

Myomectomy during Caesarean Section in Ambedkarnagar District: Case series**Uzma Kausar¹, Zahir Ahmad^{2*}**¹Associate Professor, Department of Obstetrics & Gynaecology, Government Medical College Ambedkarnagar, Uttar Pradesh, India² Assistant Professor, Department of Surgery, Government Medical College Ambedkarnagar, Uttar Pradesh, India

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Abstract

Objectives: Caesarean myomectomy has traditionally been discouraged due to fears of intractable haemorrhage and increased postoperative morbidity. However, a number of authors have recently shown that myomectomy during Caesarean section does not increase the risk of haemorrhage or postoperative morbidity. **Methods:** We present a series of 14 cases from MRA medical college, Ambedkar nagar, where myomectomy was performed during Caesarean section for large fibroids. Eight were anterior lower segment fibroids, while five was upper anterior segment uterine fibroid one was post segment. The antenatal course, perioperative management, and postoperative morbidity are discussed. **Results:** The average age of the women was 28.7 years and mean gestational age at delivery was 37.6 weeks. Regarding intra-operative blood loss, 4 patients lost 900 ml, 9 patients lost 1–1.5 litres, and 1 patient with a 14x 16 cm fibroid lost 2 L. Despite the majority being large myomas (12 of the 14 patients had myomas >5 cm in size) and 36% being intramural, no hysterectomy was required. Stepwise devascularization was necessary in one case. The size of the fibroids was confirmed by histopathology. Myomectomy added 15-30 minutes to the operating time and 6-14 day to the hospital stay, but there was no significant postoperative morbidity. Neonatal outcome was good in all patients. **Conclusion:** In selected patients, myomectomy during Caesarean section is a safe and effective procedure at tertiary centres with experienced surgeons.

Keywords: Caesarean section; Myomectomy; Fibroids; Pregnancy; Haemorrhage.

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Introduction

The incidence of myoma associated with pregnancy is reported at 0.3–5%, with a majority of myomas not requiring surgical intervention during pregnancy or delivery.[1–4] Myomectomy at the time of a Caesarean section has traditionally been discouraged due to fears of intractable haemorrhage and increased postoperative morbidity. However, a number of authors have recently shown that myomectomy at Caesarean does not increase the risk of haemorrhage.[2-5] Myomectomy during caesarean section would cause less bleeding because at post partum the uterus is better adapted for control of hemorrhage as the uterine muscles are more

sensitive to oxytocic agents and removal of myoma enable the uterus for better contraction. Moreover, the pregnant patients are in hypervolumic and hypercoagulable state, so can cope easily with a certain amount of blood loss. Enucleation of myoma is easier as the capsules become loose. It avoids the risk of another surgery and anesthesia for removal of myomas. [6-9] It avoids classical cesarean section in case of myoma presenting at lower uterine section. It facilitates the chances of vaginal delivery in subsequent pregnancies when myoma removed from the lower uterine segment. It reduces the complications associated with fibroid in subsequent pregnancies. The scar integrity following caesarean myomectomy has been shown to be better than that following interval myomectomy. It enables to keep the patient's request (most of the patients want to remove the myoma during caesarean section). [10-15] With this background this study was undertaken to evaluate the safety and

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feasibility of doing myomectomy during cesarean section.

Methods

We performed a retrospective cohort study of 14 patients with myomas which resulted in pregnancy. All 14 patients underwent myomectomy at the time of caesarean section at MRA medical college from June 2015 to June 2020. Patients' medical records were perused for demographic data, parity, and antenatal course, type of caesarean section, size and location of the fibroids, blood loss, postoperative morbidity, and neonatal outcome. All of the women in the study fulfilled the following inclusion criteria:

- 1) documented fibroid during the index pregnancy by antenatal ultrasound or at surgery;
- 2) delivery by caesarean;
- 3) no evidence of antenatal bleeding;
- 4) no other procedure at Caesarean apart from myomectomy, and
- 5) no pre-existing coagulopathy.

Informed consent was obtained from all patients preoperatively. Of the 14 patients studied, 8 had anterior lower segment fibroids which interfered with closure of the uterine incision, one had 5 upper anterior uterine fibroid and 1 is post upper segment fibroid. Adequate blood and blood products were arranged preoperatively. Caesarean incision was given at the margin where myoma starts or ends (in LUS fibroids). Baby was delivered by cephalic or breech extraction according to presentation. Myomectomy was performed in the conventional fashion using an incision over the myoma near the caesarean scar, enucleating it, and obliterating the dead space in two to three layers using interrupted 1-0 Vicryl sutures (Ethicon Inc., New Jersey, USA). Anterior lower segment myomas encroaching on the proposed incision line were excised after the delivery of the baby from same incision of caesarean. The Caesarean incision was closed in 2 layers with 1-0 Vicryl sutures. High dose oxytocin was

used intraoperatively and postoperatively, and some patients required additional uterotonic agents. Blood loss was estimated from suction aspiration, and from weighing mops, swabs and drapes used during surgery. Prophylactic antibiotics were administered to all the patients.

Results

The average age of the women was 28.7 years. The age, parity, associated risk factors of the patients, size, location of the myoma, operative findings, incisions used during surgery, complications and neonatal outcomes are summarised in Table 1 and Table 2. As depicted in table 1 only 1 (7.14%) case myoma was diagnosed before pregnancy, 10 (71.4%) cases during pregnancy and 3 (21.4%) cases diagnosed incidentally during caesarean section. Of those in the study, 8 of the 14 patients had lower segment anterior (LUS) wall fibroids at or close to the incision site, 5 patient had a large upper anterior wall fibroid and one poster-fundal segment. In total, 5 (one myoma subserosal+intramural) were intramural fibroids (35%) and 9 were subserous. The size varied from 4–14 cm with 12 of them being larger than 5 cm in diameter. Regarding intra-operative blood loss, 4 patient lost 900 ml, 9 patients lost 1–1.5 litres, and 1 patient with a 14 x 12 cm LUS fibroid lost 2 L. Stepwise devascularisation was needed to control atonic postpartum haemorrhage (PPH) in 1 patient. None of the patients required hysterectomy. Neonatal outcome was good in all the patients. The mean gestational age at delivery was 37.6 weeks (range 33–38 weeks). The 5 minute Apgar score was 9–10 in all the newborns with birth weights ranging from 2160 grams to 3,000 grams. Blood transfusion was needed in 5 women, one unit in 4 women and 2 units in one woman. Blood transfusion was needed in cases of large intramural myoma. During postnatal period one patients developed wound infection. 13 women had uneventful postoperative period.

Table 1 : Characteristics of myoma

Variables	No	%
Diagnosis of myoma		
Before pregnancy	1	7.14
During pregnancy	10	71.4
During caesarean section	3	21.4
Number of myoma		
Single	12	85.7
Multiple(2)	2	14.2
Location of myoma		
Fundus	6	42.8
LUS	8	57.14
Type of myoma		

Subserosal	9	64.2
Intramural	4	28.5
Subserosal+intramural	1	7.14
Size of myoma		
<5cm	3	21.4
5-10cm	9	64.2
>10cm	2	14.27

Discussion

Incidence of pregnancy with myoma is increasing because of late marriage and childbearing and the increasing use of ultrasonography. Removal of myoma during cesarean section is preferred by the patient and satisfactory for the obstetricians and has several advantages. But traditionally myomectomy had been discouraged during cesarean section because of fear of life threatening bleeding, which may turn to hysterectomy. But during the last decade several studies were done showing the safety of myomectomy during cesarean section. There are several observational studies where myomectomy was successful in all selected cases.[16-19]. In several case control studies also myomectomy was successful in all cases. [20-23]. In present study all myomectomy were done after delivery of the baby while in studies of Agarwal K et al.and Machado LS et al. myomectomy were done before delivery of the baby when present in lower anterior wall.[5,18] . This shows that myomectomy before delivery of the baby is also feasible when needed. Though there may be chance of more bleeding as devascularization is not possible. In present study in most of the cases myomas were diagnosed preoperatively and operations were done with proper preparations and written consent of the patient. But in 3 cases myomas were diagnosed incidentally during cesarean section. Even then myomectomy were done with the consent of the patient's husband or guardian. This situation was not described and probably not aroused in other studies. Myomectomy was done irrespective of number, size, type and location of the myomas. In two cases number were 2. In other studies also multiple myomas were removed [22,23]. Most common location was body of the uterus i.e. lower segment (57.14%) and type was subserosal (64.2%). The same is true in the studies by Agarwal K et al., Hassiakos D and Park BJ [5, 21,23]. But in studies by Kaymak O, Kwawukume EY, Roman AS and Lin JY intramural type were more common. [2,8,11, 22]. Size varied from 5-10cm in

64.2% cases and 14.27% cases size was >10cm. Kaymak O, Agarwal K et al., Roman AS., Simsek Y and Parl BJ studies also reported the removal of large myomas. [2, 5, 11, 23].In the present study the operative time was 45-60min in most of the cases and 60-90min in large myomas.Extra time was needed in cases where multiple myomas and or large intramural myomas were removed.In Hassiakos D,Lin JY,Celal K et al.,Brown D. studies the operative time of caesarean myomectomy is higher than that of caesarean section alone but that was not statistically significant. [21,22,19,24]. Besides this the benefits of caesarean myomectomy outweighs the risk of this increase operative time.During operation all women had no complications in the present study. But 5 women had moderate bleeding for which 1-2 unit blood was transfused. No patient had life-threatening bleeding to sacrifice the uterus.In studies of Agarawal K et al., Kwawukume EY, Ehigiegba AE, Hassiakos D, Lin JY and Celal K et al. no blood transfusion was needed at all.[5,8,16,21,22,19]. In other Kaymak O, Ahikari S, Lin JY, Park BJ, Machado LS et al. and Incebiyik A, studies blood transfusion was needed in some cases but when compared with control it was not statistically significant. [2,17,22,24,26,28]. None of those of cases of their series needed hysterectomy. Only in a previous study of Exacoustos et al, 3 of the 9 cases had sever hoemorrhage and required hysterectomy.[9].Due to improvement of surgical skill, surgical technique, availability of blood and anaesthetic procedure it became possible to manage the cases with intra partum haemorrhage.

Proper devascularization and experienced obstetricians can reduce the incidence of haemorrhage and hysterectomy.92%(13/14) of present study had no postoperative complications and only one pt has to stay at hospital for more than 10 days due to stichline infection. In other studies there were either no complications or small percent of mild complications which is not statistically significant. In some cases hospital stay was increased by 1-3 days.[8,2,5,9,11,16,20, 24,26,29].

Table 2: Clinical presentation and details

Age/Parity G/P/A	Risk factors/ co-morbidities	No. & location of fibroids	Size at start of pregnancy	Size at CS	GA at CS in wks	Est. blood loss in litre	Baby details	Incision	Postoperative morbidity
G2/P0/A1	Breech presentation	Intramural LUS ant wall (involving ant cervix)(single)	12*10cm	14.2cm*12.5cm	38weeks	2 l	Male/2.2kg/breech extraction	vertical	2BT
G3/P2/L2 (photo 1)	PIH	Intramural/ LUS ant wall/ middle(single)	3*4cm(ANC) 6*6cm(during preg)	8*7cm	38.2weeks	1.1 l	Female/2.6kg/cephalic /apgar 6/8	pfannens teil	1BT
G1	Infertility treated 7yr	Large subserosal LUS+ middle segment(single)	Incidental	8*9cm	37weeks	1.4l	Male /2.8kg/cephalic/ A/S-89	vertical	1BT
G2/P1 (photo2)	Prev lscs	Subserosal+intramural left fundal(single)	6*6cm	7*6cm	38weeks	0.9 l	Male/3kg/cephalic/A/S-78	pfannens teil	None
G2/P0/A1 (Photo 3)	Hypothyroidism with PIH 20yr infertility(spontaneous conception)	Subserosal ant upperseg/ large myoma(2 in no)	13.2*12cm	15*14cm 2*3cm	36.5weeks	1 l	Male /3.2kg/cephalic/ a/s-68	vertical	None
G4/P2/A1/L2 (photo 6)	none	Intramural LUS involving ant Cx(single)	4.2*5cm	8*6.4cm	38.2weeks	0.9 l	Female/2.8kg/cephalic A/S-78	Pfannens teil	1BT
G2/P0/A1 (photo4)	Hypothyroidism with PIH	subserosal/ fundal (2 in no)	5.5*6cm	6.6*6cm 2.2*2cm	37weeks	1.4 l	Female/2.8kg/cephalic/A/A-6,8	Pfannens teil	None
G3/P2/L1	Prev lscs	Intramural/ LUS ant segment(single)	4.5*4cm	6*4.8cm	38weeks	1.5 l	Male/2.7kg/cephalic/A/S-8,9	Pfannens teil	1BT
G1 (photo 5)	PIH	Subserosal/ fundo-posterior(single)	Incidental	10*6.4cm	37weeks	1.6 l	Female/2.6kg/cephalic/A/S6,8	Pfannens teil	None
G2/P0/A1	Hypothyroidism with 7yr infertility	Subserosal/ LUS ant segment(single)	6.2*5.2	8.2*5.6	37weeks	1.2 l	Female/2.5kg/cephalic/A/S6,8	pfannens teil	None
G2/P1/L1	Previous lscs	subserosal/ LUS antsegment(single)	Incidental	4*4cm	38weeks	0.7 l	Female/2.6kg/cephalic/A/A-6,8	Pfannens teil	Stichline inf.
G1	none	Subserosal fundal(single)	6*6cm	7*6cm	39weeks	0.8 l	Male/2.7kg/breech /A/S-8,9	Pfannens teil	None
G2/P0/A1	PIH	Subserosal/ Anterior inv fundal and middle part(single)	4*6cm	8*6.cm	37weeks	1.3l	Female/2.8kg/cephalic/A/S6,8	Pfannens teil	None
G3/P0/A2	PROM	Subserosal/ LUS ant segment(single)	2.4*2.2	4.2*3.4	38weeks	1.2 l	Female/2.6kg/cephalic/A/S6,8	pfannens teil	None

Legend: G/P/A = gravida/para/abortion; CS = Caesarean section; GA =gestational age; LUS = lower uterine segment; HT = hypertension; PROM = premature rupture of membranes; SUMLI = subumbilical midline longitudinal incision; ROP =

right occipito-posterior position; UT = uterus; LSCS = lower segment Caesarean section; PIH = pregnancy induced hypertension; PPH = postpartum haemorrhage; PRBC = packed red blood cells, FFP = fresh frozen plasma; Apg = Apgar score at 1 and 5 minutes

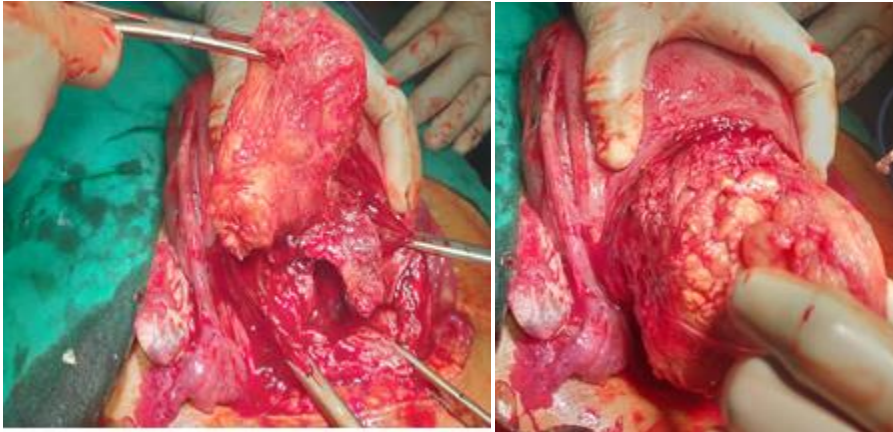


Fig 1 :Single intramural lower ut. ant segment fibroid 8*7cm



Fig 2 : Subserosal+intramural left fundal fibroid (single) 7*6cm



Fig 3: Subserosal ant upperseg/ large myoma(2 in no)15*14,2*3cm



Fig 4: subserosal/ fundal (2 in no) 6.6*6cm and 2.2*2cm



Fig 5: single, subserosal fundoposterior (incidental) 10*6.4cm

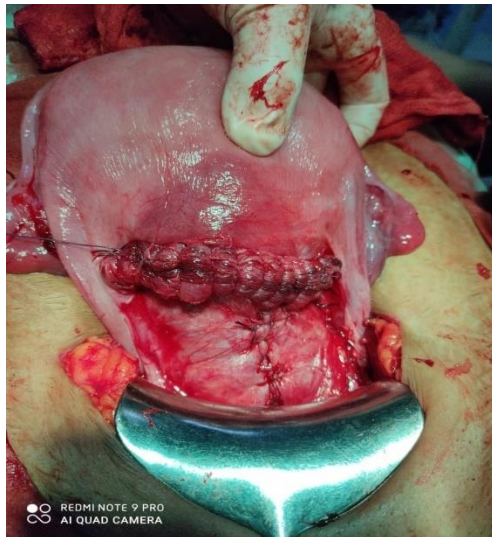
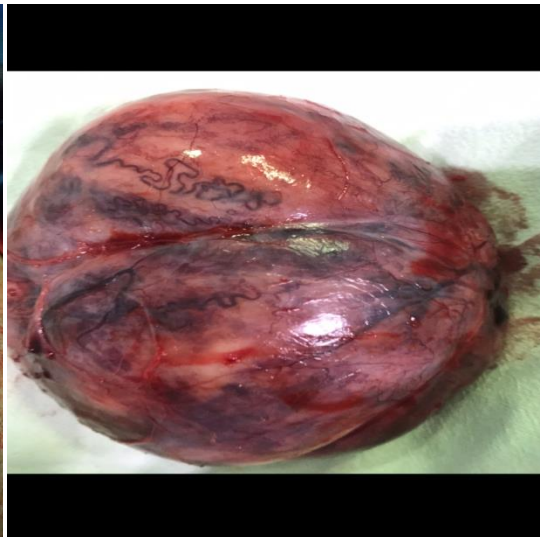


Fig 6: Intramural LUS involving ant Cx(single) 8*6.4cm



Conclusion

In conclusion, patient selection is crucial in caesarean myomectomy. Large fundal intramural fibroids should be intuitively avoided. Intramural myomectomy should be performed with caution. Fibroids obstructing the lower uterine segment or accessible subserosal or pedunculated fibroids in symptomatic patients can be safely removed by experienced surgeons. The message is that what was once considered taboo should now be reconsidered. Measures to minimise blood loss, like preoperative placement of uterine artery, balloon catheters, uterotonic drugs, uterine artery ligation, uterine tourniquets, stepwise devascularization, and post-Caesarean uterine artery embolisation would

optimise outcomes and significantly decrease the chance of hysterectomy. The time is right to recommend Caesarean myomectomy in selected patients in well-equipped tertiary settings, which could also have a positive bearing on future reproductive outcomes.

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