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Safety and feasibility of Myomectomy during cesarean delivery

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ABSTRACT

Aims: To assess the safety and feasibility of myomectomy during cesarean delivery.

Methods: This was a retrospective descriptive study conducted at Kathmandu Model Hospital. Data on cesarean myomectomy were obtained from hospital records and analyzed in terms of demographic profile, number, size and location of fibroids, intraoperative blood loss, and drop in hemoglobin level, blood transfusion, birthweight and duration of hospital stay.

Results: Mean age of mother and gestational age at delivery were 32.6 years and 37.8 weeks respectively. Seventeen cases (58.6%) had multiple fibroids. Seventeen (58.6%) of the fibroids were intramural, 10 (34.4%) sub serosal and 2(6.8%) were submucosal. Nine cases (31.1%) had intraoperative blood loss of 500ml to 1000ml with mean loss of 420 ml. Only One case who had blood loss of 1500ml due to presence of fibroid in lower segment of uterus required 3 unit of blood transfusion. The mean preoperative & postoperative hemoglobin were 12.23 gm/dl and 11.25gm/dl. The mean birthweight & duration of hospital stay were 2.8 kg and 2.3 days.

Conclusion: Cesarean myomectomy is a safe and feasible procedure.

Keywords: cesarean, myomectomy, safety

INTRODUCTION

Fibroids are most common benign tumor affecting 10 – 20% of women in reproductive age and 0.65% to 1.5 % during pregnancy.^{1,2} The incidence fibroids is during pregnancy is increasing due to changing trends in marriage and child bearing in late age.³ Coexisting fibroid during pregnancy is associated with increased risk for miscarriage, preterm labor, preterm pre-labor rupture of membrane, malpresentation, abnormal placentation and red degeneration during antepartum, prolonged or obstructed labor and intractable hemorrhage during intrapartum, increased risk for

postpartum hemorrhage, retained placenta and uterine sub-involution during postpartum period.² Myomectomy during cesarean delivery is controversial issue. Traditionally it was discouraged and considered contraindication. But in recent years many studies are upcoming in favor of cesarean myomectomy. Cesarean myomectomy is not only cost-effective, it has many advantages like, it will avoid multiple investigation, hospital admission, risk associated with multiple surgery and anesthesia. Moreover, patient will be relieved from symptoms associated with fibroid and will have better outcome in future pregnancy. The aim of this study is to assess the safety and feasibility of myomectomy during cesarean delivery.

METHODS

This is a retrospective study conducted at Kathmandu Model Hospital during period of January 2019 to December 2021. Twenty-nine women who underwent myomectomy during elective or emergency cesarean section were included for the study. Data were obtained from hospital records and discharged notes and analyzed in terms of demographic profile, number, size and location of fibroids, intraoperative blood loss, need for blood transfusion, change in hemoglobin from preoperative to postoperative period, birthweight and duration of hospital stay. Hemorrhage was defined as blood loss more than 1000 ml or decrease in Hb value by more than 3 gm/dl from preoperative to postoperative period or patient who needed blood transfusion. All the surgeries were performed by consultants or by resident in presence of consultant under subarachnoid block. Baby were delivered via lower segment cesarean section followed by removal of fibroids after securing good hemostasis. Total amount of blood loss was

estimated by scrub nurse and operating surgeon together by measuring collected blood in suction jar and visual estimation. Uterotonics were used according to need assessment. Prophylactic antibiotics were used according to hospital protocol. Catheter were removed on the next day. Patients were discharged after day two or three according to their physical assessment. Ethical approval was obtained from institutional review committee of Phect-Nepal Kathmandu Model hospital before the study.

RESULT

Twenty-nine women were included for the study. The mean age of mother and gestational age at delivery were 32.6 (Range: 26-32) years and 37.8 weeks respectively. Eleven (37.9%) cases were primi-gravida and majority were at term. [Table-1]

Table-1: Distribution of patients according to Age, Parity and Gestational age (N=29)

Parameters	Number	Percent	
Age in years	25-29	3	10.3
	30-34	16	55
	35-39	9	31.03
	>40	1	3.4
Gravidity	Primi-	11	37.9
	Multi-	18	62.1
Gestational weeks	<34	1	3.4
	34-<37	2	6.8
	37-42	26	89.6

Seventeen (58.6%) cases had multiple fibroids and 22 (75.8%) had fibroid larger than 5x5cm with maximum size of 12x 10 cm in diameter. [Table-2]

Table-2: Number and size of fibroids (N=29)

Parameters	Number	Percent	
Number of Fibroid	Single	12	41.3
	Multiple	17	58.6
Diameter (cm)	<5	7	24.13
	5-10	15	51.72
	10-15	7	24.13

Seventeen (58.6%) of the fibroids were intramural, two (6.8%) submucosal, ten (34.4%) were sub serosal, one cervical and one case of broad ligament .[Fihure-1}

primipara in 1914.⁴ Then Burton et al published case series of cesarean

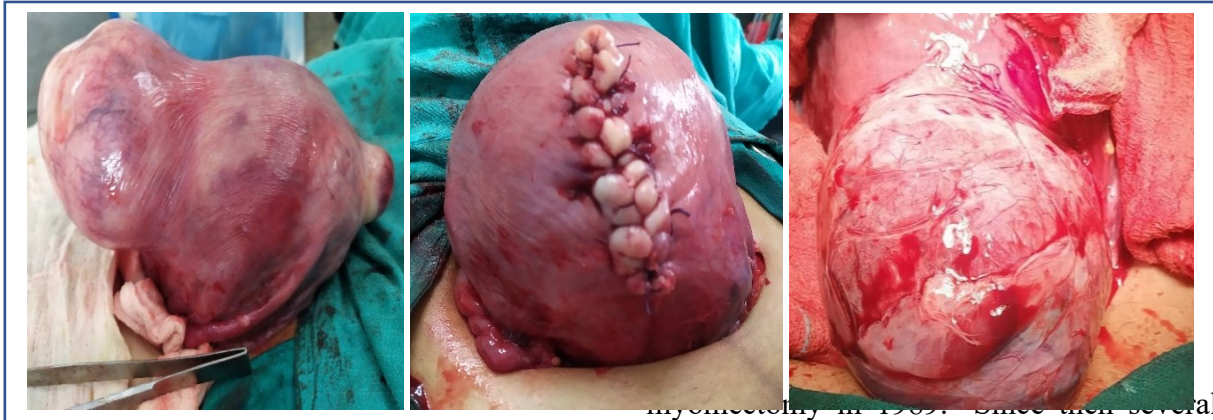


Figure-1:Surgical Myomectomy and myomectomy specimens

Twenty (68.4%) cases had intraoperative blood loss of <500ml, eight (27.5%) had >500ml and one (3.4%) had blood loss more than 1000ml. Maximum blood loss observed was 1500 ml in case of large intramural fibroid in lower uterine segment with mean blood loss of 420ml. The mean decrease in hemoglobin after surgery was 0.98gm/dl (8.01%). The mean birthweight and duration of hospital stay were 2.8±0.65kg and 2.3days. Only one cases required 3 unit of blood transfusion and none of them needed hysterectomy during study period. [Table-3]

Table-3: Change in mean hemoglobin, birth weight and hospital stay (N=29)

Mean preoperative Hb (gm/dl)	12.23 (± 1.42)
Mean postoperative Hb (gm/dl)	11.25 (±1.15)
Mean decrease in Hb (gm/dl)	0.98 (8.01%)
Mean birthweight (kg)	2.8 ±0.65
Mean duration of hospital stay (days)	2.3

DISCUSSION

There is no exact history when first cesarean myomectomy was performed but it was Bonney who published case report of cesarean myomectomy in a 30-year-old

myomectomy in 1907. Since then several studies and meta-analysis have been conducted which concludes its safety only on experienced surgeon.

Twenty-nine patients who underwent cesarean myomectomy were included in our study. The mean age of the mother was 32.6 years (26-42 years) and mean gestational age was 37.9 week. Song et al did a meta-analysis of 9 case-control studies in which 443 patient underwent cesarean myomectomy. The mean age ranges from 30.9 years to 37 years indicating association of fibroid with pregnancy in older age group and mean gestational age at delivery ranged from 37.7 weeks to 38.3 week which are comparable to this study.⁶ Fibroids with pregnancy are considered risk factor for preterm delivery or preterm premature rupture of membrane. In our study only 3 (10.6%) cases had preterm delivery and rest delivered at term. In a multi-centric retrospective study of Gurung A et al in which they analyzed the incidence and risk factor for preterm delivery among 60742 deliveries in Nepal, only 9.3% had preterm delivery which was comparable to our study.⁷ Global incidence of preterm deliveries ranges from 5% in some area of Europe to as high as 18% in some countries of Africa with average incidence of 11.1%

which is comparable to finding of study.⁸ In our study 12 (41.3%) cases had single and 17 (58.6%) cases had multiple fibroids of different size with maximum number of six. The size of fibroid ranged from 2x3 cm to as large as 12x14 cm in diameter. Majority of the cases 22 (75.8%) had fibroid larger than 5x5 cm in diameter. Fibroids were located at different sites of uterus most commonly on the body of uterus. When taking into account among the fibroids the largest tumor, there were 2 (6.8%) submucosal, 10 (34.4%) cases of sub-serosal and 17(58%) cases had intramural fibroid. Similarly there was one cervical and one case of broad ligament fibroid indicating all type of fibroids are removable.

Traditionally cesarean myomectomy was considered contraindication due to fear of uncontrollable hemorrhage. But in recent years many studies have concluded that it can be done without significant hemorrhage by experienced surgeon. Moreover, it has many surgical advantages over interval myomectomy. The incision size will be smaller with respect to uterine size, easy dissection due to better cleavage, reduced hemorrhage as uterus will contract more and will better respond to Uterotonics.⁹ Malvasi et al assessed the quality and integrity of myomectomy scar by ultrasound and during repeat cesarean section between women who underwent cesarean myomectomy and interval myomectomy. The study found superior scar on cesarean myomectomy.¹⁰ In the present study 20 (68.9%) cases had intraoperative blood loss of less than 500ml, 8(27.5%) cases had intraoperative blood loss 500ml to 1000ml and only one (3.4%) case had blood loss of more than 1000 ml. The mean intraoperative blood loss was 420±304ml indicating no significant intraoperative hemorrhage with maximum blood loss of 1500 ml in 8x8 cm fibroid in

the lower uterine segment. Bleeding occurred prior to delivery of the baby not during removal of the fibroid due to thick and highly vascular lower uterine segment. The mean pre and postoperative Hb was 12.23±1.42gm/dl) and 11.25±1.15gm/dl with mean decrease by 0.98 gm/dl (8.01%). Only one case who had maximum blood loss required 3 units blood transfusion during study period. In the study of Kaymak et al in which 40 patient who underwent cesarean myomectomy were compared with 80 patients with fibroids who underwent cesarean delivery alone. There was no significant difference in the incidence of hemorrhage (12.5% vs 11.3%).¹¹ Li Hui et al conducted a case control study in which 1242 cesarean myomectomy were compared with 145 pregnant women with fibroid who underwent cesarean delivery alone, 200 cesarean delivery women without fibroid and 51 pregnant who underwent cesarean hysterectomy on women choice. The study found no significant difference in the incidence of hemorrhage (1.1% in study group vs 0.5 – 0.7% in control groups) and change in mean Hb value (0.62 gm/dl in study group vs 0.54-0.67 gm/dl in control groups; and corroborate that myomectomy during cesarean delivery is safe procedure without much complication.¹² Similarly Song D et al did a metanalysis in eight study in which 429 cesarean myomectomy were linked with 625 pregnancy with fibroid who underwent cesarean delivery alone. There was no significant difference in the incidence of hemorrhage and the drop of Hb value was 0.30gm/dl higher in cesarean myomectomy than control group⁶ which is comparable to this study. The mean birthweight was 2.8±0.65kg with minimum birthweight of 1.7 kg in preterm delivery at 33 week of pregnancy. This finding suggests that

fibroids during pregnancy are not associated with low birth weight.

CONCLUSIONS

The study has shown that cesarean myomectomy is a feasible and safe procedure when performed by experienced surgeon. But it needs further study in large scale to establish safety in general.

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