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Original Research Article

Audit of the first caesarean section in a reference hospital in the African environment

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ABSTRACT

Background The practice of a first caesarean section can condition the future obstetric prognosis. The aim of this work was to study the indications of the first caesarean sections at the Yalgado Ouedraogo Teaching Hospital in Ouagadougou.
Methods: This was a cross-sectional study with prospective collection. The data were collected from 1 March to 30 May 2018. The women who benefited from caesarean section for the first time were the study population. The review of the documents, the interview with the patients and the expert opinion were the techniques used. The expert opinion made it possible to determine whether or not the caesarean section was preventable.
Results: The first caesarean sections accounted for 62.5% (280/448) of all caesarean sections and 34.6% (280/810) of all childbirths in the period. Caesarean section was urgently performed in 95% of cases. It was mostly an obstetrical indication. Probable fetal asphyxia was the first major indication (27.5%) followed by preeclampsia/eclampsia (15.7%) and uterine pre-rupture syndrome (8.9%). Caesarean section was found to be avoidable in 53 cases (18.9%). Probable fetal asphyxia was the most common indication (22.4%) of these preventable caesarean sections.
Conclusions: The good management of preeclampsia, the strengthening of the birth room in fetal and maternal monitoring equipment, the close coaching of physicians in specialization and the periodic audits of practices would reduce the preventable caesarean sections.

Key words: First caesarean section, Audit, Indication, Ouagadougou

INTRODUCTION

Caesarean section is the most practiced major obstetric intervention. It is effective in saving the lives of mothers and newborns, but only when it is justified by a medical indication.[1] Its rate is increasing, especially in developed countries.[2] Optimizing the use of caesarean section is of global concern. Underuse leads to maternal and perinatal mortality and morbidity. Conversely, overuse of caesarean section has not shown benefits and can create harm.[3] WHO stipulates that the priority today is to make every effort to practice a caesarean section in all women who need it only to reach a specific rate as it was before.[4] Given the risk of morbidity and mortality associated with caesarean sections, the control of cesarean section rates is an important concern in the obstetric domain.[5] The use of the Robson classification currently advocated by WHO for the evaluation, monitoring and comparison of caesarean section rates in health care facilities is one of the strategies to target the inflation rate of unjustified caesarean section.[4] The high contributory proportion of the uterine scars in the overall rate of caesarean section was noted by several

studies using this classification.[6,7] The practice of a first caesarean section can condition the future obstetric prognosis. It is important that the indication of a first caesarean section is then well laid and well justified, especially since the caesarean operation has potentially risks for both the mother and the newborn.[8-10] In Burkina Faso, the rate of caesarean section is progressively increasing in hospital settings.[11] Significant proportions of preventable caesarean sections have been reported. The authors of this work were to study the indications of the first caesarean sections at the University Hospital Centre Yalgado Ouedraogo (CHUYO) in Ouagadougou to discuss possible possibilities to reduce its magnitude. The practice of a first caesarean section can condition the future obstetric prognosis. It is important that the indication of a first caesarean section is then well laid and well justified, especially since the Caesarean operation has potentially risks for both the mother and the newborn.[8-10] In Burkina Faso, the rate of Caesarean section is progressively increasing in hospital settings.[11] Significant proportions of preventable caesarean sections have been reported.[12,13] The objective of this work was to study the indications of the first caesarean sections at the Yalgado Ouedraogo Teaching Hospital in Ouagadougou to discuss possible reductions in its magnitude.

METHODS

This was a cross-sectional study with prospective collection. It took place in the Department of Gynecology and Obstetrics of the Yalgado Ouedraogo Teaching Hospital. The data were collected over a three-month period, from 1 March to 30 May 2018. The women who benefited from Caesarean section for the first time were the study population. The estimation of the sample size was made on the basis of the proportion's formula:

$$(n = \frac{z^2pq}{(ME)^2})$$

Where, p=21% corresponding to the proportion of first caesarean section found in 2017 in an environment close to our.[14] A minimum size of 280 patients was obtained, considering a non-response rate of 10%. Patients who had a caesarean section for the first time and whose caesarean section was performed in the Department of Gynecology and Obstetrics of CHU-YO were included in this study. The review of the documents, the interview with the patients and the expert opinion were the techniques used. A minimum size of 280 patients was obtained, considering a non-response rate of 10%. Patients benefiting from a caesarean section for the first time and whose caesarean section was performed at the Yalgado Ouedraogo hospital were included in this study. The review of the documents, the interview with the patients and the expert opinion were the techniques used. The review of the documents concerned the medical records of the patients, the hospital records and those of the surgical unit. It allowed the collection of the sociodemographic and clinical characteristics of the patients as well as the data relating to the Caesarean section. The interview with the patients was used to complete this data if necessary. For each medical record, a summary was made on an anonymously structured collection form and submitted to the opinion of two experts (obstetricians not part of the department team) in order to judge the relevance of the caesarean section. When the two experts did not share the same opinion, the opinion of a third was sought and it was considered in the analysis. Caesarean section was considered non-avoidable or relevant if it was found to be medically justified. Otherwise, it was said to be avoidable or irrelevant. Anonymity and respect for confidentiality have been observed. The authorization of the management of the hospital and that of the head of Department of Obstetric gynecology were obtained before the start of the investigation. The consent of the patients was required beforehand. The favourable opinion of the ethics committee has been obtained beforehand.

RESULTS

Frequency of caesarean section

The number of first caesarean sections was 280 representatives 62.5% (280/448) of all caesarean sections and 34.6% (280/810) of all childbirths in the period.

Patient characteristics

The age of the patients varied from 16 to 46 years with an average of 27 years ±6.7. Patients under 35 years of age accounted for 83.9% of the sample. The patients had no income gainful activity in 72.5% of the cases. The characteristics of the study population is mentioned in (Table 1).

Practice of caesarean section

Caesarean section was urgently performed in 95% of cases. It was mostly an obstetrical indication. Probable fetal asphyxia was the first major indication (27.5%) followed by preeclampsia/eclampsia (15.7%) and uterine pre-rupture syndrome (8.9%) as shown in (Table 2). For the cases of Caesarean section indicated for probable fetal asphyxia, the amniotic fluid was stained with meconium in 28.6% cases, the fetal heart rate was abnormal in 55.8% of the cases and the Apgar score at the fifth minute of life was less than 7 in 9.1% (Table 3).

Prognosis

Nineteen (6.8%) complications were recorded. They were represented by the hemorrhage per operative (14) and postoperative infections (5). No maternal deaths were noted. The average length of hospitalization was 4.2±1.6 ranging from 3 to 21 days. Two hundred and ninety seven (297) births were from all of the first caesarean sections practiced. Newborns were of low birth in 20.2% (60) of cases and macrosomia in 5.4% of cases (16). APGAR 5-minute life score ranged from 1 to 7 in 27 cases (9.1%). It

was stillborn in 17 cases (5.7%). Early neonatal mortality was 67.8 for 1000 live births (19/280).

Table 1: Patient characteristics (n=280).

Characteristics	N	%
Age group (years)		
<20	50	17.8
20-34	185	66.1
≥35	45	16.1
Socio-professional category		
Housewife	166	59.3
Student	37	13.2
Employee	35	12.5
Informal sector	42	15
Parity		
Nulliparous	137	48.9
Primiparous	45	16.1
Paucipare	69	24.6
Multiparous	27	9.7
Large multiparous	02	0.7

Table 2: Main indications of caesarean section (n=280).

Indications	N	%
Maternal indications	75	26.8
Pre-eclampsia/eclampsia	44	15.7
Surgical Basin	14	5.0
Sickle crisis	09	3.2
Old primigravida	03	1.1
Other[a]	05	1.8
Fetal indications	98	35
Probable fetal asphyxia	77	27.5
Abnormal fetal presentation	19	6.8
Intra-uterine growth retardation	02	0.7
Obstetric indications	107	38.2
placenta previa hemorrhagic	11	3.9
Anamnios/severe oligohydramnios	07	2.5
Procidentia of the cord, living fetus	07	2.5
Placental retro hematoma	06	2.1
Uterine pre-rupture	25	8.9
Dynamic dystocia	14	5.0
Failure to commit	11	3.9
Cephalopelvic disproportion	09	3.2
Post term	05	1.8
Other [b]	12	4.4
Total	280	100

[a]One case of asthma, one case of urinary prosthesis, one case of history of rectal fistula treatment, one case of hip dislocation, one case of anemia. [b]Three cases of bleeding at the beginning of labor induction, three cases of multiple pregnancies, three cases of placental calcification, three cases of chorioamnionitis.

Relevance of the indications of caesarean section

Caesarean section was found to be avoidable in 53 cases (18.9%). In these cases, probable fetal asphyxia was the most common (22.4%) assumed indication (Table 4). This diagnosis was not confirmed as postnatal in any of the cases. In other cases of preventable Caesarean sections (77.4%), the diagnosis was correct but the relevance of the operative indication being questioned.

Table 3: Characteristics of caesarean section cases indicated for probable fetal asphyxia (n=77).

Characteristics	N	%
Presence of meconium in the amniotic fluid		
Yes	26	33.7
No	51	66.3
Fetal heart rate at last exam		
Normal (120-160)	34	44.1
Fetal bradycardia (<120)	32	41.6
Fetal tachycardia (>160)	11	14.3
Newborn status at birth		
APGAR Score ≥7	66	85.7
APGAR Score <7	7	9.1
Stillborn	4	5.2

Table 4: Distribution of preventable Caesarean section cases according to the assumed indication (n=53).

Indications	N	%
Probable fetal asphyxia	12	22.6
Severe pre-eclampsia	7	13.2
Post term	5	9.4
Placental calcification (without the path of the fetal heart rate)	3	5.7
Limit basin	5	9.4
Stagnant dilation	4	7.5
Fetal-pelvic disproportionality	6	11.3
Secondary subfertility	2	3.8
Premature rupture of the membranes	2	3.8
Severe oligohydramnios	2	3.8
Old primigravida	1	1.9
Asthma (not in crisis)	1	1.9
Breech presentation at primigravida	1	1.9
Intra-uterine growth retardation	1	1.9
Total	53	100

DISCUSSION

Practice of Caesarean section

More than two-thirds (62.5%) of caesarean sections performed during the study period in our series concerned first caesarean sections. The same observation was made by Gueye et al in Senegal (72.5%) and by Zelli et al in France (69%).[14,15] These first caesarean sections concerned patients who had already given birth at least once in more than half of the cases (51.1%). Probable fetal asphyxia accounted for about ¼ of the indications. This result corroborates the data of the literature.[14,16-17] The peculiarity in our series is that the diagnosis of fetal asphyxia was posed by excess leading to the practice of preventable caesarean section. Indeed, this diagnosis was

made exclusively on the basis of the only anomaly of the fetal heart rate at intermittent examination using the Pinard stethoscope or the stained appearance of the amniotic fluid. The intrapartum recording of fetal heart rate using cardiotocograph and fetal PH measurement is a better contribution to the diagnosis of fetal asphyxia than clinical examination alone.[18] As these tests are not available in our context, this diagnosis remains a diagnosis of presumption with a greater risk of excess error.

Almost one-fourth (22.6%) of caesarean sections deemed irrelevant were performed for probable fetal asphyxia, which was not confirmed as postnatal in any case. Better endowment of the birth room with fetal monitoring equipment during childbirth would improve obstetric practices. In addition, practices that could induce fetal heartbeat disorders such as the artificial rupture of latent membranes, the misuse of oxytocin, should be avoided.[19] Severe preeclampsia/Eclampsia was the second most common indication found (15.7%). This indication was at issue in 1/5th of the cases of caesarean sections deemed preventable. The irrelevance in these cases was explained by the fact that the Caesarean section had been practiced while the patient was already in the advanced phase of childbirth work without signs of dystocia or fetal distress. Vaginal delivery could have occurred within a reasonable period of time with no over added maternal or fetal morbidity.

Relevance of the indications of caesarean section

Caesarean sections were found to be preventable in 18.9% of cases. Most of the Caesarean sections were carried out in emergency (95%) and the indications were most often posed by residents in obstetrics and gynecology.

Kouanda et al found that 12% of caesarean sections practiced in 2012 in Burkina Faso's reference hospitals were not medically justified. This last study focused on low-risk women.[13] The fact that these caesarean sections were performed by non-obstetrical staff and the grant and then free of emergency obstetric and neonatal care including caesarean section were the main reasons identified by these authors to explain the proportion of preventable caesarean sections. The practice of regular audits with feedback would help to better discern the indications of caesarean section.[20]

Limitations

Data on partographs were not always available to better assess the relevance of dynamic dystocia indications. Caesarean sections were considered preventable when the intervention was indicated. A more valid indication of caesarean section would have been further clarified in the course of the evolution of the circumstance if the labor had continued.

CONCLUSION

The practice of non-scarred caesarean cesarean is routinely common. Early detection and proper management of preeclampsia and the strengthening of the birth room in fetal and maternal monitoring equipment could help to reduce the use of Caesarean section.

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