well-being was checked by ultrasonography at the end of surgery. Removed myoma was sent for histopathological examination. After discharge patient were closely followed up every 2 weekly for antenatal surveillance on out-patient department (OPD) basis. Ultrasonography was performed monthly to monitor fetal growth. Maternal and fetal outcomes and complications were studied.

Clinical and surgical characteristics of antenatal myomectomy patients are discussed in Table 1.

Table 1: Clinical and surgical characteristics of antenatal myomectomy patients.

Variables	Case 1	Case2	Case 3	Case 4	Case 5	Case 6	Mean
Age (years)	32	25	27	32	28	35	30
BMI (kg/m^2)	24.6	27.2	26	25.4	26.1	24.8	25.6
Parity	Primigravida	Primigravida	Primigravida	Primigravida	Primigravida	Primigravida	-
Symptoms	Abdominal pain	Abdominal pain, rapid growth	Abdominal pain, rapid growth	Abdominal pain	Abdominal pain	Abdominal pain	
Gestational age at symptom onset (weeks)	16	13	10	13	15	15	13.5
Medical history	None	None	None	Congenital heart disease	None	None	
Gestational age at myomectomy (weeks)	19	19	16 weeks	17	18	18	18
Fundal height on abdominal examination (weeks)	34	34	32	32	32	34	
Anaesthesia during myomectomy	SA+EA	GA+EA	SA+EA	GA+EA	SA+EA	GA+EA	
Gross size of myoma (cm)	19×15×12	18×15×16	18×14×12	15×12×10	15×10×14	17×14×12	16×13 ×13
Weight of myoma (kg)	2.85	3.7	3.0	2.4	2.5	2.75	2.86
Type of myoma	Subserous	Subserous	Intramural	Subserous	Intramural	Subserous pedunculated	
FIGO stage	VI	V	IV	V	IV	VII	
Blood loss during surgery (cc)	400	500	500	450	550	400	460
Duration of surgery (minutes)	70	90	90	80	80	60	80
PRBC transfusion (unit)	1	1	1	1	1	None	-
Hospital stays (days)	8	8	8	9	10	6	8
ICU stay (days)	0	0	0	1	0	0	
Mode of delivery	LSCS	LSCS	LSCS	LSCS	LSCS	Vaginal	-
Gestational age at delivery (weeks)	37	37 weeks 2 day	38	37	37	39	37.5
Fetal outcome	Full term live birth	Full term live birth	Full term live birth	Full term live birth	Full term live birth	Full term live birth	
Fetal weight/ APGAR scores (kg)	2.9 (6/8)	2.96 (7/8)	2.8 (7/8)	3.2 (6/8)	3.0 (6/8)	3.5 (6/7)	

DISCUSSION

To the best of our knowledge, this is the first case series from India that attempted to analyse myomectomy during pregnancy. Uterine fibroids affect 2-10% of pregnant women.[2] The current tendency to delay the age of pregnancy and the increased number of mothers over the age of 30 years have resulted in a significant increase in the frequency of pregnant women with uterine fibroids in recent years.[1] Approximately 30% of pregnancies with uterine fibroids suffer from obstetric complications. The performance of myomectomy during pregnancy is very much debated. The symptoms of uterine fibroids in pregnancy often respond to medical therapy, but in selected cases, when conservative management fails or there is a huge myoma and there is substantial risk of adverse pregnancy outcomes, a surgical approach might be necessary. The most common indications for myomectomy reported in the literature are: acute pelvic pain unresponsive to medical therapy of >72 hours, rapid growth in myoma, mass compressing the pelvic organs (leading to urinary retention, constipation), and a high risk of fetal adverse events (fetal compression syndrome, oligohydramnios, intrauterine growth restriction, haemorrhages, and placental site abnormalities).[2,5,8]

However, myomectomy in pregnancy is associated with increased the risk of bleeding complications and adverse pregnancy outcomes such as miscarriage, maternal and fetal infections, preterm delivery, and uterine rupture.[1] However in some cases, as discussed earlier, surgical removal of myoma is the only choice to improve patient outcome.

Leiomyomas in pregnancy are associated with spontaneous abortion rates of as high as 20%.[9] The suggested mechanism is compressed endometrial vascular supply, that adversely affects the fetus resulting in abortion. In contrast to this, none of the patients in our study had miscarriage or required hysterectomy. This shows that antenatal myomectomy is effective in preventing this complication.

In our study no patient had preterm labour and premature rupture of membranes. This shows that elective surgery decreases the incidence of preterm delivery in accordance with the results described by Handa et al.[9]

Studies have shown a 3-fold increase in occurrences of abruptio placentae in pregnant women with uterine fibroids.[10] In our study, no case of abruptio placentae occurred, demonstrating that myomectomy is effective in preventing this complication.

Large fibroids can cause spatial restriction, potentially leading to hindered fetal growth and limb defects.[11] In our study, none of the patients delivered a growth-restricted fetus or a fetus with a congenital anomaly. This demonstrates that performing antenatal myomectomy improves neonatal outcome.

This shows that patients with untreated symptomatic uterine fibroids during pregnancy seem to have a worse pregnancy outcome than patients treated surgically. Despite these findings, laparotomic myomectomy should be considered in pregnancy only when there are appropriate indications.

In our study antenatal myomectomy was performed at the mean gestational age of 17.8 weeks after ruling out congenital malformations and chromosomal anomalies. Epidural anaesthesia was given in all cases as it provides effective and long-term anaesthesia during surgery and in the postoperative period, along with spinal and endotracheal anaesthesia, where needed. The most common complication of myomectomy during gestation is massive bleeding often requiring multiple blood transfusions. This presents a surgical challenge as tourniquets and local injections of vasoconstrictive agents are avoided since it could reduce uterine blood supply.[13] In our study haemostasis was achieved by using multiple haemostatic clamps and sutures at the base of myoma and uterine scar was closed in two layers using polyglactin1-0 suture. One-unit PRBC transfusion was required postoperatively. In our study most of the fibroids were subserous and intramural located at uterine fundus. The lack of patients with submucosal fibroids may be due to the fact that previously identified submucosal leiomyomas were removed prior to pregnancy as these tend to be symptomatic and may contribute to failure to conceive and pregnancy loss. Histopathology of the removed myomas revealed hyaline degeneration (4 cases), red cell degeneration (1 case) and necrosis (1 case). Degenerative changes might be due to rapid growth or torsion of the myoma leads to deficiency in blood supply, with secondary tumor anoxia and necrosis.[3] All patients delivered at term with median gestational age of 37 weeks, mostly by elective caesarean section except one patient delivered vaginally who had pedunculated subserosal myoma. No adverse maternal or fetal outcome was reported.

CONCLUSION

Our study shows that antenatal myomectomy, when performed in carefully selected patients, can improve pregnancy outcomes and help prevent complications related to fibroids. However, it should not be recommended as a routine procedure. In cases where fibroids cause significant complications, such as refractory pain or pose risks to the pregnancy due to their large size, antenatal myomectomy may offer an opportunity to improve both maternal and fetal health. The decision to proceed should be individualized, taking into account the size of the fibroid, associated symptoms, and the overall clinical context, and the surgeon's expertise. Antenatal myomectomy should not be done as a routine procedure. However, in carefully selected patients in skilled hands it

is a safe procedure and gives good pregnancy outcomes while avoiding the complications typically linked to the presence of myomas.

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REFERENCES

1. Babunashvili EL, Son DY, Buyanova SN, Schukina NA, Popov AA, Chechneva MA, et al. Outcomes of Laparotomic Myomectomy during Pregnancy for Symptomatic Uterine Fibroids: A Prospective Cohort Study. J Clin Med. 2023;12(19):6406.
2. Saccardi C, Visentin S, Noventa M, Cosmi E, Litta P, Gizzo S. Uncertainties about laparoscopic myomectomy during pregnancy: a lack of evidence or an inherited misconception? A critical literature review starting from a peculiar case. Minim Invasive Ther Allied Technol. 2015;24:189-94.
3. Spyropoulou K, Kosmas I, Tsakiridis I, Mamopoulos A, Kalogiannidis I, Athanasiadis A, et al. Myomectomy during pregnancy: A systematic review. Eur J Obstet Gynecol Reprod Biol. 2020;254:15-24.
4. Wang HM, Tian YC, Xue ZF, Zhang Y, Dai YM. Associations between uterine fibroids and obstetric outcomes in twin pregnancies. Int J Gynecol Obstet. 2016;135:22-7.
5. Allameh Z, Allameh T. Successful Myomectomy in the Second Trimester of Pregnancy. Adv Biomed Res. 2019;8:60.
6. Loverro G, Damiani GR, Malvasi A, Loverro M, Schonauer LM, Muzzupapa G, et al. Myomectomy during pregnancy: an obstetric overview. Minerva Obstet Gynecol. 2021;73(5):646-53.
7. Vitale SG, Padula F, Gulino FA. Management of uterine fibroids in pregnancy: recent trends. Curr Opin Obstet Gynecol. 2015;27(6):432-7.
8. Dinglas C, Kunzier N, Sanchi J, Chavez M, Vintzileos A. Ultrasound-guided manipulation of fetal entrapment by a large uterine fibroid. Am J Obstet Gynecol. 2015;213(6):870.e1-2.
9. Handa N, Anjali. Feto maternal outcomes of fibroid in pregnancy: a retrospective observational study. Int J Reprod Contracept Obstet Gynecol. 2023;12:3080-5.
10. Tîrnovanu MC, Lozneanu L, Tîrnovanu ȘD, Tîrnovanu VG, Onofriescu M, Ungureanu C, et al. Uterine Fibroids and Pregnancy: A Review of the Challenges from a Romanian Tertiary Level Institution. Healthcare (Basel). 2022;10(5):855.
11. Spyropoulou K, Kosmas I, Tsakiridis I, Mamopoulos A, Kalogiannidis I, Athanasiadis A, Daponte A, Dagklis T. Myomectomy during pregnancy: A systematic review. Eur J Obstet Gynecol Reprod Biol. 2020;254:15-24.
12. Algara AC, Rodríguez AG, Vázquez AC, Valladares FEC, Ramírez PG, Padilla EL, et al. Laparoscopic Approach for Fibroid Removal at 18 Weeks of Pregnancy. Surg Technol Int. 2015;27:195-7.
13. Kongnyuy EJ, Wiysonge CS. Interventions to reduce haemorrhage during myomectomy for fibroids. Cochrane Database Syst Rev. 2014;2014(8):CD005355.

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