

## Cesarean Myomectomy: Practical Issues

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### Abstract

**Objective:** To determine the feasibility, safety and outcome of cesarean myomectomy.

**Methods:** It was a prospective study carried out in 25 pregnant women who had uterine myomas and underwent myomectomy during elective or emergency cesarean section. Analysis was done with reference to age, parity, characteristics of uterine myomas, operative morbidity, haematological changes occurring between preoperative and postoperative periods. Duration of surgery and post-operative duration of stay in hospital was also analysed. All cesarean myomectomies were performed by senior obstetrician. Followup of all the patients was done after six weeks.

**Results:** Cesarean myomectomy helps in preventing repeat surgery for myomas and thereby prevents the risk of repeat anesthesia and relaparotomy. In our study forty fibroids of various sizes (2-12 cm) were removed in 25 women during cesarean section. Majority of fibroids were located on anterior wall of uterus except one which was located on the posterior wall of the body of uterus and was submucosal. Majority of the fibroids were detected in the body of uterus and were of subserous and intramural type. Insignificant difference was found in mean preoperative (11.5±0.9 gm/dl) and postoperative haemoglobin (10.7±0.7gm/dl). Post-operatively only two patients required blood transfusion and one patient had fever. Mean time taken for operation was 63.9± 6.34 minutes and mean post-operative duration of hospital stay was 7.2 ± 1.7 days only. No patient had postpartum haemorrhage requiring cesarean hysterectomy in our study.

**Conclusion:** Cesarean myomectomy is safe surgical procedure without any significant complications if performed in selected patients by experienced Obstetrician in tertiary care centre.

**Keywords:** Cesarean section, Myomectomy, Hysterectomy, Fibroids.

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### Introduction

Myomas are the most common benign uterine tumours of female reproductive tract with the prevalence rate of 2-5% in pregnancy.<sup>(1,2)</sup> Delay in child bearing age of women is main attributable factor for increasing incidence of myomas in pregnancy. Exposure to increased level of estrogen hormone during pregnancy is responsible for increase in size of myomas.<sup>(3)</sup> Majority of myomas associated with pregnancy remains asymptomatic and do not require any treatment. About 22-32% myomas show increase in size in antenatal period.<sup>(4)</sup> The practical issues of cesarean myomectomy are to decide how much safe and feasible is the removal and how easy or difficult is the procedure.

Myomas in pregnancy are associated with complications like premature rupture of membrane, preterm delivery, placental abruption and dystocia.<sup>(5,6)</sup> Additionally, fetal malpresentation, IUGR, obstructed labour, retained placenta, intractable pain and ongoing inflammation as a result of red degeneration are other complications. Some complications are primarily related to location of leiomyoma e.g. placental abruption when a submucosal leiomyoma is located beneath a placental site where as other complications are related to size e.g. dystocia, obstructed labour. In pregnant women with myomas cesarean section rates

are higher, upto 73%, mainly due to obstructed labour and malpresentation.<sup>(7)</sup>

Cesarean myomectomy was considered to be life threatening as it may result in intractable intra-operative bleeding and atonic uterus and subsequent hysterectomy.<sup>(8)</sup> In recent decades however, cesarean myomectomy is considered to be a safe procedure, provided that it has been performed by an experienced Obstetrician in carefully selected patients.<sup>(9)</sup>

More widespread knowledge of stepwise devascularisation utilized in controlling postpartum hemorrhage has given confidence to perform myomectomy at the time of cesarean section, thus preventing repeat surgery for myomas later on. The aim of present prospective study was to determine the safety and feasibility of cesarean myomectomy in a series of patients and also to determine the factors leading to postponement of myomectomy.

### Materials and Method

In this prospective study conducted at tertiary care centre, Sri Guru Ram Das Institute of Medical Sciences and Research, Amritsar, 25 Pregnant women with uterine myomas were selected who underwent cesarean myomectomy from February 2015- January 2017. All the patients were counseled for possible myomectomy during cesarean section. Out of 25 patients, in 18 patients fibroids were diagnosed in antenatal period by

sonography and in 7 patients they were incidentally detected during cesarean section.

Prior ethical approval for the study was obtained from Medical Research and Ethics Committee of the hospital. The informed consent was obtained from all the patients undergoing possible cesarean myomectomy.

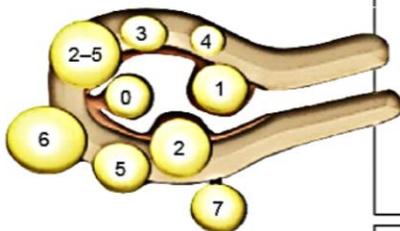
All the women included in the study fulfilled the following criteria: 1) Diagnosed cases of fibroid uterus during pregnancy by antenatal ultrasound or detected for the first time during surgery 2) No history of Antepartum Hemorrhage 3) No surgical procedure done apart from myomectomy 4) No history of any preexisting bleeding disorder.

During cesarean section, the uterine incision through which the fetus was delivered was sutured first. Uterus was then palpated for site, size, and type of myomas. The feasibility for removal of fibroids was decided on retracted uterus after delivery of baby. A transverse or longitudinal incision was made over

uterine myoma and myoma was enucleated. For subserosal pedunculated fibroid an elliptical incision was given at the base of the pedicle and purse string suture was applied at the base piercing serosa and including some depth of myometrium for hemostasis. Hemostasis was also secured by using Electrocautery. The uterine incision, after enucleation of myomas, was sutured in two to three layers using chromic catgut No 1. Myomas were sent for Histopathological Examination. Intravenous infusion of oxytocin was administered during myomectomy and next 4-6 hours following myomectomy.

For present analysis, information on demographic data, maternal features including maternal age, parity, antenatal course, gestational age at delivery, fetal presentation and engagement of head, placental localisation were recorded. Complete fibroid mapping was done and data regarding size, number, type and location of leiomyomas was recorded. Fibroid mapping was considered on the basis of FIGO classification.

### FIGO Classification

Leiomyoma subclassification system		SM – Submucosal	0	Pedunculated intracavitary
			1	<50% intramural
			2	≥50% intramural
		O – Other	3	Contacts endometrium; 100% intramural
			4	Intramural
			5	Subserosal ≥50% intramural
			6	Subserosal <50% intramural
			7	Subserosal pedunculated
			8	Other (specify eg, cervical, parasitic)

Routine Investigations, Platelet count, PTI, BT, CT were done. Prior arrangement for blood in hand was made. In addition other parameters e.g. duration of surgery, complications during surgery, preoperative and postoperative hemoglobin levels were determined and recorded. Findings at follow up after 6 weeks were also recorded.

### Results

Twenty five patients underwent cesarean myomectomy from February 2015 to Jan 2017.

**Table 1: Demonstrates age, parity and gestational age of the study population. n=25**

Parameters	Number(n=25)	Percentage (%)
<b>Age(Yrs)</b>		
20-25	4	16
26-30	12	48
31-35	6	24
36-40	3	12
<b>Parity</b>		
0	17	68
1-2	6	24
3-4	2	8
>4	-	-
<b>Gestational age(weeks)</b>		
31-34	2	8

35-38	15	60
39-42	8	32

The patient age was between 20-40years and out of them 68% of them were Primipara. The gestation age of patients was between 31-42weeks.

**Table 2: Shows the indications of Cesarean section among study patients**

Indications	Number	Percentage(%)
Previous LSCS	6	24
Breech Presentation	1	4
Cephalopelvic Disproportion	7	28
Transverse Lie	1	4
Fetal distress	7	28
Severe IUGR with Reactive Non Stress test with Doppler changes	2	8
Previous myomectomy with fibroid	1	4

**Table 3: Depicts Type, size and location of fibroids removed**

Parameter	Number(n=40)	Percentage (%)
<b>Types of</b>		
Subserosal	21	52.5
Intramural	17	42.5
Submucosal	2	5
<b>Size</b>		
<3cm	18	45
>3cm and <6cm	17	42.5
>6cm	5	12.5
<b>Location</b>		
Body	25	62.5
Fundus	9	22.5
Lower uterine segment	6	15

Most of patients had 1 to 2 fibroids only and most of fibroids were of 3-4 cm in diameter. All fibroids removed were located on anterior wall of uterus except in one patient where a large fibroid (18x16cm) located in posterior uterine wall, which was submucous fibroid, projected through the uterine incision after the delivery of baby. 21(52.5%) fibroids were subserous, 17(42.5%) were intramural and only 2 (5%) were submucous. Majority (62.5%) of fibroids were seen in body of uterus, only 9(22.5%) were present in fundus of uterus and 6 (15%) were present in lower uterine segment. The flattened intramural fibroids, fundal intramural fibroids

adjacent to cornua, fibroids located in the region of isthmus and seedling fibroids were not removed.

**Table 4: Fibroid mapping according to FIGO Classification-**

Group number	0	1	2	3	4	5	6	7	8
Number of fibroids	0	2	0	4	13	6	13	2	0

**Table 5: Outcome of the study patients (n=25)**

Parameters	
Mean Preoperative Hb (g/dl)	11.5±0.9
Mean postoperative Hb(g/dl)	10.7±0.7
Frequency of blood transfusion (%)	8%
Incidence of postoperative fever(%)	4 %
Mean duration of operation(mins)	63.9±6.34

No significant difference in preoperative and postoperative haemoglobin values was noticed. Postoperatively only 1 patient had fever and mean duration of surgery was 63.9 ±6.34 minutes. Two patients required blood transfusion in postoperative period. In our study no patient had postpartum hemorrhage requiring cesarean hysterectomy.

**Table 6: Depicts the duration of hospital stay of patients Population (n=25)**

No of Days	Number of patients	Percentage (%)
5-6	10	40
7-8	8	32
9-10	7	28

The mean duration of stay in hospital after cesarean myomectomy was 7.2± 1.7days with a range of 5 to 10 days. Post-operative period was uneventful in all cases and followup after 6 weeks showed that the uterus was properly involuted, except in one case with submucous fibroid (18x16cm) wherein uterus was 10 weeks in size. She again came for followup after six weeks and the uterus was bulky.

## Discussion

Cesarean myomectomy was earlier avoided because of risk of complications like severe haemorrhage and possibility of hysterectomy during cesarean section.<sup>(10,11)</sup> In antenatal period, with myomas in utero, complications such as, intrauterine growth retardation, placenta previa, preterm labour, postpartum haemorrhage are likely to occur in index pregnancy as well as subsequent pregnancies else another surgery has

to be performed between pregnancies to remove fibroids.

Lately several authors are of opinion that cesarean myomectomy can be performed safely and successfully, if performed by an experienced obstetrician in carefully selected patients. In a study conducted by Ehigiegba et al,<sup>(12)</sup> 25 patients underwent cesarean myomectomy and no patient had severe bleeding requiring hysterectomy. In another study Hassiakos et al<sup>(9)</sup> made comparison between 47 pregnant women with fibroids who underwent cesarean myomectomy and 94 pregnant women with fibroids who had cesarean alone. He concluded that myomectomy added mean operating time of 15 minutes to cesarean section and no patient had complications like postpartum haemorrhage requiring hysterectomy. No patient required blood transfusion postoperatively. Hence they strengthened the increasing trend toward the myomectomy during cesarean section.

In our study cesarean myomectomy was performed in 25 patients and 40 fibroids were removed. The study suggests that myomectomy during caesarean section is a safe procedure. The mean preoperative haemoglobin of patients was  $11.5 \pm 0.9$  gm/dl and mean postoperative haemoglobin was  $10.7 \pm 0.7$  gm/dl. No patient had postpartum haemorrhage necessitating emergency cesarean hysterectomy. Only two patients needed postoperative Blood Transfusion.

Several management options have been used to control blood loss in cesarean myomectomies such as uterine artery ligation,<sup>(13,14)</sup> purse string sutures, electrocautery, use of tourniquets and high dose oxytocin.<sup>(15)</sup> In our study we applied purse string sutures, did bimanual massage and intravenous infusion of high dose oxytocin was administered to obtain a sustained uterine contraction during myomectomy and was further continued for 4-6 hours after surgery. Event ration of uterus gave better access to fibroids.

Myomas are classified as subserosal, intramural, submucosal or pedunculated. In current study subserosal myomas had the highest incidence (52.5%). Number of corporeal leiomyomas (62.5%) were also more as compared to those located in fundus (22.5%) and lower uterine segment (15%).

In our study myomectomy was conducted in a patient with large submucous fibroid (18X16cm) in lower uterine segment on posterior wall which projected out through uterine incision after delivery of baby, virtually extending out itself. There were no intraoperative or postoperative complications. Similarly Leanza et al<sup>(16)</sup> conducted a successful caesarean myomectomy in a large myoma of 22cm diameter and 3000gms in weight. Yuddandi et al<sup>(17)</sup> reported removal of a 33.3x28.8x15.6cm fibroid at cesarean section with intraoperative blood loss of 1860ml necessitating blood transfusion.

In a study conducted by Kwawukume<sup>(18)</sup> on 24 women in Ghana, the average time taken for surgery in

cases having myomectomy with cesarean section (62.08mins) was longer than in those who had caesarean section only (50.83 mins). In our study the mean duration of surgery was  $63.9 \pm 6.34$  mins. Post-operative average duration of hospital stay in current study was  $7.2 \pm 1.7$  days.

A study conducted by Roman and Tabsh<sup>(18)</sup> recommended that cesarean myomectomy should be avoided in intramural myomas within fundus. Similarly Hassiakos et al<sup>(9)</sup> suggested that cesarean myomectomy should be avoided in intramural myomas located in the fundus and myomas located in the cornua of uterus. In current study large flattened intramural myomas, fundal intramural myomas located near cornual region, those located in isthmus region and seedling fibroids were not removed.

Though myomectomy during pregnancy should not be encouraged, myomectomy during cesarean section is a successful undertaking.<sup>(19)</sup> This is because uterus is better adapted physiologically to control haemorrhage in postpartum phase than in any other stage in a women's life. Understanding haemostasis achievement, technique, expertise, training, availability of blood components, good anesthesia are some of the requirements for cesarean myomectomy.

## Conclusion

Cesarean myomectomy can be recommended in selected patients in well-equipped tertiary care centres. It will be beneficial for the future reproductive outcome of the patient. Fibroid mapping can help in predicting feasibility of myomectomy but intra-operative assessment of fibroids is important in decision making for cesarean myomectomy. Complications like severe hemorrhage, and cesarean hysterectomy can be decreased by taking adequate measures to minimize blood loss like uterotonic drugs, uterine artery ligation, uterine tourniquets, stepwise devascularisation and post cesarean uterine artery embolisation. Hence wherever feasible preservation of uterus should be considered by the experienced obstetricians so that mother's ability to bear more children is not compromised.

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