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Original Research Article

Obstetric emergencies in a humanitarian context at the Somine Dolo hospital in Mopti, Mali

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ABSTRACT

Background: Conflicts are a barrier to physical and financial access to health centers [6]. Our objective was to evaluate obstetric emergencies in a humanitarian context at the Sominé DOLO hospital in Mopti.

Methods: This was a descriptive and prospective longitudinal study from January to September, 2020 in the obstetrical gynecology department of the Sominé DOLO hospital in Mopti. Our objective was to evaluate obstetric emergencies in the humanitarian context.

Results: The frequency of patients evacuated was 30.61%. The average age of the patients was 27 years with extremes of 15 and 49 years. Hemorrhage during pregnancy was the main cause of reference with 23.83%. The ambulance was the most used means of transport with 51%. Delay in evacuation was observed in 31.33 cases. About 73.03% of our patients had given birth by caesarean section. We recorded 64 maternal deaths, a rate of 10.67%. Fetal mortality in our study was 23.28%. Attacks by armed groups had a negative impact on the referral/evacuation system.

Conclusions: The health system had experienced severe challenges due to insecurity. Armed conflicts were the cause of evacuation delays. Haemorrhage during pregnancy was the main reference cause. Maternal and perinatal mortality was high.

Keywords: Obstetric emergencies, Humanitarian context, Mopti, Mali

INTRODUCTION

The humanitarian situation remains worrying with the juxtaposition of conflicts, multifaceted insecurity and climatic hazards (floods and droughts). These shocks are superimposed on the COVID-19 pandemic which continues to exacerbate pre-existing vulnerabilities with adverse socio-economic consequences in the short, medium and long term, exacerbating humanitarian needs. Thus, in 2021, according to estimates, 11.7 million people will be affected by the crisis, of whom 5.9 million are now in need of humanitarian assistance relating to basic needs, access to social services for basic and living conditions, as

well as strengthening their recovery capacities and resilience to shocks.¹

The health situation in Mali continues to deteriorate. Many health needs of the most vulnerable populations remain unmet due to lack of access to and use of quality basic health services.¹ Obstetrical emergencies are dramatic clinical situations involving short-term maternal and/or fetal vital prognosis.²

Experience shows that at least 15% of pregnancies worldwide have complications that can be fatal.³ In Mali according to DHS VI, maternal mortality is estimated at

325 deaths per 100,000 births and the pregnancy-related mortality ratio is 373 maternal deaths per 100,000 live births.^{4,5} Conflicts are a barrier to physical and financial access to health centers.⁶ The COVID-19 that appeared in the region in 2020 has further aggravated this already precarious situation. In Mopti, no study has been done on obstetric emergencies in a humanitarian context.

This study aims to contribute to the achievement of Sustainable Development Goal 3 through Target 3.1 By 2030, reduce the global maternal mortality rate to below 70 per 100,000 live births.¹

METHODS

This was a prospective cross-sectional study from January to September, 2020 in the obstetrical gynecology department of the Sominé DOLO hospital in Mopti. Our objective was to evaluate obstetric emergencies in a humanitarian context at the Sominé DOLO hospital in Mopti. Our study concerned all the patients admitted in emergency in the service for obstetric affections involving in the short term the vital prognosis of the mother and/or the fetus. The study did not include all patients admitted in whom an obstetric emergency was not labelled. The sample size was calculated using the EPI Info 7 software taking into account the following parameters: The margin of error at 5%, the confidence interval at 95% and the distribution of responses at 50%. The data was processed and presented using Word and Excel version 2016. Data entry and analysis using Epi info version 3.5.3 software.

RESULTS

During the study period from January to September, 2020, we recorded 600 obstetric emergencies out of 1,960 patients admitted, i.e. 30.61%.

Table 1: Distribution of patients according to the reasons for the delay in evacuation.

Reason for delay	Number	Percentage
Attack by armed groups	18	3
Any	412	68,67
Road degradation	106	17,67
Imprecise	9	1,5
Lack of means	14	2,33
Ambushed	12	2,0
Journey is long	29	4,83
Total	600	100,0

The average age of the patients was 27 years with extremes of 15 and 49 years. The most represented age group was 20-24 or 24.83%. The majority of women were married with 95.67% and housewives were the most represented with 83% of cases. About 86.33% of the patients were not educated. Nulliparous represented 24.5% of the study. % . As for the primiparous they represented 18.80% and the

multiparous represented 17.67%. Arterial hypertension and heart disease were the most frequent medical antecedents, respectively 5.6% and 2.3%. About 62.3% of the patients had no prenatal consultation.

Table 2: Distribution of patients according to the reason for reference.

Reason for evacuation	Number	%
Anemia	50	9.76
Others	3	0.58
Incomplete abortion	8	1.56
BAF on pregnancy	3	0.58
Abnormal pelvis	7	1.4
Parent request	4	0.78
DFP	33	6.45
Stationary dilation	25	4.88
Dynamic dystocia	18	3.52
USG	22	4.3
Bleeding/pregnancy	122	23.83
HRP	19	3.71
hypertension	30	5.86
excessive HU	9	1.75
Placenta accreta	3	0.58
HPP	13	2.54
Pre-eclampsia/eclampsia	66	12.89
Cord prolapse	8	1.56
Retained placenta	8	1.56
Rpm	14	2.73
Uterine rupture	18	3.52
SFA	9	1.75
pregnancy trauma	4	0.78
scarred uterus	16	3.13
Total	512	100.0

The evacuation concerned 85.33% of the patients; 14.67% were consultants who came on their own. About 51% of the evacuees came by ambulance. The majority of patients evacuated had an evacuation sheet, i.e., 59.76% against 29.30% for the partogram and 10.4% for a letter. Patients who came on their own for CUD/pregnancy were the majority with 82.95% follow-up. RPM accounted for 5.8%. Hemorrhage during pregnancy was the main cause of reference with 23.83%. Delay in evacuation was observed in 31.33 cases. This delay can be deduced from table 1. Hemorrhage and anemia were the most common maternal complications on admission with 22.67% and 13% respectively. The frequency of spontaneous abortion was 1.67% of all deliveries.

During the study period, 73.03% of our patients had given birth by caesarean section. The forceps was practiced in 5.91% of cases. About 6.69 of the patients had benefited from a laparotomy. During the study period, 37.66% of patients had complications. Hemorrhage and anemia were the most common maternal complications on admission with 22.67% and 13% respectively. These frequencies of

evacuations are recorded in Table 2. The top three admission diagnoses were mechanical dystocia (15%); eclampsia (14.17), acute fetal asphyxia (7.84%) are presented in Table III cited at the end of the document. We recorded 64 maternal deaths, a rate of 10.67%. The average length of stay in hospital was 5 days with extremes of one hour to 21 days. Fetal mortality in our study was 23.28%. About 40.87% of newborns had a morbid condition at birth. About 61.18% of newborns had a weight between 2500 and 3495. Hypotrophy, neonatal suffering and prematurity were the most frequent reasons for transfer to pediatrics with respectively 11.42%; 10.73 and 9.13%.

Table 4: Distribution of patients according to diagnosis.

Entry diagnosis	Number	%
Mechanical dystocia	90	15
Rupture + uterine pre-rupture	34	5.67
Dynamic dystocia	44	7.33
Spontaneous abortion in progress	10	1.67
USG	30	5.0
Placenta previa	28	4.67
Infection in pregnancy	5	0.83
Pre-eclampsia	31	5.17
Threat of spontaneous abortion	6	1.0
Cord and/or limb prolapse	29	4.83
SFA	47	7.84
Postpartum hemorrhage + retained placenta	40	6.67
Acute endometritis	2	0.33
Eclampsia	85	14.17
HRP	20	3.33
Induced abortion + complication	3	0.5
MAP	10	1.67
Vomiting in pregnancy	4	0.67
Cyst Rupture/Cyst Torsion	8	1.33
douglas break	4	0.67
rpm	5	0.83
Puerperal infection	18	3.0
Molar pregnancy	8	1.33
Genital trauma	2	0.33
Acute bartholinitis	1	0.17
Pelviperitonitis	2	0.33
BAF on pregnancy	3	0.5
pregnancy trauma	5	0.83
Sepsis	9	1.5
Placenta accreta	3	0.5
Malaria in pregnancy	14	2.33
Total	600	100

DISCUSSION

The multidimensional crisis experienced by Mali has greatly impacted the reproductive health system in the

center of the country. Out of 1960 patients admitted, we collected 600 cases of obstetric emergencies, i.e., 30.61%. This result is similar to that found by Traore 6 in 2013 which was 30.10%, and Traore7 (31.74%). On the other hand, Cisse8, Savadogo; Maiga and Ouattara had found lower rates with respectively 28.24%; 28.1%; 23.5%; and 3.67%.⁹⁻¹¹ Our high frequency could be explained by the fact that the hospital is the only 2nd level reference center in the region taking care of the majority of gynecological-obstetrical emergencies due to its technical platform. The most frequent age group was that of 19-29 years with 64.6%. This slice corresponds to the period when the genital activity was the most intense. Many African authors have reported in the 14 to 19 age brackets respectively; 19-29 years old; 20-35 years old; 20-30 years 45.33%; 55.6%; 75.9%; 41.9%.^{6,9,12} Housewives were the most represented with 83%. This is because most of the population are housewives. There is also a predominance of housewives in the Traore and Traore with 94.8% and 99.23%.^{6,7} Women with no schooling represented 86.33% and only 6.5% had a secondary education. In Mali, the enrollment rate for girls is still low in rural areas. The nulliparous were the majority with 24.5% in our study. This large number confirms the notion of risk of gravido-puerperium in women with no experience of parturition. This result was lower than that of Cisse8 29.9%; Traore 35.03% and Cisse; 33.1% and much higher than that of Traore6 8.9%.^{6,13}

The primiparous were 18.80%. This frequency is higher than that of Cisse 15.7% and Traore 15.5%, Traore 13.86%.^{6,7} The primiparous were 18.80%. This frequency is higher than that of CISSE S.A 8 15.7% and Traore 15.5%, Traore 13.86%.^{6,7}

Grand multiparas represented 17.67% in our series. This frequency is lower than that of Kouyate 12 42.2%, higher than that of Cisse 16.7%, and Traore 16.27%.^{8,7} The risk in these women is due to the fragility of the uterus resulting from multiple and closely spaced pregnancies.

The majority of patients had a normal pelvis, i.e. 93.84%. The pelvis was generally narrowed in 1.60%. This figure is higher than that of Traore6 for the normal pelvis and lower for the generally narrowed pelvis, i.e. 66.2% and 8.3%.

The prenatal consultation had not been carried out by 62.33% of the women. Only 22.60% have at least three 3 prenatal consultations. This figure was higher than that of Traore6 22.4%, Cisse 37.01%, Savadogo 38.5% and Traore 7 29.45%.^{6,8,9} This result could be explained by economic problems, the low level of literacy of the population, geographical inaccessibility and insecurity.

Hypertension and heart failure were the most common medical history in 5.67% and 2.33% of cases. This frequency is lower than that of Cisse who had respectively 50% and 22.72% of cases for these different pathologies.⁸

The evacuation concerned 85.33% of the patients; 14.67% were consultants who came on their own. Some African authors have reported variable rates of 80% and 20% for Traore.^{4,6} The 60.7% and 39.3% for Sarampo. The difficulty of geographical accessibility and the remoteness of the SONUB structures from the hospital and its status as a 2nd reference could explain the high number of patients evacuated to our structure.

The ambulance was the most used means of transport with 51%. This frequency was lower than that of Traore 66.2% Savadogo 60.9%.^{15,18}

A reference/evacuation sheet accompanied them in 59.76% of cases. The inadequacy in the use of these materials could be explained by the presence of unqualified personnel in most of these peripheral structures.

Hemorrhage and anemia were the most common maternal complications on admission with 22.67% and 13% respectively.

The frequency of spontaneous abortion was 1.67% of all deliveries. Our lower abortion rate is because most of our women don't go to the hospital unless they have complications. This frequency is much lower than that of Kone 41.1%; and Savadogo 2.1%.^{9,14}

Our frequency of USG (5%) could be explained by the resurgence of sexually transmitted infections and essentially the increase in the number of tubal infections. Our percentage can be superimposed on that of Savadogo 4.0%.⁹

The frequency of uterine rupture (5.67%) was lower than that of Cisse 6.76%; and superior to that of Traore 3.8%; Cisse 3.7%; Sarampo 2.2% and Maiga 0.3%.^{6,8,15,20} This frequency is related to late evacuations and the lack of adequate and rapid means of handling these emergencies.

The frequency of placenta previa (4.67) was lower than that of Cisse 9.25% and higher than that of Savadogo 2.3%.^{8,9}

The HRP represented 3.33% lower than those of Cisse 8.18%; Traore 4.5%; Traore 10.39%; and Savadogo 4.1%.^{6,9} This difference could be explained by the methodological approaches used in these studies. The frequency of postpartum haemorrhages was 6.67%, higher than that of Cisse 2.85%.⁸

The frequency of placenta previa was 4.67%. This rate was lower than that of Cisse 9.25% and higher than that of Savadogo 2.3%.^{8,9}

The pathological pelvis represented 15% in our study and is lower than those found in the studies of Cisse 18.15%; and superior to that of Traore 7.2%; Savadogo 2.8% and Sarampo 12.2%.^{4,6-9}

The frequency of dynamic dystocia was 7.33%. It could be explained by the excessive use of oxytocic in peripheral maternities which disrupts uterine dynamics.

Our frequency of high blood pressure and its complications (19.34%) could be explained by the irregularity of women at the prenatal consultation.

Caesarean section was performed 7.28% and forceps was applied in 66.67% of cases. The diagnosis of distress was made based on the color of amniotic fluid (meconium) and changes in fetal heart sounds (bradycardia or tachycardia). Our rate was higher than that of Sarampo 5.5% and Savadogo 5.1%.^{4,9}

Cord prolapse accounted for 4.83% of cases. The vaginal examination supported up to the operating room and the caesarean section were systematic in all cases of prolapse with beating cord 5.39% (20 cases). Savadogo (20 Cases) and Cisse reported 66.7% and 1.93% respectively.^{8,9}

Our frequency of threatened preterm delivery (1.67%) was higher than that of Savadogo 0.8% and lower than that of Cisse 3.56%.^{9,17}

During the study period, 73.03% of our patients had given birth by caesarean section. This caesarean rate can be superimposed on those of: Cisse 73.67%; and lower than that of Traore 82.41%; and higher than that of Kouyate 29.06%.^{6,8,12}

The forceps was practiced in 5.91% of cases. This frequency was lower than that of Cisse 10.68% and higher than that of Savadogo 2.3%.^{9,16}

The frequency of laparotomy (hysterorrhaphy and hemostasis hysterectomy) was 6.69%. This rate is lower than that of Cisse 7.76%; and superior to that of Traore 0.7%.^{6,8} Soft tissue suturing was performed in 1.77% of our patients. This rate was lower than that of Traore 3.4%.⁶

During the study period, 37.66% of patients had complications. They were dominated by anemia 24.5%, stroke 1%, parietal suppuration 5%, puerperal psychosis 3%; heart failure 1.33%; vesico-vaginal fistula 0.83%.

We recorded 64 maternal deaths, a rate of 10.67%. This is due to the high frequency of emergencies, insecurity; geographic inaccessibility; and the lack of means for the effective and rapid management of patients. This rate is superimposed on that of Cisse 11.03% and higher than that of Traore 0.7%; Savadogo 4.5%; Sarampo 1.5% and Traore 3.66%.^{4,6-9}

Fetal mortality in our study was 23.28%, lower than that of Cisses 33.4% and higher than that of Traore 6.29%.^{6,8}

This high rate of fetal mortality is explained by the delay in the management of certain foreseeable complications such as PRH, placenta previa and uterine rupture).

Morbidity is still difficult to define, but for the sake of conformity, we considered as morbid any newborn with an Apgar score of less than 7. Our rate was 40.87% (i.e. 179 cases). These cases of morbidity were resuscitated and then referred to paediatrics.

The average length of stay was 5 days, with extremes of 6 hours for normal deliveries and 21 days for perineal suppuration and vesico-vaginal fistula.

During our study, the delay in evacuation was directly linked to attacks by armed groups in 3% of cases, by stopping ambulances and checking personnel on board; road deterioration is 17.67%; 2% of cases fell into an ambush; 4.83% cases reported that the journey is long; and in 2.33% of cases reported a lack of means.

CONCLUSION

The health system had suffered severe challenges due to insecurity. Armed conflicts were the cause of evacuation delays. Haemorrhage during pregnancy was the main reference cause. Maternal and perinatal mortality was high.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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