

DOI: <http://dx.doi.org/10.18203/2320-1770.ijrcog20172050>

Original Research Article

## Myoma in pregnancy and outcome after cesarean myomectomy

H. Valson\*, Nazer T., Sukanya Mukerjee

Department of Obstetrics and Gynecology, DM Wayanad Institute of Medical Sciences, Wayanad, Kerala, India

**Received:** 22 April 2017

**Accepted:** 01 May 2017

**\*Correspondence:**

Dr. H. Valson,

E-mail: [h.valson@gmail.com](mailto:h.valson@gmail.com)

**Copyright:** © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

### ABSTRACT

**Background:** The prevalence of leiomyoma is 30% to 70% in reproductive women. In addition to causing menstrual disorders like menorrhagia, mass in abdomen, pain and it also negatively affect fertility and pregnancy outcome. Objectives of present study was to investigate the outcome in cases of pregnancy complicated by fibroids undergoing lower segment cesarean section (LSCS) in DM WIMS Medical College and Hospital, Wayanad, Kerala, where the prevalence of fibroids is high in reproductive women.

**Methods:** Twelve cases of leiomyoma with pregnancy underwent LSCS with myomectomy following the delivery of the baby. The indications for myomectomy during LSCS taken into consideration were firstly the size of fibroids usually less than 5 cm, mainly single myoma complicating pregnancy and sites like sub serous and intramural. The suturing of the uterus was done using polyglycolic acid of size No. 1 and polyglycolic acid suture of 2 '0' for closing the dead space and with good hemostasis the operation was completed. The indications for cesarean, the average operative time for surgery, the amount of blood loss, and postoperative complications like surgical site infections were noted and outcome recorded.

**Results:** The time taken for surgery was about 45 minutes longer, average blood loss was approximately 300 ml to 500 ml more than for a routine LSCS. There was no surgical site infections or postpartum hemorrhage in any of the cases.

**Conclusions:** Myomectomy with caesarean in selected cases with proper indications is safe and possible in selected cases. It avoids a second surgery with its associated morbidity.

**Keywords:** Pregnancy, cesarean myomectomy, leiomyoma, hemorrhage

### INTRODUCTION

The prevalence of leiomyoma is 30% to 70% in reproductive women. In addition to causing menstrual disorders like menorrhagia, mass in abdomen, pain and uterine fibroids also negatively affect fertility and pregnancy outcome. The incidence of leiomyomas in pregnancy is 2-4%. The increasing incidence is due to the fact that many women are delaying pregnancy. It is a known fact that leiomyomas grow larger in pregnancy due to the presence of higher levels of estrogen.<sup>1-4</sup> Studies have shown that fibroids can cause many complications

during pregnancy, such as abortions, preterm labor and delivery, placenta previa, accidental hemorrhage, intrauterine growth retardation, increased rate of cesarean section and postpartum haemorrhage.<sup>5-8</sup>

Elective myomectomy at the time of LSCS has been discouraged due to the attendant risk of severe hemorrhage. Only few small randomized controlled studies are available, hence the proportion of surgeons attempting this combined procedure is low, due to concerns regarding safety.<sup>9</sup> If myomectomy during Caesarean section becomes widely accepted practice, it

could eliminate the need for a second operation in these patients. At times, due to its location at the lower segment, large myoma removal is mandatory in order to deliver the baby, at caesarean section.<sup>10</sup>

Physiologically we know that pregnant uterus is better adapted to control hemorrhage, as the uterine contractions and retractions allow the bleeding vessels to close down and as pregnancy is a hypercoagulable state and the vascular changes for clot formation in the placental bed helps in stopping the bleeding. Hence, myomectomy during caesarean will have the above advantages but the policy of doing myomectomy for the sake of avoiding second surgery may not prove to be wise, especially in multiple fibroids with size bigger than 8 cm, hence we select the cases which can safely have caesarean with myomectomy. In spite of the above physiological advantage the incidence of hemorrhage during myomectomy is approximately 10% because of the increased blood flow to the uterus in pregnancy.<sup>11,12</sup> We report here 12 cases where myomectomy was done during the period January 2013 to December 2016.

## METHODS

We performed myomectomy during caesarean section in twelve patients. Sixteen patients were diagnosed having fibroid by routine obstetric ultrasound during the regular antenatal care. 12 cases underwent LSCS with myomectomy. In the remaining 4 patients, one had spontaneous first trimester abortion, the remaining three delivered normally. The indications for performing myomectomy were based on the findings of single myoma size smaller than 8 cm, subserous and submucous fibroid in lower segment. By Ultrasound accurate location, size, number and there relation to placenta was noted.



**Figure 1: Subserous fibroid.**

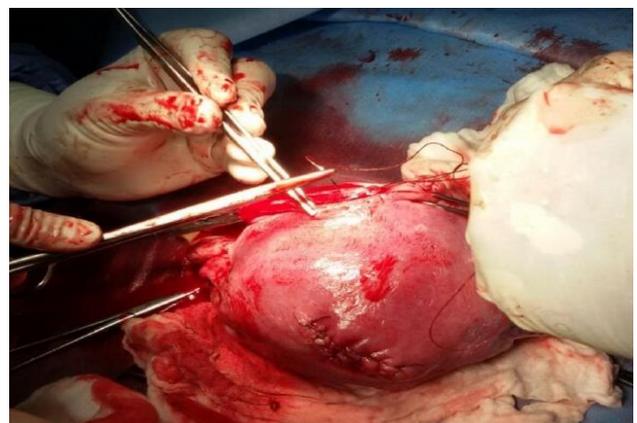
Color flow Doppler was done to differentiate fibroids from myometrial thickening. They were counseled and consent was taken for the possibilities of hemorrhage during myomectomy and the need for hysterectomy in

case of uncontrolled bleeding. After conducting the LSCS, delivery of the baby and removal of placenta completely, uterine incision closed in one layer using 1 '0' polyglycolic acid. During the procedure of myomectomy intra lesional injection of vasopressin was infiltrated to control hemorrhage during dissection. Authors approached the intramural myoma by a transverse incision. Myoma bed was obliterated with delayed absorbable sutures (using polyglycolic acid)), taking meticulous care for hemostasis (Figure 1-3).



**Figure 2: Multiple myomas.**

With the above-mentioned techniques, operating time was reasonable-only 3 patients required more time for surgery i.e. more than 2 hours. High dose oxytocin (20 IU) was used intraoperatively and postoperatively for 24 hours, and some patients required additional uterotonic agents like carboprost. Blood loss was estimated from suction aspiration, and from weighing mops, swabs and drapes used during surgery and hematocrit value on 2nd post-operative day. Prophylactic antibiotic was given as per prophylactic antibiotic protocol. Following myomectomy the size of myoma removed, blood loss by estimation of mop counts and of hematocrit fall, need for transfusion, intra/postoperatively and duration of stay was tabulated. After 6 weeks repeat ultrasound was done to see for complete involution of uterus.



**Figure 3: Myomectomy closure.**

## RESULTS

In demographic data (Table 1), the incidence of fibroids in pregnancy is more in third decade of fertile life. In the study the incidence of fibroid is higher in multipara (Table 2). Distribution of LSCS in various gestational age and indications for LSCS has been shown in Table 3 and Table 4.

**Table 1: Demographic data showing total no. of cases with fibroid in pregnancy.**

Age (years)	Number (16)	%
20-25	02	12.5
26-30	03	18.75
31-35	10	62.5
>35	01	6.25

**Table 2: Case distribution according to parity.**

Case distribution	Number	%
Primigravida	05	31.25
Para 1	06	37.50
Para 2	04	25.00
Para 3	01	6.25

**Table 3: Gestational ages of patients.**

Gestational age at cesarean section	No. of patients
< 32 weeks	01
32 to 35 weeks	02
35 to 36 weeks	01
36 to 37 weeks	04
38 to 40 weeks	04

Table 4 gives the indications for which LSCS was performed in each of the 12 patients. In one patient, fibroid was situated in the lower segment (sub mucous type). Sub serous and intra mural (Table 5) were the majority (06 and 05 respectively). Three patients had multiple fibroids (Table 6).

**Table 4: Indications for LSCS.**

Indications for LSCS	No. of cases
Previous LSCS	06
Lower segment fibroid	01
Primigravida with other indications (preterm premature rupture of membrane, unstable lie, previous myomectomy with infertility)	05

**Table 5: The types of fibroid.**

Type of fibroid	(n=12)
Sub serous	06
Intra mural	05
Sub mucous	01

**Table 6: No. of fibroids in cases undergone cesarean section.**

No. of fibroids	(N=12)
Single	09
Multiple	03

In the study, 7 of the 12 patients had lower segment anterior wall fibroids at or close to the incision site, in these, 4 were intramural fibroids and 3 were subserous. The size varied from 4-8 cm with 3 of them being larger than 5 cm in diameter.

**Table 7: Requirement of blood transfusion.**

Need for blood transfusion	(n=12)
Yes	03
No	09

In The remaining 5 cases, one was in the line of incision and out of the remaining 4 fibroids one was intramural in the upper segment and remaining 3 were in the posterior aspect of uterus, subserous type. Regarding intra-operative blood loss, the average blood loss was around 300 ml-500 ml more than in a routine LSCS. We transfused blood in 3 cases (Table 7). There was no surgical site infections or postpartum hemorrhage in any of these cases. The mean operating time was 1 hour 15min (Table 8).

**Table 8: Operative time.**

Operating time	Total no. of cases (n=12)	Mean time
1-2 hours	9	75 min
>2 hours	3	

## DISCUSSION

With more and more women delaying marriage and childbirth, fibroids in pregnancy is on the rise. 10% of women with fibroids in pregnancy develop complications related to the myoma. About 22% to 33% show sudden increase in size.<sup>13</sup> Larger fibroids (>5cm) are more likely to grow during pregnancy and can cause miscarriages, obstructed labor, malpresentations, pressure symptoms, pain due to red degeneration, preterm labor, preterm premature rupture of membranes, retained placenta, postpartum hemorrhage and uterine torsion. Katz et al. found that 10–30% of women with myoma associated with pregnancy had complications as listed above.<sup>14,15</sup> Caesarean section rates in women with myoma is approximately 73%, mainly due to obstructed labor and malpresentations.<sup>16</sup> In present study, the cesarean section rate was 75%.

Kaymak et al compared 40 patients who underwent myomectomy at Caesarean section with 80 patients with myoma who underwent Caesarean section alone. The mean size of the fibroids removed was 8.1 cm compared

to 5.7 cm in the controls. The authors found no significant difference in the incidence of hemorrhage (12.5% in the Caesarean myomectomy group versus 11.3% in the controls), postoperative fever, or frequency of blood transfusions between the 2 groups, and concluded that myomectomy during Caesarean section is a safe procedure if selected carefully and performed by experienced obstetricians. In present study, the size varied from 4 cm to 8 cm, 3 cases had multiple fibroids. Out of the 16 patients with fibroid, 12 underwent cesarean myomectomy. Ortac et al reported 22 myomectomies during Caesarean for large fibroids (>5 cm) they suggested myomectomy for reducing post op sepsis.<sup>17</sup> In another study by Burton et al of the reported 13 cases of myomectomy at Caesarean section, only 1 case had intra-operative hemorrhage and they concluded it to be safe in selected patients.<sup>18</sup> In present study there was no intraoperative hemorrhage. Ehigiegba AE et al. have reported that caesarean myomectomy is safe with average per operative and postoperative bleeding.<sup>19</sup>

Enucleation of the fibroid is technically easier in gravid uterus due to extra looseness of the capsule and dissection becomes easier.<sup>20</sup> In Kerala there is a high incidence of fibroid in reproductive women and so there occurrence in pregnancy is also high so, obstetrician should be skilled to perform emergency myomectomy if indicated.<sup>21</sup> Further strengthening the increasing trend towards Caesarean myomectomy is the case series by Hassiakos et al they compared 47 pregnant women with fibroids who underwent caesarean myomectomy with 94 pregnant women with fibroids who had Caesarean section alone.<sup>22</sup> Myomectomy added a mean operating time of 15 minutes to the Caesarean section. No patient had a hysterectomy, postpartum complications, or blood transfusion. The length of hospital stay was comparable in both groups; hence, these authors also generally recommended performing the procedure.

## CONCLUSION

In our case series study, the mean operating time was 45 minutes more, no patients had hysterectomy or postpartum complications and only 3 patients required one unit of blood transfusion. Caesarean myomectomy, if done in well-equipped centers by an experienced obstetrician is a definite and safe option for these mothers.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: The study was approved by the Institutional Ethics Committee*

## REFERENCES

1. Muram D, Gillieson MS, Walters JH. Myomas of the uterus in pregnancy: ultrasonographic follow-up. *Am J Obstet Gynecol.* 1980;138:16-9.

2. Kaymak O, Ustunyurt E, Okyay RE, Kalyoncu S, Mollamahmutoglu. Myomectomy during cesarean section. *Int J Gynecol Obstet.* 2005;89:90-3.
3. Hasan F, Armugam K, Sivanesaratnam V. Uterine leiomyomata in pregnancy. *Int J Gynecol Obstet.* 1990;34:45-8.
4. Davis JL, Ray-Mazumder S, Hobel CJ, Baley K, Sassoan D. Uterine leiomyomas in pregnancy: A prospective study. *Obstet Gynecol.* 1990;75:41-4.
5. Vergani P, Ghidini A, Strobelt N, Roncaglia N, Locatelli A, Lapinski RH et al. Do uterine leiomyomas influence pregnancy outcome? *Am J Perinatol.* 1994;11:356-8.
6. Coronado GD, Marshall LM, Schwartz SM. Complications in pregnancy, labor, and delivery with uterine leiomyomas: a population-based study. *Obstet Gynecol.* 2000;95:764-9.
7. Qidwai IG, Caughey AB, Jacoby AF. Obstetric outcomes in women with sonographically identified uterine leiomyomata. *Obstet Gynecol.* 2006;107:376-82.
8. Vergani P, Locatelli A, Ghidini A, Andreani M, Sala F, Pezullo JC. Large uterine leiomyomata and risk of cesarean delivery. *Obstet Gynecol.* 2007;109:410-4.
9. Brown D, Fletcher HM, Myrie MO, Reid M. Caesarean myomectomy-a safe procedure. A retrospective case controlled study. *J Obstet Gynecol.* 1999;19(2):139-41.
10. Mahendru RI, Sekhon PK, Gaba G, Yadav S. At times, myomectomy is mandatory to effect delivery. *Ann Surg Innov Res.* 2011;5(1):9.
11. mOrtac F, Gungor M, Sonmezer M. Myomectomy during Cesarean section. *Int J Gynecol Obstet.* 1999;67:189-90.
12. Roman AS, Tabsh KMA. Myomectomy at the time of Cesarean delivery: retrospective cohort study. *BMC pregnancy and childbirth.* 2004;4:14.
13. Rosati P, Exacoustas C, Mancuso S. Longitudinal evaluation of uterine myoma growth during pregnancy. *J Ultrasound Med.* 1992;11:511-5.
14. Myerscough PR. Munro Kerr's Operative Obstetrics. Pelvic tumors. Other surgical complications in pregnancy, labor and the puerperium. 10<sup>th</sup> ed. London: Baillière Tindall Publications; 1982:203-411.
15. Katz VL, Dotters DJ, Droegemueller W. Complications of uterine leiomyomas in pregnancy. *Obstet Gynaecol.* 1989;73:593-6.
16. Kaymak O, Ustunyurt E, Okyay RE, Kalyoncu S, Mollamahmutoglu Myomectomy during Cesarean section. *Int J Gynecol Obstet.* 2005;89:90-3.
17. Ortac F, Gungor M, Sonmezer M. Myomectomy during Cesarean section. *Int J Gynecol Obstet.* 1999;67:189-90.
18. Burton CA, Grimes DA, March CM. Surgical management of leiomyoma during pregnancy. *Obstet Gynecol.* 1989;74:70.
19. Ehigiegba AE, Ande AB, Ojobo SI. Myomectomy during caesarean section. *Int J Gynaecol Obstet.* 2001;75:21-5.

20. Kwawukume EY. Myomectomy during caesarian section. *Int J Gynaecol Obstet.* 2002;76:183-4.
21. Mumtaz P, Sajan R, Vahab A, Imrana HS. Outcomes of caesarean myomectomy-a retrospective study. *J Evi Based Medicine Healthcare.* 2014;1(5):312-9.
22. Hassiakos D, Christopoulos R, Vitoratos N, Xarchoulakou E, Vaggos G, Papadrias K.

Myomectomy during Cesarean section: a safe procedure? *Ann NY Acad Sci.* 2006;1092:408-13.

**Cite this article as:** Valson H, Nazer T, Mukerjee S. Myoma in pregnancy and outcome after cesarean myomectomy. *Int J Reprod Contracept Obstet Gynecol* 2017;6:2267-71.