AN AUDIT OF CAESAREAN SECTION IN A TERTIARY HOSPITAL NORTHWEST NIGERIA

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ABSTRACT

Background: There is an increasing trend in the rate of caesarean section worldwide and this has become a major cause of concern to obstetricians. Despite the increasing safety of anesthesia and surgical technique, caesarean delivery accounts for more maternal morbidity and mortality compared to a normal vaginal delivery.

Objective: To determine the rate, major indications, and outcome of caesarean delivery in Aminu Kano Teaching Hospital, Kano.

Methodology: This is a 3 year retrospective descriptive study done at Aminu Kano Teaching Hospital (AKTH), Kano. Records of patients who had caesarean section (C/S) were retrieved from the operation record book in the theatre and the labour ward delivery record book. Patients' case files were retrieved, studied and recorded in a proforma. Data analysis was done using SPSS version 17, and proportions were compared using the Chi square test where applicable with level of significance considered at a P-value of <0.05.

Results: During the study period from 1st January 2008 to 1st January, 2011, there were12,600 deliveries, out of which1,966 were delivered by caesarean section, giving a caesarean section rate of 15.6%.There were 1300(66.1) emergency caesarean section and 666(33.9) elective caesarean section. Of the emergency caesarean 305 (23.5) were due to obstructed labour and cephalopelvic disproportion alone, 335(25.8) due to hypertensive disorders in pregnancies. Also 361(54.2) of the elective caesarean section were due to multiple previous caesarean section.1022 (52) of caesarean section were done on nulliparous women. There were more post-op complications associated with emergency caesarean section than elective c/s, with statistically significant difference in post-op pyrexia and post-op wound infection P< 0.05. There was also statistically significant difference in neonatal complications such as low birth weight, birth asphyxia, birth trauma and neonatal sepsis between emergency c/s and elective c/s with P<0.05. Five patients died post caesarean section giving a maternal mortality rate of 254 per 100,000. Majority of the deaths were not directly caused by the procedure, as 4 patients died of complications of eclampsia and only one died of post partum hemorrhage. 80% of the deaths were unbooked patients.

Conclusion: Caesarean section rate though high in this study, but within the acceptable range of 5-15% and hypertensive disease in pregnancy was the commonest indication for C/S. Emergency C/S is associated with increased maternal and perinatal morbidity and mortality than elective Caesarean Section.

Keywords; Caesarean section, prevalence, indication, complications

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INTRODUCTION

Caesarean section is the delivery of the fetus, placenta, and membranes after the age of viability through an abdominal and uterine incision[1,2]

It is one of the most frequently performed surgical procedures in obstetrics and certainly one of the oldest operations in surgery.[3] Caesarean section usually resulted in the death of the mother.[2] The first successful caesarean section that did not result in the death of the mother was in 1580.[2]This followed advances made with the introduction of anesthesia, blood transfusion, introduction of suturing of the uterus and lower transverse uterine incision.[2,3]

There is a wide global variation in the Incidence of caesarean delivery among countries and within a country, it varies from one hospital to another.[4] The general incidence is between 5%-15%, [5,6] with a steady and continued increase during the last two decades in the developed nations up to 30%,[5,6] while the reported incidence in most teaching hospitals in Nigeria is in the range of 20-30%.[4]

The determinants of C/S rate are patient characteristics such as age, parity, gestational age, race, low/high-risk, private/non-private and socio economic status; hospital characteristics. [7]

The different types of caesarean section could be classified based on the timing of caesarean section or the type of incision. Based on the timing it could be elective or emergency and based on the incision on the uterus it could be classical or transverse lower segment caesarean section.[8]

The indications for elective caesarean section are many and varying and are often relative rather than absolute. They include contracted pelvis, major degree placenta praevia, two or more previous caesarean section, malpresentation, HIV infection in pregnancy, previous vesico-vaginal fistula repair, intrauterine growth restriction, and bad obstetric history.[3,9] Good maternal and perinatal outcomes can be ensured through essential obstetric and newborn care provided by skilled attendants during pregnancy and childbirth.[9-12] Caesarean section has contributed immensely to improve obstetric care throughout the world.[13]

Like any other major abdominal surgery; caesarean section is not free of complication. These complications are major contributors to maternal morbidity and mortality.[14,15]

We therefore review caesarean section in Aminu kano teaching hospital, from 1st January 2008 to 1st January, 2011 with a view to determine incidence and feto-maternal outcome after caesarean section.

It is hoped that the findings and recommendation would help in reducing feto-maternal morbidity and mortality from caesarean section, and improve our chances of meeting the Millennium Development Goals 4 and 5.

AIMS AND OBJECTIVE

To determine the prevalence, indications, maternal and fetal outcome of caesarean section in Aminu Kano Teaching Hospital, Kano.

METHODOLOGY

Study Design: A three year descriptive study from 1st January 2008 to 1st January 2011, in Aminu Kano Teaching Hospital, Kano.

STUDY POPULATION

All patients that were delivered by caesarean section were included.

DATA COLLECTION

The researchers went through all file of patients that delivered via vaginal delivery and all those that had caesarean delivery over the study period.

The information obtained included, types of caesarean section, indications, post operative outcome for both the mother and baby, mortality and fetal outcome as well as the various indications for caesarean delivery.

DATA ANALYSIS

The data collected was analyzed using SPSS version 17. Charts and tables were used to present data as appropriate and Chi-square was used to test variables were necessary.

RESULTS

During the period from 1st January 2008 to 1st January 2011, there was a total of 12600 deliveries, out of which1,966 were by caesarean sections, giving a caesarean section rate of 15.6%.There were 1300(66.1%) emergency caesarean section and 666(33.9%) elective caesarean section (Fig 1.1). Out of the emergency caesarean 305 (23.5%) were due to obstructed labour and cephalopelvic disproportion alone, while 335 (25.8%) were due to hypertensive disorders in pregnancies (Table 3). Also 361(54.2%) of the elective caesarean section were due to multiple previous caesarean section, while 1022(52%) of caesarean section were done on nulliparous women (Table 4). There were more post-op complications associated with emergency caesarean section than elective c/s, with statistically significant difference in post-op pyrexia and post-op wound infection ($P< 0.05$). There was however no statistically significant difference in postpartum haemorrhage and urinary tract infection, between patients who had emergency C/S and those with elective C/S (Table 5). There was also statistically significant difference in neonatal complications such as low birth weight, birth trauma and neonatal sepsis between emergency c/s and elective c/s ($P<0.05$), however there was no statistically significant difference in preinatal death between elective c/s and emergency c/s (Table 7). Five patients died post caesarean section giving a maternal mortality rate of 254 per 100,000. Majority of the deaths were not directly caused by the procedure, as 4 patients died of complications of eclampsia and only one died of post partum haemorrhage (Table 6).

DISCUSSION

The optimum rate for caesarean sections to ensure the best outcome for mother and child is estimated to be from 5%-15%,[5,6] although this estimate needs to be validated with data from less developed countries.[16] However, in most sub- Saharan Africa, rate of caesarean sections are low, especially in West Africa, where they account for less than 1% of expected births.[16]The incidence of 15.5% in this study is comparable to the 13.6% observed by Omole in kano,[17] 18.5% in Owerri, [18] 10.2% in Kaduna. [19]. This was however lower than that of 22.2% in Benin [20]and 34.6%[21] in Lagos. These differences are possibly attributed to the hospital catchment population, hospital distribution in the community, booking status of the patients, socio-economic status and availability of senior obstetrician in the labour ward who are able to perform most of the instrumental vaginal deliveries.

Emergency caesarean section rate of 66.1% in this review was lower than 76.5% and 77.9% reported by Ezemu in Owerri [18] and Akinwuntan in Ibadan [22] respectively. As in several earlier reports, cephalopelvic disproportion/ obstructed labour were the commonest indication for caesarean section. [14,21,22] This may also be related to childhood malnutrition and chronic infection with resultant impaired pelvic bone development. [23]Also the high prevalence of early marriage among our patients may explain the reason for this high figure in this study. This is similar to the findings in Kaduna and Zaria with similar socio-cultural background.[19]

The fact that caesarean section is a potent tool for averting life threatening problems of pregnancy and labor, [22] was confirmed in this study with a caesarean section complication rate of 14.1%. This rate of complication in this review is lower than 44.4% reported by Chama in Maiduguri, [23] 49.9% reported by Akinwuntan in Ibadan, [22] and 56.3% reported by Kolawole.[24]

These complications are common with emergency caesarean sections, among the unbooked patients. These may be attributed to late presentation and compromised maternal condition before the surgery. It might also be that in emergency caesarean sections, detailed precautions to reduce complications before and during surgery may have been waived in order to salvage the fetus or to prevent more serious maternal morbidity or mortality. This was also observed by Ezechi O. in Lagos. [21]

This high morbidity and high mortality in emergency compared to elective c/s in this study may be explained by the fact, that in emergency cases mostly the patients were referred and were operated by junior registrars and the commonest indications in the referred patients in this study were hypertensive disorders, obstructed labour and antepartum haemorrhage which are known major causes of maternal morbidity and mortality [25,26]

The commonest complication was postoperative pyrexia and wound infection which gave a morbidity of 29.2% in this study. This is higher than 10.8% reported by Ezechi O in Lagos.[21] This could be explained by the fact that obstructed labour is the second most common indication for caesarean delivery in our centre and all were unbooked and referred cases. Perinatal death from caesarean sections accounted for 8.9% of the total deaths with neonatal sepsis accounting for the highest cause of deaths 13.4%.There were 1300 emergency sections with 19.0% perinatal deaths, while 666 elective sections had 16.7% perinatal deaths this was comparable to finding by Onankpa.[27] Neonatal complications such as low birth weight, birth asphyxia, birth trauma and neonatal sepsis were commoner among the emergency c/s than elective c/s with statistically significant difference.

In conclusion, the caesarean section rate in this study, though, high, but is within the acceptable range of 5%-15% and hypertensive disease in pregnancy was the commonest indication for caesarean section. It has also shown that emergency c/s is associated with a high perinatal morbidity and mortality than elective c/s. The Perinatal morbidity and mortality due to emergency c/s is majorly due to unbooked status and late referral of the patient.

RECOMMENDATIONS

Efforts should be made to maintain the rate of caesarean sections between 5 %-15%, which could be done by educating our women on the benefits of early booking for antenatal care and early presentation in labor. Also early referral from peripheral hospitals will go a long way in reducing both maternal and fetal morbidity and mortality.

TABLE 1. AGE DISTRIBUTION OF PATIENTS THAT HAD CAESAREAN SECTION.

AGE	FREQUENCY	PERCENTAGE
< 19	175	8.9
20 -24	645	32.8
25 – 29	610	31.3
30-34	300	15.0
> 35	236	12.0
TOTAL	1966	100

TABLE 1. AGE DISTRIBUTION OF PATIENTS THAT HAD CAESAREAN SECTION.

PARITY.	FREQUENCY.	PERCENTAGE.
0	1023	52.0
1	326	16.6
2	233	11.9
3	128	6.5
4	136	6.9
>5	120	6.1
TOTAL.	1966	100

Fig. 1.1. Shows proportion of ELCS to EMCS

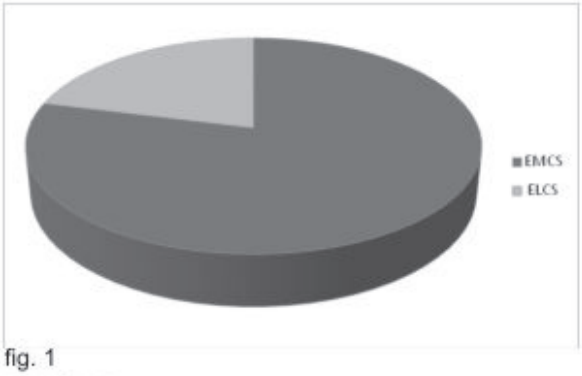

fig. 1

NB. EMCS = Emergency caesarean section.

ELCS = Elective caesarean section.

TABLE 3. INDICATIONS FOR EMERGENCY CAESAREAN SECTION.

INDICATION.	FREQUENCY.	PERCENTAGE.
Obstructed labor/CPD	305	23.5
Hypertensive disorder.	335	25.8
Failed induction.	60	4.6
APH.	105	8.1
Fetal distress.	120	9.2
Failed trial of scar	40	3.1
Breech presentation in labor.	105	8.1
BOH in labor.	25	1.9
Abnormal lie in labour.	33	2.5
Face/brow presentation.	15	1.2
Previous multiple C/S in labor.	28	2.2
Multiple pregnancy in labour.	40	3.1
Cord prolapse.	23	1.7
Failed vacuum.	17	1.3
Others.	49	3.7
TOTAL	1300	100

Obstructed labour/hypertensive disorder was the commonest indication for emergency caesarean section.

TABLE 4. INDICATION FOR ELECTIVE CAESAREAN SECTION.

INDICATION.	FREQUENCY.	PERCENTAGE.
Macrosomia.	4	0.6
Breech in primigravida.	39	5.9
Hypertensive disorder.	82	12.3
Previous multiple C/S	361	54.2
Previous BOH.	9	1.4
Abnormal lie.	23	3.5
Multiple pregnancy.	117	17.6
Placenta previa.	31	4.5
TOTAL.	666	100

Multiple previous caesarean section was the commonest indication for elective caesarean

TABLE 5. POST CAESAREAN SECTION COMPLICATIONS.

COMPLICATON	ELCS frequency	%	EMCS frequency	%	TOTAL	%	Chi-square test P-value
Post operative pyrexia.	45	37.8	135	46.7	180	44.1	0.01
Wound infection	39	32.8	72	24.9	111	27.2	0.01
PPH.	23	19.3	60	20.8	83	20.5	0.402
UTI.	10	8.4	22	7.6	32	7.8	0.509
Bladder injury.	2	1.7	-	-	2	0.4	–
TOTAL.	119	100	289	100	408	100	

Postoperative pyrexia and wound infection were the commonest complications.

TABLE 6. MATERNAL MORTALITY POST CAESAREAN SECTION.

Patient	Age	Parity	Booking status	Indication	Admission – death interval	Western education.	Delay type.
1st	17	0	unbooked	Antepartum eclampsia	7 hours	None	1
2nd	16	0	Unbooked	Antepartum eclampsia	4 days	None	1
3rd	22	1	Unbooked	Intrapartum eclampsia	8 hours	None	1
4th	19	0	Unbooked	Intrapartum eclampsia	15 hours	None	1
5th	36	6		PPH	10 hours	Teacher	1

Majority were ***unbooked,*** *eclamptic patient !*

TABLE 7. FETAL OUTCOME AFTER CAESEREAN SECTION.

Parameter	Freq. of ELCS fetus	%	Freq. of EMCS fetus	%	Total	%	Chi-square test P-value
LBW(<2.5kg)	97	19.2	540	30.9	637	28.3	0.00
Birth asphyxia (APGAR <7 at 5 mins.)	202	40.1	193	11.0	395	17.5	0.00
Birth trauma	19	3.8	140	8.0	159	7.0	0.01
Neonatal sepsis	102	20.2	545	31.1	647	28.7	0.00
Perinatal death	84	16.7	332	19.0	416	18.5	0.18
TOTAL	504	100	1750	100	2254	100	

There were 2254 babies out of total caesarean section of 196 6 due to multiple pregnancies

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