Caesarean Operation at the University Teaching Hospital Yalgado Ouedraogo (UTH-YO) of Ouagadougou, Burkina Faso

Epidemiological and Prognostic Aspects

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Abstract

Objective: To study the maternal and fetal morbi-mortality from caesarean section at the University Teaching Hospital Yalgado Ouedraogo (UTH-YO) of Ouagadougou in Burkina Faso.

Materials and method: It has been a descriptive cross-sectional study during 36 months from January 1st, 2012 to December 31st, 2014. The information was collected from the clinical records of patients delivered by caesarean section at the maternity of the UTH-YO during the study.

Results: During the study the incidence of caesarean section was 36.5%. We recorded 909 cases of maternal and fetal complications with a morbidity rate of 18.8%. In total 82.3% of women had been evacuated. The average age of patients was 27.2%. The mean of childbirth number was 2 with a range of 1 to 9. Caesarean section was performed in 94.7% of emergency cases. Intraoperative morbidity was 4.2%, dominated by injury and hemorrhagic complications. Postoperative morbidity was dominated by infection in 36.8 cases of hypertension in 26.8% of cases and hemorrhage in 3.45% of cases. Lethality of maternal complications was 3% dominated by hemorrhage and infection. Perinatal morbidity was observed in 10.24% of newborns dominated by neonatal infection. Stillbirth was 8.14%, the early neonatal mortality of 3.63% and perinatal 11.7%.

Conclusion: To improve the prognosis of caesarean section, efforts should be made by both practitioners and policy makers in the training of qualified staff, improving drainage conditions and improving accessibility to facilities providing obstetric care.

Keywords: Caesarean; Mortality; Ouagadougou

Introduction

Caesarean section is a way to rescue the mother and the fetus, to address the difficulties of either vaginal delivery or at risk of fetal asphyxia. These indications are in great interest for all the obstetric pathology. It is one of the factors of quality of obstetrics care and is supposed to bring security to mother and child [1-4]. However, according to many authors, the saving act that constitutes this intervention is justified only when the indication is well placed, the technic well executed. If not, it increases maternal and fetal morbidity from 5 to 7 times compared to vaginal childbirth [5,6]. The University Teaching Hospital Yalgado Ouedraogo (UTH-YO) is a referral hospital in Burkina Faso which provides practical training for gynecologists, general practitioners, midwives and nurses. Faced with the task of training, caesarean section is an activity that is most often done by delegation of tasks. This could interfere on the prognosis of the mother and the child [7,8]. We undertook to analyze the maternal and fetal complications of the intervention in order to contribute to a better quality of care in this national structure which position is well established in the national health system.

Materials and Method

It was a cross-sectional descriptive study during 36 months from January 1st, 2012 to December 31st, 2014. The Gynecology and Obstetrics department into the UTH-YO was the setting. Were included in our study, all patients who delivered either by elective caesarean section or an emergency one during the study time. Variables of the studies were sociodemographic characteristics, history of the pregnancy, indication and mode of the caesarean section, operative techniques, type of anesthesia, difficulties associated with maternal and fetal complications, duration of hospitalization of patients and fetal complications. A structured collection sheet has allowed the collecting of information from the clinical records of patients. Data were analyzed through the Epi Info in its software version 3.5.1. The significance level was set at 5%.

Results

Frequency

During our study time, 5027 patients were delivered by caesarean section on a total of 13,772 deliveries. It was a frequency of 36.5% for caesarean section. In total 909 mother-infant pairs were assigned a complication that to say a morbidity rate of 18.8%.

Sociodemographic data

The patients were referred from a surrounding structure in 82.5% of cases. The average age of patients was 27.2 years with extremes of 14 and 46 years. The age [21-25] years group was most represented.

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Housewives were the most represented with a rate of 65.3%. A total of 615 patients had a conjugal life, and they represented 67.7%. Single were 294 (32.3%). The notion of oral pill contraception was found in 45% of cases and the contraceptive injection in 17.5%. A notion of excision 2nd level was noted in 78.9% of cases. The average rate of childbirth was 2.4% with a range of 0-9. Pauciparous (2-4 childbirth) were the most represented with 534 cases or 58.8%. A notion of hypertension was found in 47.61% of cases, diabetes was found in 6.35% of cases, hemoglobinopathy in 9.52% of cases of asthma in 15.87% of the cases. The uterus was scarred in 21% of cases.

Data on caesarean

**Type of caesarean:** Caesarean sections were performed in emergency in 862 cases (94.8%) and programmed in 47 cases (5.8%).

**Indications:** The indications of caesarean section were presented into Table 1.

| Indications                  | Number | Percentage (%) |
|------------------------------|--------|----------------|
| Pre-eclampsia                | 151    | 16.6           |
| Scarred uterus               | 143    | 15.7           |
| Acute fetal distress         | 134    | 14.7           |
| Overview dystocia            | 121    | 13.3           |
| Dystocia start               | 89     | 9.8            |
| Syndrome of pre-failure      | 79     | 8.7            |
| Eclampsia                    | 46     | 5.1            |
| Placental Praevia            | 41     | 4.5            |
| Macrosomia                   | 36     | 4              |
| Placental abruption          | 32     | 3.5            |
| Basin generally shrunken     | 30     | 3.3            |
| Cephalopelvic disproportion  | 25     | 2.8            |
| Cord abnormalities           | 20     | 2.2            |
| Rupture of membranes         | 17     | 1.9            |
| Post term                    | 12     | 1.3            |
| Failed to trigger            | 5      | 0.6            |
| Other**                      | 34     | 3.7            |

Other **: Preventing mother to child transmission of HIV, uterine myoma, caesarean for security

| Table 1: Distribution of patients according to the indication of caesarean section n=5027. |

in 351 patients (36.8%), postpartum hypertension in 255 patients (26.8%) and postpartum hemorrhage in 3.45% of cases.

**Maternal mortality:** Maternal death was recorded in 18 cases that to say a fatality rate of 3%. Hemorrhage was involved in 22.2% of cases, infection in 16.7% of cases and cardiopulmonary arrest in 11.17% of cases.

**Duration of hospitalization:** The hospital average stay was 6.4 days with a range of 2 to 38 days. 79.8% of patients had been hospitalized for a week.

**Fetal and neonatal complications**

**Apgar score:** In total of 732 newborns living, 80.5% had an Apgar greater than 7 in the first minute. 84 newborns (9.3%) were resuscitated with an average time of 5.2 minutes with a range of 1-20 minutes.

**Anthropometric parameters of newborns:** The parameters of newborns at birth were presented into the Table 2.

**Neonatal morbidity:** Out of the 732 newborns living, 75 showed morbidity that to say neonatal morbidity rate of 10.24%. Neonatal infection and neonatal pain were the predominant diseases in neonatal morbidity in 60% and 21.33%. Fetal trauma was noted intraoperatively with 1 case of fracture of the humerus, 1 case of shoulder dislocation and 2 cases of abrasions at the cheek and on the scalp.

**Perinatal mortality:** We noted 74 cases of stillbirth (8.14%). Also 33 newborns died in early neonatal period (3.63%).

**Discussion**

The caesarean rate in our series was 36.5%. This rate was similar to those of Sawadogo [9], Kprakpra [10] who found respectively in the same department 30.5% and 30.8%. It was higher than Mariko’s [11] who reported in Mali a rate of 14.6%.

The high rate of Caesarean section in department could be a reflection of improved antenatal care with the effective detection of patients to operate. Indeed, since the opening of the studies in obstetrics and gynecology diploma in Burkina Faso, we noted an improvement in the national coverage of antenatal care. Also its interpretation must take into account the fact that this is a hospital rates but not frequencies in population.

The rate of maternal intraoperative complications was 4.2%. It was lower than that reported by Ouedraogo C [12] (25%). The difference between the frequencies could be explained by the adoption and mastery of the new technique of caesarean quality according to Misgav-Ladach which is simpler and faster.

An infectious syndrome was noted in 36.87% of patients. This rate was higher than Bambara’s [13] who reported 17.7%. The context of endemic malaria, neglect of aseptic staff could explain this figure.

Parietal suppuration was found in 9.40% of patients. Our results were higher than those of Block [14], Kharrasse [15] and Sayouti [16] who reported respectively 98.5%; 0.83% and 5.40%. It was also lower than the one found in the same department by Ouedraogo C [12] who reported 7.7%. The caesarean section according to Misgav Ladach by reducing the operating time may explain the decrease risk of infection.

Bleeding was observed in 3.45% of patients. Our rate was higher than those found by Ouedraogo C [12] (2.90%) and Ouedraogo A [17,18] (0.80). This rate was lower than Sawadogo’s [9] who reported...
related to indications, the poor condition of women upon their arrival
rate was higher than Bokossa’s [22] in Cote d’Ivoire who found 2.18%.
than those of Kprakpra [10] and Ouedraogo A [17] who reported
correct the malfunction by training specialists in anesthesia and the
anesthesia are entrusted to skilled nursing anesthesia. It is urgent to
in anesthetics in our countries could explain this result. Most acts of
exhaustion coupled with poor general condition of women upon their
postoperatively. The remoteness of peripheral health facilities,
constraints, lack of financial resources to pay the drugs for operation
caused by the infections during emergency caesarean section. Inadequate
management of morbidity during antenatal care, isolation of
peripheral structures and low socio-economic status of our people
explain this high rate of maternal mortality. Also we could add the
delay for taking decisions in order to apply treatment, most operators
being learners.

The hemorrhage was the leading cause of maternal death in the
postoperative with 22.22% of cases. This rate was lower than Sawadogo’s [9] who found 72% and higher than that reported by Bambara [18] who found a frequency of 14.70%. The predominance of bleeding in maternal mortality could be explained by delays in evacuation, unsatisfied transfusion need and insufficient qualified staff, most teams consisting of students.

Infection was the cause of maternal death in 16.7% of cases. Yet it
was the leading cause of death in other previous studies in the same
department leaded by Ouedraogo C [12] (38.70%) and Ouedraogo A [18] (38.20%). Keita [19] in Mali had found the infection as the leading
cause of maternal deaths as well as Bambara [13] in Bobo-Dioulasso.

Delay in consultation resulting from adverse social and cultural
constraints, lack of financial resources to pay the drugs for operation
and antibiotic prescriptions, weaken our patients whom have no
immune defense.

In our series, 1.10% of deaths were related to cardiac arrest
preoperatively. The remoteness of peripheral health facilities, exhaustion coupled with poor general condition of women upon their
arrival at the UTH-YO, lack of financial means and insufficient doctors in anesthetics in our countries could explain this result. Most acts of anesthesia are entrusted to skilled nursing anesthesia. It is urgent to
correct the malfunction by training specialists in anesthesia and the
granting of qualified equipment.

The rate of respiratory distress was 09.33%. This rate was lower
than those of Kprakpra [10] and Ouedraogo A [17] who reported respectively 23.90% and 35.10.

From our results, neonatal pain was noted in 21.33% of cases. This rate was higher than Bokossa’s [22] in Cote d’Ivoire who found 2.18%. It was near the one of Sayouti [16] who found in Morocco 19.52%. The poor antenatal care of women during pregnancy, late evacuations related to indications, the poor condition of women upon their arrival
at the UTH-YO, lack of financial resources to meet the operating kits,
inadequate technical platform for care of the newborn could explain this high rate.

We detected 74 stillbirths or 8.14% of births. This rate was higher
than that found by Kprapra [10] in the same department who found
6.5%. It was inferior to Ouedraogo A’s [17] who noted a rate of 17.9% and
close to that of Ouedraogo J [23] who found 8.85%. The delay in
the surgical procedure and poor prenatal care are contributing factors.

The rate of early neonatal mortality was 3.63%. This was lower than Ouedraogo J [23] reported that a rate of 7.45%. It was near the one of Kprapra [10] (3.7%). This reflects the poor quality of antenatal care, the lack of supervision of the work of childbirth by the partograph.

The rate of perinatal mortality was 11.7%. This was higher than
Kprakpra’s [10] who reported a frequency of 8.4%. It is lower than
Ouedraogo J’s [23] and Ouedraogo A’s [17] in the same department
who reported respectively 16.3% and 19.22%. It is also lower than
Sayouti’s [16] in Morocco who reported 22.87%. Some neonatal
deaths are due to operational difficulties [22]. The low socio-economic
status of our people, the conditions of poor hygiene, lack of staff and
equipment, lack of adequate supplies in the care of the newborn are
factors to be taken into account in the resolution of perinatal mortality.

Conclusion

Caesarean section is a common surgery at the UTH-YO with a bad
maternal, fetal and neonatal prognosis. To improve all this, efforts must
also come from practitioners and policy makers by training competent
staff, improving the conditions of evacuations and improving the
accessibility of obstetrics health facilities.

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| Settings            | Average | Interval  |
|---------------------|---------|-----------|
| Weight (gram)       | 2815.9  | [1450–4700] |
| Size (cm)           | 49.1    | [34–59]   |
| Head circumference (cm) | 32.8    | [25–40]   |
| Thoracic perimeter (cm) | 31.5    | [24–52]   |

Table 2: Constants of newborns.
overusing of crash c-section procedure? J Gynecol Obstet Biol Reprod (Paris) 39: 133-138.

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