

Indications for Cesarean Section in a Tertiary Center in Togo

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Abstract

Objectives: The objective of this study was to evaluate the indications for cesarean section (CS) and some related characteristics in Sylvanus Olympio University Hospital Center in Togo. **Methods:** We analyzed all CS performed from January 1, 2020 to December 31, 2020. **Results:** Total number of 8676 women were delivered, of which 4583 were by CS (52.8%), emergent vs. planned; 69.6% vs. 30.4%. Acute fetal asphyxia was the leading indication (25.4%), followed by pre-eclampsia/eclampsia (17.3%), and pelvic anomalies (12.2%). Analysis showed that 51% of cases had definite indications for CS, whereas in remaining cases, CS was performed for non-definite-indications. **Conclusion:** CS should be done based on definite indications. We must take an effort to educate this in this area, which, avoiding unnecessary CS, might reduce the CS rate in this area.

Keywords

Caesarian Section, Indications, Togo

1. Introduction

Caesarian section (CS) is a surgical act aimed at delivering a fetus from the maternal uterus through an incision of the abdominal wall and uterus [1]. In 1985, World Health Organization (WHO) estimate the ideal rate of C-section between 10 to 15%. Since that period, caesarian delivery is frequently realized in developed as well as developing countries. When medically justified, C-section can effectively prevent both maternal and perinatal mortality and morbidity [2].

Based on ICD-10 classification, “previous history of CS” was the most common indication (24.1%) for doing CS. Other indications included: “fetal distress” 20.6%, “prolonged and obstructed labor” 15.9%, “amniotic fluid disorder” 14.3%, “post-dated pregnancy” 13.1%, “maternal disorder related to pregnancy” 4.5%, “fetal mal-presentation” 3.5%, “hypertensive disorder in pregnancy” 2.5%, “placenta praevia” 0.78%, and “general disease complicating pregnancy” 0.7% [3]. In sub-Saharan Africa, studies have shown that cephalopelvic disproportion is commonest indication for emergency cs, respectively 18.6%, 27.5%, 36.0% [4] [5] [6]. In Togo, since May 2011, with the launching of activities the Campaign for Acceleration of Maternal Mortality Reduction in Africa by the state authorities in September 2010, CS is subsidized by the Togolese State [7]. It is therefore more accessible to the population than before. The practice of CS like any other surgery is not trivial [8]. With this accessibility to almost all the people, are indications of CS always justified?

The general objective of this study was to evaluate the indications of caesarian deliveries carried out in the Obstetrics and Gynecology Unit of the Sylvanus Olympio University hospital Center (CHU SO), over the year 2020.

2. Methods

It was a retrospective study carried out from January 1st to December 31st, 2020; which involved the files of parturient or pregnant women who underwent a CS over the year 2020 at the Obstetrics and Gynecology Unit of the CHU SO, and which contained post-operative notes. Files where post operative notes were missing, were not included in the study. Files of CS done in other health facilities, and referred for complications were not included. Variables studied were: frequency, age, data on pregnancy follow up, clinical data and indication of CS. Data were collected using a pre-established questionnaire filled from the post-operative notes’ registers, files of pregnant and laboring women who underwent CS, monthly reports of activities of the obstetrics and gynecology unit, and monthly reports of neonates transferred to the pediatric unit. Data analysis was done using Epi data 3.1, Rstudio version 3.6.3 and Epi info 7.2.6. questionnaires were filled respecting the anonymity of the patients, authorizations were obtained, verbally from the Head of service and written and filed as N° 1160/2021/MSPHAUS/CHU-SO/DIR/DRH/SERV. PERS from the Director of the Teaching hospital.

3. Operational Definitions

- **Admitted:** to talk of a patient who came to the hospital for care of her own will.
- **Referred:** said if a patient leaves a hospital for another one where better care can be provided.
- **Sent by ANC:** to talk of a pregnant woman seen in antenatal care and who is not allowed to go back home but is directly sent to the delivery hall for immediate care.

- **Health center:** local health facility with a legal background, providing primary health care.
- **Delivery house:** facility providing obstetrical care meanwhile it doesn't respond to any legal health norms.
- **Compulsory CS:** concern situations in which delivery cannot be performed other than by the upper route (fetopelvic disproportion, placenta previa, dystocic presentation, mechanical dystocia).
- **Precaution CS:** corresponds to circumstances for which an intervention is not essential, but can bring in certain cases a better vital or functional prognosis to the mother, but especially to the child (scarred uterus, breech presentation, fetal asphyxia, "precious child").
- **Necessity CS:** is performed for pathologies that are generally accessible to preventive treatment but which, in the absence of monitoring or management during pregnancy or delivery, may have an unfavorable evolution leading to an emergency surgical intervention to save the mother's life (dynamic dystocia, hypertensive pathology, other maternal pathology).

4. Results

4.1. Frequency

From 1st January to 31st December 2020, obstetrics and gynecology unit of Sylvanus Olympio University Hospital Center has registered 8676 deliveries, with 4583 through CS (52.8%).

4.2. Socio-Demographique Data

4.2.1. Age

Mean age of operated women was 29.03 ± 5.80 with extremes of 13 and 51 years (Table 1).

4.2.2. Parity

Nullipara represented 35.2% (Figure 1).

4.3. Past History of Uterine Surgery

Among women who underwent CS, 1385 (30.2%) previously gave birth through caesarian at least once and 300 (6.5%) had had a myomectomy; the rest of

Table 1. Distribution of caesarian deliveries according to age groups.

	Frequency	Percent
<18	300	6.5
[18; 30[2500	54.5
[30; 35[1083	23.6
≥35	700	15.4
Total	4583	100

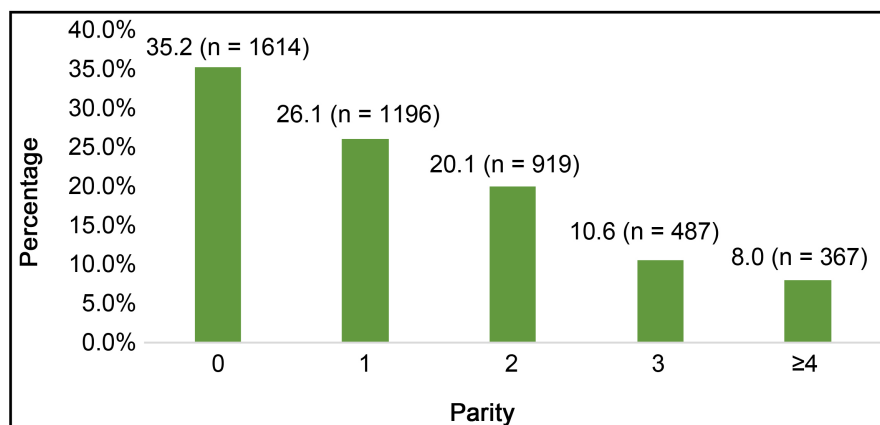


Figure 1. Distribution of caesarian deliveries according to parity.

pregnant women, 3198 (69.8%) didn't have any history of uterine surgery.

4.4. Antenatal Clinic (ANC)

4.4.1. Number of ANC

Pregnant women attended 4 ANC in 49.1% of cases (**Table 2**).

4.4.2. Sites of ANC

The study population attended ANC in a peripheral health center in 55% cases, Sylvanus Olympio and University teaching hospitals in 34% cases and delivery houses in 11%.

4.5. Management at Sylvanus Olympio Hospital

- Mode of admission

Two thousand one hundred and fifty-seven (47.1%) operated women came on their own, 1765 (38.5%) were referred and 661 (14.4%) were sent from ANC.

- Clinical state on admission

Over 4583 pregnant women, 96.49% had a good general state on admission and 3.51%, a bad general state.

- Indications

Acute fetal asphyxia was found in 25.4% of the indications (**Table 3**).

- Type of CS

Emergency caesarian deliveries represented 69.6% (3188), versus 30.3% (1395) elective.

- Time limit between indication and performance of emergency C-section

This time limit was 30 to 60 min in 74.5% of cases (**Table 4**).

4.6. Nature of Caesarian Delivery

Necessity CS represented 51.04% (**Table 5**).

4.6.1. Acute Fetal Asphyxia and Mode of Admission

Acute fetal asphyxia was diagnosed in 64.9% of referred mothers and 33.1% of admitted mothers (**Table 6**).

Table 2. Distribution of caesarian deliveries based on the number of ANC attended.

	Frequency	Percent
0	390	8.5
1 - 3	1172	25.6
4	2250	49.1
>4	771	16.8

Table 3. Distribution of CS according to indications.

	Frequency	Percent
<i>Acute fetal asphyxia</i>	1165	25.4
Severe pre-eclampsia/Eclampsia	795	17.3
Pelvis anomalies	559	12.2
Cephalo-pelvic disproportion	302	6.6
Abnormal fetal presentation	291	6.3
Funicular anomaly	240	5.2
Short birth interval	213	4.6
Unfavorable biophysical profile	184	4.0
Advanced age in nullipara	171	3.7
Macrosomia	145	3.2
Cervical dystocia	141	3.1
Breech presentation in nullipara	126	2.7
Poor obstetrical history	75	1.6
Failed trial of scar	69	1.5
Uterine rupture	62	1.4
Pathless immature pelvis	45	1.2
Total	4753	100

Table 4. Distribution according to time limit between indication and performance of C-section.

In min	Frequency	Percent
<30	596	18.7
[30 - 60]	2375	74.5
>60	217	6.8

Table 5. Distribution of CS according to the nature.

	Frequency	Percent
Compulsory CS	959	20.92
Precaution CS	1285	28.04
<i>Necessity CS</i>	2339	51.04

Table 6. Distribution of newborns with acute fetal asphyxia according to the mode of admission of their mother.

	acute fetal asphyxia		
	No n (%)	Yes n (%)	Total n (%)
Admitted	1893 (50)	264 (33.1)	2157 (47.1)
Referred	1247 (32.9)	518 (64.9)	1765 (38.5)
Referred by ANC	645 (17)	16 (2)	661 (14.4)
Total	3785 (100)	798 (100)	4583 (100)

p = 0.0355.

Table 7. Distribution of newborns by Apgar score.

	1st minute		5th minute		10th minute	
	Frequency	%	Frequency	%	Frequency	%
Apgar Score < 7	803	17.5	697	15.2	695	15.2
Apgar Score ≥ 7	3780	82.5	3886	84.8	3888	84.8
Total	4583	100	4583	100	4583	100

4.6.2. Apgar score of newborns

The Apgar score of the newborns was good in 82.7% at the first minute (Table 7).

4.6.3. CS Outcome

- Maternal Complications.

Maternal complications were 1.7%. The rest of the CS were free of complications.

5. Discussion

Frequency of CS is 52.8% for 8676 births. This rate is greater than the one reported by Akpadza [9] in the same unit in 2011, and that of Cissé *et al.* in Dakar [10] in 2001 which were respectively 44.2% and 25.2%. In fact, this high rate joins the general movement of increase of numbers of caesarian deliveries in maternities [2]; but it can be explained otherwise by the fact that Obstetrics and Gynecology Unit of the Sylvanus Olympio Teaching hospital is the national reference center; serious cases resulting from a poor management of labor are often referred there from delivery houses. Also, due to grant of CS by the State in May 2011, many prefer public facilities where a simple CS is done at 10,000 fcfa. This national reference center is in the straight line of recommendations of WHO to give access to caesarian delivery to every pregnant woman in need. In fact, as recommended by WHO, priority should not be to reach a specific rate, but to put everything in place in order to perform a caesarian section for all the women who are in need [2].

The mean age of patients was 29 years with extremes of 13 and 51 years. These results are close to that of Imbert *et al.* in 2003 in Dakar [11] who had a mean age of 30.5 years. However, they are greater than those of Dembele *et al.* in 2012 [12] and Tahmina *et al.* in 2017 [13]. who reported a mean age respectively of 26.2 years and 26 years. This mean age of 29 years is part of genital activity full period, where women are sexually active and also is the best fertility period.

Nulliparous women were predominant with a rate of 35.2%. This high rate of operated nullipara could be explained on one side by the fact that, it was their 1st experience and they could not bear labor pains, which was sometimes responsible for cervical dystocia (3.4%); on the other side, their pelvis had never been tried for delivery (12.2%).

Forty-nine-point one percent (49.1%) of pregnant women attended four ANC. Following new recommendations of WHO for ANC, the number of ANC moves from four to eight. According to WHO, increase in the number of contacts in the health system for women and young girls is associated with a lower probability of stillbirths, because these consultations provide more opportunities to detect and take care of possible problems [14].

Fifty-five percent (55%) attended ANC in peripheral health centers; 34% in Teaching hospitals. This may be due to the fact that midwives in the first cited centers, can follow normal pregnancies and risky ones are often referred to Teaching Hospital. Among operated women, 1385 (30.2%) had at least once undergone a CS, and 300 (6.5%) a myomectomy. Tahmina B. *et al.* [13] in 2017 reported 24.1% history of caesarian delivery. This high rate of caesarian deliveries in previously operated pregnant or parturient women can be explained by the fact that it was either a repetitive indication or short birth interval not authorizing a trial of scar. On the other way, previous indications for CS were not known by the women. And we didn't either know the conditions of previous surgeries (health facility, surgeon's skills...). Concerning those previously operated for fibroids, post-operative notes were not available and we didn't know the operation conditions. It is then necessary to inform women about indications of their CS, conditions of surgical intervention, write post-operative notes in their ANC book. This will enable a good follow-up of the following pregnancies, preparation of suitable delivery route and will favor trial of scars. This also calls for an increased sensitization about quality ANC.

Forty-seven-point one percent (47.1%) operated women were admitted versus 38.5% referred meanwhile 34% only attended ANC in the Teaching hospital. This could be explained by the fact that Sylvanus Olympio Teaching Hospital is the 1st national reference center and that many pregnant women or parturient women will prefer to give birth in the above-mentioned hospital for a better management at a lower cost.

Acute fetal asphyxia was the first indication for caesarian delivery with a rate of 25.4%; severe preeclampsia/eclampsia in 17.3% of cases. Akpadza in 2011 [9] in the same unit, reported a rate of 16.4% for acute fetal asphyxia and 15.9% for

severe preeclampsia/eclampsia. Cissé *et al.* [10] reported cephalo-pelvic disproportion in 31.3%; followed by acute fetal asphyxia in 25.2% and Imbert *et al.* [11], reported placenta abruptio 39.2%; acute fetal asphyxia for 28.8% cases. Even though in the leading position, acute fetal asphyxia has increased, moving from 16.4% in 2011 [9] to 25.3% in 2020 in the same unit; this could be explained through the improvement of conditions of maternofetal follow-up during labor, by the use of tococardiography thus insufficient, and an echography machine available in the labor room. Regarding pelvis anomalies found to be the third cause of CS, it should be noted that the diagnosis was clinical. A pelvis scan was requested and done in doubtful cases during ANC, and was recommended to be done during the upcoming pregnancy for women admitted as emergency cases.

We found 69.6% emergency caesarian deliveries against 30.4% elective ones. Necessity CS was predominant with 51% of cases followed by precaution CS (28%); compulsory CS was 20.9% of cases. These results are similar to those of Akpadza [9] in the same unit in 2011. The results are different from those of Ouedraogo *et al.* [15] and Cissé *et al.* [10] who reported respectively, compulsory C-sections at 54.8% and 43.8%, necessity CS at 36.4% and 30.4% and precaution CS at 8.8% and 25.4%. High rates of precaution and necessity of caesarian deliveries would have shown a good pregnancy follow-up at the ANC unit ruled by a hard-working Gynecologist and in the delivery room by the team on duty made up of a Gynecologist and training gynecologists, who rapidly take decisions on problematic labor cases. This allowed the C-sections to be done in due time on one hand; and on the other hand, most of the caesarian deliveries were done as emergency cases (69.6%), and the women had mostly referred cases.

6. Conclusion

Caesarian delivery is an artificial delivery after surgical opening of the uterus. Indications were dominated by acute fetal asphyxia, followed by pre-eclampsia/eclampsia, and pelvis anomalies. Discipline in indication of CS must be enforced to avoid falling in ease, especially with the subvention of CS which should be perpetuated and also to strengthen the technical platform, to enable surgeons to be in optimal condition for a better maternofetal prognosis.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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