



ORIGINAL ARTICLE

Myomectomy at the time of Cesarean Section: A Prospective Multicentre Study

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Abstract

Background: Myomectomy can be performed during cesarean section. **Objective:** The purpose of the present study was to assess the safety and efficacy of myomectomy during cesarean section. **Methodology:** The study design was a prospective multi-centre study done in three tertiary care hospitals Dhaka Medical Collage, BSMMU & private Hospital in Dhaka City. The subject were 65 pregnant women elective or emergency myomectomy during cesarean section. All cesarean section myomectomy were performed by consultants. Intra-operative and post-operative complications such as change in haematocrit, length of operation, blood loss were estimated. Length of hospital stay was also recorded. **Results:** 79 Fibroid of various sizes (2 to 6cm) were removed from 65 women. Fibroid were on the anterior uterine wall with most being sub serous and intra mural. Four patients had one unit of whole blood transfusion in post-operative period. No hysterectomy was done at the time of cesarean section. There was no significant change of haematocrit: incidence of post-operative fever and duration of operation. The mean duration of post-operative hospital study was 7.3 ± 1.2 days, 5 patients subsequently became pregnant, were also underwent repeated cesarean section in the study period. **Conclusion:** In selected cases myomectomy during cesarean section does not appear to result in an increased risk of intrapartum or short-term post-partum morbidity if performed by an experienced practitioner. Cesarean myomectomy is a safe surgical options with no significant complications. [*Journal of Current and Advance Medical Research 2019;6(1):18-22*]

Keywords: Cesarean section; myomectomy; uterine myoma

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Introduction

Uterine myoma are the most common type of benign tumor of female reproductive tract with an incidence ranging from 5.4 to 7.7%^{1,2}. The size of uterine myoma is greatly increased during the fertile period. This is associated with exposure to circulating estrogen³. The frequency of uterine myoma during pregnancy has been reported to be 0.05-5.0%⁴.

Approximately 10.0% of gravida develop complications associated with myoma during pregnancy, such as pain, abortion, placental abruption, premature rupture of membrane (PROM), premature labor, post-partum hemorrhage and dysfunctional labor⁵.

In some instances conversion of cesarean myomectomy to cesarean hysterectomy is necessary due to severe bleeding⁶⁻⁷. Currently, it has been suggested that cesarean myomectomy is a safe surgical modality provided if it is performed in carefully selected patients⁸⁻¹¹. Myoma is also a common problem in the women of reproductive age in Bangladesh. Accordingly this prospective study was under taken to evaluate the safety and efficacy of the cesarean myomectomy in a series of consecutive patients.

Methodology

In this prospective ongoing study, we identified 65 patients with documented uterine myoma who underwent cesarean myomectomy from January 2005 to December 2017 in Dhaka Medical Collage Hospital, BSMMU Hospital and one private Hospital in Dhaka city. All patients underwent cesarean section with known uterine myoma were counseled and consented for a possible cesarean myomectomy. Inclusion criteria were detection of uterine myoma on prenatal ultrasonography or during cesarean section, no placenta previa or placenta abruption, no other procedures performed during the cesarean section, except myomectomy like ovarian cystectomy or absence of coagulation disorder. The uterine incision through which the fetus was delivered was sutured following delivery. A transverse or longitudinal incision was then made over the uterine myoma electro-cautery was used to minimize bleeding. Following removal of myoma, the uterine incision was sutured in two or more layers using an absorbable suture (1-0 chromic). During the myomectomy and the 24 hours period following myomectomy an intravenous infusion of oxytocin was administered. Specimens' form the all

removed myoma were send for histopathology. The informed consent was obtained from all selected patients. Permission from the concerned ethical committee of the respective centre was also taken regarding the involved patients after careful examination of the ethical aspects. Statistical analysis was done by SPSS (Statistical package for social science) software for windows version 12.0 Data were expressed in number, percent or mean +SD as appropriate.

Results

A total number of 65 patients had so far met the study criteria and had cesarean myomectomy during the 5 Years period. Table 1 show the obstetric characteristics (age, parity and gestational age) of the study patients.

Table 1: Distribution of age, Parity and Gestational Age of Study Population (n=65)

Characteristics	Frequency	Percent
Age Group		
20 to 25 Years	10	15.4
26 to 30 Years	35	53.8
31 to 35 Years	13	20.0
36 to 40 Years	7	10.8
Parity		
0	21	32.3
1 to 2	26	40.0
3 to 4	11	16.9
≥5	7	10.8
Gestational age		
<30 Months	7	10.8
31 to 34 Months	12	18.5
35 to 38 Months	35	53.8
39 to 42 Months	11	16.9

The age of the patients range between 20 to 40 years and 40% of them were nulliparous. The gestational age range was 30 to 42 week.

Table 2: Different Indications for Cesarean Section among Study Patients (n=65)

Indication of CS	Frequency	Percent
H/O CS with complications	25	38.5
PIH	10	15.4
CPD	12	18.5
Prolonged first stage of Labor	9	13.8
Breech with complications	7	10.8
C. fibroids with obstruction	2	3.1

CS= cesarean section; PIH= Pregnancy induced hypertension; Cephalo-pelvic disproportion (CPD); C= Cervical

Table 2 shows the indication of cesarean section in study population.

Table 3: Depicts Number, Type, Size, Location of Fibroids

Parameters	Frequency	Percent
Number of fibroids		
1	27	41.5
2	32	49.2
3	29	44.6
4	10	15.4
5	5	7.7
Type		
Sub serosal	35	53.8
Intramural	38	58.5
Sub Mucous	2	3.1
Pedunculated	12	18.5
Size		
<3 cm	48	73.8
≥3 cm and <6 cm	34	52.3
≥ 6 cm	13	20.0
Location:		
Body	48	73.8
Fundus	35	53.8
Isthmus	3	4.6
Fundus + Body	24	36.9
Pedunculated	13	20.0

Table 3 shows the number and type of fibroids removed. Most of the patients (30-323%) had only one or two fibroids. Most fibroids were 2-4cm in diameter. All the fibroids removed were located on the anterior wall of the uterus with majority (55.56%) being sub serous. Twenty (40.0%) fibroids were interamural of which only one was pedunculated with a short stalk.

Table 4: Showing Outcome of the Study Patients (n=65)

Parameters	Frequency	Percent
Pre-operative Hb (g/dl)	65	100.0
Operation Time (min)	40	61.5
Post-operative Hb (g/dl)	65	100.0
Blood transfusion (%)	4	6.1
Postoperative fever (%)	6	9.2

Table 4 mean duration of operation was 60.2±18.3 minutes. There was on significant deference in the pre-operative and post-operative hemoglobin values. Incidence of post-operative fever was 4.2%. Frequency of blood transfusion was 1.1±1.2%. No

patient had life threatening hemorrhage in this study and a hysterectomy as a result of excessive blood loss. Two patients (6.67%) became pregnant after cesarean myomectomy and were under went repeat cesarean section during the study period.

Table 5: Duration of Hospital Stay of the Study Population (n=65)

Parameters	Frequency	Percent
0 to 4	25	38.5
5 to 6	22	33.8
7 to 8	13	20.0
9 to 10	5	7.7
Mean days = 7.3±1.26		

The mean duration of hospital stay after cesarean myomectomy was 7.3±1.2 days with a range of 4 to 10 days (Table 5).

Table 6: Pre- and Post-Operative Hemoglobin Concentration (gm/dL)

Pre-operative	Frequency	Percent
8 to 9 (gm / dL)	15	23.1
9 to 10 (gm / dL)	20	30.8
>10 (gm / dL)	30	46.1
Post-operative		
8 to 9 (gm / dL)	2	3.1
9 to 10 (gm / dL)	9	13.8
>10 (gm / dL)	54	83.1

Discussion

Uterine myoma are the most common type of uterine tumor: the incidence of myoma in fertile women has been reported to ne 25-30%^{12,13}. Histopathologically uterine myoma have been reported to occur in 77% of uteri obtained from total abdominal hysterectomy specimens¹⁴.

The etiology of uterine myoma has been reported to be associated with various factors, such as age, genetic factors, hormones and ethnicity: however the exact etiology or pathophysiology under myoma remains unclear.

The incidence of uterine myoma has been reported to ne three times in the black population than white or other ethnic populations¹⁵. It has also been reported that their growth of the uterine myoma is closely related to estrogen, growth hormone and progesterone¹⁶.

Uterine myoma are rarely seen and there size are

decreased in postmenopausal women. Based on their finding it has been suggested that estrogen plays a critical role in the growth of uterine myomas¹³.

With respect to the distribution of myoma as a function of parity. Rice et al¹⁷ reported that uterine myoma frequently develop in multiparas; however, Gravind et al¹⁸ noted that myoma are more prevalent in primipara. In the study, uterine myoma were common in primi paras (40%).

Uterine myoma may be serosa, intramural or sub-mucosal or pedunculated. In this current study, sub-serosal myoma had the highest incidence (54%) as reported by other authors⁸⁻¹⁰.

In general, most obstetrician have been instructed not to perform uterine myomectomy during cesarean section, with the exception of pedunculated myoma because of risk of massive hemorrhage, and the possibility of hysterectomy. However, if the uterine myoma are not removed, the possibility of re-operation due to complications arising from myoma and the influence on future pregnancies persist. Because of these uncertainties several studies involving cesarean myomectomy have been conducted⁸⁻¹¹.

Several authors have suggested that uterine myomectomy can be performed both safely and successfully during cesarean section if performed by an experienced obstetrician in a carefully selected patient. Burton et al¹¹ performed myomectomy during cesarean section in 13 patients and reported successful recovery in 12 patients, one transfusion was performed intra operatively because of bleeding. The authors concluded that myomectomy during cesarean section is safe in carefully selected patients¹¹. Ehigiegba et al¹⁹ performed cesarean myomectomy in 25 patients and reported no case of severe bleeding.

In this present study shows that cesarean myomectomy may not be as dangerous as most obstetricians are trained to believe as 30 cases of cesarean myomectomy were done and none had severe hemorrhage necessitating emergency hysterectomy. The blood loss was average. Only four patients needed post operative blood transfusion. Although this rate is more than our average blood transfusion rate after an uncomplicated cesarean section, it is lower than the rate reported by most authors. We advocate the use of high dose oxytocin to obtain a sustained uterine contraction during myomectomy and for 12-24

hours after surgery as was used in this study. The average duration of hospital stay was 7.3±1.2 (mean) days.

Several authors have also recommended the optimal type of uterine myoma which could be treated by cesarean myomectomy. Roman and Tabsh⁹ recommended that intra mural myoma within the fundus should be avoided. Hassiakos et al¹⁰ concluded that intra mural myoma in the fundus, myoma located proximal to the fallopian tubes and myoma located in the cornua should be avoided. In the current study, cesarean myomectomies were performed with no restriction based on location. We performed cesarean myomectomy without damaging the fallopian tubes, even in cases in which the myoma were located in the fundus or proximal to the fallopian tubes.

Conclusion

This study has shown that cesarean myomectomy may not be as dangerous as generations of obstetricians and gynecologists have been trained to believe with adequate experience of routine myomectomy and the use of high dose oxytocin infusion, severe hemorrhage, which is the most serious complications can be curtailed. Cesarean myomectomy can be successfully performed when conducted by an experienced practitioner.

References

1. Lippma SA, Warner M, Samuels S, Olive D, Vercellini P, Eskenazi. Uterine Fibroids and gynaecologic pain symptoms in a population based study. *Fertil Steril*, 2003;80:1488-1494
2. Flake GP, Andersen J, Dixon D. Etiology and Pathogenesis of uterine leiomyomas: A review *Environ Health Perspect* 2003;111:1037-1054
3. Wallach EE. Myomectomy. In: Tomson JD, Rock JA (eds), *Tel Lind'es Operative Gynecology*, 7th edn. Philadelphia, PA: Lippincott, 1992:647-662
4. Rasmussen KL, Knudsen HJ. Effect of uterine fibroid on pregnancy. *Ugesker Laeger* 1994;51:7668-7670
5. Phelan JP. Myomas and pregnancy. *Obstet Gynecol clin North Am* 1995;22:801-805
6. Depp R. Cesarean Delivery. In: Gabbe SG, Nieby L JR, Simpson J (eds) *Obstetrics: Normal and Problem Pregnancies* 4th edn. New York: Churchill Livingstone, 2002:599
7. Cunningham FG, Gant NF, Levenok KJ, Gilstrap LC, Hauth JC, Wenstrom KD (eds). *Williams Obstetrics*, 21st edn. New York: McGraw Hill Press, 2001
8. Ortac F, Gungor M, Sonmezer M. Myomectomy during cesarean section. *Int J Gynecol Obstet*, 199;67: 189-190
9. Roman AS, Tabsh KM. Myomectomy at time of cesarean delivery: A retrospective cohort study. *BMC Pregnancy Child birth* 2004;4: 14-17
10. Hassiakos D, Christopoulos P, Vitoratos N, Xarcho ulakoue, Vaggos G, Papadias K. Myomectomy during

- cesarean section: A safe procedure? *Ann NY Acad Sci* 2006;1092:408-413
11. Burton CA, Grimes DA, March CM. Surgical management of Leiomyomata during pregnancy. *Obstet Gynecol*, 1989;74:707-709
 12. Arthur LH, Danial RM Jr, Morton AS, Wiliam D (eds). *Comprehensive Gynecology* 2nd edn. St Louis, MO: Mosby Year Book, 1992
 13. Stewart EA. Uterine fibroid. *Lancet* 2001;357:293-298
 14. Cramer SF, Patel A. The pregnancy of uterine Leiomyomas. *Am J Clin Pathol*. 1990;94:435-438
 15. Marshall LM, Spiegelman D, Barbieri RL, et al. Variation in the incidence of uterine leiomyoma among premenopausal women by age and race. *Obstet Gynecol* 1997;90:697-973
 16. Burtam VC Jr, Reiter RC. Uterine Leiomyoma. Etiology, symptomatology and management. *Feutil Steril* 1981;36:433
 17. Ricc JP, Kay HH, Mahony BS. The clinical significance of uterine Leiomyomas in pregnancy. *Am J Obstet Gyaecol*. 1989;160:1212-1216
 18. Gravind K, Palvio DHB, Lauristen JG. Uterine myoma in pregnancy, *Acta Obstet Gynecol Scand*, 1990;69:617-619
 19. Ehigiegba AE, Ande AB, Ojobo SI. Myomectomy during cesarean section. *Int J Gynaecol Obstet* 2001;75:21-25