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Profile and Prognosis of Retro Placental Hematoma Victims at the Regional University Associated Hospital of Borgou (CUAB) in Republic of Benin

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Abstract

Objectives: Describe the prognosis and profile of the retro placental hematoma(RPH) at CUAB for a better organization of care.

Methods: This is a descriptive retrospective study, carried out in the obstetric gynecology service of the CUAB over a 12-months period from January to December 2019. It focused on the complet medical records of patients. Were included pregnant in the third trimester in whom the diagnosis was made either by clinical examination and/or by ultrasound and confirmed by the presence of placental cups. Data entry and analysis were carried out by EPI Data and EPI Info software. Strict compliance with ethical rules and standards has been observed.

Results: The RPH in 2019 represented 2,70 % of childbirth at CUAB. The RPH victims were young multiparous women, with an average age of 29 years, housewives, of Bariba or Dendi ethnicity with a history of preeclampsia, diabetes and sickle cell disease. They were referred for irregular uterine bleeding (97,8%), lumbar and pelvic pain (72,3%), suspected RPH (48,9%) or death in utero (46,8%). The clinical pictures were often typical and the forms with coagulation disorders represented (25,5%). Anemia was the main morbidity and found in 80% of cases. Prematurity (32-36 AW and 6 days) was 74,5%. The maternal case-fatality ratio was 6% and the perinatal case-fatality ratio was 68%. Neonatal mortality was proportional to the weight of the cups.

Conclusion: Mortality from RPH was high in northern Benin. The victims were nulliparous or multiparous young people of Bariba or Dendi ethnicity with a history of vasculo-renal syndromes or referred diabetes.

Keywords: Retro Placental Hematoma; Profile; Prognosis

Introduction

Despite the efforts of health professionnals and technical and financial partners in the Benin Health System, maternal mortality remains high. According to WHO in 2015 the maternal mortality rate was around 216 per 100,000 live births. Africa in general and south of Sahara in particular knows the highest rates with -546 deaths per 100,000 live

births [1]. In Benin in 2018, the maternal death rate was 391 per 100,000 live births in 2018 [2].

Hemorrhages take the first place among the direct causes of maternal death and retro placental hematoma. It represents one of the causes of hemorrhage in the second half of pregnancy. It takes the fourth place in terms of frequency after the hemorrhage of delivery, placenta prævia and the uterine rupture. It is an unpredictable obstetric emergency of extreme gravity that affects 0.4% to 1% of pregnancies [3]. The reported incidence ranges from 4.4% to 13.3% of delivery and increases with gestational age [4]. It takes the fourth place in terms of frequency after the hemorrhage of delivery Placenta Prævia and uterine rupture. It is responsible for 5% of maternal deaths [5].

The knowledge of the profile and prognosis of the RPH victims patients in the single University Associated Hospital of North Benin, will direct the interventions in prevention, mitigation and recovery.

Patients and Methods

This is a descriptive retrospective study that took place in the Obstetric and Gynecology Service of the CUAB, wich is a level 3 Maternity in northern Benin. It focused on all complete medical records of the patients admitted for RPH between January 1 and December 31, 2019. Were included pregnant women in the third trimester, in whom the diagnosis was made either by clinical examination accordingly to the HURS's criteria (presence of two of the following four signs : hemorrhage, pain, abnormal uterine contraction or fetal heart rate) [6] and/or by ultrasound and confirmed by the presence of placental cups. The studied variables were related to the maternal profile (socio-demographic, clinical characteristics, paraclinical data, data relating to drug, obstetrical and surgical management) and the maternal and perinatal prognosis. The sample was non-probabilistic. The files were collected and then analyzed using a previously validated form.

Data entry and analysis were carried out by EPI Data and EPI Data software.
Strict compliance with ethical rules and standards has been observed.

Results

Frequency

During the study period, 1,740 deliveries were performed. The diagnosis of RPH was made in forty seven (47) patients, i.e a frequency of 2,7%.

Socio-demographics data (Table1)

The mean age of the patients was 29,57+/- 5 years with extremes of 18 to 40 years. The 25 to 34 age group was the most affected with 51% of cases (n=30). The Bariba and Dendi ethnic groups were the most represented with 48,9 % (n=23). The majority (72%) of the victims (n=31) came from the city of Parakou and lived as a couple in 89,4% (n=42).

Socio-professional characteristics	Workforce (n=47)	Percentage (%)
Age(years old)		
> 20	03	6,4
20-24	08	17
25-29	12	25,5
30-34	12	25 ,5
35-39	11	23,4
> 40	01	2,1
Occupation		
Housewife	30	63,8
Official	07	14,9
Shopkeeper	04	8,5
Craftswoman	04	8,5
Pupils/Students	02	4,3
Ethnicity		
Bariba	12	25,5
Dendi	11	23,4
Peulh	08	17
Fon and Anago	07	14,9
Adja	04	8,5

The most common histories in the RPH patient population are listed in the table below.
Table 1: Socio-professional characteristics of patients with RPH.

Clinical data (Table 2)

Most of the victims (89%) (n=39) were referred from the outlying peripheral centers of the city of Parakou. Pregnancy was not at term (<37 AW) in 74,5% of pregnancies and mean prematurity (32-34 AW) was observed in 46,8% (n=22). The main reasons for referral were uterine bleeding (metrorrhagia) in 97,8% (n=45), lumbo-pelvic pain in 72,3% (n=34), suspicion of RPH in 48,9% (n=23) and in utero death in 46,8% (n=22), Preeclampsia in 38,3% (n=18), high blood pressure in 14,9% (n=7), the diabetes (n=2) and sickle cell disease (n=1) were the most common past mediacal history. antecedents,The nulliparous and multiparous were the most affected in the same proportion of 34% (n=16). The systolic blood pressure was abnormal (SBP≥ 16mmHg) in

51% of the cases, the diastolic blood pressure was abnormal (90≤DBP≥110 mmHg) in 93,6% (n=44). Urine dipstick albumineria was significant (≥ 2+) in 72% of cases (n=34) and negative (negative or 1+) in 28% (n= 13).

Uterine hypertonia, one of the pathognomonic signs of RHP after bleeding, was found in 74,5% of pregnant women (n=35).

Clinical Characteristics	Work force (n=47)	Percentage (%)
Mode of admission		
Referred	39	83
Came by herself	08	17
Gestational age		
< 37 SA	12	25,5
35-37SA	13	27,7
32-35SA	22	46,8
Reference pattern		
Lumbopelvic pain	34	72,3
Métrorrhagia	45	97,8
RPH suspicion	23	48,9
In utero death	22	46,8
Acute fetal distress	15	31,9
Lack of blood products	03	7,1
No pattern	02	4,3
Medical and obstetrical histories		
No history	22	46,8
Severe preeclampsia	18	38,3
High blood pressure	07	14,9
Associated diabetes	02	04,3
Associated in utero death	01	02,1
Sickle cell disease	01	02,1
Parity		
Nulliparous	16	34
Primiparous	05	10,6
Pauciparous	05	10,6
Multiparous	05	10,6
Large multiparous	16	34

Table 2: RPH's patients clinical data.

Therapeutic data

Pregnant women benefited from the blood transfusion (68.3%) of the cesarean section for fetal rescue in 32% (n=15) and maternal rescue in 14.9% (n=7). Magnesium sulfate was used only in 2 patients against 34 indications, ie a rate of use of 5.9%. Obstetrical treatment consisted of rupture of membranes in 74.5% (n=35) followed by the injection of pethidine by intramuscular route and of the infusion of Syntocinon.

Prognosis (Tables 3 & 4)

Maternal: Maternal morbidity was represented by anemia and bleeding disorders (25,5%). Three maternal deaths were recorded in our series, i.e a mortality rate of 6%.

Fœtal: The APGAR score at 5 min was inferior to 7 in 17% of patients (n=8) and required resuscitation procedures.

Deaths were registered in ante partum period in 46.8% (n=22), in perinatal periode in 12.8% (n=6) and neonatal period in 8.5% (n=4). The perinatal mortality rate of RPH was 68%.

Death was observed in 83% for cups weighing between 501 and 1000g and 100% for cups weighing over 1000 grams (Table 4).

Characteristics	Work force (n = 47	Percentage (%)
Maternal prognosis		
Kidney function		
Disturbed	22	46,8
Normal	25	53,2
Anemia	38	80,8
Bleeding disorders	12	25,5
Transfusion	30	63,8
Maternal death	03	6,4
Fetal prognosis		
Ante-partum death	22	46,8
Perinatal death	06	12,8
Neonatal death	04	8,5
Apparent death state (APGAR ≤ 3)	01	2,1
Poor adaptation 4 ≤ APGAR ≤ 7	07	14,9
Good adaptation to life APGAR > 7	07	14,9
Fetal weight		
< 1500	01	2,1
1500 – 2000	11	23,4
2000 – 2500	11	23,4
> 2500	24	51

Table 3: Maternal and fetal prognosis.

Cups weight (grams)	Number of cases	Number of living children	Number of deceased children	Percentage of deaths per cup
< 100	13	8	05	38,4
101-500	02	01	01	50
501-1000	12	02	10	83,3
> 1000	14	00	14	100
No cups	06	4	02	33,33
Total	47	15	32	68

Table 4: Distribution of newborns according to the weight of the cup and the method of exit.

Discussion

Through this study, we report the socio-demographic, clinical, biological and prognostic data on a series of 47 cases of RPH recorded in 2019 in a university associated hospital in North Benin.

Epidemiologic and Clinical Characteristics

This study found that RPH represented 2.7% of deliveries. The high frequency in our series may be due to the fact that DUHC/B is the single referral university associated hospital in the northern region of Benin. This frequency is comparable to those found by many authors in Sub-Saharan Africa. Nayama and Coll in Niger in 2007 [7] found in their series a frequency in a hospital comparable to the UHC of North Benin in terms of admission of referrals. In general, the frequency of RPH in sub-Saharan Africa remains higher than that observed in developed countries. Milan DD and coll in their series at Cocody University Hospital in Ivory Coast in 2014 [8] found 1.55%. According to Anca D. this frequency varies from 0,13 to 1,38% [9].

According to Guennec and coll in 2016 the frequency of RHP was 0.78% [10]. This can be explained by the higher socio-economic level, the adequate follow-up of pregnancies and the much higher technical platform in European countries. However, the level of development does not seem to be the only one explanatory factor given the high frequencies recorded also in some Asian countries whose socio-economic level is comparable to that of Europe. This is what Ayser H. and coll study showed in 2018 in India with a frequency of 3.1% [11]. According to several authors, preeclampsia, arterial hypertension, premature rupture of membranes, malnutrition were incriminated [7,12]. In our series, the mean age of onset of RPH was 29,57 ± 5,4 years old with extremes of 18 to 40 years old. RPH occurs at all ages especially in young women our series. The predominance of young age can be explained by the lack of pregnancy follow-up and the anxiety generated by pregnancy.

Multiparity is a factor in RPH incriminated in the littérature. In addition, age is a factor when it is associated with parity according to TIKKANEN and coll in 2011 who found a higher frequency of RPH after 35 years old with a relative risk of 1.3 [13]. According to Thieba B. and coll, RPH at young age is due to a defect or insufficiency of prenatal follow up and not to a vascular cause [14]. The nulliparous and multiparous were the most affected in our series, whereas in most of the studies in the literature multiparity was incriminated [15]. Nayama and coll had shown through their series that RPH did not spare any parity, thus confirming the data of our study [7].

RPH victims in our series were refered patients in 97.8%. This could be explained by the fact that Borgou University associated Hospital is the single referral hospital in the department where all cases from outlying hospitals were sent. Thieba B and coll in 2003 at Ouagadougou had found 85.9% of RPH coming from medical evacuations [14]. The referrence reasons were : bleeding in 97.8% (n=45), lumbopelvic pain in 72.3% (n=34), suspicion of RPH in 48,9% (n=23) and death in utero in 46.8% (n=22). Severe forms were the most frequent and could be due to delayed diagnosis and/or referral.

These severe forms can also explain the high rates of ante partum deaths in our series (46.8%). Belinga and coll in 2017 in Yaounde found death after neonatal asphyxia as one of the main obstetrical complications associated with the referral. All cases of RPH cases in our series occured after 32 AW. This finding confirms the thesis that RPH is an entity of the third trimester of pregnancy. Niyama had reaches the same conclusion in his series [7]. The significant blood loss before admission in 97.8% could justify the coagulation disorders 25.5% in a context of severe preeclampsia in 72.8% of cases. According to Offer Erez in 2015, hemorrhages and preeclampsia are the big providers of coagulopathy [16].

Treatment

Bohec C and coll recommended in 2010 a quick correction of blood volume lost in the event of significant hemorrhgagic shock by infusing 1500 to 3000 ml of

crystalloids and then gelatins [17]. In our study, treatment consisted of preoperative resuscitation with vascular filling in all of our patients. The state of vascular collapse observed in most cases of RPH justified this approach.

Magnesium sulphate was used in only 2 patients whilw prescribed for 34 patients (severe preeclampsia complicated by RPH) ie a use rate of 5.9%. Tonato Bagnan JA and coll in 2017, found a magnesium sulphate use rate of 87.18% at Cotonou's University Associated Hospital of Mother and Child Lagune in the management of preeclampsia and eclampsia. Our result shows insufficient use of magnesium sulphate in severe preeclampsia complicated by RPH. The absence of an emergency kit and the shortages of magnesium sulphate among suppliers could explain this performance.

Obstetrical treatment consisted of rupture of membranes in 74.5% (n=35) followed by intramuscular injection of pethidine and infusion of syntocinon. This protocol is used in case of delivery by natural routes is chosen . The high frequency of the choice of vaginal route for the uterine evacuation in our series is related to the frequency of deaths in utero. The same management was observed in Niamey and Burkina Faso in 2003 in the same indications [7,14].

The caesarean has been carried out in 46.8% of cases of wich 31.9% for fetal rescue. Thieba B abd coll had found 35.6% caesarean for fetal rescue in their series [14].

Prognosis

Maternal morbidity was related to hemorrhages in 97.8% (n=45), source of anemia in 80%, hypovolemic shock and coagulation disorders in 25.5%. Maternal lethality from RPH was 6% in our series. This rate is comparable to that observed by Nayama in Niger in 2003 (5,1%). But it far higher than in developed countries where maternal mortality remains exceptional with a rate of less than 1% [7,18].

Prematurity after 32 WA was observed in 74.5% in our series versus 67% in the Boisramé T series in 2014 in strasbourg and 59% in the Tikkanen series in 2011 [7,14]. Perinatal mortality was dominated by death in utero in 46.8% (n=22), followed by fresh born deaths in 12.8% (n=6) and neonatal deaths 8,5% (n=4). The perinatal case-fatality ratio from RPH was 68%. In Tikkanen's series, perinatal mortality was also dominated by in utero deaths [19,20].

The death of children was observed, in a proportion of 83% for cups's weight between 501 to 1000g and 100% for cups of more than 1000g. Nayama in Niger had made the same conclusion. Perinatal mortality was proportional to the weight of the cup [7].

Conclusion

RPH remains a rather common pathology and associated to a high level of morbidity and mortality at CUAB. A good knowledge of the patient profile and better organization of services can improve the prognosis.

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