

Epidemiology and Prognosis of Retroplacental Hematoma in a Maternity Ward at a Regional Hospital Center in Southern Senegal

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Abstract

Objectives: To study the epidemiological profile and the prognosis of the retro-placental hematoma (HRP) at the maternity ward at Kolda Regional Hospital Center. **Materials and methods:** This was a retrospective descriptive cross-sectional study conducted over a period of 11 years: from January 1st, 2006 to December 31st, 2016, at Kolda Regional Hospital Center. It included all patients admitted for HRP during this period. The studied parameters concerned sociodemographic characteristics, gynecological obstetrical history; clinical, therapeutic and prognostic data (non-inclusion or exclusion criteria). The data were collected from medical records, the delivery room and the surgery room registers using a collection sheet developed for this purpose. The statistical analysis of the variables studied was done with the software Epi-info 3.5. For the qualitative variables, we calculated the frequencies and for the quantitative variables, we studied the distributions. **Results:** During the study period, 15,343 were recorded deliveries and we carried out the diagnosis of HRP in 301 patients (1.97%). The average age of the patients was 24 years with an average parity of 4.8 deliveries. Almost all the patients (87.5%) were evacuated and half had delivered by caesarean section. Maternal and fetal deaths were 7% and 72.1%, respectively. Uterine atony accounted for 21.2% of complications. One third of the cases of uterine atony had resulted in a hysterectomy. The average duration of hospitalization was 6 days. **Conclusion:** The retro-placental hematoma is a serious medico-obstetric emergency. It is burdened with high maternal and fetal morbidity and mortality in developing countries.

Keywords

Retro-Placental Hematoma, Mortality, Kolda

1. Introduction

The retroplacental hematoma (HRP) is the premature detachment of the normally inserted placenta while the fetus is still in utero. Its frequency is variously appreciated according to the authors: 0.25% in Europe [1] [2] [3], 1% to 9% in developing countries [4] [5] [6]. This is a major obstetric complication with significant maternal and perinatal morbidity and mortality. The fetal complications are intrauterine growth retardation, especially induced prematurity and its complications. The most common maternal complications are hemorrhagic shock, haemostasis disorders and less rarely maternal deaths. In this, care is multidisciplinary.

In fact, the obstetrical treatment consists of a rapid uterine evacuation and the delivery route is mainly a function of the labor phase and the foeto-maternal status. The pre and post partum resuscitation is always necessary as well as pediatrician involvement.

The objective of this study is to evaluate the epidemiological profile and the prognosis of the retro-placental hematoma (HRP) at the maternity ward at Kolda Regional Hospital Center.

2. Patients and Methods

We conducted a retrospective descriptive cross-sectional study from January 1st, 2006 to December 31st, 2016 at Kolda Regional Hospital Maternity Hospital. It was a Level II maternity hospital, the only Regional Hospital Center in Kolda located on average Casamance (700 km from the capital) and border to the Republic of Guinea Bissau. All health centers in the Kolda region, as well as some in the Sedhiou region and some health posts in Guinea Bissau, evacuated to this structure.

This study included all patients presented clinical signs of HRP in the service regardless of the delivery route during the study period. Patients whose care required evacuation outside the hospital were not included. The parameters studied were as follows: age, parity, mode of admission, existence or absence of uterine scar, term of pregnancy, history of hypertension, mode of entry to work, the mode of delivery, clinical data, maternal-fetal complications and therapeutic aspects.

The severity of the clinical picture was assessed according to the SHER classification, we distinguish: grade 1: seemingly isolated metrorrhagia; grade 2: more complete symptomatology and living child; grade 3: complete symptomatology with fetal death (3A: without coagulation disorders; 3B: with coagulation disorders).

The APGAR score ≤ 6 defined perinatal asphyxia. This data was collected through the patient's medical records, the birth room and operating room registers. The descriptive statistical analysis was carried out with the Epi-info software. The distributions of the quantitative variables and the proportions of the qualitative variables were calculated.

3. Results

1) Socio-demographic characteristics

During this period of study, we recorded 15,343 deliveries, comprising 301 cases of retroplacental hematoma representing a frequency of 1.97%.

The average age of the patients was 24 years with extremes of 16 and 43 years. The average parity was 4.8 deliveries with extremes of 1 and 13 deliveries. The majority of patients (85.7%) came from surrounding health structures, particularly from the Kolda region (77.7%), Sédhiou (15.9%) and the Republic of Guinea Bissau (6.3%) (**Table 1**).

2) Clinical data

A bit less than one-third of cases (29%) presented chronic arterial hypertension that was not followed or poorly monitored (**Table 1**).

Six (6.9%) patients had never had prenatal consultation (ANC) and only 10.4% of our patients completed the 4 ANC recommended by WHO.

Mean gestational age was 36 weeks of amenorrhea (AS) and 3 days with extremes of 24 and 40 weeks of amenorrhea. Prematurity accounted for 43% of cases.

The diagnosis of HRP focused on the clinical database.

Table 1. Epidemiological characteristics of patients.

Characteristics	Number	Percentage
Age		
<20	41	13.6%
20 to 24	69	22.9%
25 to 29	92	30.6%
30 to 34	48	15.6%
35 to 39	44	14.6%
≥40	7	2.3%
Parity		
Primipare	42	13.9%
Paucipare	58	19.6%
Multiparous	89	29.6%
Grande multiparous	112	37.2%
Admission criteria		
Patients who came on their own	43	14.3%
Evacuated patients	258	85.7%
Address		
Kolda	234	77.7%
Sédhiou	48	15.9%
Guinée Bissau	19	6.3%

For the majority of patients (87%), the clinical signs at admission were dominated by metrorrhagia (97.7%), uterine hypertonia (77.1%), and absence of fetal heart activity (76%), (1%) and shock (10%) (**Table 2**).

Forty percent (40%) of the patients had hypertension on admission, half pre-eclamps. Almost all patients (93.5%) had spontaneously entered work. The most frequent table was grade 3: 226 cases (75.1%). Coagulopathy was observed in 8% of patients (**Table 3**).

3) Therapeutic and prognostic aspects

Caesarean section delivery accounted for 51.2% of the sample. The perinatal mortality was high; it concerned 76.1% of the fetuses. Perinatal asphyxia made 19% of births complicated. Maternal morbidity was dominated by anemia (227 cases) followed by renal failure (20%), HELLP syndrome (19%), and uterine atony 32 cases (10%) (**Table 4**).

The management of uterine atony consisted of medical treatment in (21.8%) cases, conservative surgery for (40.6%) and hysterectomy in (37.5%). Among the cases of uterine atony, seven received medical treatment with misoprostol, thirteen underwent a conservative surgical technique (arterial ligation and/or B-Lynch compression) and twelve underwent haemostatic hysterectomy.

The specific lethality of HRP was 7%. Eighty-six percent of the deceased patients were discharged and 62% were classified as SHER Stage III. The average duration of hospitalization was 6 days.

Table 2. Distribution of patients according to the clinical picture.

Clinical sign	Number	Percentage
Metrorrhagia	294	97.7%
Uterine hypertonia	232	77.1%
Absence of cardiac activity	229	76.1%
Shock condition	30	10%

Table 3. Distribution of patients by SHER classification [7].

Stage	Number	Percentage
Stage I	13	4.3%
Stage II	62	20.6%
Stage III a	202	67.1%
Stage III b	24	8%

Table 4. Distribution by morbidity.

Morbidity	Number	percentage
Anemia	227	75.4%
Renal failure	63	20.9%
HELLP syndrome	57	18.9%
Coagulopathy	32	10.6%
Uterine atrophy	32	10.6%

4. Discussion

1) Socio-demographic characteristics

In Senegal there is no study evaluating the incidence of retroplacental hematoma at the national level. In our study, the frequency of HRP is 1.97%. This rate is slightly lower than other studies in other regions of Senegal. Thus, Thiam [7] in Ndioum found a rate of 6%, and Dumont [8] in Saint Louis reports an incidence of 4.2%. In Africa, particularly in Cameroon and Gabon, studies found respectively 3.84 and 2.44 [4] [9]. In France, the frequency of HRP varies between 0.25 and 0.5% [1].

These differences are due, on the one hand, to the diversity of classifications used by these authors, a complete picture including anatomopathology, or a simple macroscopic or microscopic finding, or even a purely clinical diagnosis. On the other hand, sociodemographic, economic and environmental characteristics (climatic, seasonal factors, eating habits) noted by these authors, [10] [11] [12] [13] have contributed to the increase in the frequency of HRP.

2) Clinical data

The average age of HRP was 24 years old and the most represented age group was 25 to 30 years old. This age is slightly lower than that found by studies in Senegal and Africa [5] [7] [11] [12] (29.9, 29.8, 29.6, 30). This average age can be explained, in part by early marriage in this part of Senegal.

Several studies have shown that multiparity is a risk factor for HRP [14] [15] [16]. The average parity in our series was 4.8 deliveries and multiparas accounted for almost 66%. This rate is close to that of THIAM, where the average parity was 4.8 deliveries with 58% multipare [7]. However, this rate is higher than that of the developed countries [17] [18]. This, can be explained by a late pregnancy but also a birth limitation in developed countries contrary to our context.

In our series 85% of the patients were evacuees, similar rate to THIEBA (85.9%), OUEDRAOGO (88%), SARR (83%). This mode of admission constitutes a factor of poor maternal and fetal prognosis in Dakar. Indeed the Hospital Center absorbs all the evacuations of the region as well as those of the border structures.

The average age at which HRP occurred was 36 weeks + 3 days, and only 10% of patients completed the 4 prenatal consultations recommended by WHO [19].

The number of CPNs performed is variously appreciated by the authors; however, all agree that the frequency of HRP is inversely proportional to the number of ANC [3] [5] [7] [19].

The occurrence of HRP in a hypertensive context is noted by many authors [15] [16] [19]. In our series, we found 40% of vasculo-renal syndrome cases. Our results are similar to those of Nyama [10] who found a rate of 39.8%.

However, our rate is much higher than that of other authors including Ananth *et al.* [20], Oyelese [21] and Toivonen *et al.* [22] who found respectively 14%, 12.12% and 2.3%.

Clinically, we found metrorrhagia in 97.7% of cases, uterine hypertonicity in 77.1%, absence of fetal heart activity in 76.1% of cases and shock in 10% of cases. Due to the absence of an ultrasound machine in the work room, the ultrasound diagnosis was not done in any of the patients (more discuss the effectiveness of the clinical diagnosis) (there are publications on the clinical diagnosis).

Ouédraogo in Burkina, found a lack of fetal heart activity (82%), uterine hypertonicity (79.8%), metrorrhagia (74.2%) [11]. On the other hand, in Western countries, 10% to 20% of placental abruption was made complicated because of intrauterine fetal death [16] [20] (Table 5).

3) Therapeutic and prognostic aspects

In our series, 51.1% of patients had delivered by cesarean section. Ouédraogo in Burkina Faso found 64% of normal delivery versus 36% of cesarean section [11]. However, Doumbia in Côte d'Ivoire and Nayama in Niger have a higher cesarean section rate of 63.2% and 94.10%, respectively [6] [10]. These differences can be explained by differences in treatment protocols. It is important to note that a large proportion of the patients that were admitted at center were in labour. Early, rapid uterine evacuation and resuscitation are the basis of treatment for retroplacental hematoma. However, the way of delivery is not unanimous.

Some authors including Krauss *et al.* [23] and Prochazka *et al.* [24] advocate systematic caesarean section regardless of the condition of the fetus. In contrast, Bohec *et al.* [1] recommends a wait-and-see attitude to HRP with fetal death and bleeding disorders. In developing countries, such as Senegal, where the technical plateau is low and taking into account the conditions and time of admission of patients, we believe that the expectant attitude in the event of fetal death is not indicated given the insufficiency in available blood products and in human and financial resources to manage severe anemia, hypovolemic shock and DIC. A better endowment of consumable products (fill fluids), blood products, and adequate equipment for the laboratory service and, above all, the availability of qualified and sufficient staff are essential to reduce the rate of caesarean section in case of HRP in our service. This could promote acceptance of vaginal delivery, especially in cases of fetal death.

As in most African studies [6] [7] [12] [13], maternal morbidity was dominated by anemia in our series (75.4%), anemia occurring on a site weakened by multiparity and social conditions. and precarious economics.

Table 5. Distribution of the clinical picture according to the studies.

Surveys	Fetal death	Metrorrhagia	Hypertonia
Our series	76.1%	97.7%	77.1%
Ouedraogo [11] (Niger 2015)	82%	74.2%	79.8%
Ananth [18] (USA 2010)	16.1%	71.1%	27.8%
Boisrame [16] (France2011)	12%	67%	4%

In our series we found 32 cases of uterine atony of which 37.5% had a hysterectomy of haemostasis.

We recorded high lethality (7%) compared to other counts (2% - 5%) [10] [11]. This can be explained by a delay of support but also by the insufficiency of the technical platform.

The fetus pays the highest price to the HRP in our African countries [9] [10] [11]. Perinatal mortality remains high and is 76.1% in our series. Our figures are slightly higher than those of Nayama (71.3%), against Ouédraogo has recorded a higher rate (86.7%). Some African writers have found that medical evacuation and the extent of the detachment surface are poor prognostic factors.

5. Conclusion

The retro placental hematoma remains a major medico-obstetric emergency in our practice. Diagnosis and early management improve the prognosis. The prevention of maternal and fetal mortality related to this condition requires an improvement in prenatal consultation, a better organization of the delivery plan, especially in the peripheral maternity ward, and an improvement in evacuation conditions, especially in rural areas where the means are limited.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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