REASONS FOR DELAY TO PERFORM EMERGENCY CAESAREAN SECTION AMONG PARTURIENTS IN A TERTIARY HEALTH CARE FACILITY IN SOUTH-SOUTH NIGERIA.

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ABSTRACT

The low-resource setting prevalent in developing countries is associated with a lower quality of health care delivery to the populace largely due to lack of facilities. Aim: This study set out to determine the reasons for delay to perform emergency caesarean section in the centre studied. Methods: This was a review of the case notes of women who had emergency caesarean section during the period of the study. Results: The prevalence of caesarean section during the study period was 23% with emergency caesarean section rate of 66.4%. The modal (43.3%) age group was 26-30 years among parturients in the study population with half of the women being multiparous. A vast majority (79.3%) of the women had booked and obtained antenatal care in the centre. Failure to progress in labour was responsible for the majority (60.0%) of the caesarean section among the women followed by fetal distress, which accounted for 28.7%. A large number (43.3%) of the parturients were delayed for 1.1 to 3.0 hours and only 6 (4.1%) of the parturients had a minimal delay of half an hour or less. In 55.3% of the parturients, the reasons for delay were not stated in their case notes; although, 20.7% of the parturients were delayed because the theatre was engaged. CONCLUSION: Lack of essential health care facilities led to undue delay to perform emergency caesarean section in the centre studied.

***Keywords**: caesarean section, emergency, decision delivery interval, delay, reasons.*

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INTRODUCTION

Caesarean section is one of the oldest surgical procedures and is commonly performed on women in order to provide an alternative route for delivery of the infant. The last three decades have witnessed an increase in the number of caesarean section operations performed the worldover.[1] While the global incidence of caesarean section ranges from less than 10% to about 35%, some maternity centres in the United States of America have incidences as high as 75%.[1,2] The incidence of caesarean section in Nigeria ranges from 6 to 35%; while the centre studied recorded an incidence of caesarean section of 19.8% in the year 2002.[3-5]

The relatively high caesarean section rates in developed countries of the world is largely due to defensive practice by obstetricians because of the fear of litigation, use of continuous cardiotocographic monitoring in labour and repeat caesarean sections.[1,6] Rates of caesarean section in the tropics are fuelled largely by cephalopelvic disproportion in labour leading to emergency surgical interventions.[1,7] Cephalopelvic disproportion often results from childhood undernutrition, which leads to sub-optimal skeletal growth and pelvic contraction. Other common indications for caesarean section include, fetal distress, intrapartum haemorrhage and severe preeclampsia and eclampsia.[1,7]

Caesarean section is a major surgical operation and could be fraught with complications. The risk of maternal mortality from caesarean section is 4 per 10,000 caesarean deliveries as against less than 1 per 10,000 associated with vaginal deliveries.[1,6] From a case fatality of nearly

100% in the beginning, caesarean section in contemporary obstetric practice is safe due to improved knowledge and development in surgical technique, safe anaesthesia, safe blood transfusion services and effective antibiotics.[1,6]

Caesarean section can be performed as an elective procedure when there is an identifiable reason to avoid vaginal delivery. Otherwise, the procedure is undertaken as an emergency to provide an alternative route for rapid delivery of the infant when prolongation of the pregnancy is not desirable. In emergency caesarean section, timing is of essence and undue delay could lead to adverse maternal and perinatal outcome. A 30- minute interval between decision for emergency caesarean section and delivery of the infant has been recommended by relevant authorities.[8-10]

Even though some experts have questioned the authenticity and attainability of the recommended 30 minutes interval, caesarean delivery should be expedited once a decision has been made to avoid untoward perinatal or maternal outcome.[11]

While the surgical procedure of caesarean section is essentially the same in developed and developing countries of the world, challenges are often encountered in low-resource settings in the course of preoperative preparation and the actual surgical operation.[7,12] Such challenges could lead to undue delays to perform the procedure in developing countries.

This study was designed to establish the reasons that lead to delays to perform emergency caesarean section in the University of Calabar Teaching Hospital, Calabar, Nigeria. It is envisaged that the findings of this study will assist the management of hospitals and policy makers in Nigeria to address the challenges in order to improve maternity care in the country.

METHODS

STUDY DESIGN AND STUDY AREA

This was an exploratory study that was conducted in the maternity annex of the University of Calabar Teaching Hospital over a twelve-month period to determine the reasons for delay to perform emergency caesarean section among parturients who delivered during the study period. The University of Calabar Teaching Hospital is located in Calabar, the state capital of Cross River State, which is in the south-south geopolitical zone of Nigeria. The University of Calabar Teaching Hospital is the only tertiary health care facility that provides specialist maternity care to women in the state and its environ. There is also a secondary health care facility in Calabar and several primary health care centres distributed across the state. Cross River State has a population of about 4million people with Calabar, the state capital having a population of 328,876 people, 50% of which are women.[12]

RECRUITMENT AND DATA COLLECTION

Data sheet was designed to obtain information on each parturient who delivered through emergency caesarean section during the period of the study. These pieces of information were extracted from the women's case notes within 24hours postpartum and included: maternal age, parity and the booking status of the women. Additional information included the indications for the caesarean section, interval from decision to delivery and reasons for delay to perform the operation. The total number of deliveries and the proportion of elective caesarean sections that were performed in the centre during the period under review were also extracted from the delivery register.

STATISTICAL ANALYSIS

The data obtained are presented in the form of numericals, simple proportion and percentages. Statistical calculations were done using conventional statistical formulas and some of the results are presented in tabular form for ease of perusal. The data were analyzed using descriptive and inferential statistics.

TABLE I: DEMOGRAPHIC AND OBSTETRIC DETERMINANTS OF EMERGENCY CAESAREAN SECTION AMONG PARTURIENTS IN THE STUDY POPULATION

Demographic/obstetric parameters	No. of partureints (%)
Age groups (Years)	
16-20	8 (5.3)
21-25	36 (24.0)
26-30	65 (43.3)
31-35	31 (20.7)
36-40	10 (6.7)
Parity	
Para 1	67 (44.7)
Para 2-4	75 (50.0)
Para 5-7	8 (5.3)
Booking status	
Booked	119 (79.3)
Unbooked	22 (14.7)
Referred	5 (3.3)
Defaulted	4 (2.7)
Total	150 (100.0)

TABLE II: INDICATIONS FOR EMERGENCY CAESAREAN SECTION AMONG PARTURIENTS IN THE STUDY POPULATION

Indications	No. of parturients (%)
Failure to progress	64 (42.7)
Obstructed labour	19 (12.7)
Fetal distress	43 (28.7)
Intrapartum haemorrhage	15 (10.0)
Severe preeclampsia/eclampsia	9 (0.6)
Total	150 (100.0)

TABLE III: DELAY INTERVAL FROM DECISION TO DELIVERY BY EMERGENCY CAESAREAN SECTION AMONG PARTURIENTS IN THE STUDY POPULATION

Delay interval (Hrs)	No. of parturients
$\leq$ 0.5	6 (4.1)
0.6-1.0	8 (5.3)
1.1-3.0	65 (43.3)
3.1- 6.0	41 (27.3)
6.1-12.0	18 (12.0)
Not stated	12 (8.0)
Total	150 (100.0)

TABLE IV: REASONS FOR DELAY TO PERFORM EMERGENCY CAESAREAN SECTION AMONG PARTURIENTS IN THE STUDY POPULATION

Reasons for delay	No. of parturients
Blood not available	2 (1.3)
Electricity not available	4 (2.6)
Theatre engaged	31 (20.7)
Refusal by the parturient	7 (4.7)
Surgeon not available	7 (4.7)
Anaesthetist not available	16 (10.7)
Not stated	83 (55.3)
Total	150 (100.0)

RESULTS

The study covered a period of 12 months, when a total of 1100 women were delivered in the maternity annex of the University of Calabar Teaching Hospital. A total of 253 caesarean sections were performed during the study period giving the prevalence of caesarean section of 23%. Analysis of the caesarean section register revealed that 168 (66.4%) were emergencies while 85(33.6%) were performed as elective cases. This gave an emergency caesarean section rate of 66.4% during the study period. Notwithstanding, 150 parturients were included in the study because in 18 of the women, information in their case notes were inadequate.

Table I shows the demographic and obstetric parameters of women who underwent emergency caesarean section during the period of the study. The modal (43.3%) age-group was 26-30 years among parturients in the study population. Half of the women were multiparous, that is, parity of 2 to 4, followed by primiparous women who accounted for 44.7% of the women in the study population. A vast majority (79.3%) of the women had booked and received antenatal care in the centre, whereas 2.7% of them had received antenatal care in the centre but defaulted to attempt delivery elsewhere to no avail before they were brought to the centre.

The indications for emergency caesarean section among parturients in the study population are shown in table II. Failure to progress in labour was responsible for the majority (60.0%) of the caesarean section among the women followed by fetal distress, which accounted for 28.7%. Table III shows the delay interval from decision to delivery among women who were scheduled for emergency caesarean section. The majority (43.3%) of the parturients were delayed for 1.1 to 3.0 hours. Only 6 (4.1%) of the parturients had a minimal delay of half an hour or less.

The various reasons for delay in performing emergency caesarean section among parturients in the study population are shown in table IV. In over half (55.3%) of the parturients, the reasons for delay were not stated in their case notes; although, 20.7% of the parturients were delayed because the theatre was engaged.

DISCUSSION

Absolute or relative lack of health care facilities in developing countries has created a difference in the quality of health care attainable in developed and developing countries of the world. This study which set out to determine the reasons for delay to perform emergency caesarean section in the centre studied found the prevalence of caesarean section of 23%. This prevalence was modest considering the national rate, which ranges from 9.9% to 34.5% in Nigeria.[13,14] Lower rates of caesarean section were however attained in Sokoto-northwestern Nigeria (9.9%), Enugu-south-eastern Nigeria (10.4%) and Maiduguri- northeastern Nigeria (11.8%).[13,15,16] There was a preponderance (66.4%) of emergency caesarean section in this study in agreement with findings from other centres in Nigeria where even higher proportions of emergency caesarean section of 85.2% and 93.7% were obtained in Jos and Enugu respectively.[17,18]

The modal age-group among parturients in the study population was 26-30years. This is probably the peak age of reproduction among women in our environment and not necessarily an independent risk factor for emergency caesarean section. Among the few studies that analyzed the maternal age of women who had emergency caesarean section, Igberase et al[14] found that most of the parturients in their series belonged to a comparable age-group of 25-29years. Half of the study population was made up of multiparous women similar to what Ugwu et al.[18] found in their study. The revelation that the vast majority (79.3%) of the parturients in the study population had booked and received antenatal care in the

centre probably demonstrates that booked women are not immuned to intrapartum complications that might warrant emergency caesarean section. This finding however contrasted with the result obtained in Abraka- south south Nigeria, where the majority (59.5%) of parturients in their series were unbooked for antenatal care.[14]

The major indication for emergency caesarean section among parturients in the study population was failure to progress in labour. This often results from cephalopelvic disproportion due to relative contraction of the pelvic cavity.[1,7] Childhood undernutrition is associated with sub-optimal skeletal growth leading to pelvic contraction in females.[7] Ikeako et al.[15] also found the commonest indication for emergency caesarean section to be cephalopelvic disproportion in their study in contrast to results obtained from Jos-northcentral Nigeria and South-east Asia, where cephalopelvic disproportion was displaced to the second position by previous caesarean sections.[17,19]

The finding of a large number (43.3%) of parturients being delayed for 1.1- 3.0 hours has cast doubt on the feasibility of the recommended 30 minutes interval between decision for emergency caesarean section and delivery in the centre studied. Only 4.1% of parturients were delivered within 30 minutes from when a decision for emergency caesarean section was made. The reasons for delay to perform emergency caesarean section after a decision had been made were varied but typical of a low-resource setting where essential health care facilities are often lacking. Among the cases where reasons were documented, the majority (20.7%) of the parturients were delayed because the theatre was engaged. The centre studied had two operating tables in the obstetric theatre and if both tables are engaged, any other obstetric emergency warranting surgery would have to wait till at least one of the operating tables is vacant. While Onah et al.[20] found anaesthetic delay as the major source of delay in their series in Enugu-southeastern Nigeria, a study by Onwudiegwu[21] noted sundry reasons similar to our results: unavailability of the paediatrician (9.6%), unavailability of the anaesthetists (13.6%), unreadiness of the theatre (11.9%) and waiting for a senior medical personnel's review (6.4%) as major causes of delay in his study. In sharp contrast, a study in the United Kingdom where 71% of the emergency caesarean sections were performed within 30 minutes identified delay to transfer the parturients to the operating theatre as the main source of delay to perform emergency caesarean section in their study.[8]

A worrisome revelation from this study was the finding that 83 (55.3%) of the parturients whose cases were delayed, had no documentation of the reason for such delays in their case notes. This aberrant practice should be discouraged through enlightenment of medical personnel on the importance of clinical record keeping for the purposes of effective service delivery, clinical audit and research.

CONCLUSION: The prevalence of caesarean section in the centre studied was 23% with preponderance for emergency caesarean section. Emergency caesarean section was commonly performed on booked, multiparous women with age ranging from 16 to 40 years. Failure to progress in labour resulting from cephalopelvic disproportion was the major indication for the operation. Nearly half of the parturients were delayed for 1.1 to 3.0 hours after a decision had been made for caesarean delivery and the recommended 30 minutes delay interval was met in only 4.1% of cases. There were sundry reasons peculiar to low-resource settings for the delay to perform emergency caesarean section, while for cases where a reason was given, the operating theatre was engaged in the majority of cases.

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