Caesarean Sections: Experience of a Tertiary Hospital in a sub-Saharan Country

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ABSTRACT

This study aims to assess indications, maternal and neonatal outcomes, and sociodemographic factors related to cesarean sections, focusing on 100 cases managed in a tertiary hospital in Mauritania. Conducted over a 9-month period, this study provides insight into the clinical and social dynamics surrounding cesarean procedures in a sub-Saharan region. The most common indications for cesarean section were dystocia (30%), fetal distress (25%), and previous cesarean sections (12%). The majority of patients were aged 19–30 years, with a high proportion of multiparous women (45%). Postoperative maternal complications, including haemorrhage with one case of haemostasis hysterectomy, were observed in 8% of cases, while neonatal complications, such as low birth weight (20%) and transfer to intensive care (12%), were found. Socioeconomic factors influenced maternal and neonatal outcomes. This study highlights the need to improve antenatal care and optimise resource allocation for safe delivery practices in sub-Saharan African countries. It calls for policy interventions and improved health infrastructure to address the rising rates of caesarean sections and associated complications, thereby contributing to better maternal and neonatal health outcomes in the region.

Keyword: *Cesarean section, Delivery, Dystocia, Complications*

1. INTRODUCTION

Caesarean section is a surgical procedure that can effectively prevent maternal and neonatal mortality when performed for medical reasons [1]. Maternal and perinatal deaths associated with labor complications such as malpresentation, obstructed labor, and suspected uterine rupture are generally preventable with timely cesarean delivery [3]. Appropriate and judicious decision-making is essential, however, as cesarean delivery that is not medically justified increases the risk of maternal and perinatal mortality compared with uncomplicated vaginal delivery [4–7]. Cesarean deliveries also expose women to an increased risk of obstetric complications such as uterine rupture [8,9], placenta previa, and abruption in subsequent pregnancies [10–12]. Globally, cesarean delivery rates have increased in recent decades. According to recent estimates covering 150 countries, 21% of all births are by cesarean section, with averages ranging from 1% to 58% depending on the country [2]. In Mauritania, a study conducted in 2016 at the National Hospital Center in Nouakchott shows a rate of 26.7% (13). The objective of this work is to present a study of the epidemiological profile, indications, and maternal and neonatal morbidity and mortality of cesarean section at the Cheikh Zayed Hospital in Nouakchott based on 100 cases.

2. MATERIALS AND METHODS

This is a prospective study that took place over a period of 9 months from July 10, 2023 to April 10, 2024, at the obstetrics and gynecology department of Cheikh Zayed Hospital in Nouakchott (tertiary structure), including all patients who underwent a cesarean section during this period. An operating sheet was drawn up for each patient

file including epidemiological aspects, indications for cesarean sections, their complications, and maternal and neonatal prognosis. The data were entered, studied, and analyzed using SPSS 26.0 software.

3. RESULTS

Out of a total of 1680 deliveries, 100 cesarean sections were performed during the period of our study, a rate of 5.95%. The average age was 29.29 years (range 17 - 41 years). The most represented age was between 19 and 30 years with 51%. Primiparous women represented 45%, followed by multiparous women at 37%, and pauciparous women at 18%. The number of prenatal consultations was greater than or equal to 4 in 68.8% of patients. Eighty (80%) patients were at term. The rate of cephalic presentations was 87%. In our series, 51 cesarean sections were performed as emergencies, and 49 cesarean sections were scheduled.
In our series, 92% of patients did not have any per-operative complications while 8% had hemorrhages. Postoperatively, 2 cases were managed for a hemostasis hysterectomy and a hematoma of the wall, respectively. No maternal deaths.
Concerning the fetal prognosis, 80% of newborns had a normal weight, the rate of transfer to intensive care was 12%. Perinatal mortality was 8%. The Table 1 shows the percentage rate of indications found in our study.

Table 1 : Number and rate of indications in our study

INDICATIONS	NUMBER OF CASES	(%)
Dystocia	30	30%
Scarred uterus	25	25%
Acute fetal distress	12	12%
Failed trial of labor	10	10%
Preeclampsia	10	10%
Retroplacental hematoma	5	5%
Fetal macrosomia	4	4%
Others	4	4%
TOTAL	100	100%

Others = Placenta accreta, twin pregnancy, cord prolapse

3. DISCUSSION

Between July 10, 2023 and April 10, 2024, we recorded 100 cesarean sections among 1680 deliveries, a rate of 5.9%. Our cesarean section rate was found to be low compared to the optimal interval set by the World Health Organization (WHO) with a rate of 10-15% [14]. This rate is comparable to that reported by Coulibaly AN (6.8%.) [15] but lower than those reported by Kinenkinda et al [16], Togora M. [17] and Teguete I. [18], who respectively obtained 12.8%; 24.05% and 10.65%.
In our series, the extreme ages are between 19 and 41 years, the age group corresponding to the optimal age (19-30 years) is the most represented with 51%. This is observed consistently in the studies reported by BERTHE (66%) [19], DIALLO CH (88%) [20], and COULIBALY AN (51.8%) [15].

In this study, primiparas were the most represented, with a rate of 45%. This result is close to those reported by Iman Tahila [21] and Dram Malick [22] who obtained 45.93% and 42.7% respectively. The number of prenatal consultations was greater than or equal to 4 in 68.8% of patients, which demonstrates a good coverage rate of prenatal follow-up in Nouakchott.
In our series, the rate of cesarean sections for scarred uterus (25%) is higher than that observed in Dakar, where Cissé C.T [23] reported a rate of 11.2% in 2001. This difference is mainly explained by our lack of resources, particularly to perform a pelvimetry scan. Consequently, in the presence of a clinically suspect pelvis, we cautiously opt for cesarean section.
Our results show that the majority of cases of scarred uterus were treated by cesarean section because of clinically suspect pelvises. Nevertheless, our rate of cesarean sections for scarred uterus remains lower than that observed in Canada, where Liu S. noted a rate of 40.3% in 2000/2001[24], and in Casablanca, where Jebara Nahy H. reported a rate of 28.72% in 2001/2002[25].

Our rate of pre-eclampsia (10%) is slightly higher than that found in DAKAR (8.4%) Cissé C.T[23]. Intraoperative complications were found in 8%, therefore slightly higher than that reported in Tunis (3.6%) by Trabelsi k [26], but lower than that found in Guinea (17.61%) Diallo F [27].
Our perinatal mortality rate after cesarean section is 8%, dominated mainly by severe neonatal suffering. This result is close to that found in Dakar Cissé C-T (11.6%)[23] but higher than that found in Marrakech by Tahila (3.94) [21]. We can therefore explain the difference by the non-monitoring of pregnancies, the delay and the poor conditions of transfer of patients to specialized centers.
The fetal morbidity which is a specific consequence of cesarean section is explained by the stagnation of pulmonary fluid. Indeed, delivery by cesarean section short-circuits the real physiological wringing represented by the passage of the fetus through the birth canal. However, this is a minor complication and the healing is spontaneous in the majority of cases. [28-29]. We found that 12% of newborns had complications after cesarean section, and were hospitalized in the neonatal intensive care unit. These complications are mainly dominated by newborn respiratory distress (NRD) in 65.4% of cases. A study conducted in Morocco [30] reported that 36% of newborns had complications at birth due to NRD.

CONCLUSIONS

Caesarean section is a common procedure in obstetrics, worldwide its rate has continued to increase in recent years. However, in sub-Saharan countries this rate is still low as confirmed by our study. Cesarean section can effectively prevent maternal and neonatal mortality when performed for medical reasons, but the surgical procedure of cesarean section itself is not free from complications like any surgery. This study highlights the need to improve antenatal care and improve resource allocation for safe delivery practices in sub-Saharan African countries. It calls for policy interventions and improved health infrastructure to address the increasing rates of caesarean sections and associated complications, thereby contributing to better maternal and newborn health outcomes in the region.

CONFLICTS OF INTEREST

None.

AUTHOR CONTRIBUTION

All authors have reviewed and approved the final manuscript

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