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The Anesthetic Management of Complications during Obstetrical Emergencies

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Summary

Anesthetic management of patients during obstetric emergencies is a serious problem, especially in developing countries. In daily practice, the anesthetist staff is confronted with many minor and major events which consequences can be benign or more serious. Our objective was to study the problem of the management of anesthetic complications during obstetric emergencies at the Ziguinchor Peace Hospital. We conducted a retrospective, descriptive and analytical study of all patients who underwent surgical intervention in the operating room during obstetric surgical emergencies. During this study period 325 patients were operated on. Age was reported in 323 files. The average age was 27.2 years old. Hypotension and hemorrhagic shock were the main complications. The timing of complications was 53.1% at induction and 46.9% at upkeep. The average hemoglobin level and the average platelet count were lower in women who had complications than those who did not. The immediate evolution was often good. All cases of death (2%) were related to hemorrhagic shock often associated with disseminated intravascular coagulopathy that can not be managed by the unavailability of fresh frozen plasma, platelet concentrates and other coagulation products.

Keywords: ***Problem-Emergency-Anesthesia-Obstetrics-Ziguinchor.***

Introduction

The management of obstetric emergencies is often delicate and requires therapeutic means sometimes unavailable in our practice. The health status of mothers and their children's are intimately linked, and for this reason, maternal and perinatal mortality is a valuable indicator of the effectiveness of emergency obstetric care. In daily practice, the anesthetist staff is confronted with many minor and major events that he deals with, and whose consequences can be benign or more serious. Thus it is necessary to measure the activity, the feats, but also the failures in order to look for the probable causes and to improve the practice of anesthesia in urgency. The progress of anesthesia for Caesarean section has been immense. However, some progress remain to be made. They are either technical in nature or related to practice. Anesthesia is an interesting model because it requires both comprehensive care for major and well defined acts but also requires attention to detail and an ever improving quality of care.

We conducted this work in order to reinforce the safety measures surrounding the anesthetic act in emergency, to distinguish between the events related to anesthesia and those related to the surgical procedure and to have data on the problematic of the management of complications in emergency obstetric surgery.

Our aim was to study the problem of the management of anesthetic complications during obstetric emergencies at the Ziguinchor Peace Hospital.

Patients and Methods

We conducted a retrospective, descriptive and analytical study of all patients who underwent surgical intervention in the operating room during obstetric surgical emergencies. It

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was conducted over a 12-month period from December 2015 to November 2016. Patients were collected from anesthesia cards. On these were noted intraoperative complications and management. The prescription of the complementary examinations was not systematic, it was made according to the field, the surgical pathology, the clinical data and the availability of these examinations. The data collected were: the occurrence of complications, management, evolution and problems encountered.

Results

During this study period, 325 patients were operated on. Age was reported in 323 files. The average age was 27.2 years with a standard deviation of 6.77. The extremities were 15 to 45 years old and the median 27 years old.

Hypotension and hemorrhagic shock were the main complications observed in this table below (Table I).

Table I: Repartition of complications

Type of complication	*Frequency*	*Percentage*
Arterial hypotension	27	42,2
Hemorrhagic shock	24	37,5
Failure of spinal anesthesia	4	6,3
Conversion	2	3,1
Cardiac arrest/uterine rupture	1	1,6
Death	1	1,6
Difficult intubation	1	1,6
Death newborn	1	1,6
No motor block	1	1,6
Speech disorders	1	1,6
Vomiting	1	1,6
Total	64	100,0

Complications occured 53.1% at induction and 46.9% at upkeep. Anesthesia at the time of occurence of complications was general in 55% and locoregional in 45%. The failure of spinal anesthesia required conversion to general anesthesia without noted complications. Vomiting was treated with Levosulpiride. All cases of arterial hypotension were curbed by vascular filling with isotonic saline and ephedrine boluses.

The average hemoglobin level was lower in women who had complications than those who did not. The difference was statistically significant (P value = 0.0001) (see Table II). We found hemoglobin less than 10g / dl in 28.9% of women (n = 57). Thus, women who had hemoglobin less than 10g / dl were 5 times more likely to have complications.

Table II: Complications according to hemoglobin level

Classification of hemoglobin	**Complications**				**Total**	**P value**	**Ods [Ic à95%]**
	Yes		**No**				
	N	**%**	**N**	**%**			
Abnormal (<10g/dl)	23	40,4	34	59,6	57	0,0001	4,89[2,35-10,18]
Normal (≥10g/dl)	17	12,1	123	87,9	140		1

The average platelet count was lower in women who had complications than those who did not. The difference was statistically significant (p value = 0.011). We found thrombocytopenia in 28.1% of women (n = 38) (see Table III). Thus, women with a platelet count of less than 150,000 items / mm3 were 5 times more likely to have complications.

Table III: Complications according to platelet count

Classification of platelets	**Complications**				**Total**	**P value**	**Ods [Ic à95%]**
	Yes		**No**				
	N	**%**	**N**	**%**			
Abnormal (<150.000)	17	44,7	21	55,3	38	0,0001	4,79[2,04-11,27]
Normal (≥150.000)	14	14,4	83	85,6	97		1

The prothrombin rate was less than 60 in 3.55% of cases (n = 3).

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Thirty-four patients, 10.5%, had been transfused. The transfusion was made with whole blood. We did not have a red blood cell. However, no patient showed signs of overload. The management of intraoperative haemorrhagic shock was most often done with isotonic saline followed by whole blood. All cases of coagulopathies had benefited from new blood. We did not have adequate products for the management of cases of coagulopathy except whole blood and sometimes fresh frozen plasma. The immediate evolution was often good. All cases of death (2%) are related to hemorrhagic shock often associated with disseminated intravascular coagulopathy that can not be managed by the unavailability of fresh frozen plasma, platelet concentrates and other coagulation products.

Discussion

Many African countries are in a dynamic improvement of their technical platform. So our work consisted in looking for the problems of our anesthetic practice in our structures in Ziguinchor. The young age of our patients is found in many studies, sometimes affecting anesthetic management, especially in obstetric hemorrhagic emergencies.[1;2;3;4;5] Hemodynamic complications are the main problems encountered during our practice. This is found in many studies.[1;2;5] The predominance of accidents and / or cardiovascular events could be explained in our study by the fact that pregnant women are at low flow rate[6] and are therefore more prone to accidents and cardiovascular incidents intraoperatively, especially after delivery. However the means necessary for their care are often difficult to access in our conditions of exercise. These are often vasopressor amines (including Phenylephrine and Noradrenaline) and labile blood products. These amines are often not available in many West African countries. They constitute the first-line treatment associated with often moderate vascular filling.[7] Whole blood and / or red blood cell concentrate are often available. Only platelet concentrates and fresh frozen plasma are most often inaccessible. This is linked to the scarcity of specialists but also to the absence of optimal blood banks in many health facilities. In several works these complications occurred either at induction or at maintenance.[1] Some are attributable to anesthesia however most are often directly attributable to the pathology. Several complications occurred during general anesthesia and this is found in Diop's work. The practice of anesthesia in our structures poses enormous problems. The overall rate of patients with at least one accident and / or cardiovascular incident was 79.7% and the anesthetic time of accidents and incidents was the maintenance period.

Conclusion

Obstetric emergencies are common at Ziguinchor Maternity Hospital. They mainly concern the young woman. They dominate the anesthetic practice and are often associated with complications whose management remains to be desired because of the inaccessibility of certain therapeutic means. The reduction of morbidity and mortality related to obstetric emergencies requires the improvement of the quality of care, especially the availability of products namely phenylephrine, norepinephrine and labile blood products, but also training and availability of qualified staff.

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