East African Scholars Journal of Medical Sciences
Abbreviated Key Title: East African Scholars J Med Sci
ISSN: 2617-4421 (Print) & ISSN: 2617-7188 (Online)
Published By East African Scholars Publisher, Kenya

Volume-6 | Issue-6 | Jun-2023 | DOI: 10.36349/easms.2023.v06i06.003

OPEN ACCESS

Original Research Article

Anaesthetic Management of Caesarean Sections at the Markala Reference Health Centre

Dr. Fomba Dramane[1*], Diarra I[3], Ballo B[2], Kone O[1], Kanthé D[1], Samaké B[4], Keita M[4], Ouolegeum[1], Malle K[5], Ongoiba S[6], Samaké Y[7], Keite. S[7]

[1]Markala Reference Health Centre, Mali
[2]Koutiala Referral Health Centre, Mali
[3]Local Health Centre I Bamoko, Mali
[4]Nianankoro Fomba Hospital in Ségou, Mali
[5]Ségou Regional Management, Mali
[6]Gavardo Hospital in Bamako, Mali
[7]Fana Referral Health Centre, Mali

Article History
Received: 14.05.2023
Accepted: 11.06.2023
Published: 16.06.2023

Journal homepage:
https://www.easpublisher.com

Quick Response Code

Abstract: Our work is a prospective study of 73 caesarean section cases (from 10 October to 10 December 2022), i.e. a period of 2 months at the Csréf in Markala. Our caesarean section success rate was 65.17%. The 20 to 40 age group was the most represented, with 73.97%, ranging from 16 to 42. In 83.56% of cases, caesarean sections were performed urgently. The indications for caesarean section were dominated by scar uterus (28.77%) and acute foetal distress (19.18%). General anaesthesia was the anaesthetic technique used in 89.04% of cases. Ketamine was the only narcotic used for induction and maintenance. Vomiting (8.22% of parturients) was the most common post-operative complication in the immediate post-partum period. Post-operative pain was managed with a combination of Paracetamol and Nefopam.

Keywords: Management, Anaesthesia, Caesarean section, perioperative incidents and accidents.

INTRODUCTION

The certainty that natural childbirth is possible and without risk to the mother and foetus is never absolute.

All pregnant women run the risk of suffering obstetric complications responsible for foetal and maternal mortality and morbidity.

Maternal mortality is a major public health problem throughout the world, and its assessment gives high figures.

The WHO has estimated that more than half a million women worldwide die each year as a result of obstetric complications. In other words, a woman dies every minute for reproductive reasons.

Estimates show that 30% of maternal deaths occur in Africa, with the highest rates in Central and West Africa (around 700 per 100,000 live births) [**7**].

Caesarean section is one way of reducing this risk.

The number of caesarean sections is rising all over the world, and the rate of 12% recorded in the 1970s has now doubled (20 to 25%) in some industrialised countries. In 2014, the rate in France was around 16 to 17%. Less than 50% of caesarean sections are performed as emergencies, the other indications being scheduled operations.

In Africa, the rate is 19% in Morocco and 21% in Tunisia. In sub-Saharan Africa, the rate is estimated at 14.79% [4].

Anaesthesia for caesarean sections is highly specific, taking into account the safety of both mother and foetus. The choice of anaesthetic technique takes into account the objective of reducing the maternal and foetal mortality rate.

***Corresponding Author:** Dr. Fomba Dramane
Markala Reference Health Centre, Mali

The risk of mortality is particularly high during emergency caesarean sections, and is six times higher than during scheduled caesarean sections [2].

In Mali, the maternal mortality rate is estimated at 364 maternal deaths per 100,000 live births according to the EDSMV survey (2013).

In other words, one woman in 24 in Mali is at risk of dying at childbearing age (15-49) [2]. Since the introduction of the free caesarean section policy by the state in 2005 the caesarean section rate has risen from 0.9% to 2.3%, of which 1.77% were scheduled caesareans in 2014 [4].

Although there are many indications for anaesthesia, the main causes of mortality are anaesthetic: difficult IOT and inhalation of gastric fluid. The choice of anaesthetic technique depends on the indication, the degree of urgency and the anaesthetist's judgement. In all cases, the anaesthetist must choose the technique that he or she believes to be the safest and most suitable for the mother, least depressing for the foetus and allowing optimum working conditions for the obstetrician.

General anaesthesia (GA) represents a high risk compared with LRA [2].

According to several studies, the benefits of locoregional anaesthesia (whether epidural or spinal) for Caesarean section are significant for both mother and child. General anaesthesia should therefore only be used if there is a contraindication to LRA [4].

Spinal anaesthesia has developed considerably in obstetrics over the last decade and has finally supplanted epidural anaesthesia for scheduled caesarean sections.

RESULTS

Table I: Distribution of parturients by marital status

Marital Status	Numbers (n=73)	Percentage (%)
Brides	65	89,04
Single	8	10,96
Total	**73**	**100**

Almost all the women in labour were married (89.04%).

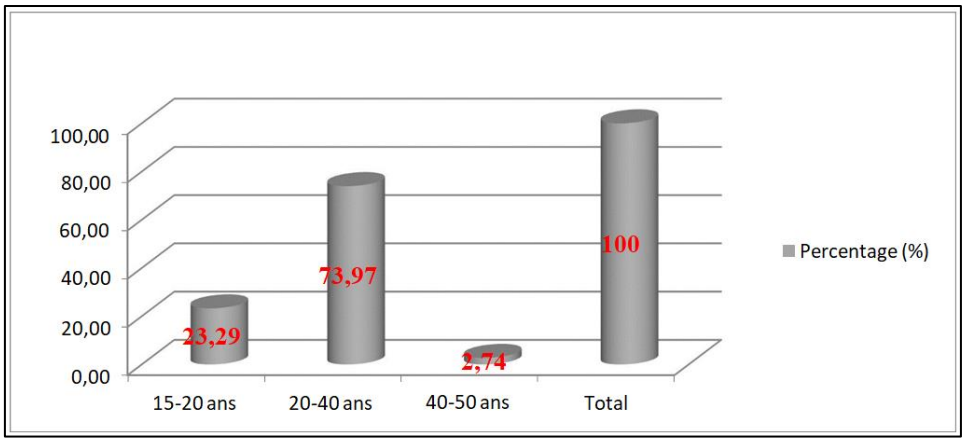

Figure 1: Graphical representation by age group

The 20-40 age group was the most represented at 73.97%.

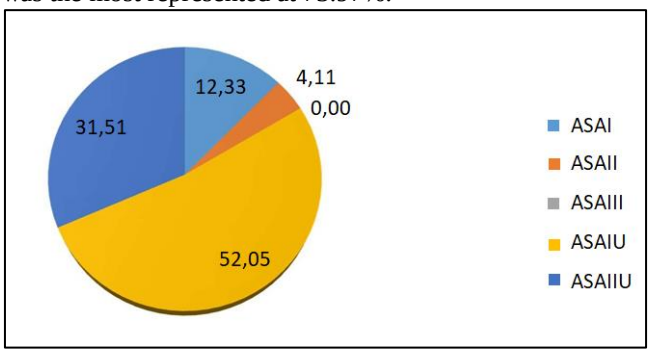

Figure 2: Graphical representation according to ASA classification

The majority of our parturients were in ASA class IU, accounting for 52.05% of cases.

Table II: Distribution of parturients according to gestational age

Gestité	Numbers (n=73)	Percentage (%)
Primigeste	17	23,29
Paucigeste	25	34,25
Multigeste	25	34,25
Large multi-gesture	6	8,22
Total	**73**	**100**

Paucigests and multigestures were the majority represented with 34.25%. Table III: Distribution of parturients according to medical history.

Table III: Distribution of parturients according to medical history

History	Numbers (n=73)	Percentage (%)
HTA	25	34,25
Sickle cell disease	5	6,85
Asthma	6	8,22
Hepatitis	1	1,37
HIV	2	2,74
Diabetes	4	5,48
No previous history	30	41,10
Other	0	0
Total	**73**	**100**

We found that hypertension was the most frequent medical history with 34.25%. Table IV: Distribution of parturients according to surgical history.

Table IV: Distribution of parturients according to surgical history

History	Numbers (n=73)	Percentage (%)
Caesarean sections	24	32,88
Digestive surgery	0	0
Tumour	0	0
Other	1	1,37
No previous history	48	65,75
Total	**73**	**100**

The most common surgical history was scar uterus (32.88%).

Table V: Distribution of parturients according to anaesthetic history

History	Numbers (n=73)	Percentage (%)
AG	28	38,36
Rashi	5	6,85
No previous history	40	54,79
Total	**73**	**100**

The majority of our parturients belonged to the Mallanpati I class, accounting for 75.34% of cases.

Table VI: Distribution of parturients according to type of anaesthesia

Type of anaesthesia	Numbers (n=73)	Percentage (%)
General anaesthesia	65	89,04
Peridural	0	0
Spinal anaesthesia	8	10,96
Total	**73**	**100**

We noted that 54.79% of parturients had no anaesthetic history.

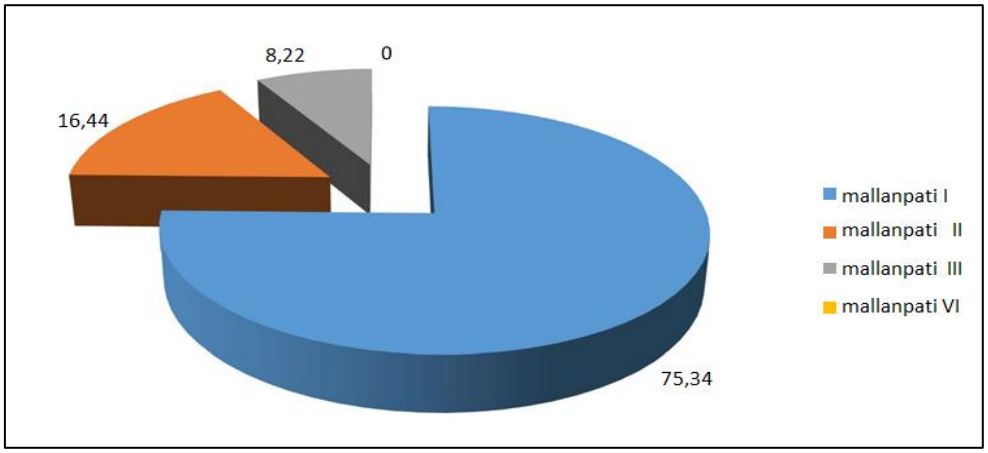

Figure 3: Graphical distribution according to Mallanpati score

General anaesthesia was the most commonly used technique, accounting for 89.04% of cases.

Table VII: Distribution of parturients according to anaesthetic used at induction

Anaesthetic product	Numbers (n=73)	Percentage (%)
Ketamine	65	89,04
Bupivacaine	4	5,48
Bupivacaine + fentanyl	4	5,48
Diazepam	3	4,11

COMMENTS AND DISCUSSIONS

The general aim of our prospective study was to evaluate anaesthetic management practices for caesarean sections at the Markala referral health centre over a period of 2 months, from 10 October to 10 December 2022. We recorded 73 patients operated on for caesarean section.

1- Frequency:

During the study period, 73 caesarean sections were performed for 209 deliveries, a frequency of 65.17%. Caesarean section was the first surgical procedure performed in the operating theatre of the Markala CSRéf. Our caesarean section rate (65.17%) is higher than that of Diallo B [10] and Traore N [5] who reported 25.64% and 30.67% respectively. It is lower than that of Nourou T [6] who reported 94%.

This is due to its status as a reference centre receiving high-risk pregnancies and referrals from the 18 Cscom.

2- Socio-demographic data:

Age:

The age group (20 to 40 years) was the most represented with 73.97% and extremes ranging from 16 to 42 years. This rate is higher than that of Diallo B [8] and Kone A [2] who reported respectively (15-25 years) and (31 -38 years) or 57.2% and 40.2%; lower or equal to that of Dembele M [1] 76.7% of cases (19 - 39 years).

Patients aged between 20 and 40 are at the peak of their reproductive activity.

a) Profession:

The household is the most represented occupation of our patients, i.e. 89.04%. This result is close to those of Dembele M [1] who found 86.6% of cases; as for Kone A [2] it represented 71.2%.

This is because the majority of women in Mali is not literate, and therefore looks after the home.

Marital Status:

Most of the patients were married, a rate of 89.04%. This finding was made by Bah B [3] 84% but lower than those of Dembele M [1] and KONE A [2] i.e. 92.7% and 97.7%.

Background:

Arterial hypertension was the most common medical history with 34.25%. Caesarean section was the most common surgical history, accounting for 32.88% of cases. The majority of patients had no major medical history: 41.50% had none, 65.75% had no surgical history and 54.74% had no anaesthetic history.

This result differs from that found in the work of Gana M [4], who found 8.16% of cases of hypertension.

Gynaecological-obstetric history was dominated by paucigestitia and multigestitia (32.25% each).

General Examination:

The ASA classification was dominated by ASAIu with 52.05%, a lower rate than that of Gana M [4] 73.46% and different from that of Kone A [2] who found 63.5% ASAII patients.

The Mallanpati classification is represented by Mallanpati I with 75.34% of cases.

Indications:

The indication for caesarean section in our study was given in the majority of cases in patients with at least one scar uterus, i.e. 28.77%. This rate is lower than that of Gana M [4] (55.10%) and higher than that of Diallo B [8] (19.9%). Next comes acute foetal distress (AFS), accounting for 19.18% of cases in our study.

Characteristics of Caesarean section:

Our Csréf is a referral centre for obstetric emergencies from the Cscom.

In our study 83.56% of caesarean sections were performed in an emergency context, a higher rate than in the study by Diallo B [8] with 74% of cases and Dembele I [12] with 49% in an emergency compared with 53% in the programme. This high frequency of caesarean section in our context can be explained by the high number of parturients referred for evacuation. In addition, the inadequate prenatal follow-up of parturients in our facilities could explain the high number of obstetric emergencies evacuated to the Csref.

Anaesthetic Techniques:

The choice of anaesthetic modality for Caesarean section depends on the degree of urgency and the condition of the mother and foetus. General anaesthesia was the anaesthetic technique used in 89.04% of cases, compared with 10.96% for spinal anaesthesia.

Our results differ from those of Diallo B [8] and Gana M [4] who found that spinal anaesthesia was used most often, with 62.9% and 71.42% of cases. These differences may be explained by the non-availability of spinal anaesthesia products and consumables and the urgent nature of caesarean sections.

None of our parturients were intubated, due to the absence of curares and intubation tubes.

The Products Used:

Ketamine was the only narcotic used for induction and maintenance of general anaesthesia with a rate of use of 100%; this is different from the result obtained by Bah B [3] with 93.5% Ketamine and 6.5% thiopental. This could be explained by the absence of other narcoses and qualified anaesthesia-intensive care personnel.

For spinal anaesthesia, Bupivacaine was used alone at a rate of 50% or often combined with fentanyl in 50% of cases.

Dopamine was used in 1.37% of women with severe preclampsia, following hypotension caused by the use of Nicardipine.

Time between Incision and Extraction:

In 69.86% of cases, the extraction time was less than or equal to 2 minutes after the incision. This time is lower than that of Gana M [4] with 3 minutes in 51.2% of parturients.

Duration of the Intervention:

The duration of the operations was between 31 and 60 minutes in 78.08% of cases.

Other studies have found shorter times. Namely the study by Dembele I [12] and Gana M [4] with 30 to 45 min in 59 % and 20 to 40 min in 59.18 %, taking into account the difference in the type and context of the indication for caesarean section, the duration of the operation could depend on the skill of the surgical team.

Antibiotic Prophylaxis:

Caesarean section is a major risk factor for post-partum infection, which is why 100% of our parturients have received antibiotic prophylaxis.

Apgar score:

The Apgar in newborns is an instrument for assessing behaviour after birth delivery. More than half the newborns (52.05%) had an Apgar score of 8 or more at the first minute.

In other studies, many newborns had good scores at the first munit of life; such as the study by Pahale M [14] and Gana M [4], i.e. 89.79% and 60% of Apgar scores between 8/10 and 10/10 at the first munit.

However, their anaesthetic technique was dominated by spinal anaesthesia, unlike our study. This difference can be explained either by the anaesthetic technique used or by the time taken for extraction.

Intraoperative Incidents and Accidents:

Intraoperatively, there were no incidents or accidents in the majority of cases; however hypertension followed by hypotension were the most common with respectively 46.81% and 21.28% intraoperatively. According to Traore N [6]; Dembele I [12] and Ag I [15] hypotension was the major intraoperative incident in with respectively 27%; 31.3% and 90% of cases; Guindo M [13] found tachycardia followed by arterial hypotension and hypertension as complications in respectively 68.75%; 60.58% and 41; 35% of cases.

The incidents and accidents encountered in our series were dealt with as appropriate. Management of hypotension consisted of vascular filling and ephedrine bolus administration. This approach is in line with other series [4, 6, 8, 12-14], and the management of adverse events must be early and appropriate in order to reduce the impact on the mother and foetus.

Post-Operative Complications:

No post-operative complications were observed in 87.67% of patients.

Complications such as vomiting were reported in 8.22% of cases, and headache, shivering and dizziness in 1.37%. No deaths were recorded.

Assessment of Postoperative Pain:

Pain was assessed in all parturients using a VAS, and postoperative analgesia was managed using paracetamol combined with Nefopam infusion or IM ketoprofen injection, depending on the case.

The majority of our parturients were awakened in the operating theatre, in 67.12% of cases.

CONCLUSION

This work has enabled us to take stock of anaesthesia practice at the Csréf in Markala. The caesarean section rate at the Markala Csref was very high at 65.17%.

Most of the patients were young, with an estimated average age of 29, ranging from 16 to 42.

Scar uteri were the most frequent indication.

Locoregional anaesthesia is not practical enough due to a lack of equipment and qualified staff. Adverse events are dominated by hypertension (46, 81%).

At the end of this study, we make recommendations that could improve the practice of anaesthesia in the department.

REFERENCES

1. Mr Mahamadou DEMBELE. Qualitative study of caesarean section at Sikasso hospital. Thesis in medicine. University of bamako; 2008, 129p.
2. Mr Aboudou N'tji KONE. Rachianesthesia for emergency caesarean section at the reference health centre of the commune VI of the district of Bamako .Thesis of end of cycle Master. INFSS of bamako ; 2016, 73p.
3. Mr Baba BAH. Prise en charge anesthésiologique des urgences obstétricales au centre de sante référence (CSRéf) de Nara : Evaluation des pratiques. Thèse de médecine. University of bamako; 2012, 90p.
4. Mr Mamadou GANA .Anaesthesia for caesarean section programme at the hospital centre Mère -enfant le Luxembourg de Bamako .Mémoire de fin de cycle Master. INFSS de bamako; 2014, 66p.
5. Mr N'fasseny TRAORE. General anaesthesia in spontaneous ventilation for caesarean section at the Csréf of the commune V of Bamako. Master's thesis. INFSS de bamako; 2014, 80p.
6. Mr Nourou TRAORE. Anaesthesia in gynaeco-obstetric emergencies at CHU Gabriel TOURE .Master's degree dissertation. INFSS de bamako; 2014, 77p.
7. Mr Boua CISSE. Evaluation of the referral system for the evacuation of obstetrical emergencies at the Markala Csref. Thèse de médecine. University of Bamako; 2013, 72p.
8. Bernard Dalens. Part I. Chapter 15. Modification physiologique au cours de la grossesse et implication anesthésique, Paris: Arnette; 2004; 275p.
9. Mr Brehima DIALLO .Evaluation de la Prise en charge anesthésiologique de la césarienne à l'hôpital régional de Ségou. Thèse de médecine. University of bamako; 2012, 111p.
10. Bernard Dalens. Part V. Chapter 8. Prise en charge anesthésique des urgences obstétricales, choix d'une technique locorégionales en urgence, Stratégie anesthésique en cas de souffrance fœtale aigue, place actuelle de l'anesthésie générale en urgence obstétricales . Paris: Arnette; 2004; 1089p.
11. Bernard Dalens. Part VII. Chapter 4. Anesthesia of the pregnant woman; out of labour, for labour, for caesarean section, safety rule, indication of caesarean section. Paris : Arnette ; 2004 ; 1425p.
12. Mr Isaac DEMBELE. Incidents et accidents au cours de la rachianesthésie en chirurgie obstétricale a l'hôpital femme et enfants de Koutiala. Master's thesis. INFSS de bamako; 2017, 58p.
13. Mr GUINDO Moussa. Prise en charge anesthésique des urgences obstétricales - chirurgicales au CHU mère-enfant le Luxembourg de bamako. End of Master cycle thesis. INFSS de bamako; 2016, 69p.
14. Mr VOUNBA Pahalé. Incidents et accidents lies a la rachianesthésie pour césarienne programme au CHU du Gabriel TOURE .Mémoire de fin de cycle Master. INFSS de bamako; 2017, 86p.
15. Mr sidi Amar AG IBRAHIM, spinal anaesthesia for caesarean section: hypotension, vasopressors and filling. End of cycle Master thesis. INFSS de Bamako; 2013, 78p.

Cite This Article: Fomba Dramane, Diarra I, Ballo B, Kone O, Kanthé D, Samaké B, Keita M, Ouolegeum, Malle K, Ongoiba S, Samaké Y, Keite. S (2023). Anaesthetic Management of Caesarean Sections at the Markala Reference Health Centre. *East African Scholars J Med Sci*, *6*(6), 251-256.