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Original Research Article

A prospective study of simultaneous myomectomy with cesarean section at a tertiary care hospital

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ABSTRACT

Background: Simultaneous surgical removal of a previously diagnosed myoma during cesarean section is preferred these days to reduce multiple operative procedures. The aim of present study was to determine the safety, cost effectiveness and complications of myomectomy at the time of cesarean delivery and its related peri-operative morbidity.
Methods: This prospective study was conducted in total 50 pregnant cases during the period of 6 months. The analysis focused on age and gender, the number, size and location of fibroids, the need for hysterectomy and blood transfusion.
Results: The mean age of patient was 28.2 years. Out of the 50 patients, 66% were primiparous and only 17% were multiparous. 56% patients underwent caesarean section for indications like primigravida head floating, IUGR, oligohydroaminos. 48% patients had myoma size 2-4 cm. Most of the myomas were located anteriorly (64%). The most common type of leiyomyoma found was subserosal (31%) and 17% with intramural fibroid. Only one patient required post operative blood transfusion whereas none of the patients underwent hysterectomy.
Conclusions: Cesarean myomectomy is a safe and effective procedure and it is a feasible undertaking in experienced hands.

Keywords: Blood transfusion, Cesarean section, Fibroids, Hysterectomy, Morbidity, Myomectomy

INTRODUCTION

The most frequent benign smooth muscle tumours of the female genital tract over the age of 30 are uterine fibroids, also known as uterine myomas or leiomyomas, and the overall incidence of fibroid uterus is approximately 40-60% by the age of 35 years.[1,2] Given the fact that their growth is related to their exposure to circulating estrogens, fibroids obtain their maximum dimensions during the reproductive period.[3] However, the uterine myomas are observed in pregnancy more frequently now than in the past. Because many women are delaying child bearing till their late thirties, the time with the greatest risk for myoma growth (reproductive age group). The prevalence of uterine fibroids in pregnancy varies between 2% and 12% percent depending upon the trimester of assessment and the size threshold.[4,5] The use of ultrasonography has improved the diagnostic ability of detecting small myomas and has increased our knowledge of myomas in pregnancy.

Furthermore, uterine fibroids during pregnancy can result in first-trimester losses, pressure symptoms, pain from red degeneration (necrobiosis), torsion of a pedunculated variant, malpresentations, preterm rupture of membranes and preterm labour, obstructed labour due to a cervical or lower segment mass intrapartum and retained placenta, subinvolution of the uterus, postpartum endomyometritis, and postpartum hemorrhage.

Myomectomy is a common surgical procedure to remove uterine fibroids. Traditionally obstetricians and gynecologist avoided myomectomy either during

pregnancy or at cesarean section due to the fear that bleeding may be intractable as a result of the increased vascularity of the pregnant uterus and uterine atonicity requiring life-saving hysterectomy.[6,7] Many researchers have studied the feasibility of myomectomy during cesarean section, either by developing new techniques for myomectomy or by devascularization techniques to reduce blood loss and to potentially eliminate multiple surgeries. However, many surgeons are still resisting this policy due to the lack conclusive evidence demonstrating its safety.[8]

Hence the present study was undertaken to evaluate the feasibility and outcome of myomectomy during cesarean section.

METHODS

After obtaining written informed consent from all the patients, this prospective observational study was conducted in the department of obstetrics and gynecology, at a tertiary care center during a period from June 2022 to November 2022. A total of 50 patients between 20 to 40 years, pregnant at term were well investigated with pre operative Hb of greater than 10 gm% and had cesarean section along with myomectomy were included in the study. Patients with other co morbid conditions, with pre-existing coagulopathy, patients of antepartum hemorrhage were excluded from the study.

A detailed history and patient characteristics including age, body mass index, gestational age at birth, gravidity, indications for cesarean section, number of previous cesarean deliveries, presence of systemic diseases, bleeding diathesis and other prior surgical procedures were noted. The location, size and number of myomas were recorded after evaluation with ultrasonographic examination and finally noted after cesarean section. Patients were evaluated in terms of preoperative and postoperative hemoglobin (Hb), duration of surgery, massive hemorrhage, need for blood transfusion, postoperative obstetric complication & need for intensive care.

Surgical technique

The technique involved making an incision on the serous surface of the uterus through the myometric to myoma and enucleate. The incision was maintained vertically except for the pedunculate fibroids which were removed by circular incision around the pedicle. The fibroid was held with vulsellum, allis forceps or myoma screw; then myoma was shelled out by dissection underneath the false capsule of the tumor. If a large vessel was found to be entering the tumor, it was clamped, divided and ligated. The dead space was obliterated by interrupted sutures with vicryl 1-0. Hemostasis was confirmed and additional sutures were passed if necessary. All the procedures were performed under general anesthesia. All the patients received prophylactic antibiotics.

Statistical analysis

All data was transferred into excel sheet and then SPSS 22 software. Descriptive analysis (mean and standard deviation) was carried out in the carried-out observations and results.

RESULTS

A total of 50 patients who underwent cesarean section along with myomectomy were enrolled in the study. The mean age of the patient was 28.2 years with ranged from 20-40 years. Out of 50 patients, 66% were primiparous and only 17% were multiparous. Detailed demographic and obstetric characteristics of the patients are shown in Table 1.

Table 1: Demographic and obstetric characteristics of the patients.

Characteristics	Mean±SD
Age (years)	28.2±4.23
Weight (kg)	81.85±1.87
Height (m)	1.64±0.11
BMI (kg/m^2)	23.8±3.35
Gravida	3.4±1.67
Parity	2.17±1.53
Gestational age (weeks)	37.60±2.42

The maximum number of patients (56%) underwent caesarean section for indications like primi head floating, IUGR, oligohydramnios followed by 20% for previous caesarean as depicted in Figure 1.

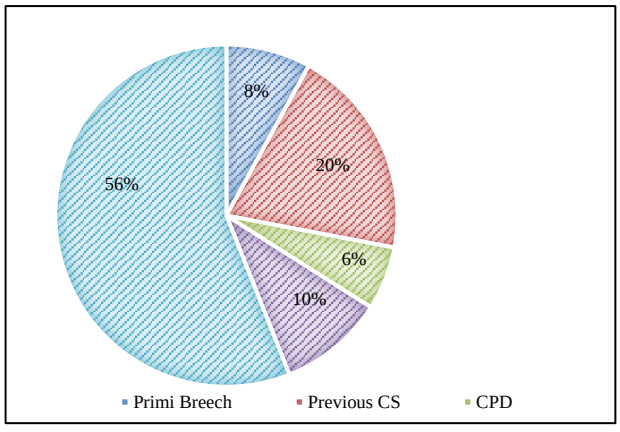

Figure 1: Distribution of patients according to indication of caesarean section.

Size of the myoma varied from 1×1 cm to 7×6 cm. Maximum numbers of patients (48%) had myoma size 2-4 cm, most common type of leiomyoma found was sub serosal (31%) and most of the myomas were located anteriorly (64%) as shown in Table 2. Almost 90% patients had 1-2 fibroids with 10% having >2 fibroids.

Table 2: Distribution of cases according to the size, types and location of fibroids.

Fibroid parameters		No. of patients	Percentage
Diameter	<2 cm	3	6
	2-4 cm	24	48
	>4 cm	23	46
Types of myoma	Sub serosal	31	62
	Intramural	17	34
	Subserosal + intramural	2	4
Locations	Cornual	4	8
	Fundal	3	6
	Anterior	32	64
	Posterior	7	14
	Anterior + cornual	1	2
	Anterior + posterior	2	4
	Anterior + fundal	1	2

Table 3: Outcomes of cesarean myomectomy patients.

Characteristics	Mean±SD
Preoperative hemoglobin level (gm/dl)	11.81±1.28
Post-operative hemoglobin level (gm/dl)	10.24±1.51
Mean change in hemoglobin values (gm/dl)	1.57±0.23
Duration of operation (minutes)	55.33±17.12
Length of hospitalization (days)	3.32±1.34
Incidence of hemorrhage (%)	5.47±1.25
Blood transfusion (No of patients)	1(2.0%)

Table 3 shows the outcomes of cesarean myomectomy patients. Only one patient required post operative blood transfusion whereas none of the patients underwent hysterectomy. Only 2 neonates were admitted to the nursery due to low birth weight.

DISCUSSION

Caesarean myomectomy was not seen until the last decade and very limited literature is available till date. This was due to the high risk of hemorrhage associated with this procedure and the need for blood transfusion as well as the fear of hysterectomy. For particular circumstances, such as pedunculated uterine fibroid, anterior subserous fibroid, and fibroid in the lower uterine segment, some obstetricians have begun doing selective myomectomy at caesarean section. Recently, several authors have argued in favour of standard caesarean section removal of all anterior wall uterine fibroids.

In the present study, mean age of the patient was 28.2 years with ranged from 20-40 years. Out of 50 patients, 33 patients (66%) were primiparous. In a similar study conducted by Adesiyun and Ojabo in Nigeria, the patient's mean age was 31.5 years with ranged from 27-44 years. Of the 22 patients, 16(72.7%) were primigravida and 19 (86.4%) of the patients had cesarean section at term, 2 (9.1%) and 1 (4.5%) of the patients were preterm and post term respectively.[9] Similarly, in Agarwal et al study conducted in UP, India, 61.54% mother's parity was zero and only 15.39% mothers were having parity of two.[10] A significant number of our patients underwent elective cesarean section (45/50) with remaining 5 patients had emergency cesarean section which is comparable with the study done by Adesiyun and Ojabo where the significant number of patients (16/22, 72.7%) had elective cesarean section and the remaining 6 (27.3% patients) had emergency cesarean section.[11] In current study the leading indication for cesarean section were like primi head floating with cord around the neck, IUGR, oligohydramnios, bad obstetric history and premature rupture of membrane accounting for 56% of the cases with malpresentation (breech) in 8% patients, previous cesarean section in 20% cases.

The idea that fibroids enlarge throughout gestation has been debunked by the use of ultrasonography to measure fibroids' growth throughout pregnancy. The majority of uterine fibroids (49 to 60 percent) do, in fact, have minor (defined as less than 10 percent) volume changes throughout gestation, while 22 to 32 percent suddenly get larger and 8 to 27 percent lessen in size. The majority of development in fibroids that do enlarge happens in the first trimester, with little to no additional growth occurring in the second and third trimesters. Smaller fibroids are more likely to remain stable in size, whereas larger fibroids (>5 cm in diameter) are more likely to expand. The average fibroid volume increases by 12 percent during pregnancy, and very few fibroid volumes rise by more than 25 percent. In the current study, 48% of patients had myomas between 2-4 cm, 46% had myomas >4 cm, and 6% had myomas smaller than 2 cm. According to Shavell et al, people with myomas larger than 5 cm in diameter are at a higher risk than those who have none or ones that are smaller.[12]

The most common leiomyoma being sub serosal 62%, with 17 patients (34%) having intramural fibroid, none of them had either cervical or pedunculated fibroid. These findings are in accordance with the study conducted by Hassiakos et al and Nargis et al where the majority of patients were having sub serosal myomas.[13,14] In the study by Adesiyun et al, a total of 46 fibroids were removed in the 22 patients, of them 52.2% were subserous, 34.8% were intramural and 6 were submucous, 69.9% fibroids were between 6-10cms size.[15] The most common location of fibroid being corpus anterior (64%) with 14% being posteriorly located fibroid. Almost 90% patients had 1-2 fibroids with 10% having >2 fibroids. These results were comparable with the study done by Agarwal et al where in 92.3% patients the location of myoma was at anterior wall and subserous and in 7.7% cases it was fundal fibroid.[16]

In existing study, there was no major difference between pre-operative and post operative hemoglobin. Neonatal outcome was good in all patients. The 5-minute APGAR score was 8-9 in all newborns with birth weights ranging from 1600 gms (IUGR) to 4100 gms. There was no maternal and perinatal mortality. Though myomectomy during pregnancy is still not encouraged as uterus in the immediate postpartum phase is better adapted physiologically to control hemorrhage than in any other stage in women's life. Enucleation of fibroid is technically easier in gravid uterus owing greater looseness of capsule. No patient had hysterectomy or any post operative complications, hence caesarean myomectomy can be performed in a well-equipped setting by a skilled surgeon. Only one patient required post operative blood transfusion whereas none of the patients underwent hysterectomy. In Turkey, Ortac et al reported no bleeding and no need for blood transfusion in patients with myomas exceeding 5 cm that had been operated with cesarean myomectomy.[17]

Various methods have been recommended to prevent bleeding during cesarean myomectomy. The majority of studies in the literature have reported using high dose oxytocin intraoperatively and in the postpartum period.[18] Uterine tourniquet, electrocautery, bilateral uterine artery ligation and the other intraoperative techniques are also useful in reducing the amount of bleeding.[19] The adequate management of fibroids, previously known or surprisingly met during cesarean delivery, is controversial. Additional benefits of surgical management of uterine fibroid during cesarean section include reduction of the risk of anesthesia as well as of the cost.[20] The study has a limitation of small sample size and short time duration.

CONCLUSION

Considering the results of present study and according to the literature, we can say that myomectomy during cesarean section is a safe and effective method in case attempted by experienced surgeons in well-equipped tertiary care centers. Fibroids obstructing the lower uterine segment; accessible sub serosal, intramural and pedunculated fibroids can be safely removed by experienced surgeons. There is benefit of one surgery rather than two hence chances of operative complications are reduced. Nevertheless, further large scaled prospective should be done in this respect.

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