Assessment of Predicting Risk Factors for Cesarean Complication Development in Tikrit City Hospitals

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Abstract: Problem statement: A cesarean birth happens through an incision in the abdominal wall and uterus In November of 2005, the Centers for Disease Control and prevention (CDC) reported the national cesarean birth rate was the highest ever at 29.1%, which is over a quarter of all deliveries. This means that over 1 in 4 women will experience a cesarean delivery. With any major surgical procedure, there are risks involved. It is important to know and understand your risks before a cesarean procedure. Approach: Descriptive study was carried from 1st March to end of October 2009, 200 cases attending Tikrit teaching hospital and 2 private hospitals in Tikrit city that were developing complications after cesarean section during time of the study were enrolled in this study. Results: The study reviled that half of study population from age group 20-34 years, 36.5% were developed complications after C/S. it was founded that 36.5% developed wound infections, 31.5% complained from post partum hemorrhage 17.5% of them of secondary type and 14% of primary type. And 6, 7.5 and 1% developed paralytic illus, DVT, death respectively and 34% occurred within first week after C/S and 8%within operation. Conclusion: Wound infection and hemorrhage are the most frequent complications that happened after cesarean section and about third of patients with complication had previous complication.

Key words: Cesarean section complication

INTRODUCTION

Cesarean delivery refers an operation that is performed to deliver a baby via the trans-abdominal rout (Fuantes, 1997). Cesarean delivery has been documented in ancient Egypt, Asia and Europe (Ash Morga and Baker, 2006). Written reports of cesarean section and survival not reported till late 1700s and early 1800s (Hill. A. 2010). The first cesarean on a life women is thought to that of the wife of Jacob Nufer, a sixteenth-century Swiss pig farmer, she was saved by the procedure (Ash Morga and Baker, 2006).

The name cesarean derives from the Roman law included in the region of the cesarean and not as is commonly thought to the delivery of the infant Julius Caesar (Lamisdien and Hideey, 2000). Most hospitals reports a 10-35% of birth rate and its use has increased significantly over the past year and numerous attempts are underway to decrease the cesarean births in some countries such as USA (Fuantes, 1997). By the twenty century, the classical (Medline-vertical uterine incision) operation had become widespread for the obstructed labor and placenta previa (Ash Morga and Baker, 2006). Which is associated with high blood loss and risk of uterine rapture (Fuantes, 1997). When Murrokurr introduced the concept of labor segment operation in the 1920s. The profession was derisive (Ash Morga and Baker, 2006).

Labor, malposition, prolapsed cord, multiple gestation, fetal distress, malpresentation, medical and surgical indications, obstetrical complications and previous C/S while indication for classical C/S are, pre-term labor placenta previa, transverse lie with back posterior large cervical fibroid, sever adhesions in lower segment, postmortem C/S (Ash Morga and Baker, 2006).

In many instances C/S deliveries are considered to be life saving procedure for both the mother and the infant. However similar to all surgical procedure, C/S may be associated with increased maternal morbidity and mortality as compared to vaginal delivery (Koroukian and Rimm, 2000; Annibale et al., 1995). So the aim of study is:
To estimate the rate of different types of complications among cesarean section
To identify the predisposing risks factors for development of cesarean section complication
To study the relation between previous and current complication
To identify the relation between antenatal care and the cesarean section complication

MATERIALS AND METHODS

Descriptive study was carried from 1st March to end of October 2009, ethical consideration like official agreement of patients were obtained from 200 cases attending Tikrit teaching hospital and 2 private hospitals in Tikrit city who were developing complications after cesarean section during time of the study were enrolled in this study and 2 recorded death cases after C/S were included also, special questionnaire form designed for this study including information about some variables that influence complication development like demographical features, history of previous, last pregnancy types and time of complication were collected and analyzed.

RESULTS

The study reviled that half of study population from age group 20-34 years and about 59% from rural while 54% of patients with parity 1-4 as shown in Table 1.

Table 1: Distribution of cases according to some demographical characteristics

| Characteristics   | Frequency | Percentage |
|-------------------|-----------|------------|
| Age               |           |            |
| < 20 years        | 23        | 11.5       |
| 20-34 years       | 104       | 52.0       |
| ≥ 35 years        | 73        | 36.5       |
| Address           |           |            |
| Rural             | 116       | 59.0       |
| urban             | 84        | 41.0       |
| Parity            |           |            |
| Para 0           | 31        | 15.5       |
| 1-4               | 109       | 54.5       |
| ≥ 5               | 60        | 30.0       |

From Table 2, 24.5% of patients had previous history of abortions, 38% with history of previous caesarean sections and 36.5% were developed complications after C/S.

Regarding the obstetrical history for the last pregnancy (Table 3), it was founded that 48.5% complained from uterine contraction while 7.5, 9.5% with gestational diabetes and hypertension respectively and 23% with history of uterine bleeding, 69% with anaemia and also 55% were attending the antenatal care facilities 37.3% of them reviled regular visits during the last pregnancy.

Table 2: Distribution of cases according to previous obstetrical history

| Characteristics   | Frequency | Percentage |
|-------------------|-----------|------------|
| History of abortion |           |            |
| Yes               | 49        | 24.5       |
| No                | 151       | 75.5       |
| History of previous C/S |       |            |
| Yes               | 76        | 38.0       |
| No                | 124       | 62.0       |
| History of complication after previous C/S | | |
| Yes               | 73        | 36.5       |
| No                | 127       | 63.5       |

Table 3: History of last pregnancy

| Characteristics   | Frequency | Percentage |
|-------------------|-----------|------------|
| History uterine contraction |           |            |
| Yes               | 97        | 48.5       |
| No                | 103       | 51.5       |
| History of gestational diabetes |       |            |
| Yes               | 15        | 7.5        |
| No                | 185       | 92.5       |
| History of uterine bleeding (APH) |       |            |
| Yes               | 46        | 23.0       |
| No                | 154       | 77.0       |
| History of hypertension |           |            |
| Yes               | 19        | 9.5        |
| No                | 181       | 90.5       |
| History of antenatal visits |           |            |
| Yes               | 110       | 55.0       |
| No                | 90        | 45.0       |

Table 4: Types of complications after last C/S

| Type of complication | Frequency | Percentage |
|----------------------|-----------|------------|
| Post partum hemorrhages |           |            |
| Primary              | 28        | 14.0       |
| Secondary            | 37        | 17.5       |
| Wound infection      | 73        | 36.5       |
| Paralytic illus      | 12        | 6.0        |
| DVT                  | 15        | 7.5        |
| Bladder injury       | 4         | 2.0        |
| Renal failure        | 2         | 1.0        |
| Retained pack        | 1         | 0.5        |
| Respiratory tract infection | 3   | 1.5        |
| Urinary tract infection | 4    | 2.0        |
| More than one complications | 19 | 9.5        |
| Death                | 2         | 1.0        |
Possible complications of cesarean section. It includes blood loss approximately more than 1000 cc after cesarean delivery. Postpartum hemorrhage is the most common complication. The risk factors for it are: Meconium, chorioamnionitis, prolonged rupture of membranes, frequent vaginal examination, anemia, and low socioeconomic status and it prevented by prophylactic embolization (Callahon and Caughay, 2009; Arias, 1993; Johnson, 1999). Wound infections include cellulitis and abscess are seen in 1-5% of C/S. Cellulitis is suspected with local erythema around surgical site and treated by broad-spectrum antibiotics. Abscess is a palpable collection within the incision and treated by incision and drainage, cleaning, and packing. Wound separation can occur in the absence of infection due to fluid collection of either serum (seroma) or blood (hematoma). If fascia is also separated, this is a wound dehiscence (Callahon and Caughay, 2009). The incidence of superficial thrombophlebitis increases 7 times (12 per 1000 pregnancies) during postpartum period. It is a painful complication hypercoagulability, it is treated with warm compresses and analgesia. It is unlikely to cause DVT or PE (Callahon and Caughay, 2009; Arias, 1993; DeClerq et al., 2007; ACOG, 2000). DVT incidence increases 4-5 times (15 per 10000 pregnancies) during postpartum period because this is the time during which a rapid rise in plasma and whole blood fibrinolytic activity occurs. The risk factors are cesarean section, obesity, use of estrogen to suppress lactation, obstetric complication (such as multiple labor, induction, prolonged labor, age less than 30 years old, difficult labor, high parity and deficiency of a natural anticoagulant activity. Pulmonary embolism occurs rarely during pregnancy, Friend and Kakkar (1970) reported an incidence of 2.7 per 1000, but almost certainly this is a high estimate resulting from over-diagnosis. In about 95% PE is the result of DVT of iliofemoral veins and in the majority of cases, it occurs in the immediate postpartum period (Callahon and Caughay, 2009; DeClerq et al., 2007; ACOG, 2000). The injury to bladder and ureter at the time of C/S is 0.3-0.7% respectively, the risk of injury to bladder is increased threefold when cesarean hysterectomy is performed and associated with uterine extension to broad ligament and extension to broad ligament and extends to broad ligament and extensive hemorrhage. The chance of dying from cesarean section is about 200/100000. The other rare complications are retained placenta, mastitis, postpartum depression, maternal cardiovascular, accident which is not reported in current study.

From Fig. 1, the time of complications development of cases were found that 34% occurred within 1 week after C/S and 8% within operation.

**DISCUSSION**

As more than 30% of deliveries are now by C/S (Callahon and Caughay, 2009). The risk of both early and long-term complications are increased in women delivered by C/S when compared with the outcomes after normal vaginal deliveries with risks of surgical and anesthesia (Ash Morga and Baker, 2006).

The key to successful management of postpartum complications is the identification of the patient at risk and the adaptation of precautions to avoid occurrence of the problem, however, in many cases complications occur unexpectedly and successful management on early recognition and adequate treatment. The risk of complications increases with previous scar, smoking, poor nutrition, excess alcohol consumption, placenta previa, chronic heart or lung disease, and use of some drugs such as CNS drugs. Some of these factors can be modified or changes (Miller et al., 1997).

Postpartum hemorrhage is the most common complications of cesarean section. It defined as blood loss approximately more than 1000 cc after cesarean section. It complicated approximately 3.9% of normal vaginal delivery and 6.4% of cesarean deliveries and accounts for approximately 35% of all maternal deaths caused by bleeding during pregnancy. The risk factors to it in C/S are general anesthesia, chorioamnionitis, pre-eclampsia, protracted active phase of labor, arrest of second stage of labor and Hispanic ethnicity (Arias, 1993).

Sub peritoneal hematoma is much less common than genital hematoma that occurs usually after normal vaginal delivery and 50% of them discovered immediately and half of them only present after 24 h (Johnson, 1999), when it should be suspected in cases of postoperative hypovolemia without external blood loss and definitive diagnosis of it by ultrasound and CT scanning (Arias, 1993). Endomyometritis is a polymicrobial ascending infection of organisms that constitute the normal vaginal of flora that infect uterine living. It affect 10-30% of cesarean deliveries, the most common microorganisms are, *Gardnella vaginalis*, group B Streptococci, Echerichia coli, *Bacteroids bividus* and *Mycoplasma*. The risks factors for it are: Meconium, chorioamnionitis, prolonged ruptured of membrane, frequent vaginal examination, anemia and low socioeconomic state and it prevented by prophylactic embolization (Callahon and Caughay, 2009; Arias, 1993; Johnson, 1999). Wound infections include cellulitis and abscess are seen in 1-5% of C/S. Cellulitis is suspected with local erythema around surgical site and treated by broad-spectrum antibiotics. Abscess is a palpable collection within the incision and treated by incision and drainage, cleaning, and packing. Wound separation can occur in the absence of infection due to fluid collection of either serum (seroma) or blood (hematoma). If fascia is also separated, this is a wound dehiscence (Callahon and Caughay, 2009). The incidence of superficial thrombophlebitis increases 7 times (12 per 1000 pregnancies) during postpartum period. It is a painful complication due to fluid collection of either serum (seroma) or blood (hematoma). If fascia is also separated, this is a wound dehiscence (Callahon and Caughay, 2009). The incidence of superficial thrombophlebitis increases 7 times (12 per 1000 pregnancies) during postpartum period. It is a painful complication due to fluid collection of either serum (seroma) or blood (hematoma). If fascia is also separated, this is a wound dehiscence (Callahon and Caughay, 2009). The incidence of superficial thrombophlebitis increases 7 times (12 per 1000 pregnancies) during postpartum period. It is a painful complication due to fluid collection of either serum (seroma) or blood (hematoma). If fascia is also separated, this is a wound dehiscence (Callahon and Caughay, 2009). The incidence of superficial thrombophlebitis increases 7 times (12 per 1000 pregnancies) during postpartum period. It is a painful complication due to fluid collection of either serum (seroma) or blood (hematoma). If fascia is also separated, this is a wound dehiscence (Callahon and Caughay, 2009). The incidence of superficial thrombophlebitis increases 7 times (12 per 1000 pregnancies) during postpartum period. It is a painful complication due to fluid collection of either serum (seroma) or blood (hematoma). If fascia is also separated, this is a wound dehiscence (Callahon and Caughay, 2009). The incidence of superficial thrombophlebitis increases 7 times (12 per 1000 pregnancies) during postpartum period. It is a painful complication due to fluid collection of either serum (seroma) or blood (hematoma). If fascia is also separated, this is a wound dehiscence (Callahon and Caughay, 2009). The incidence of superficial thrombophlebitis increases 7 times (12 per 1000 pregnancies) during postpartum period. It is a painful complication due to fluid collection of either serum (seroma) or blood (hematoma). If fascia is also separated, this is a wound dehiscence (Callahon and Caughay, 2009).
CONCLUSION

Nearly two third of complication are wound infection and poor antenatal care visits with history of previous complication are the most predisposing risks factors for development of such complications.

Recommendation: Established a national health program concerned with pregnant women during antenatal visits regarding the health care of women who subjected to C/S after section and during future pregnancies.

Improved health facilities standard to overcome morbidity and mortality that occurred from C/S.

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