

Outcome of Intracapsular Caesarean Myomectomy: A Cross Sectional Study in a Teaching Institute of North East India

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ABSTRACT

BACKGROUND

Myoma associated with pregnancy is increasing alarmingly due to delay in childbearing because of higher educational period associated with craze for professional establishment leading to late marriage. Conventionally, concomitant myomectomy during Caesarean section was considered a relative contraindication. Our aim was to assess the feasibility and outcome of Intracapsular Caesarean Myomectomy among women undergoing Caesarean section.

METHODS

A cross sectional study was conducted in 24 well selected patients with myoma in gravid uterus undergoing elective Caesarean section for one year from January 2019. Intraoperative haemorrhage, postoperative haemorrhage, change in haematocrit, length of operation, length of postpartum stay, postoperative pain, and postoperative fever were recorded and evaluated.

RESULTS

Average intraoperative blood loss in 24 cases was 747.92 mL. Std. deviation was 235.6. Only in 2 cases there was intraoperative blood loss of more than 1000 mL and in one case Hb drop more than 3 gm/dL. No patient had significant blood loss, severe pain, and fever postoperatively. Almost all patients were discharged on postoperative day 5.

CONCLUSIONS

In well selected cases of fibroid, in gravid uterus with good preoperative haemoglobin, intracapsular Caesarean myomectomy is feasible and beneficial to the patient.

KEYWORDS

Fibroids, Myoma, Myomectomy, Caesarean Section, Intra Capsular Myomectomy, Haemorrhage

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BACKGROUND

Uterine myomas are the commonest pelvic tumours in the age group of 30 + years.¹ These are found in approximately 2% of pregnant women.² These tumour, especially large ones, tend to increase in size especially in the first half of pregnancy in almost 50% cases as a response to increased oestrogen.¹ The complications attributed to fibroids during pregnancy and labour are spontaneous abortion, preterm labour, abruption, red degeneration, malpresentation, postpartum haemorrhage, subinvolution & postpartum discomfort attributed to heavy pelvic lump.^{3,4} The overall risk of major complication is 71%.^{3,5}

Myoma associated with pregnancy is increasing alarmingly due to higher educational period associated with craze for professional establishment leading to late marriage and delay in childbearing. Conventionally, concomitant myomectomy during Caesarean section was considered relative contraindication and there was stigma regarding this type of Gynaecological surgery during Caesarean section may lead to more haemorrhage and increase the possibility of Hysterectomy. In traditional practices, there was postpartum complications and need for myomectomy in second setting leading to more morbidity and anaesthetic exposure. Consequently, relief from this neoplastic lesion during surgical intervention (Caesarean section) is a valid consideration. Caesarean Myomectomy is getting popular in present day obstetric service. Different institutions advocated the feasibility of Caesarean myomectomy with reasonably favourable outcome. Though isolated studies are giving encouraging outcome, there is paucity of studies as regards to Caesarean myomectomy. Enumerable innovation and modification of Caesarean myomectomy is being studied by the obstetricians in different parts of the world. Intracapsular myomectomy, keeping the neurovascular bundle surrounding myoma facilitates easy removal of fibroid from gravid uterus during Caesarean section. This procedure not only avoid unexpected haemorrhage, but also facilitate favourable impact on reproductive functionality in future. Health status of reproductive age group women in this region differs from rest of the world. Hence this study is designed to assess the feasibility and outcome of Intracapsular Caesarean Myomectomy among women undergoing Caesarean section in Agartala Govt. Medical College & GBP Hospital.

Objectives

- To evaluate the outcome of Intracapsular Caesarean Myomectomy among pregnant women with myoma undergoing Caesarean section in Agartala Govt. Medical College & GBP Hospital.
- To estimate intra- and post-operative haemorrhage, operative time and change in haematocrit.
- To evaluate postoperative morbidity in the form of postpartum fever, postoperative pain and postoperative hospital stay.

METHODS

A cross sectional prospective study was conducted from the month of January of the year 2019 for one year in the Department of Obstetrics & Gynaecology Department of Agartala Govt. Medical College & GBP Hospital. All antenatally diagnosed fibroid uterus were evaluated by USG (if required by MRI) about the size, shape & position of the myoma. Pregnant woman requiring elective Caesarean section, clear counselling was done for major surgical intervention like Caesarean section and consequences of concurrent myomectomy. Detailed discussion was undertaken depending on size & location of myoma and associated risks which were similar to those of Caesarean section with extended procedure. Consenting women were evaluated & enrolled for study after excluding the preoperative exclusion criteria like 1) anaemia (Hb less than 10 mg/dL), 2) associated medicosurgical disorder like Bronchial Asthma, Diabetes mellitus, Heart disease, sepsis, coagulation disorder etc, 3) susceptibility to sepsis like prolonged PROM, obstructed labour, 4) Emergency Caesarean section, 5) past history of morbid adherent placenta, malformed uterus, 6) multiple pregnancy, 7) polyhydramnios. Per operative evaluation was done to confirm position, number & size of the fibroid, tonicity of uterus, adherent placenta of any form. Final decision was taken for concurrent myomectomy after excluding per operative excluding criteria like 1) atonic post-partum haemorrhage, 2) adherent placenta, 3) malformed uterus, 4) tumour proximity to great vessels, 5) cornual fibroid.

Myomectomy was conducted after extraction of baby by usual low transverse incision on uterus & removal of placenta & assured contracted uterus except in cases when myomectomy was essential for safe extraction of fetus. After delivery of baby & placenta along with routine use of inj Syntocinon, one ample of carboprost was given intramuscularly if not contraindicated. Inj. Tranexamic acid 1 vial in 100 mL normal saline was given before myomectomy. Myomectomy was done with electrocautery incision of uterine wall up to the pseudo capsule & extraction of myoma from the surrounding fibro-neurovascular layer of pseudo-capsule. In case of myoma in posterior wall of uterus, myoma was enucleated through uterine cavity seen after baby and placenta delivery. To avoid skill bias surgical team was fixed and included senior gynaecologist having 10 years' experience. The following parameters were recorded and evaluated in a prewritten proforma.

General Parameters

- 1) Age, 2) parity, 3) gestational age, 4) location of fibroid (fundal, corpus anterior, corpus posterior, lower segment)
- 5) type of fibroid (pedunculated, subserous, intramural, submucosal)
- 6) size of fibroid (<3 cms, 3 – 6 cms, >6 cms).
- 7) number of fibroids.

Specific Parameters

Change in haematocrit (by comparing preoperative haematocrit and postoperative haematocrit at 48 hours), 2) intra operative haemorrhage (by counting mop fully soaked/ medium soaked/ partially soaked), 3) operative time (defined skin incision to skin closure), 4) postpartum fever (defined temperature > 38 degree Celsius), 5) postpartum haemorrhage (determined by the number of pad soakage), 6) postoperative hospital stay, 7) need for blood transfusion, 8) measurement of postoperative pain by visual analog scale, 9) maternal morbidity or mortality if any.

RESULTS

During the study period among total 38 pregnant women with diagnosed myoma in antenatal period 24 cases underwent intracapsular Caesarean myomectomy. Demographic characteristics are shown in table 1. Most of patients are primi aged more than 30 years and at gestational age more than 37 weeks.

Distribution of location, types, number and size of fibroids are shown in table 2 and 3. Most of fibroids are located in corpus anterior and subserosal. Three cases with fibroid located corpus posterior are operated through uterine cavity after extraction of baby and placenta with incision over lower segment. Lower segment fibroids are removed first before the extraction of baby and placenta. One case of submucosal fibroid located in corpus posterior is approached through uterine cavity. Almost all the cases are having single number of fibroids. 87.5% cases are having fibroid size more than 3 cm which suggests these cases may require operation in second setting for removal of fibroid in future. Distribution of indication of elective Caesarean section has been shown in table 5.

No. of cases of myomectomy	24
Median age in years (range)	32 (25-40)
Median gravida (range)	1 (1-1.75)
Median parity	0
Median gestational age in weeks (range)	37 weeks 6 days (36 weeks - 40 weeks 5 days)

Table 1. Demographic Characteristics

Corpus anterior	12 (50%)
Corpus posterior	3 (12.5%)
Fundal	7 (29.2%)
Lower segment	2 (8.3%)

Table 2. Location of Fibroid

Pedunculated	3 (12.5%)
Subserosal	12 (50%)
Intramural	8 (33.3%)
Submucosal	1 (4.2%)

Table 3. Types of Fibroid

3 cms or less	3 (12.5%)
> 3 to <6 cm	12 (50%)
6 cms or more	9 (37.5%)
Median numbers of fibroid	1

Table 4. Size and Number of Fibroid

Elderly primi	9 (37.5%)
Primigravida	3 (12.5%)
Transverse lie	2 (8.3%)
Others (oligohydramnios, BOH, Preeclampsia, post-dated CPD, IUGR, CDMR)	10 (41.6%)

Table 5. Indication of LSCS

Hb drop in gm/dL	Mean-1.23, S.D.-0.54, min-1, max-3.5
Intraoperative haemorrhage	Mean-747.92 mL, S.D.- 235.6 mL 500 mL or Less- 4 (16.7%) <500 mL to 1000 mL-18 (75%) More than 1000 mL- 2 (8.3%)
Postoperative haemorrhage	Median 200 mL 500 mL or less- 3 (12.5%) <500 mL to 1000 mL- 0 (0%) More than 1000 mL- 0 (0%)
Nos of blood transfusion	2 in one case
Nos of hysterectomy	Nil
Operative time	Mean- 36.46 min S.D.-5.78 min Less than 30 min- 3 (12.5%) 30-60 min- 21 (87.5%) >60 min- 0 (0.0%)
Postpartum fever	Nil
Postoperative pain by verbal rating scale	Mild- 20 (83.3%) Moderate - 4 (16.7%) Severe - 0 (0%)
Postoperative hospital stay	Median 5 days
Maternal mortality	Nil

Table 6. Outcome of Caesarean Myomectomy



Figure 1



Figure 2



Figure 3

Intraoperative Pictures of Intracapsular Caesarean Myomectomy in a Case of Big Myoma in Fundal Region

The results of outcome are shown in table 6. Only one case of elderly primi with 8 cms subserosal fibroid in corpus

anterior is complicated with excessive intraoperative haemorrhage with more than 1000 mL (Hb drop 3.5 gm/dL) for which 2 units of whole blood are transfused. Another case, 30 years aged with preeclampsia with 3 cms intramural fibroid corpus posterior is complicated with excessive intraoperative haemorrhage for which only iron infusion is transfused as Hb drop is 2 gm/dL. No case is required hysterectomy. As operation is conducted by team having 10 years experienced gynaecologist, 87.5% cases is operated within 30 to 60 minutes. No case is required more than 60 minutes. Only 3 cases are having postpartum haemorrhage less than 500 mL requiring only conservative management. No patient is having postpartum fever & severe postoperative pain. Almost all patients were discharged on day 5. No maternal mortality is recorded.

DISCUSSION

Demographic profile of the patients with myoma in this northeast region is having a trend toward advanced age and tumour size is usually more than 3cm. Few cases are having big tumour with size more than 6 cm. It indicates these cases will require definitely surgical intervention in second setting if myomectomy is not done concurrently during Caesarean section. Concurrent myomectomy avoids the risks of myoma related complications in puerperium and in subsequent pregnancy. It also avoids the risks of morbidity and exposure of anaesthesia and operation in future. Patient is also psychologically benefitted as the neoplastic growth is out from the uterus.

As the cases were selected carefully and operated by experienced surgeons operation completed within 60 minutes which is expected in any Caesarean section with extended procedure.

Intraoperative and postoperative haemorrhage is also under control because of available powerful uterotonic (inj. oxytocin, inj. Prostodin, tab. misoprostol), inj. tranexamic acid and use of electrocautery and technique of removal of fibroid sparing of myoma pseudocapsule. Our observation is that myomectomy in gravid uterus is technically easier owing to greater looseness of capsule & easier identification of cleavage plane. There is effortless placement of stitches making closure approximation of margin of myoma bed because of elasticity. Another advantage of concurrent myomectomy is easy control of haemorrhage with uterotonic in gravid uterus than nongravid uterus due to physiologically adapted uterus with increased oxytocic receptors. Physiologically increased blood volume in pregnancy contributes easy adaptation to blood loss associated with myomectomy. Only in one case we required two units of blood transfusion. Physiological involution at puerperium associated with retraction of myometrium will reduce haemorrhage & haematoma formation at myomectomy site leading to good scar. There is expectation that incision line will be smaller after healing and involution of uterus.

Removal of fibroid located in corpus posterior is easier through the uterine cavity exposed after extraction of baby

and placenta. Removal of lower segment fibroid contribute easy to extract baby without causing any injury to the fetal parts.

Postoperative morbidity is similar to the other ordinary Caesarean section cases. No patient is required hospital stay more than 5 days.

Earlier studies have reported that it is better to avoid myomectomy during Caesarean section with the exception of small pedunculated fibroids.⁶⁻⁸ In a study by Exacoustos and Rosati⁹ out of 9 cases, 3 had severe haemorrhage requiring hysterectomy. Also, myomas become smaller with postpartum involution, hence older textbooks have recommended myomectomy after the occurrence of uterine involution.¹⁰⁻¹²

A few studies now have been published in the literature supporting Caesarean myomectomy can be considered as a safe procedure.

Burton et al¹³ reported that concurrent myomectomy may be safe in carefully selected patients. They reported 13 Caesarean myomectomies of which only one was complicated with intraoperative haemorrhage. Ehigieba et al¹⁴ reported 25 cases of Caesarean myomectomy of which no case required hysterectomy. Kwawukume¹⁵ studied Caesarean myomectomy in 12 patients without any complications. The mean operative time was 62.08 minutes. 85% fibroids were intramural within the body of uterus. There was no significant difference in intra- and postoperative morbidity and blood loss in performing CS alone and CS with myomectomy when a tourniquet was applied.

Two cases were reported by Omar et al¹⁶ where myomectomy was needed to facilitated delivery of baby during CS without any significant intra-and postoperative complication.

Hassiakos et al¹⁷ in a retrospective case control study reportedly 47 patients with CS myomectomy compared with 94 women with uterine myomas who had surgical delivery without removal of fibroid. Myomectomy added mean 15 minutes time to operative time of CS. There were no significant differences between complication rate, need for blood transfusion and length of hospitalization. No hysterectomy was performed.

A prospective nonrandomized study included 29 women and found that future fertility and subsequent pregnancy outcome was unaffected by CS myomectomy.¹⁸

Andrea Tinelli et al¹⁹ studied that intracapsular myomectomy, originated from the prostatectomy, had allowed a reduction in uterine bleeding and uterine musculature trauma with sparing of the pseudocapsule neuropeptide fibers. This technique had a favourable impact on functionality in reproduction.

CONCLUSIONS

In well selected cases of fibroid in gravid uterus with good preoperative haemoglobin, intracapsular Caesarean

myomectomy is feasible and beneficial to the patient. Complications in subsequent pregnancy & difficulties in future surgery require evaluation. A large-scale study is required for evaluating routine intracapsular Caesarean myomectomy.

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