

# BLOOD LOSS DURING CAESAREAN MYOMECTOMY: A RETROSPECTIVE ANALYSIS OF 36 CASES CARRIED OUT AT A COTTAGE HOSPITAL IN THE NIGER DELTA REGION OF NIGERIA

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## ABSTRACT

### Background

*Myomectomy during Caesarean delivery is thought to be associated with increased risk of haemorrhage but some studies have demonstrated that myomectomy during Caesarean section is a safe procedure.*

### Method

*Anaesthetic records of all parturients who had Caesarean myomectomy between September, 2011 and August, 2012 were analysed for the following parameters: packed cell volume (PCV) change, length of operation, intra-operative blood loss, need for blood transfusion and post-partum hospital stay. The data collected were subjected to descriptive analysis of average, mean, percentages, and compared to previous studies*

### Result

*Thirty six patients had caesarean myomectomy during the study period. Twenty three of the patients were undergoing emergency surgery while 13 had elective caesarean section and myomectomy. The mean age of the subjects in the study was 28.83years, and the average duration of surgery was 59.66 minutes. The number of fibroids removed ranged between 1 and 23 with an average of 4.13. The average change in packed cell volume was 7.03% and average estimated blood loss was 690.27ml ml. Four of the 36 patients who had Caesarean myomectomy were transfused with a total of 11 units of blood and Cross-match: Transfusion ratio was 6.54. The average length of stay after surgery was 4.16 days. Twenty five patients had postoperative anaemia (PCV less than 30%) and 1 of the patients had wound dehiscence. No mortality was recorded and none of the patients had hysterectomy as a result of uncontrolled haemorrhage.*

### Conclusion:

*Caesarean myomectomy does not significantly increase the risk of intra-operative blood loss if appropriate measures are taken to maintain the tonicity of the uterus during the procedure. Selected cases of Caesarean myomectomy could therefore reduce the incidence of repeat laparotomy, and its attendant complications especially in a resource – poor economy like ours.*

*Key words: Blood loss, Caesarean myomectomy*

## INTRODUCTION

Leiomyoma also known as myoma or uterine fibroid, is a common tumour of the genital tract. It is commoner among the black race with an incidence of 1 out of 5 women of child-bearing age,

and the incidence rises to 50% at the age of 50<sup>1,2</sup>. Leiomyoma has been reported in 2% of pregnant women<sup>3,4</sup> Caesarean myomectomies are often avoided because of fear of severe haemorrhage as a

result of the increase of the size of the fibroids and vascularity of the uterus during pregnancy<sup>5</sup>. Classical Caesarean section and tubal ligation was often carried out because of presence of myoma in the lower segment. Avoidance of Caesarean myomectomy often necessitates a repeat laparotomy solely for myomectomy. Caesarean myomectomy has however been reported to result in no significant increase in blood loss, and has been advocated in selected cases<sup>6</sup> especially when the myoma is situated in the line of incision.

This study was planned to assess the extent of blood loss during Caesarean myomectomy in a Cottage hospital in the Niger delta region of Nigeria.

### MATERIAL AND METHOD

This was a retrospective study carried out between September 2011 and August, 2012 at Obio Cottage Hospital in Port Harcourt, an oil city and probably the economic capital of the Niger delta region of Nigeria. The subjects were mothers with co-existing myomas who underwent Caesarean operations during which myomectomies were also carried out. Informed consent was obtained for the procedure by the attending gynaecologist. The myomectomies were done after delivery of the babies, and commencement of oxytocin infusion. Two units of blood were grouped and cross-matched for each of the patients. Data were collected on the number and location of the fibroid masses, length of surgery, intra-operative blood loss, change in packed cell volume, length of post-partum hospital stay, and need for blood transfusion. The data collected were presented in descriptive tabulations and analyzed in percentages and means and compared to previous studies.

### RESULT

The ages of the 36 patients who had Caesarean myomectomy ranged between 23 and 43 with average age of 28.83 years. The preoperative packed cell volume was between 22% and 40% with an average of 34.36% while the post-operative PCV ranged between 15% and 36% with an average of 27.33%. The average PCV change was 7.03%.

Estimated blood loss was between 250ml and 1600ml, with an average of 690.27ml. Four of the 36 patients were transfused with a total of 11 units of blood, the Crossmatch-Transfusion ratio being 6.54 as shown on table 1. All the cases were done under spinal anaesthesia, and the duration of

operation ranged between 25 and 155 minutes with an average duration of 59.66 minutes.

The number of fibroids enucleated for each of the patients was between 1 and 23 bringing the total to 150. Six of the fibroids were in the lower segment while 144 were in the upper segment. The location of the fibroids as shown in table 2 were Sub-serous/sub-mucous in 1 patient (2.77%), only sub-serous in 23 (63.8%), only sub-mucous in 4 (11.11%) and intra-mural in 8 (22.22%). Twenty five (69.4%) of the 36 patients had post-operative PCV less than 30% (anaemia) and one (2.77%) of the patients developed wound sepsis. The length of stay in the hospital after surgery was between 3 and 13 days with an average of 4.02 days. No patient had Caesarean hysterectomy and there was no mortality.

Table 1: Estimated blood loss and units of blood transfused.

Estimated blood loss	Number of patients	Percentage of patients	Units of blood transfused
Less than 500ml	6	16.66	-
500 – less than 1000ml	25	69.44	1
1000ml and above	5	13.88	10
<b>Total</b>	<b>36</b>	<b>100</b>	<b>11</b>

Table 2: Location of fibroids and number

Location of fibroid	Number of fibroids	Number of patients	Percentage of patients
Sub-serous/Sub-mucous	3	1	2.77
Sub-mucous only	36	4	11.11
Sub-serous/Intra-mural	-	-	-
Intra-mural	45	8	22.22
Sub-serous	66	23	63.8
<b>Total</b>	<b>150</b>	<b>36</b>	<b>100</b>

### DISCUSSION

Leiomyomata are the commonest gynaecologic tumours with the reported incidence of 20-30%<sup>7,8</sup>, and women in the child-bearing age are often affected. The estimated incidence of fibroid in pregnancy is 1-4%<sup>3,4</sup>, and patients previously diagnosed of having myomas frequently request for removal during Caesarean section<sup>9</sup>.

Caesarean myomectomy is usually discouraged because the size and blood supply of myomas increase in pregnancy, with a theoretical risk of excessive haemorrhage<sup>5</sup>. Classical Caesarean operations and bilateral tubal ligation for myomas

situated in the lower segment was preferred, and this option automatically terminates the patient's obstetric career. The increasing popularity in organ preservation without loss of function stimulated the interest in myomectomy during Caesarean section. Ehigiegba et al advocated Caesarean myomectomy in selected cases<sup>6</sup>, especially when myoma is situated in the line of incision. Caesarean myomectomy has been found to be cost effective and beneficial for the patient by avoiding second surgery, anaesthetic hazards and complications of myoma in a subsequent pregnancy<sup>10</sup>.

Packed cell volume (PCV) is one of the indices that determine the maternal well-being and their post-partum condition. In this study, the mean pre-operative PCV was 34.36% (Hb 11.45g/dl) whereas Agarwal et al reported a mean pre-operative PCV of 31.68% (Hb 10.56g/dl) in patients who had Caesarean myomectomy<sup>9</sup>.

Exacoustos et al<sup>4</sup> reported haemorrhage indicating hysterectomy in three of the nine Caesarean myomectomy they carried out, and Hassan et al<sup>11</sup> also reported 3 hysterectomies out of 10 cases. Ehigiegba et al<sup>6</sup> in their own study reported no haemorrhage that indicated hysterectomy in the 25 cases that had Caesarean myomectomy, and therefore concluded that experience and use of high dose oxytocin infusion in the intra and post-operative period as was done in this study reduces haemorrhage that may complicate the procedure. The uterus in the post-partum phase is better adapted to control haemorrhage. The contraction of uterine muscle fibres which is further enhanced by the oxytocic closes the blood vessels, and increase in coagulability during pregnancy also aids clot formation. The use of vascular occlusion method by application of cervical tourniquet has also been described by Owolabi et al<sup>12</sup>, and the mean blood loss was found to be 589ml (300-1300ml). Other methods that can also be used to reduce blood loss are electrocautery<sup>13</sup> and bilateral uterine artery ligation<sup>14</sup>.

Haemorrhage is the most common cause of direct maternal death<sup>15</sup>. It was therefore a mandatory requirement for two units of blood to be grouped and cross-matched for each of the patients. Visual estimation of blood loss during Caesarean section is difficult because of dispersion of blood and the mixture of blood with amniotic fluid, dilutional effect of crystalloids and inter-compartmental fluid shift. However, the average blood loss during

Caesarean section as estimated by anaesthetists in a study by Khan et al was found to be 498 +/- 176ml<sup>16</sup>. Dimitrov et al<sup>17</sup> observed a 10% increase in blood loss during Caesarean myomectomy, while Hsieh et al<sup>18</sup> reported that Caesarean myomectomy adds only 112ml to intra-operative blood loss. Adesiyun et al<sup>19</sup> reported an average blood loss during myomectomy to be 806.8ml while in a similar study by Ehigiegba et al<sup>6</sup> and Owolabi et al<sup>12</sup>, the averages were 876 +/- 313ml and 589ml respectively. An average blood loss of 690.27ml as was observed in this study therefore falls within the range previously documented.

Blood transfusion was indicated in 4 (11.11%) of the cases in this study with a C:T ratio of 6.54. Khan et al<sup>16</sup> however reported a 13% indication for blood transfusion, with a C:T ratio of 9.7, whereas Ransom et al<sup>20</sup> and Imberti et al<sup>21</sup> reported indication for blood transfusion in 9.4% and 2.4% respectively. In yet another study by Adesiyun et al<sup>19</sup>, there was no indication for blood transfusion in 90.9% of the cases, while Ehigiegba et al<sup>6</sup> reported indication for blood transfusion in 5 (20%) of the 25 cases. Brown et al<sup>22</sup> in a retrospective case controlled study did not observe any significant difference in the need for blood transfusion between Caesarean section and Caesarean myomectomy. Ideally, cross-match: transfusion ratio should be 1.0. However, a ratio of 2.5 has been suggested to be indicative of efficient blood usage for most elective procedures<sup>23</sup>.

Although hysterectomy due to uncontrolled haemorrhage has been reported by Exacoustos et al<sup>4</sup> and Hassan et al<sup>19</sup>, there was no indication for hysterectomy in this study, and same was reported by Ehigiegba et al<sup>6</sup> and Hsieh et al<sup>18</sup>. Post-operative anaemia (PCV less than 30%) was however up to 69.4% whereas Ehigiegba et al<sup>6</sup> reported an incidence of 60%. Although a higher incidence of post-operative anaemia was observed in this study, most of the patients developed mild anaemia for which blood transfusion was not indicated as evidenced by the average post-operative PCV 27.33%.

Hsieh et al<sup>18</sup> reported that Caesarean myomectomy adds only 11 minutes to the operation time and half a day to hospitalization time. The average duration of operation was 59.66 minutes and the average length of stay in the hospital after surgery was 4.02 days. In the study by Kwawukume et al<sup>10</sup>, the mean duration of operation time was 62.8 minutes, and Ehigiegba et al<sup>6</sup> reported a length of stay as 7.4 +/-

2.2 days. Another complication observed in the study was 1 case (2.77%) of wound dehiscence which was responsible for the longest hospital stay (13 days), but no mortality was recorded.

## CONCLUSION

Uncontrolled haemorrhage during Caesarean myomectomy is more of fear than fact. Caesarean myomectomy carried out by an experienced surgeon after good patient selection, adequate uterine tonicity is maintained and a plan for managing occasional significant haemorrhage has been put in place, is considered safe. Caesarean myomectomy is cost effective in a resource poor economy like ours, and eliminates the risks that may follow repeat abdominal operations.

**CONFLICT OF INTEREST** The authors declare that there was no financial or personal relationship which may have inappropriately influenced them in writing this paper.

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