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RESEARCH ARTICLE

ULTRASOUND IN THE ETIOLOGICAL ASSESSMENT OF HEMORRHAGES DURING THE 3RD TRIMESTER OF PREGNANCY AT THE FERTILIA MEDICAL CLINIC IN BAMAKO

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Abstract

Background: Haemorrhage in the third trimester of pregnancy is a major public health problem because it can jeopardize the vital prognosis of the mother and the fetus. The objective of our study was to study the sonographic etiologies of hemorrhages in the 3rd trimester of pregnancy.

Subjects and Methods: This was a 5-year cross-sectional and prospective study, between JUNE 2017 and MAY 2022, which involved 82 pregnant women who were between 28 and 40 weeks of amenorrhea (SA) and who presented with hemorrhage regardless of its volume. The data collected was obtained on the ultrasound reports and a series of questions asked either of the patient or her companions. Data were entered and analyzed on SPSS version 26.0.

Results: In our study, we performed 12,900 obstetrical ultrasounds, of which 82 women had hemorrhage, i.e. a frequency of 0.63%. The average age was 29 years with extremes ranging from 17 to 43 years. 39 patients or 47.5% were between 20 and 30 years old. 42 patients or 51% were multi gestures. 51 patients or 62% were multiparous. The clinical information prompting an ultrasound was abdominal pain + metrorrhagia in 58.5% of cases. 70.7% were between 37 SA and 42 SA. The sonographic etiologies were retroplacental hematoma (HRP) with 56%; placenta previa (33%), placenta previa+HRP (2.2%) and uterine rupture (1.8%).

Conclusion : Faced with the occurrence of metrorrhagia in the 3rd trimester of pregnancy, it is always necessary to think of the most serious etiologies, which are ultimately not so rare and can jeopardize the vital prognosis of the mother and the child. A targeted questioning and a concise clinical examination make it possible to quickly orient towards an etiology. Ultrasound is an invaluable diagnostic and prognostic aid. The speed of emergency care can sometimes save the child, most often the mother.

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Introduction:-

The birth of a child is a happy event in a family. In Africa and particularly in Mali, the stability of a household depends on the children. However, this birth carries a fatal risk for thousands of women around the world [1]. Haemorrhages in the 3rd trimester of pregnancy are nowadays a frequent situation that can jeopardize the maternal-fetal prognosis. According to RIVIERE, pregnancy and childbirth have been a fatal risk since the beginning of time [1]. Although the risk is reduced in developed countries, it remains high in developing countries where health coverage is insufficient. According to WHO statistics, around 525,000 women die each year worldwide during pregnancy or childbirth or in the postpartum period, leaving behind 1,000,000 orphans [1]. In developing countries this mortality is even more marked, reaching 15 to 20 times the number of deaths recorded in developed countries [2]. This mortality is unequally distributed between the north and the south: 1020/100,000 live births in West Africa while it is 27/100,000 live births in developed countries [3]. It is dominated in more than 80% of cases by bleeding, 95% of which would be avoidable (WHO) [4, 5,6].

In Mali, maternal deaths represent 32% of all deaths among women aged 15-49 [EDSM V]. The trend in the maternal mortality rate has been falling since 2001, going from 582 deaths per 100,000 births in 2001 [EDSM III] to 464 deaths per 100,000 births in 2006 [EDSM IV] to reach 364 deaths per 100,000 births in 2012 [EDSM V] [7] in 2018 it reached 325 deaths per 100,000 births [EDSM VI] [7]. Infant and child mortality was 95‰ in 2012 in Mali, in Koulikoro infant and child mortality was estimated at 96‰ the same year [7]. Estimated at 122‰ in 1995-1996, the infant mortality rate fell to 96‰ in 2006 then to 54‰ in 2018. at 101‰ [EDSMVI] [7].

In developed countries, even though maternal mortality has been divided by a hundred during the 20th century, it has stagnated at 10 deaths per 100,000 births since the 1980s [8]. Despite the progress made in the field of obstetrics; The etiological diagnosis of these hemorrhages remains difficult. Although there are haemorrhages of unknown origin, placenta previa, retro-placental hematoma and uterine rupture are the main causes of haemorrhage in the 3rd trimester of pregnancy.

In Mali, in 1998 in the Gabriel TOURE hospital a study by Kané [9] found 2.6% of pregnancies complicated by hemorrhage in the 3rd trimester and in 2004 a similar study by Diakité R. [1] in the CSRéf Common IV, found 2.22% 3rd trimester hemorrhage of pregnancy.

In our center, since no study has been carried out on the sonographic etiologies of 3rd trimester hemorrhage, this study will serve to shed more light on this serious and urgent phenomenon. In addition, many studies have been done on the subject, but they are full of some shortcomings that we have tried to fill in our study.

Materials And Method:-

This was a 5-year cross-sectional and prospective study, between June 2017 and May 2022, which involved 82 pregnant women who came urgently for obstetric ultrasound in a context of 3rd trimester hemorrhage and who agreed to participate in our study.

Exploration Techniques:

We used different types of ultrasound machines such as Voluson E8, Logic9 and Vivid3. Some ultrasounds were performed in the ultrasound room but others in the delivery room or in the operating room.

Data Processing And Analysis:

The data collected on the technical sheets were entered and analyzed using SPSS 26.0 software.

Results:-

In our study, we performed 12,900 obstetrical ultrasounds, of which 82 women had hemorrhage, i.e. a frequency of 0.63%. The average age was 29 years with extremes ranging from 17 to 43 years. 39 patients or 47.5% were between 20 and 30 years old. 42 patients or 51% were multi gestures. 51 patients or 62% were multiparous. The clinical information prompting an ultrasound was abdominal pain + metrorrhagia in 58.5% of cases. 70.7% were between 37 SA and 42 SA. The sonographic etiologies were retroplacental hematoma (HRP) with 56%; placenta previa (33%), placenta previa+HRP (2.2%) and uterine rupture (1.8%).

Table I:- Distribution Of Patients According To Age Group.

AGE GROUP (YEARS)	NUMBER	PERCENTAGE
17– 19	08	09.75%
20 – 30	39	47.50%
31 – 40	32	39.00%
>40	03	03.65
TOTAL	82	100%

Mean age = 29 years \pm 7.3 years, Median age is 28.5 years, Extreme ages are 17 and 42 years old

Table II:- Distribution Of Patients According To Gesture.

GESTURE	NUMBER	PERCENTAGE
FIRST GESTURE	09	11.00%
*PAUCI GESTURE	14	17.07%
**MULTI GESTURE	42	51.00%
***GREAT MULTI GESTURE	17	20.73%
TOTAL	82	100

*Pauci gesture: at least one pregnancy. **Multi gesture: at least three pregnancies. ***Great multi gesture: at least five pregnancies.

This study highlighted the link between multiple gestation and the occurrence of hemorrhage ($p < 0.002$).

Table III:- Distribution Of Patients By Number Of Deliveries.

NUMBER OF DELIVERIES	NUMBER	PERCENTAGE
NULLIPAROUS	09	11.00%
PRIMIPAROUS	06	07.31%
PAUCIPAROUS	08	09.75%
MULTIPAROUS	42	51.00%
GREAT MULTIPAROUS	17	20.73%
TOTAL	82	100%

Multiparas were the most likely to have a third trimester hemorrhage. The link between multiparity and the occurrence of bleeding was proven ($p < 0.005$).

Table V:- Distribution Of Patients According To Etiology On Ultrasound.

DIAGNOSIS	NUMBER	PERCENTAGE
PLACENTA PREVIA	38	46.34%
RETROPLACENTAL HEMATOMA	43	52.4%
UTERINE RUPTURE	01	01.22%
TOTAL	82	100%

Retroplacental hematoma was the most represented, 52.4%.

Discussion:-

Frequency:

During the study period, we recorded 12,900 obstetric ultrasounds, including 82 cases of hemorrhage in the third trimester of pregnancy, a frequency of 0.63%. This frequency is respectively lower than that of Lahmar R [10] which was 0.88%, that of Adnaoui F [13] in Tunisia which was 0.85% and that of KONE N in Bamako [12] which was 1.37%. Similarly, Sanogo S.D [15] found 6.33%. This frequency could be explained by the fact that the Fertilia medical-surgical clinic is a reference in matters of gynecology, obstetrics and procreation. So receives a lot of requests for obstetrical ultrasound.

All these results demonstrate that hemorrhages are still relevant despite the progress made in the field of maternal and child health.

Age

The most affected age group was 20 to 30 years old with 47.5%. This age group corresponds to the optimal period of fertility. In the DIAKITE R. [1] series, the most represented age group was 18–35 years, i.e. 75.6%.

In KANE F.'s series [9] the most represented age group was 21–35 years old with 64.17%. MABOUNGA. R. A. [13] found in his series that the most affected age group was 20–35 years with 67.6% of cases. FOOTE [14] finds that placenta previa is twice as common after 29 years. Retroplacental hematoma is more common after 30 years and in very young primiparae according to UZAN. M [15]. The extreme maternal ages (17 years and > 40 years) constitute the period at risk of uterine rupture according to KONE F. [16]. The age group 25–30 years is dominant in the occurrence of retroplacental hematoma in Mali according to GARBA. H [17].

Gesture

Multi gestures represented 42 cases or 51%. Multiple gestation has been cited as a risk factor for placenta previa, retroplacental hematoma and uterine rupture by several authors [1, 19, 20, 21]. In the series of DIAKITE R. [1] the few gestures represented 46.3%. COULIBALY. F [26] finds that multi-gestures run three times more risk of performing an HRP than few gestures.

Parity

Multiparous irradiates 51% of our sample. The association of parity and the main causes of bleeding in the 3rd trimester of pregnancy have been reviewed by several authors. Our rate is comparable to that of KONE F. [16] which was 51.11% hemorrhagic placenta previa. BOOG [24] finds that parity is a determining factor than age, 35% were multiparous; FOOTE [14] noted a four times greater frequency of placenta previa among multiparas.

Etiology

Ultrasound has been invaluable in etiological research. In descending order of frequency, we found:

Retroplacental Hematoma (RPH)

With 52.4%, it ranks first among the causes of hemorrhage in the third trimester of pregnancy in our study series. In the DIAKITE R study series [1]; KANE F. [9]; FOOTER [14]; their rates were respectively 24.4%; 35.82%; 37% and those of BARBOTX. J[22]; LANSAC. J [23] were respectively 15-16% and 7.4% of cases. These relatively significant differences can be explained by the existence of early prevention of this pathology, namely research and management of its main risk factors during antenatal consultation.

Placenta Previa (P.P)

It constitutes with the retro placental hematoma one of the most frequent causes of haemorrhage during pregnancy. It occupies the second cause of the hemorrhages of the third trimester in our series with 46.34%. DIAKITE .R [1], KANE F. [9]; FOOTE [14] who incriminated placenta previa found 57.3% respectively; 43.28% and 36% of cases of bleeding. In their HOHLFELD study series [18]; LANSAC .J [23] and BARBOTX. J. [22] found 20%, 3.7% and 12-24% of cases respectively. The lowest frequencies are observed in France with 0.4 to 0.5% and on the American continent with 0.33 to 0.99% [31].

Uterine Rupture

Uterine rupture, which has almost disappeared in studies from well-medicalized countries, is still relevant in our study with 01.22%. In their studies DIAKITE R. [1], KANE F. [9], BOOG. G [24] found 6.1%; 11.94% and 0.7 to 3.5% of cases. This high frequency is explained by the fact that our study took place in a clinic where the reference in gynecology and obstetrics is high. All these patients were evacuees either from the peripheral maternities of Bamako; or by other health centers in the interior of Mali.

Conclusion:-

Faced with the occurrence of metrorrhagia in the 3rd trimester of pregnancy, it is always necessary to think of the most serious etiologies, which are ultimately not so rare and can jeopardize the vital prognosis of the mother and the child. A targeted questioning and a concise clinical examination make it possible to quickly orient towards an etiology. Ultrasound is an invaluable diagnostic and prognostic aid. The speed of emergency care can sometimes save the child, most often the mother

Declaration of conflict of interest:

The authors declare that they have no conflict of interest.

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