INTRODUCTION

During the past decades the rate of caesarean delivery has been a noticeable increase. Some of short term morbidities of caesarean delivery are hemorrhage, postoperative fever and endometritis. The infection is one of a major possible complication of caesarean delivery. The risk of endometritis after caesarean delivery is about eight-fold higher than after vaginal delivery. It determined as maternal temperature was at least 38°C twice after the first 24 hours and the women also had either uterine tenderness or foul-smelling lochia. A number of operative and obstetric factors have impact on post cesarean endometritis. Obstetric factors include: the duration of labor, rupture of the membranes and the length of time to place the placenta, membrane rupture and operative delivery, the number of vaginal exam, null parity and gestational age. Operative factors include: the skill of the operating surgeon operative time- Type of anesthesia, maternal obesity. There is various techniques for cesarean section. The differences among these techniques include the type of the abdominal incision, site of repairing the uterus (extra or intra-abdominal), single or double layer repair of the uterus. The method of removing the placenta after the birth of the baby is one of the most important factors that affect the duration of surgery. There are two methods of delivery of placenta at cesarean section: manual removal and spontaneous delivery; in manual removal method the surgeon inserting his hand between the placenta and the uterus and manually drawing out the placenta from the uterus. In spontaneous method, the physician applies limited traction to the umbilical cord combined with massage of the uterus and then waits for the independent or spontaneous release of the placenta. Some trials showed significantly a reduced risk of post operative endometritis and blood loss with spontaneous delivery of the placenta. However, some other clinical trials have reported no significant difference between the two techniques of placental removal. The main aim of this study was to determine if there is any difference between spontaneous and manual removal of placenta during cesarean delivery on postpartum infection; we also examined the effects of placental delivery on time of surgery.

METHODS

We conducted a randomized controlled trial in the departments of obstetrics and Gynecology of two hospitals (Razi and Emam Khomeini, Ahwaz) from July 2011 – March 2012. The institutional ethics committee approval was obtained before the initiation of this study (Ethical number: Ajums. REC.1392.136). This study involved the singleton pregnant women at term (37 weeks) who admitted for elective caesarean delivery. Patients with gestational diabetes, severe preeclampsia, placenta previa, maternal coagulopathy, anemia (Hb < 8 g/dl) previous history of a significant disease including heart disease, liver, renal disorders and women that were complicated during surgery were excluded from the trial. The sample size was 262 patients that randomly were assigned in equal numbers to manual placental removal (study group) or spontaneous delivery of placenta (control group). Cesarean delivery was performed by senior obstetric residents. The techniques of cesarean section in two groups were similar. The women’s abdomen was scrubbed for 3-5 minutes with 1% providone-iodine solution. Foley catheter was retained in the operative room. The type of anesthesia was regional in all patients. Incision of skin was Pfannenstiel in all cases of primary cesarean delivery. The myometrium was incised as transverse lower segment. After delivery of the baby were added 30 units of oxytocin to the intravenous fluids. After the removal of placenta, the myometrium was closed Layer by layer with 3/0 vicryl sutures. The abdominal wound was closed with separate absorbable sutures of 2/0 Vicryl. Patients were given prophylactic antibiotics of amoxicillin and clavulanic acid and received antibiotics as shown in the protocol of the study. The subjects of this study were divided into two groups based on the method of placental removal: study group (manual placental removal) and control group (spontaneous placental removal). The differences of interval of post cesarean infection and delivery and postoperative infection were compared between the two groups. The finding of our study suggests that, there is not an association between the method of placental delivery and post cesarean infection in elective cesarean section.

Keywords: placental delivery, spontaneous, manual, puerperal infection.
DISCUSSION

The results of operating time and postoperative outcome for the two groups are shown in Table 2. The time interval between the delivery of the infant and of the placenta in the spontaneous delivery group (4 ± 1/2) was longer, compared with the manual group (1 ± 1/1) but there were no statistically significant difference in total operating time between the two groups (p > 0.05). The incidence of post cesarean infection was % 10/6 overall. Post cesarean infection occur in 15 (11/4 %) of women who had manual removal of placenta an 13 (9/9 %) in spontaneous delivery (p > 0/05). No statistically significant difference in post cesarean infection was noted between the two groups’ Day numbers of hospitalization of two groups was similar.

Table 2: Results of operating time and postoperative outcome

<table>
<thead>
<tr>
<th>Method of placental removal</th>
<th>Manual Mean ± SD</th>
<th>Spontaneous Mean ± SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total operating time (minute)</td>
<td>38 ± 10</td>
<td>40 ± 12</td>
</tr>
<tr>
<td>Time taken for placental Delivery (minute)</td>
<td>1 ± 1/1</td>
<td>4 ± 1/1</td>
</tr>
<tr>
<td>Hospital stay (Day)</td>
<td>4 ± 1/5</td>
<td>3/2 ± 1/5</td>
</tr>
<tr>
<td>Post cesarean endometritis (%)</td>
<td>% 11/4</td>
<td>% 9/9</td>
</tr>
</tbody>
</table>

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One patient in control group and two patients in study group developed wound infection that determined by slightly discharge from incision without fever or wound dehiscence or need to re hospitalization.

DISCUSSION

Delivery by cesarean section is one of the most commonly performed major abdominal operations in women all over the world.

Although cesarean birth is considered as safe, maternal morbidity and mortality are higher than vaginal Birth. Endometritis is the most common complication of c/s. It is important to identify the techniques could reduced infection. Recent study suggested the method placenta removal in c/s could influence the risk of post cesarean complication. Tangwong wan et al. reported that manual removal of placenta increased the risk of post cesarean endometritis than spontaneous delivery of placenta. Lasey et al., Atkinson et al., magan et al. and mccurdy et al. also reported the similar results in their studies. In contrast to these studies, some of the previous trials have shown that there is no difference in risk for post cesarean infection between the two methods. merchary et al. concluded that manual removal of placenta did not increased the risk for fever and wound infection. In our study, we found no increase in risk of post cesarean infection in manual delivery of placental groups. Theoretically, even in the spontaneous placental delivery group, curettage of the uterine cavity by the gauze that used to remove clots and placental fragments can cause endometritis. The duration of surgery and hospital stay had no significant different between two groups (P > 0/05). Gahlot Ajay et al. also reported that the duration of surgery was not altered by the method of placental delivery.

CONCLUSION

This finding has shown that there is no difference between methods in post cesarean puerperal infection. Our results were contrast with previous studies (3,7,8), the reason might
be because our subjects were only elective Cesarean section whether almost other studies were contain elective and emergency cesarean section. This is possible the manual removal placenta increased risk in emergent cesarean section. For further study we are recommending to more research in this field in only emergent cesarean section.

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REFERENCES

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