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Original Research Article

Hemorrhagic Placenta Previa: Epidemiology, Clinical and Prognostic Aspects in the Maternity Ward of Sominé Dolo Hospital, Mopti, Mali

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Abstract

Introduction*:** Placenta previa is a complication of pregnancy, corresponding to the insertion of Anor male insertion of the placenta into the lower segment of the uterus. The objective of our study was to determine the frequency of hemorrhagic placenta previa, its epidemiological and clinical profile and its maternal-fetal prognosis in the maternity ward of Sominé Dolo Hospital. ***Methods: This was a descriptive cross-sectional survey type study of 40cas collated with hemorrhagic placenta previa ranging from February 1, 2016 to January 31, 2017, a 12-month period. Data were entered and analyzed on SPSS software (version 16 .0). ***Results:*** During the study period we collected on 946 deliveries of which 54 cases of placenta previa among which 40 cases were hemorrhagic placentas previa that is a prevalence of 4.2%. The age group 19-35 years represented 50% of the cases. The epidemiological profile was that of married women (80% of cases), housewives (50% of cases), and multiparous women (45% of cases). The delivery by high route was practiced in 87.5% of the cases and the main indications were placenta previa covering, hemorrhage despite amniotomy in labor, breech presentation and acute fetal distress with respectively 70%, and 6% of the cases for the last three indications each. Fetal mortality was represented by 25% of cases. Maternal complications were represented by hemorrhagic shock and delivery hemorrhage with respectively 60% and 40% of cases. ***Conclusion:*** Hemorrhagic placenta previa is nowadays a dreadful event that can jeopardize the maternal and fetal prognosis. Rapid management by a multidisciplinary team composed of obstetricians, resuscitators, neonatologists and biologists, could improve the maternal and fetal prognosis.

Keywords: Hemorrhagic placenta previa, maternal-fetal prognosis.

INTRODUCTION

Placenta previa is a rare complication of pregnancy, corresponding to an abnormal insertion of the placenta on the lower segment of the uterus. This obstetric pathology, of multifactorial origin, is potentially serious since this anomaly is often the cause of hemorrhagic complications, particularly in the second part of pregnancy and until delivery. In its hemorrhagic form, placenta previa constitutes an obstetrical emergency because it puts at risk the vital maternal-fetal prognosis. Therefore, it requires early diagnosis and adequate management [3, 5]. Even if the progress made in recent years in the diagnosis and management of women with placenta previa has been significant, this pathology remains associated with a high maternal and perinatal morbidity. In particular, the sudden and often unpredictable occurrence of massive hemorrhage during pregnancy constitutes a real obstetrical emergency, putting the vital maternal-fetal prognosis at risk and possibly requiring an emergency premature delivery [3, 5]. Placenta previa is the 4th most common cause of maternal death by hemorrhage after uterine rupture, delivery hemorrhage and retroplacental hematoma with frequencies ranging from

0.9 to 1.78%. Placenta previa complicates 0.3% to 0.5% of deliveries in Europe, 0.3% to 0.62% of deliveries in America, and 0.5% to 0.9% of deliveries in Asia. The highest frequencies are reported in Africa where the diagnosis is still essentially clinical with rates varying between 0.5% and 3.6% of deliveries [5, 7, 8, 11]. Placenta previa is a formidable obstetric condition where systematic termination of pregnancy was once advocated for maternal rescue. Today, patients with placenta previa benefit from modern diagnostic and therapeutic means.

In Mali, the most recent studies report frequencies between 0.72% and 2.2% of deliveries A study conducted in Côte d'Ivoire by Rokotomalala J, found 39% fetal mortality. The prematurity rate was 45.50% [5, 7, 8, 19].

If the precise etiologies of the vicious insertion of the placenta on the lower segment of the uterus are unknown, numerous studies have identified the risk factors which are: multiparity. Multigestation, history of placenta previa, high maternal age, history of uterine scarring, multiple pregnancies, history of endometritis, uterine malformation, endo-uterine maneuvers, submucosal fibroid, and more recently maternal smoking during pregnancy [3, 5, 18, 19].

Placenta previa is a dreadful obstetrical pathology where systematic interruption of the pregnancy was advocated for maternal rescue, but it now benefits from modern diagnostic and therapeutic means. The use of ultrasound in the diagnosis of placenta previa has led to a considerable reduction in maternal mortality from more than 10% in the 1940s to less than 1% today [5, 18, 19].

In this specific situation, the absence of a study on this obstetrical pathology at the Sominé Dolo Hospital maternity ward led us to initiate this work. The objective of our study was to determine the frequency of hemorrhagic placenta previa, its epidemiological and clinical profile and its maternal-fetal prognosis at the Sominé Dolo Hospital maternity hospital.

METHODS

Our study was conducted at the maternity ward of Sominé Dolo Hospital in Mopti. The Sominé Dolo Hospital is a second referral facility for the entire region. It has a capacity of 84 beds. In 2002, it became a public hospital (EPH) with management autonomy. This was a prospective descriptive study of the cross-sectional survey type conducted over a 12-month period from February 1, 2016 to January 31, 2017 at the maternity ward of Sominé Dolo Hospital in Mopti, Mali. The Study Population was focused on all pregnant women of at least 28Semen of amenorrhea admitted to the department for delivery during the study period. Eligible patients were all pregnant women of at least 28 weeks of amenorrhea who delivered at our maternity ward during the study period and were diagnosed with hemorrhagic placenta previa. Patients not eligible for our study were cases of placenta previa delivered in another maternity hospital and admitted to our department for complications and any incomplete records. The sample size was calculated using the Schwartz formula n = $(Z\alpha)^2 \frac{P \times Q}{i^2}$ n = z =1.96 i= 5% (precision) = risk P= prevalence of hemorrhagic placenta previa in Mali: 1.90, Q= 1- 0.0190 = 0 .81 n = 23.64 = 24. The variables studied were sociodemographic variables (age, occupation, marital status, history, origin); clinical variables (mode of admission, reason for admission, gestational age, parity, number of abortions, number of prenatal visits, term, uterine height, cervical dilatation, metrorrhagia, weight of placenta, measurement of the small side of the membranes, length of the cord, maternal side of the placenta, Apgar score, weight, height, head circumference, thoracic circumference, sex) and therapeutic variables (route of delivery, delivery hemorrhage, maternal and fetal prognosis. The data collection was carried out on an individual survey form filled in from the prenatal consultation books, the delivery register, the register of operative reports and anesthesia forms, the register of hospitalization of patients, the register of reference/evacuation of mothers and newborns. As for the practical conduct of the study, a questionnaire was filled out as soon as the patients admitted to the department met the inclusion criteria. Once the diagnosis of hemorrhagic placenta previa was accepted, the following steps were taken the patient was installed; a safe venous line was taken with a G16 or G18 catheter; the rhesus blood group was requested for those who did not have one; the hemoglobin level was requested urgently; the request for an obstetrical ultrasound if necessary in urgency (the diagnosis of placenta previa, the term of the pregnancy, the fetal vitality); the pulmonary maturation of the fetus was carried out if necessary by the corticoids (12mg in IM to be renewed 24 hours after) in case the maternal state allowed it The course of action depended on these different parameters. We proceeded to the follow-up of our patients and live newborns during the whole hospitalization period.

Active management of the third period of labor (AMTSL) was routinely performed. Data entry and analysis were performed using SPSS software (version 16 .0).

RESULTS

During our study period, we recorded a total of 946 deliveries in the department, including 54 cases of placenta previa, of which 40 cases were hemorrhagic placenta previa. Thus, the prevalence of hemorrhagic placenta previa in our study was 4.2% (40/946).

Table 1: Sociodemographic characteristics

Variables	Number	Percentage (%)
Age		
<19 years old	4	10
19 to 35 years old	20	50
>35 years old	16	40
Total	40	100
Marital status		
Married	32	80
Single	8	20
Total	40	100
Profession		
Housewife	31	77,5
Teacher	1	2,5
Secretary	1	2,5
Shopkeeper	3	7,5
Student	2	5
Student	2	5
Total	40	100

Table 2: Clinical characteristics

Variables	Number	Percentage (%)
Parity		
Nulliparous	3	7,5
Primiparous	4	10
Pauperous	4	10
Multiparous	18	45
Very large multiparous	11	27,5
Total	40	100
Reason for admission		
Hemorrhagic placenta previa	11	27,5
Hemorrhage during pregnancy	15	37,5
Hemorrhage during labor	10	25
Painful uterine contractions	4	10
Total	40	100
Prenatal consultation		
0	13	32,5
1-4	20	50
>4	7	17,5
Total	40	100
Gynecological history		
Curettage	8	20
Uterine rupture	1	2,5
Endometritis	3	7,5
Caesarean section	7	17,5
Abortion	10	25
None	11	27,5
Total	40	100
Time of onset of hemorrhage		
Antepartum	12	30
Per-partum	28	70
Total	40	100
Fetal heart sounds on admission		
Absent	4	10
< 120bts/Min	10	25
120-160bts/Min	24	60
>160bts/Min	2	5
Total	40	100

Table 3: Distribution by type of care

Variables	Number	Percentage (%)
Route of delivery		
Low route	5	12,5
High route	35	87,5
Total	40	100
Indications for cesarean section		
Persistence of hemorrhage despite amniotomy (in labor)	2	6
Resumption of hemorrhage	1	3
Procidence of the cord	1	3
Breech presentation	2	6
Transverse presentation	1	3
Hemorrhagic shock	1	3
Acute fetal distress	2	6
Overlapping placenta previa	25	70
Total	35	100
Apgar score at 1st minute		
0	4	10
1-3	3	7,5
4-6	7	17,5
≥ 7	26	65
Total	40	100
Type of hemorrhagic placenta previa		
Recovering	25	62,5
Non-covering	15	37,5
Total	40	100,0
Birth weight of newborns		
< 2000 g	3	7,5
2000 to 2500 g	10	25
2500 to 3500 g	12	30
3500 to 4000 g	12	30
>4000 g	3	7,5
Total	40	100
Resuscitation of newborns		
Resuscitated	14	35
Non-resuscitated	26	65
Total	40	100
Immediate maternal complications		
Delivery hemorrhage	2	40
Hemorrhagic shock	3	60
Total	5	100
Status of newborns		
Stillbirth	4	10
Early neonatal mortality	4	10
Late neonatal mortality	2	5
Live newborns	30	75
Total	40	100

DISCUSSION

Limitations of our study: not all patients had benefited from obstetrical ultrasound at entry due to the emergency context, the problem of blood product supply at Sominé Dolo Hospital in Mopti, Mali for the management of obstetrical emergencies, and finally, the assessment of fetal heart sounds using the Pinard stethoscope was the subject of much uncertainty.

At the end of our study the frequency of hemorrhagic placenta previa was 4.2% (40/946). In the literature, authors have found results that differ from those of our study. Teme IB [3] in Bougouni, Mali found 2.1% (61/2900); N'guessan K [4] in Abidjan Ivory Coast found 1.6% and Dorine Ley [5] found 6.5% (79/122) at the Port Royal maternity hospital in France in a retrospective study. The discrepancy could be explained in part by the size of the different samples but

also by the rigorous ultrasound follow-up in Dorine Ley's study which allowed all cases to be notified. The age range of 19-35 years was the most represented in our study with extremes of less than 19 years and more than 35 years (Table 1). Our result was close to that obtained by Teme IB [3] = 20-34 years (62.3%) but different from that found by Dorine Ley [5] who found a mean age of 33.7 years. The difference in age range of our result compared to that of Dorine Ley [5] would be partly due to late pregnancies in European women while African women, particularly those in Mali, contracted their first pregnancy at a young age. Finally, the epidemiological profile was dominated by married women (80%) and housewives (77.5%) (Table 1). Our proportion of married women was similar to those found by Teme IB [3] =96.7% and by Keita S B [17]. The high number of married women can be explained by the fact that early marriage in our country exposes them more to pregnancy and endometrial trauma. In our study, multiparous women and very large multiparous women represented the bulk of our sample with 45% and 27.5% respectively (Table 2). The association between multiparity and placenta previa has been proven by several authors. In France, Boog G [9] reported that multiparous women were four to five times more concerned than primiparous women with placenta previa. This same trend was also reported by Bakayoko S [8]: 43.55% of multiparous women and 32.25% of large multiparous women. In our study, about 1/3 (33%) had not attended prenatal consultations (Table 2), although obstetrical complications such as placenta previa could be detected during prenatal consultations. We reported from our study that the main gynecological antecedents were represented by abortion, curettage and repeated cesarean sections with 25%, 20%, and 17.5% respectively (Table 2). The literature recognizes these parameters as factors that can promote placenta previa [1-5, 9]. The main maternal complications in our study were hemorrhagic shock in 60% of cases and delivery hemorrhage in 40% of cases (Table 3). Dorine Ley [5] reported 41% of maternal complications due to delivery hemorrhage secondary to hemorrhagic placenta previa. Our proportion of delivery hemorrhage was 40% and therefore similar to that reported by Dorine Ley [5]. In 87.5% of the cases, delivery was performed by the vaginal route in our study (Table 3). Teme IB [3] reported 67.20% of cases of caesarean delivery and Dorine Ley [5] reported an overall caesarean rate of 81%. Our cesarean section rate was similar to these trends. The main indications for cesarean section were placenta previa covering 70% of cases and 6% of cases each for fetal distress, breech presentation and persistent hemorrhage despite amniotomy during labor (Table 3). These indications were the usual professional practices to improve the maternal-fetal prognosis [1, 3, 5, 9, 17, 19]. Fetal morbidity and mortality were marked by resuscitation for fetal distress of 3/5 or 60% of newborns at birth and high fetal mortality of ¼ or 25% of cases with 10% stillbirths and early mortality each, and 5% late mortality (Table 3). The high perinatal mortality rate in our study could be explained by delayed evacuation, fetal prematurity either spontaneous or induced (delivery for hemorrhagic shock).

CONCLUSION

Hemorrhagic placenta previa is nowadays a dreadful event that can jeopardize the maternal and fetal prognosis. Of course, the maternal prognosis of placenta previa was favorable. Rapid management by a multidisciplinary team of obstetricians, resuscitators, neonatologists and biologists could significantly improve the maternal and fetal prognosis.

Conflicts of Interest: The authors had declared no conflicts of interest.

Contribution of the authors

Tioukani Augustin Théra was the designer of our study and Pierre Coulibaly supervised the conduct of the study. Seydou Mariko was responsible for writing the manuscript. All the authors contributed substantially to the manuscript. All authors had read and approved the final manuscript before submission.

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