International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2020): 7.803

Caesarean Myomectomy in a Tertiary Care Hospital in Meghalaya: A Case Series

Dr Kerlin Mihsill[1], Dr Indrani Roy[2], Dr Neelotparna Saikia[3], Dr. Himadri Bhuyan[4], Dr Priyanka Singh[5]

Consultant, Department of Obstetrics & Gynaecology, Nazareth Hospital, Shillong, Meghalaya, India

HOD, Department of Obstetrics & Gynaecology, Nazareth Hospital, Shillong, Meghalaya, India

Senior Consultant, Department of Obstetrics & Gynaecology, Nazareth Hospital, Shillong, Meghalaya, India

DGO, DNB Resident, Department of Obstetrics & Gynaecology, Nazareth Hospital, Shillong, Meghalaya, India

DNB Resident, Department of Obstetrics & Gynaecology, Nazareth Hospital, Shillong, Meghalaya, India

Abstract: ***Objective: To study the safety and feasibility of performing myomectomies during caesarean section. Methods: It is a retrospective observational study.13 cases of Caesarean myomectomies were performed from June 2019 to June 2021, at our institution – a tertiary health care centre in Meghalaya. Myomectomy was done after delivery of baby in all cases. This was followed by suturing and adequate haemostasis. The maternal demographics and characteristics of fibroids, operative time, intraoperative and postoperative complications, need for blood transfusion and duration of hospital stay were analysed. Results: The average age of women was 36.15 years and mean gestational age at delivery was 38 weeks. Regarding intra - operative blood loss, more than average blood loss was seen in 4 patients. Blood transfusion was required for 2patient while 2 patients received injectable iron preparation post operatively. Despite the majority being large myomas (9 of the 13 patients had myomas >5 cm in size) and 5 being intramural, no hysterectomy was required. Myomectomy added a mean increase of 37.07 minutes to the operating time. There was no difference in duration of hospital stay and postoperative complications as well. Neonatal outcome was good in all patients. Conclusion: In our study we found that myomectomy during Caesarean section is a safe and effective procedure, when done at tertiary centres, under expert hands.***

Keywords: Caesarean myomectomy, leiomyomas in pregnancy

1. Introduction

Uterine fibroids are one of the most common benign tumours of the female genital tract, arising from neoplastic transformation of single smooth muscle cells of the myometrium. They are usually well circumscribed with a whorled pattern. The incidence of fibroids increases with age occurring in 40% of reproductive age group. [1]Since their incidence increases with increasing age, they are becoming more common in pregnancy as women delay childbearing, as the old adage puts it “fibroids are the reward of virtue, babies the fruit of sin”. It is thus suggested that excessive oestrogen and progesterone causes stimulation and an increase in size of fibroids. [2] Often leiomyomas are discovered during routine antenatal ultrasound, and majority of the pregnancies proceed without any complications, especially sub - serosal ones.

Myomectomy at the time of Caesarean section in the past has been discouraged due to concerns of life – threatening haemorrhage and ultimately hysterectomy. If myomectomy during Caesarean section becomes widely accepted, it would eliminate the need for another operation in these patients. British gynaecologist Victor Bonney, perfected the procedure of myomectomy and introduced his instrument also for use in the same. His wife underwent hysterectomy as she suffered from heavy menses leading to anaemia, she was later diagnosed to have multiple submucous fibroids. This rendered him childless thus introducing myomectomy and thereby conserving fertility of many fibroid patients, who till then were having hysterectomy. [3] In the recent past, a number of studies have shown that myomectomy during Caesarean section does not increase the risk of haemorrhage or postoperative morbidity and can be considered a routine in selected cases under experienced surgeons.

2. Methodology

This is a retrospective analysis of case records of all patients with fibroids complicating pregnancy, that underwent Caesarean section with concomitant myomectomy. A total of13 cases have been performed in this Tertiary Referral Hospital, during the time period from June 2019 to June 2021. The maternal demographics and characteristics of myomas i. e size, location, number and type were evaluated, along with operative time, intraoperative and postoperative complications, need for blood transfusion, duration of hospital stay were analysed. Women with twin pregnancy, coagulation disorders, and previous myomectomy histories were excluded. During caesarean section, Pfannenstiel skin incision, and uterine incision was made using low transverse incision in all patients. After delivery of the baby and the placenta, myomectomy was performed. Intra - lesional injection of vasoconstrictive agents were given. A linear incision was made on the myoma following which the myoma was enucleated from normal uterine muscle. Myoma bed was sutured with vicryl 1 - 0 (polyglactin 910) till obliteration of dead space, along with concurrent administration of uterotonics. The lower uterine segment incision was sutured in 2 layers with absorbable vicryl 1 - 0 (polyglactin 910). The operating time, any intra operative complications like additional requirement for uterotonics or uterine devascularisation or brace sutures for management of

PPH were noted. Visual estimation of blood loss was noted by the operating surgeon including additional mops used during the operation. Post - operative, haemoglobin was sent in patientswith more than average blood loss. Accordingly, 2 patients received blood transfusion while 2 were given parenteral iron preparation. This data has been given below in tabulated form.

S. No.	Age	Parity	Risk Factors	Size Prior To Pregnancy	Characteristics	GA (weeks)	Hb (gm%)
1.	35	G1P0 (BOOKED)	-	1) 4.4 * 4.4 2) 4.4*4 CM Only Two Mentioned in USG	1) 6*4 CM Intramural Over Anterior Wall 2) 4*4CM Intramural Over Posterior Wall 3) 2*3 CM Subserosal On Anterior Wall	39+2	Pre - op: 13 Post - op: 11.2
2.	34	G1P0 (BOOKED)	PROM, GDM ON DIET, HYPOTHYROIDISM	11.4*7.8CM Only One Mentioned but Other Fibroids Incidental Finding in OT.	1) 10*8 CM Subserosal Over Anterior Wall 2) 2*2 3) 1.5*2 4) 2*2 All Subserosal	37+1	Pre - op: 11.1 Post - op: 8.4 *INJ IRON FOR 3 DAYS
3.	37	G1P0 (BOOKED)	OLIGOHYDRAMNIOS	Incidental Finding	6*7CM Intramural Fibroid in Anterior Wall (Evidence of Degenerative Changes in Fibroid Seen)	38+2	Pre - op: 12.9
4.	41	G2P1L1 (BOOKED)	POST CS, DM, ESSENTIAL HTN WITH SUPERIMPOSED SEVERE GESTATIONAL HTN	Incidental Finding	2*3 CM Intramural Fibroid	37+1	Pre - op: 11.5
5.	40	G1P0 (BOOKED)	RH NEGATIVE PREGNANCY, OLIGOHYDRAMNIOS, MSL	Incidental Finding	5*5 CM Subserosal Fibroid On Anterior Wall [Fundal]	39+4	Pre - op: 13.4 Post - op: 12.5
6.	30	G1P0 (BOOKED)	-	5.7*5.2 CM	6*7 CM Intramural Left Side Just Above The Lus	37	Pre - op: 11.6 Post - op: 10.9
7.	36	G1P0 (UNBOOKED)	OLIGOHYDRAMNIOS	Incidental Finding	15*14CM Subserosal Anterior Fundal Region Intra Operative – Placenta Previa	38+3	Pre op - 13.4 Post op - 9.5 *2 Unit BT+ I. V Iron
8.	41	G4P1L1A2 (BOOKED)	ONCE POST CS, MSL	Indicental Finding	2*2 CM Intramural Fibroid along the Incision Line	38+3	Pre - op: 12.6
9.	36	G3P2L2 (BOOKED)	TWICE POST CS, OLIGOHYDRAMNIOS. HYPOTHYROIDISM	Incidental Finding	3*2 CM Submucosal Left Side of Anterior Uterine Wall [Fundal]	38	Pre - op: 12.8
10.	38	G4P2L2A1 (BOOKED)	PLACENTA PREVIA	Incidental Finding	5*5 CM Fibroid along Incsion Line in the Upper Part	32	Pre - op: 10.9 Post - op: 10
11.	30	G1P0 (BOOKED)	GDM ON MNT	5.29* 3.3CM	10*5 CM Subserosal Fibroid Noted Over The Left Cornual End. 5*4 CM Subserosal Noted Near Left Cornua 3*4 CM Noted Over Right Posterior Surface	40+1	Pre - op: 11.1 Post - op: 10.5
12.	35	G1P0 (BOOKED)	CPD, MSL, ANEMIA, HYPOTHYROIDISM	1.7*2CM	4*4 CM Degenerated Subserosal Fibroid in Fundal Region	41+3	Pre - op: 9.9 Post - op: 7.3 *1 unit BT + I. V Iron
13.	37	G2A1 (BOOKED)	GDM ON DIET, HYPOTHYROIDISM	4.3*2.7CM	10*8 CM Degenerated. Seen In The Anterior Uterine Wall Along Insicion Line. 2*1 CM Along Incision Line Left Side 3*2 CM Anterior Myomectomy	38+3	Pre - op: 13.5 Post - op: 11.6

Table 1.1: Age

Age	n=13	%
30 - 34 years	3	23%
35 - 39 years	7	54%
40 - 45 years	3	23%

In this study, 13 women underwent caesarean myomectomy from June 2019 to June 2021. Majority of the study group were in the age group between 35 to 39yearsi. e 54%. Thus, concluding that increasing reproductive age group is a risk factor for fibroids.

Table 1.2: Parity

Parity	Number (n=13)	%
0	9	69.3%
1 - 2	4	30.76%

Majority of our patients were nulligravid (69.3%). Thus, concluding that nulligravid condition is also a risk factor for fibroids.

Table 1.3: Gestational Age

Gestational Age	(n=13)	%
31 - 34 weeks	1	7.7%
35 ≤ 37 weeks	1	7.7%
>37 - 40 weeks	8	61.5%
>40 - 42 weeks	2	15.4%

In our study, patients were in the gestational age between 37 to 40 weeks i. e 8 out of 13 (61.5%). Thus, concluding that fibroids did not result in preterm labour in majority of our patients.

Table 1.4: Number Of Fibroids

Only 4 out of 13 patients had multiple fibroids removed at surgery (greater than 3).

Number Of Fibroids	(n = 13)	%
SINGLE	9	69.3%
MULTIPLE	4	30.7%

Table 2: Duration of Surgery (~40 minutes)

Operating Time	(n = 13)	Mean increase in operating time
≤ 40 Minutes	1	37.07 Minutes
>40 Minutes – 2 Hours	11	
>2 Hours	1	

In majority of the patients, the duration of surgery was between 40 minutes to 2 hours, and the surgery time duration was increased by a mean of 37.07 minutes.

Table 3: Duration Of Hospital Stay (~post surgery)

Hospital Stay (in days)	(n=13)
≤4	1
4 - 7	12
>7	0

In this study, patients with subcuticular sutures were discharged on post - operative day 4 and those with interrupted mattress sutures were discharged on post - operative day 6 or 7 (after suture removal) as per hospital protocols. None of our patients had increase duration of hospital stay beyond the normal protocols.

The average age of the women was 36.15 years. The age, parity of the patients, size, number and location of the myoma, intra - operative findings, complications and neonatal outcomes are summarised in Table 1. The mean gestational age at the time of surgery was 38weeks. Of those in the study, 9 patients had single fibroid and 4 patients had multiple fibroids. The total number of fibroids were 21. Out of them, 4 were lower segment (LUS) fibroids at or close to the incision site, 12 anterior wall fibroids, 1 fundal fibroid and 2 cornual and 2 posterior wall fibroids. In total, 5 were intramural fibroids, 15 were sub - serosal and 1 submucosal fibroid.9 fibroids were larger than 5 cm in diameter, the largest being 15 cmx14cm. Of the 13 patients, 2 were patients with placenta praevia for which uterine artery ligation was done, as an additional management of PPH. Intra - operative blood loss was visually estimated and post - operative haemoglobin estimation was done for those with more than average blood loss. Accordingly, 2patients required post - operative blood transfusion and 2 were given parenteral iron preparation. Of the 2patient requiring blood transfusion, one was a patient of placenta praevia type IV, who also required parenteral iron. None of the patients required hysterectomy. Operating time was extended by a mean duration of 37.07 minutes in patients with multiple fibroids or large fibroids. Neonatal outcome was good in all the patients with birth weights ranging from 2400 grams to 3800 grams. All the patients had an uneventful postoperative period.

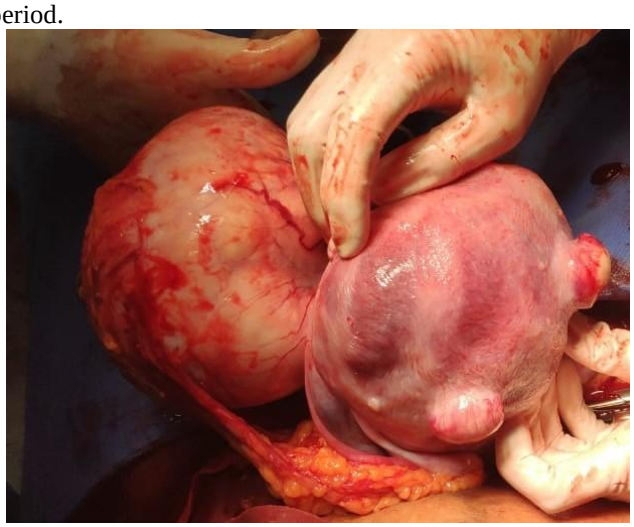


Image 1: Large sub - serosal posterior wall fibroid with two small sub - serosal anterior wall fibroids during a routine caesarean section.

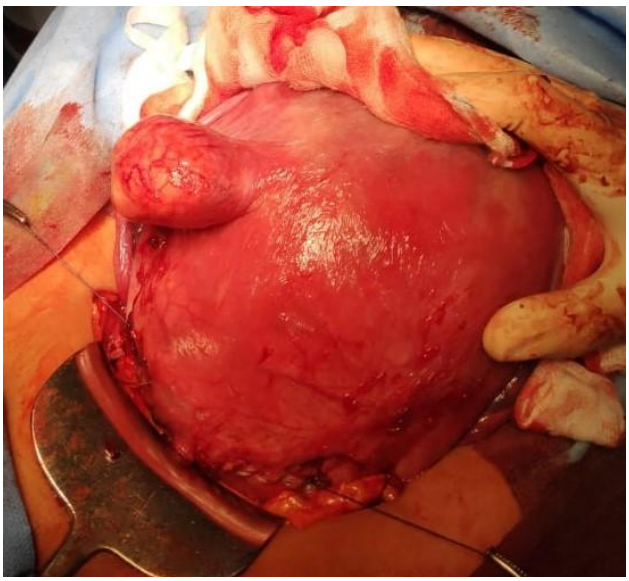


Image 2: Small sub - serosal anterior wall fibroid

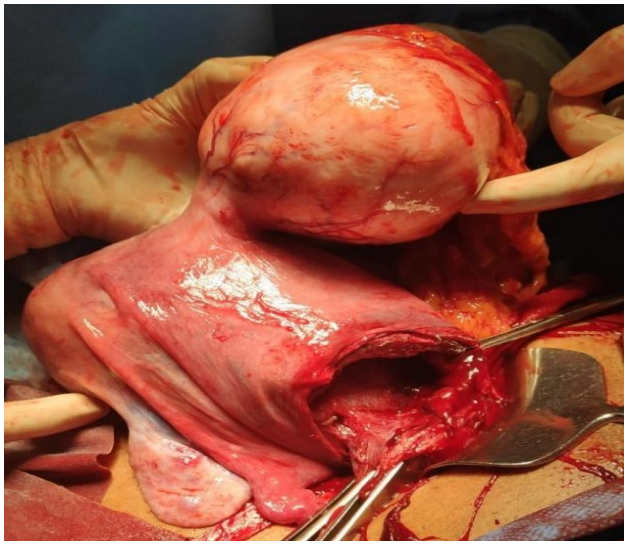
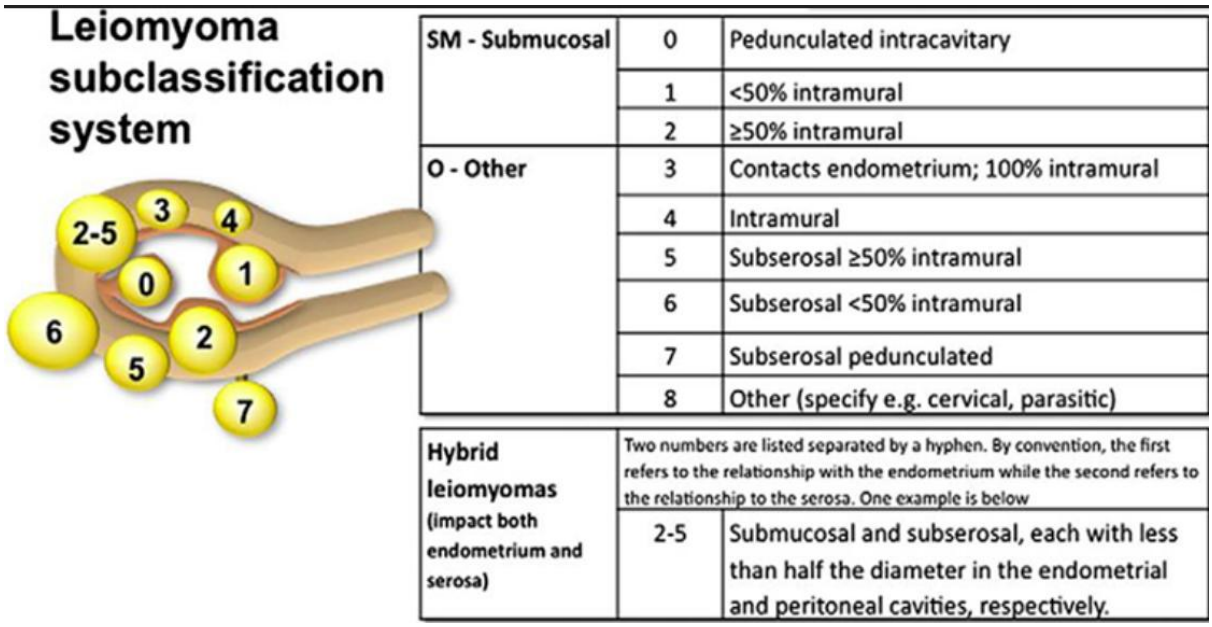


Image 3: A large anterior wall sub - serosal fibroid during a routine caesarean section



SM - Submucosal	0	Pedunculated intracavitary
	1	<50% intramural
	2	≥50% intramural
O - Other	3	Contacts endometrium; 100% intramural
	4	Intramural
	5	Subserosal ≥50% intramural
	6	Subserosal <50% intramural
	7	Subserosal pedunculated
	8	Other (specify e.g. cervical, parasitic)
Hybrid leiomyomas (impact both endometrium and serosa)	Two numbers are listed separated by a hyphen. By convention, the first refers to the relationship with the endometrium while the second refers to the relationship to the serosa. One example is below	
	2-5	Submucosal and subserosal, each with less than half the diameter in the endometrial and peritoneal cavities, respectively.

Image 4

3. Discussion

This study included 13 term pregnant women with fibroid who had undergone myomectomy during caesarean section. The outcomes compared were operative time, amount of blood loss leading to need for blood transfusion and parenteral iron, post - operative complications and duration of hospital stay. Traditionally, caesarean myomectomy was not performed due to the risks of massive haemorrhage intra - operatively. Leiomyoma in reproductive age group can lead to disorders of menstruation, abortions and infertility.

Fibroid in pregnancy leads to various complications red degeneration, torsion of fibroid, infection, malposition and malpresentation, IUGR, pre - term delivery, obstructed labour, abnormal uterine inertia. [2] In this study, 1 patient required pre - term caesarean section in view of placenta praevia type III with APH. Srirupa Ghosh et al, in her study found that in pregnant women, fibroid growth is non - linear fashion, with the greatest growth occurring in the first 7 weeks of pregnancy. Growth in the later trimesters was significantly slower. [4] In our study 6 out of 13 patients had prior scans identifying fibroids in ante - natal period. The size of the fibroids were larger intra - operatively. Caesarean myomectomy in patients with large myomas is a safe and effective procedure as concluded by a study done by Kwon Dh et al. [5] Majority of the studies did not find any statistical significance with the post - operative haemoglobin change in comparison to an isolated caesarean section. [6]In our study, only two of thirteen patients (15.38%) required blood transfusion post operatively of which one was a patient of placenta praevia type 4. Blood loss was insignificant in majority of the patients. The study done by Roman and Tabsh [7] showed that 0.9% required blood transfusion whereas in another study done by Hassiakos et al, none of the patients required blood transfusion. [8] In a study done by Desai et al, to reduce blood loss intra - operatively, he devised a novel technique of selective stepwise devascularisation of the ovarian, ascending and descending cervical arteries were ligated bilaterally. In our study, of the 13 patients, uterine artery ligation was done in two patients who had placenta praevia, as an additional

management of PPH. No additional procedures of PPH management like brace sutures and stepwise devascularisation were required though adequate use of uterotonics was ensured. Many studies have shown significant difference between the operating time but Roman and Tabsh [9] reported no significant difference in the study groups. The mean duration of surgery in this study group was extended by 37.07 minutes. Myomectomy was performed after extraction of the baby and removal of the placenta. Majority of the fibroids in the study were of size 5 to 10 cm and were of FIGO classification O - 5 and O - 6. In spite of such large myomas, none of our patients required hysterectomy. There was no significant difference in duration of hospital stay and post - operative complications as well. Howevera study done by Simsek Y et al, there was prolonged hospital stay in myomectomy patients as compared to caesarean section alone. [9] The most common age group in my study was 35 to 40 years. The majority of our patients were in the gestational age group of 38 to 40 weeks. All the mothers had good neonatal outcome. Thus, all cases were managed successfully. [10] None of our patients came with follow up subsequent pregnancy but various studies have shown that caesarean myomectomy doesn't adversely affect subsequent pregnancy. [11]

4. Conclusion

In caesarean myomectomy, patient selection is crucial. Intramural myomectomy should be performed with caution. Fibroids in the lower uterine segment or accessible sub - serosal or pedunculated fibroids maybe safely removed in experienced hands. The message is that what was once considered taboo should now be safely considered. It only may prolong the operative time, but its many benefits include avoiding a future myomectomy. Aggressive management of PPH, using medical and surgical methods, if required, should be done to avoid excessive blood loss, blood transfusion and most importantly a hysterectomy. From this study we may safely conclude that performing Caesarean myomectomy in selected patients in well - equipped tertiary settings, is associated with good maternal outcome with a positive bearing on future reproductive outcome.

Conflict of Interest: Nil

Source of Support: Nil

References

[1] Edmonds Keith D, Lees Christopher &Bourne Tom Dewhurst's Textbook of Obstetrics & Gynaecology, Wiley Blackwell, Ninth Edition, 2018 pg 826
[2] Malhotra Narendra, Jeffcoate's Principles of Gynaecology, Jaypee, Eighth Edition, 2014 pg 252 - 272
[3] Jauniaux E, Khan KS. Caesarean myomectomy: Victor Bonney reports the first case in 1913. BJOG 2014 Jan; 121 (2): 193. doi: 10.1111/1471 - 0528.12548
[4] Srirupa Ghosh1 & Joel Naftalin2 & Rachel Imrie1 & Wee - Liak Hoo1 Current Obstetrics and Gynecology Reports (2018) 7: 117–121 https: //doi. org/10.1007/s13669 - 018 - 0243 - 5
[5] Kwon DH, Song JE, Yoon KR, Lee KY. The safety of cesarean myomectomy in women with large myomas. Obstet Gynecol Sci.2014 Sep; 57 (5): 367 - 72. doi: 10.5468/ogs.2014.57.5.367. Epub 2014 Sep 17. PMID: 25264526; PMCID: PMC4175596.]
[6] Hassiakos D, Christopoulos P, Vitoratos Z, Xarchoulakou E, Vaggos G, Papadias K. Myomectomy during cesarean section: A safe procedure? Ann N Y Acad Sci.2006; 1092: 408 - 13
[7] Roman AS, Tabsh KMA. Myomectomy at time of cesarean delivery; a retrospective cohort study. BMC Pregnancy and Child birth 2004; 4: 14
[8] Hassiakos D, Christopoulos P, Vitoratos Z, Xarchoulakou E, Vaggos G, Papadias K. Myomectomy during cesarean section: A safe procedure? Ann N Y Acad Sci.2006; 1092: 408 - 13]
[9] Simsek Y, Celen S, Danisman N, Mollamahmutoğlu L. Removal of uterine fibroids during cesarean section: a difficult terapeutic decision. Clin Exp Obstet Gynecol.2012; 39 (1): 76 - 8. PMID: 22675961.
[10] Desai BR, Patted SS, Pujar YV, Sherigar BY, Das SR, Ruge JC. DGOA novel technique of selective uterine devascularization before myomectomy at the time of caesarean section: A pilot study. Fertility and Sterility. June 1, 2010; 94 (1): 362 - 364. ©2010
[11] Adesiyun AG, Ojabo A, Durosinlorun - Mohammed A. Fertility and obstetric outcome after caesarean myomectomy. J Obstet Gynaecol.2008 Oct; 28 (7): 710 - 2. doi: 10.1080/01443610802462712. PMID: 19065366