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Caesarean myomectomy dilemma: Do or not to do?

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ABSTRACT

Objective: our goal is to clarify the risk–benefit ratio of cesarean myomectomy.

Material and methods: This prospective clinical study was conducted at departments of obstetrics and gynecology, Zagazig University Hospitals, Egypt. The study group included twenty pregnant women with uterine myoma who were indicated for cesarean section (CS). Myomectomy (serosal or endometrial) was done during cesarean section. The following points were analyzed: myomectomy success, surgery time length, intraoperative bleeding, postoperative complications and inward stay length.

Results: A total 20 cases of myomectomies were performed at time of CS. Seventeen (85%) women were of 23 -30 years old. Primigravida represented the high percentage (75%). Myomas were diagnosed in sixteen (80%) women before pregnancy. The diagnosed women with single myoma was higher (80%). The uterine body was involved by myoma in fourteen (70%) of cases. Four (20%) women had subserous myomas, twelve (60%) had subserous – intramural myomas and four (20%) had intramural-submucous myomas. In three (15%) women, the diameter of the myoma was more than 10 cm. In the remaining seventeen (85%) women, it varied from 5-10 cm. Myomectomies were successful without need of blood transfusion in all cases. The mean change in pre and postoperative hemoglobin (Hb) level was 1.08 ± 0.26 g/dL. Operative time was <45 min in four (20%) women, (45-60 min.) in fourteen (70%) cases and (60-75 min.) in two (10%) cases. All cases had uneventful postoperative period. Nineteen (95%) women discharged after 48hrs.

Conclusion: Considering carefully selected patients, skilled obstetrician and implemented measures to control bleeding, cesarean myomectomy would be safely done with sound outcome.

Key words: Myoma, pregnancy, cesarean myomectomy, complications

INTRODUCTION

Myoimas are benign neoplasms commonly seen in childbearing period. The prevalence of uterine myomas in pregnancy approaches 0.5 - 2% (1). Myomas may be associated with adverse maternal and fetal outcome. The common antenatal complications include: pressure symptoms, abortion, and preterm labour. Postpartum, there is increase in the probability of uterine subinvolution and postpartum bleeding [2].

Many times, obstetricians are faced with fibroids during caesarean delivery. This situation put them at a loss and represent a debate. Uncontrolled bleeding and unavoidable hysterectomy that may result from caesarean myomectomy are the nightmare of most obstetricians. Additional risks include:

prolonged surgical duration, increased risk of infection and intraperitoneal adhesions [3–6].

According to the scenario founded, the procedure may be easy or scary. Subserous myoma with pedicle is easy to remove by transligation resection. Also, if the myoma was in the site of planned uterine incision, many surgeons prefer to do vertical mid line incision in upper segment to deliver the baby.

Due to previous believe and lack of clear guidelines, the obstetrician may be confused to remove, incise through or leave the myoma. We conduct this study is to evaluate the validity of caesarean myomectomy

- PATIENTS AND METHODS

This is a prospective clinical trial of caesarean myomectomy carried out at obstetrics and gynecology departments, Zagazig

University Hospitals, Egypt, on a twenty pregnant women with uterine myoma in the period from April 2016 and January 2019.

Written informed consent was obtained from all participants. The study was approved by the research ethical committee of Faculty of Medicine, Zagazig University. The study was done according to The Code of Ethics of the World Medical Association (Declaration of Helsinki) for studies involving humans.

During antenatal care, patients were explained for the nature of procedure, risk and benefit of removing or leaving the myoma. Patients who agree for undergoing the procedure were approved for caesarean myomectomy.

The selection criteria were: pregnant women with a diagnosis of uterine myomas, an indication for CS, myomas number ≤ 2 , myoma diameter > 5 cm. The exclusion criteria were patients had non-singleton gestations, emergency caesarean section and comorbidities such as hypertensive disorders of pregnancy, diabetes or anemic patients with (Hb. %) levels ≤ 10.0 g/dl. All patient were counselled and had informed consent signed. Two units of compatible blood were kept ready during operation.

The main outcomes measures were patient parity, the duration of operation, blood transfusion, pre and post-operative (Hb. %) levels, the length of inward stay and postoperative complications. bleeding was defined as, the requirement for blood transfusion and / or drop in hematocrit level $\geq 10\%$. The operation length was measured from skin incision to closure. During Postoperative follow up, fever was diagnosed if patient temperature was $\geq 39^{\circ}\text{C}$ any time or $\geq 38^{\circ}\text{C}$ on two successive days.

Surgical procedure:

All women underwent spinal anaesthesia. All patient received prophylactic intravenous antibiotics (2 g. cephazolin, given 30 mins. before surgery) and single dose (4 tablets) of oral azithromycine 250 mg, four hrs. after surgery.

Measures for minimizing blood loss included: three tablets misoprostol (Cytotec,

200 μg) were inserted rectally at the time of Foley catheter insertion. Once the fetus is delivered, all women received slowly intravenous bolus of oxytocin (10 IU diluted in 10 ml saline), followed by an infusion drip of 300 ml of dextrose solution containing oxytocin (10 IU) at a rate of 150 ml/hour and direct intravenous 500 mg Tranexamic acid (Cyklokapron). A single 100 μg IV dose of carbetocin was given 2 hrs. after surgery.

Electro-cautery was used. Uterine artery ligation (uni or bilateral) was done if needed. A tourniquet to ligate the uterine artery was not practiced. In all patients, Caesarean section was made through a suprapubic transverse and the fetus was delivered through a transverse incision in lower uterine segment.

The decision to remove myoma before or after fetal delivery was individualized. If myoma occupy the site of planned uterine incision, it should be removed first otherwise, removed after fetal and placental delivery. Approach to myomectomy was dependent on its site relation to uterine incision either endometrial (using the same uterine incision) or serosal (using additional incisions).The uterine defect was closed in layers using interrupted absorbable sutures (1–0 Vicryl).

Measurement of blood loss was calculated by adding the sum of collected blood in the suction pump and blood soaked swabs.

Statistical analysis

Results were expressed as mean \pm standard deviation and number of patients (%).

RESULTS

A total 20 cases of myomectomy at time of caesarean section were performed in our study. Table (1) shows patients demographics. Mean ages of patients were 31 ± 2.12 years. Mean gestational age 38 ± 1.82 wks. Parity ranged from 0 to 2. Caesarean section were done around term in eighteen (90%) cases. Fifteen (75%) women were primiparous.

Characteristics of myomas are showed in table (1). Sixteen (80%) women, myomas were diagnosed before pregnancy and four (20%) were diagnosed during pregnancy. Sixteen

(80%) women had single myoma and four (20%) had two myomas. Two (10%) women had fundal myoma, fourteen (70%) in the body of the uterus and four (20%) had both. Four (20%) women had subserous, twelve (60%) had both subserous and intramural and intramural myomas encroaching uterine cavity were found in four (20%) cases. In three (15%) patients, the myoma size was large >10 cm, while it range from 5-10 cm in seventeen (85%) women. Myoma was found in anterior lower uterine segment in four (20%) cases, so it was removed first. In the remaining sixteen (80%) women, fetus and

placenta was delivered followed by myomectomy.

As showed in table (2) all myomectomies were successful without need of blood transfusion. Operative time was <60 min in Four (20%) women, 60-75 min in fourteen (70%) cases and 75-90 min in two (10%) cases. During postnatal period, all cases had uneventful postoperative period. The pre and postoperative hemoglobin changes has no significant differences. Nineteen (95%) women discharged home after 2 days and one (5%) women discharged after 3 days

Table (1): Characteristics of patients and myoma

parameters	Studied cases (n= 20)	%
Maternal age(yrs. , mean ± SD)	31 ± 2.12	
Gestational age (wks. , mean ± SD)	38±1.82	
Parity		
P0	15	75
P1	4	20
P2	1	5
Diagnosis of myoma		
Before pregnancy	16	80
During pregnancy	4	20
Location of fibroid		
Fundus of the uterus	2	10
Body of the uterus	14	70
Both fundus & body	4	20
Number of fibroid		
Single	16	80
Two	4	20
Type of fibroid		
Intramural - subserous		60
Inramural - submucus	12	20
Subserous	4	20
Size of fibroid (diameter,cm)	4	
5- 10		85
10 >	17	15
	3	

Primiparous women represent highest percentage Single myomas of Intramural – subserous represent the highest percentage of cases

Table (2): Myomectomy outcome

Variables	Studied cases (n= 20)	%
Myomectomy success		
Successful	20	100
Unsuccessful	0	0
Timing of myomectomy		
Before delivery of the fetus	4	20
After delivery of the fetus	16	80
Surgery length (min)		
<60	4	20
60-75	14	70
75-90	2	10
Need for blood transfusion		
Yes	0	0
No	20	100
Postoperative Complications		
Postoperative Fever	0	0
Wound infection	0	0
No complication	20	100
Preoperative Hb (g/dL, mean ± SD)	0.9711.66 ±	
Postoperative Hb (g/dL, mean ± SD)	± 0.7110.58	
Mean change in Hb (g/dL, mean ± SD)*	± 0.26081.	
Post-surgical hospital stay (hrs.)		
48	19	95
48 -72	1	5

- Most myomectomies were done after f. delivery
- * Non - significant

Table (3): Myomectomy outcome

Variables	Number	%
Myomectomy success		
Successful	20	100
Unsuccessful	0	0
Timing of myomectomy		
Before delivery of the baby	4	20
After delivery of the baby	16	80
Time needed for surgery (min)		
<60	4	20
60-75	14	70
75-90	2	10
Need for blood transfusion		
Yes	0	0
No	20	100

Variables	Number	%
Postoperative Complications		
Postoperative Fever	0	0
Wound infection	0	0
No complication	20	100
Preoperative Hb (g/dL, mean ± SD)	0.9711.66 ±	
Postoperative Hb (g/dL, mean ± SD)	± 0.7110.58	
Mean change in Hb (g/dL, mean ± SD)	± 0.26081.	
Post-surgical hospital stay (hrs.)		
48	19	95
48 -72	1	5

DISCUSSION

- Myoma of the uterus seems to be the most common benign uterine diseases. In the last decades, myoma with pregnancy became more observed. This may be attributed to trend of some women to postpone marriage and / or pregnancy.
- Science cesarean section is the most commonly performed procedure globally [7] and became much safer than in the past, myomectomy during cesarean section has gained importance for obstetricians. Although lines of treatment of myoma in non-pregnant are clear, the dealing with uterine myoma founded at time of cesarean section is still a confusing topic. Because of fear of excessive bleeding after myomectomy in pregnant patient, many obstetrician leave uterine myoma and go forward for cesarean section. However, if we consider carefully selected patients, skilled obstetrician and implement of measures to control blood loss, caesarean myomectomy would be safely done with good outcome.
- In the present study, all myomas were diagnosed antenatal, proper preoperative preparations were implemented and myomectomy was applied to subserosal and intramural myomas. In agreement with several observational studies [8-12], we accomplished myomectomy in all our cases.
- Although the line of uterine incision was involved by myomas in (20%) of cases, Myomectomy was successfully done before delivery of the fetus with a great value of

avoiding classical caesarean section. This shows that caesarean myomectomy could be considered a safe option without affecting fetal outcome with the benefits of avoiding classical CS and great chance of vaginal delivery in future.

- The mean change in pre and postoperative (Hb) level was 1.08 ± 0.26 g/dL, which is less than that found in the study by Özcan et al. [13], 1.48 ± 0.7 g/dL. Also, in this study no case of intraoperative haemorrhage or requirement of blood transfusion while in studies by Guler et al [14] and Ehigiegba et al [12], the blood transfusion was given in 1.35% and 20% respectively.
- The good control of bleeding in our study might be attributed to special measures and protocol that were applied in all cases to reduce the risk of bleeding. These measures involve using electrocautery, uni or bilateral uterine artery ligation, spinal anesthesia, preoperative (rectal misoprostol.600 µg), intraoperative (0.5 gm IV. tranexamic acid, electrocautery and oxytocin infusion) and postoperative (IV. Carbetocin, 100 µg). Spinal anaesthesia eliminates the use of inhalational anaesthetic agents and the effect it may have on the tonicity of the uterus, thereby contributing to a reduction in total blood loss. Uterotonics control bleeding by stimulating more uterine contraction closing blood vessels and enhancing clot formation.
- In the present study, the operative time was generally average and accepted. It was <75 min in 90% cases. In two (10%) cases, uterine

myomas were large and intramural which made operation take little more time (75 – 90 min). During postnatal period, all cases had uneventful postoperative period. Nineteen (95%) cases stayed in the hospital for 2 days and one (5%) women stayed for 3 days due to mild abdominal distension. In some studies, hospital stay was increased by 1-3days [15-18].

The caesarean myomectomy has numerous advantages over interval myomectomy as it will avoid the patient the risks and costs of reoperation, being one setting for two operations. From surgical technique view, the caesarean myomectomy has the advantage of smaller incision and less tissue damage due to smaller uterus/tumor ratio compared to non-pregnant uterus. Also, the elasticity of the pregnancy makes uterine fibers more elastic which allows easy suturing of incision with less chance for serosal scarring. Furthermore, caesarean myomectomy prevents current postpartum complications related to myoma and related maternal and fetal adverse outcome in future pregnancies.

CONCLUSIONS

Considering carefully selected patients, skilled obstetrician and implemented measures to control bleeding, caesarean myomectomy would be safely done with sound outcome.

Conflict of Interest: The authors report no conflicts of interest

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