

Maternal and Perinatal Prognosis of the Cesarean at Chu Point G, Bamako, Mali

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Abstract

Objective: In light of numerous obstetric evacuations to the Point G University Hospital and taking into account the practice of cesarean section for many years in the service, it seemed necessary to us to make our contribution to the study of cesarean section by putting emphasis on maternal and perinatal prognosis in the Obstetric Gynecology Department of the Point G university hospital. **Method and materials:** We conducted a retrospective cross-sectional study in the Gynecology and Obstetrics Department of the Point G University Hospital, from January 01, 2018 to December 31, 2018. The Point G University Hospital is a 3rd level center of reference in the field of obstetrics in Mali. There is no neonatal ward. The study included all women who gave birth in the gynecology and obstetrics department during the study period. All prophylactic and emergency Caesarean section records during the period in which management took place in the ward were included. The records of patients who had a prophylactic or emergency cesarean section in other health facilities and non-usable records were not included. Data were collected using a pre-established survey form. The variables analyzed were socio-epidemiological, clinical and prognostic. Data were analyzed using IBM SPSS software version 16.00. The Chi2 test and Fischer's exact test were used to highlight risk factors. The significance level retained was $p < 0.05$. **Operational definition:** Nulliparous: A woman who has never given birth; Primipara: A woman who gave birth once; Pauciparous: A woman who has a number of deliveries between two and three; Multiparous: A woman who has a delivery count of between four and six pregnancies; Large multipara: A woman who has given birth more than six times.

Results: We recorded 608 deliveries by cesarean section out of a total of 1573 deliveries, *i.e.* a rate of 38.6%. The majority of caesareanized patients were between 20 and 29 years old or 41.94%, the average age was 26 years old. Out-of-school patients were the most represented, or 44.41%. They were pauciparous in 34.4% of cases. The pregnant majority had performed at least 04 antenatal consultations, or 68.91%. In 74, 51% of the cases the patients carried a pregnancy estimated to term. Cesarean section was performed urgently in 85.36% of cases and eclampsia crisis was the most common maternal indication, or 27.97% among the 379 cases. We recorded 10 maternal deaths or 1.64%. The bleeding disorder was responsible for half of our deaths, or 50%, from retro-placental hematoma. The fetal prognosis was dominated by neonatal distress with 19.08% of cases. We recorded 101 cases of stillbirths, or 16.61%, and 23 cases of early neonatal death, or 3.78%. Our study found a statistically significant relationship between the type of cesarean section and neonatal death with Fisher's exact test = 27.772, $P < 0.0001$.

Keywords

Cesarean Section, Frequency, Maternal and Perinatal Prognosis

1. Introduction

Cesarean section is an obstetric act that saves the newborn and its mother in certain situations. This useful act is only justified if its indication is correctly stated [1]. As early as 1986, with the initiative "for a safer motherhood", the World Health Organization (WHO) recommended that the monitoring of childbirth and the early detection of obstructed labor be selected as one of the most important approaches to reduce maternal mortality [2]. Thus, the proposal to perform a caesarean section to continuously improve the quality of obstetric care responds to these priorities. Cesarean section rates have increased over the past 20 years in the majority of industrialized countries where the surgical technique is perfectly mastered. A 2018 study shows that the global Caesarean section rate has climbed by nearly 10% in 15 years, with 15 countries where the Caesarean birth rate exceeds 40% [3]. Despite advances in obstetric surgery, anesthesia, resuscitation, the advent of antibiotic therapy and asepsis, maternal deaths are even more frequent in Africa, especially in Mali. According to demographic and health survey in Mali fifth edition (EDSM V) [4], maternal deaths account for 32% of all deaths of women aged 15 to 49. The percentage of female deaths that are "maternal" varies with age irregularly, with peak levels of 28% at 25 - 29 years, 65% at 30 - 34 and 32% 35 - 39. The high rate of maternal deaths at the middle ages 25 - 39 is consistent with fertility levels since it is at these ages that fertility is the highest [4]. Nowadays, patients normally need a caesarean section, prophylactic drugs are often lost to follow-up in late pregnancy and do not return until early labor. This exposes them to a high risk of maternal and pe-

perinatal morbidity and mortality. In the light of numerous obstetric evacuations to the Obstetric Gynecology Department of the Point G University Hospital and taking into account the practice of the caesarean section for many years in the service, it seemed necessary to us to make our contribution to the study of the caesarean section by putting the emphasis on maternal and perinatal prognosis in the gyneco-obstetrics department. The objectives of this study were to determine the frequency of cesarean section during the study period, determine the socio-demographic profile of the patients, and finally determine the maternal and perinatal prognosis.

2. Materials and Methods

We conducted a retrospective cross-sectional study in the gynecology and obstetrics department of the Point G University Hospital, from January 01, 2018 to December 31, 2018. The Point G University Hospital is a 3rd level center of reference in the field of obstetrics in Mali. There is no neonatal ward. The study included all women who gave birth in the gynecology and obstetrics department during the study period. All prophylactic and emergency Caesarean section records during the period in which management took place in the ward were included. The records of patients who had a prophylactic or emergency cesarean section in other health facilities and non-usable records were not included. Data were collected using a pre-established survey form. The variables analyzed were socio-epidemiological, clinical and prognostic. Data were analyzed using IBM SPSS software version 16.00. The Chi2 test and Fischer's exact test were used to highlight risk factors. The significance level retained was $P < 0.05$.

Operational definition:

Nulliparous: a woman who has never given birth.

Primipara: a woman who gave birth once.

Pauciparous: a woman who has a number of deliveries between two and three.

Multiparous: a woman who has a delivery count of between four and six pregnancies.

Large multipara: a woman who has given birth more than six times.

3. Results

Frequency: During the study period (January 1, 2018 to December 31, 2018), we recorded 608 cesarean deliveries out of a total of 1573 deliveries, or a rate of 38.6%.

Sociodemographic and clinical characteristics:

The majority of our caesareanized patients were between 20 and 29 years old or 41.94%, the average age was 26 years with extremes of 14 and 45 years. Out-of-school patients were the most represented, *i.e.* 44.41%. They were pauciparous in 34.4% of cases. The majority of pregnant women had performed at least 04 antenatal consultations, or 68.91%. In 74.51% of cases, the patients carried a pregnancy estimated to be term (**Table 1**). Cesarean section was performed

Table 1. Sociodemographic and clinical characteristics.

Characreristics	Effective	Frequency (%)
Age range		
[14 years - 20 years[137	22.53
[20 years - 30 years[255	41.94
[30 years - 40 years[196	32.24
[40 years - 45 years]	20	3.29
Education level		
Out of school	270	44.41
Primary	91	14.97
Secondary	201	33.06
Superior	46	7.57
Parity		
Nulliparous	199	32.7
Primipara	110	18.1
Pauciparous	209	34.4
Multiparous	69	11.3
Large multipara	21	3.5
Prenatal consultation (CPN)		
No CPN	86	14.14
[1 - 3]	103	16.94
[4 and over[419	68.91
Age of pregnancy in Week of amenorrhea		
Less than 37	150	24.67
Between 37 and 42	453	74.51
Greater than 42	5	0.82

urgently in 85.36% of cases and eclampsia crisis was the most common maternal indication, or 27.97% among the 379 cases (**Table 2**).

Maternal and perinatal prognosis of cesarean section

We recorded 10 maternal deaths or 1.64%. The bleeding disorder was responsible for half of our deaths, or 50%, from retro-placental hematoma (**Table 3**). We found a statistically significant relationship between neonatal complications and mode of admission with $P < 0.05$ (**Table 4**). The fetal prognosis was dominated by neonatal distress with 19.08% of cases. We recorded 101 cases of stillbirths, or 16.61%, and 23 cases of early neonatal death, or 3.78% (**Table 5**). We found a statistically significant relationship between type of cesarean section and neonatal death with Fisher's exact test = 27.772; $P < 0.0001$ (**Table 6**). We found a statistically significant relationship between the type of caesarean section and neonatal death with $P < 0.05$.

Table 2. Type of caesarean section and indications.

Type of cesarean and indications	Number of patients	Frequency (%)
Type of cesarean		
Urgent	519	85.36
Prophylactic	89	14.64
Indication		
Pelvic abnormality	26	6.86
Asthma attack	1	0.26
History of vesico-vaginal fistula cure	2	0.53
History of uterine prolapse cure	2	0.53
History of uterine rupture	2	0.53
Heavy obstetric history	5	1.32
Disseminated intravascular coagulation	1	0.26
vaso-occlusive crisis	12	3.17
Pelvic fetal disproportion	32	8.44
Dynamic dystocia/scarred uterus	14	3.69
Eclampsia	106	27.97
Preeclampsia	45	11.87
Elderly primipara	3	0.79
Retinopathy sickle cell	2	0.53
Septicemia	1	0.26
Pre-uterine rupture syndrome	16	4.22
Scarred uterus/shruken bony pelvis limit	30	7.92
Multicatricial uterus	79	20.84

Table 3. Distribution of patients by cause of death.

Causes of maternal death	Number	Frequency (%)
Decompensated anemia (Blood not available)	2	20.00
State of eclamptic illness	2	20.00
Hellp syndrome	1	10.00
Bleeding disorders	5	50.00
Total	10	100

Table 4. Distribution of neonatal complications by mode of admission.

Mode of admission	Neonatal complications					
	Yes		No		Total	
	Number	%	Number	%	Number	%
Come from herself	38	6.25	65	10.69	103	16.94
Référée	39	6.41	146	24.01	185	30.43

Continued

Evacuated	120	19.74	200	32.89	320	52.63
Total	197	32.40	411	67.60	608	100

Pearson's chi-square = 15.571; ddl = 2; P < 0.0001.

Table 5. Distribution of newborns according to the nature of the complications.

Nature of Neonatal Complications	Number	Frequency (%)
Neonatal distress	116	19.08
Prematurity	32	5.26
Neonatal distress	23	3.78
Respiratory distress	7	1.15
Others	19	3.13
No complications	411	67.6
Total	608	100.0

Table 6. Distribution of fetal prognosis by type of cesarean section.

Fetal prognosis	Type of Cesarean section					
	Urgent		Prophylactic		Total	
	Number	%	number	%	Number	%
Vivant	397	65.30	87	14.31	484	79.61
Mort-nés	100	16.45	1	0.16	101	16.61
Décès précoce	22	3.62	1	0.16	23	3.78
Total	519	85.36	89	14.64	608	100

Fisher's exact test = 27.772; P < 0.0001.

4. Discussion

Between January 1, 2018 and December 31, 2018, we recorded 608 cases of caesarean sections out of a total of 1573 deliveries, *i.e.* a frequency of 38.6%. Our cesarean rate is high compared to the optimal interval set by WHO. This could be explained by the fact that the Point G University Hospital is considered to be the 3rd level reference center and that the majority of these patients have an indication for cesarean section. The study by Coumaré S. [5], Wologueme D. [6], Ganaba S. [7], CT Cissé and col [8], obtained respectively 29.35%; 28.29%; 12.44% and 11.2% cesarean section rate. On the other hand, Kadima Mutomba C. and col [9] and Tshabu-Aguèmon C. [10] obtained significantly higher rates, 85.53% and 57.26%.

Cesarean section was performed urgently in 85.36% of cases and eclampsia crisis was the most common maternal indication, or 27.97% among the 379 cases. Sylla Cheikna [11] found 46.15% of cesarean sections performed in emergency versus 53.85% of prophylactics. As for the indication for cesarean section,

CT Cissé [8], found pelvic fetal disproportion, placenta previa and dystocia at 41.4%.

In our study, the 20 to 29 year age group was the most represented at 41.9% and the average age was 26 years with extremes of 14 and 45 years. This is the rule in the studies of Wologueme D., who finds an age group of 20 to 29 years [6]; Sylla Cheickna [11] observe a mean age of 27.41 plus or minus 5.84 with extremes of 14 to 40 years; CT Cissé [8] finds as an average age 26 years [8]; at the Mohamed VI University Hospital in Marrakech, Imane T the 20 to 29 age group was the most represented [12]. Indeed this is explained by the fact that this age group constitutes the population group in full genital activity. In our study, housewives represented 65.13% of Caesarean sections, this same tendency is found by Korenzo M., *i.e.* 74.3% [13]. Out-of-school women were 44.41%. The majority of Caesarized women were married, or 93.1%. This predominance of married women is corroborated by most studies: Ganaba S 92.3% [7] and Tamboura B 97% [14] because it is they who lead a regular sexual life.

The majority of our patients had an estimated gestational age at term, or 75.33%. Most of our pregnant women have been consulted at least once. More than half had benefited from at least 4 ANC, or 68.91%. These results differ from those found by Korenzo M. [14] and Dramé M. [15], or 56.7% and 26.7% respectively. Unlike Sylla Cheickna [11] who observed 100% of patients having benefited from at least 4 prenatal consultations.

We recorded 181 cases of complications associated with cesarean section, *i.e.* 29.77%, almost all of which were with emergency cesarean section, or 28.62%. Unlike Kadima Mutombo. C which found 97.37% of patients with a good prognosis. Ten (10) cases of maternal death were observed, or a death rate on cesarean section of 1.64%. All maternal deaths occurred in the postoperative period, the main cause of which was represented by the coagulation disorder 50% and state of eclamptic disease 20%. These deaths could be avoided if the availability of blood products was ensured. CT Cissé [8] finds the same rate in Dakar 1.4%. Unlike AB Adama-Hondegla [16] who found a low rate of 3.2% and Tshabu-Aguèmon C [10] a higher rate of 58.69%.

Among the 608 cesarean sections performed in our study, we recorded 16.61% stillbirths and 3.78% early neonatal deaths. The majority of the causes of these deaths were due to respiratory distress and prematurity, respectively 52.17% and 43.48%. Sylla Cheickna *et al.* found 30% perinatal death [11]; Kadima Mutombo [9] 38.84% perinatal mortality, Pete Yaïch D Cesar [17] 11.6% early neonatal death and Tshabu-Aguèmon C [10] 15, 44% perinatal mortality. Neonatal complications were related to the mode of admission. In fact, among the 320 evacuated patients, we recorded 19.74% neonatal complications (n = 120), unlike those who were referred cold 6.41%, (n = 39) and the appearances of itself 6, 25% (n = 38): Pearson's chi-square = 15.571, with P < 0.0001. Similarly, Ouédraogo C. [18] according to a study carried out at the Yalgado Ouédraogo Hospital in Ouagadougou on the quality of the cesarean section. The perinatal

mortality rate was 15.9% this rate was significantly higher for emergency evacuated women (23.5%) than non-evacuated women (3.8%), relative risk = 6.2 and $P < 10$.

5. Conclusion

This study shows that cesarean section in our working conditions is coupled with high maternal and perinatal morbidity and mortality. The risk factors identified are largely avoidable, especially rightly or wrongly attributed to the operation masking ipso facto the often irrational circumstances of its practice.

Conflicts of Interest

No conflict of interest regarding the publication of this article.

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