

The Rate of Caesarean Section in Nnewi, Nigeria: A 10-year Review

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ABSTRACT

Background: *There is widespread public and professional concern about the increasing proportion of births by caesarean section (c/s).*

Objectives: *This study is to determine the c/s rate, the indications and the reasons for the high rate.*

Methods: *The obstetric records of all caesarean deliveries that occurred at Nnamdi Azikiwe University Teaching Hospital (NAUTH), Nnewi, South-Eastern Nigeria, between 1st January, 1999 and 31st December, 2008 were reviewed retrospectively.*

Results: *Of the 6,015 deliveries, 1,114 were by C/S giving an overall rate of 18.5%. Caesarian birth rose from approximately 1 in 7 deliveries in 1999 to 1 in 4 deliveries in 2008 and this was statistically significant ($\chi^2=20.75$; $df=1$; $p<0.05$). A new peak of 26.9% was recorded in 2008 for C/S rate. The mean age of the patients was 30.8 ± 5.1 years and 37.4% of the patients were primiparous. However, 31.8% of the women were unbooked cases, and the majority (96.4%) of these unbooked cases had emergency C/S.*

Previous caesarean section (previous scar), was the commonest indication for C/S throughout the study period, accounting for 242 (21.5%) of cases. The other major indications were cephalopelvic disproportion (CPD), 141 (12.3%), obstructed labour, 134 (11.7%), antepartum haemorrhage, 133 (11.6%), pregnancy induced hypertension, 105 (9.1%) and breech presentation, 77(6.7%).

Conclusion: *The C/S rate has significantly increased during the study period and repeat C/S and CPD were the commonest indications. The efforts to avoid unnecessary C/S should focus on reducing the frequency of first time procedures. Vaginal birth after a previous caesarean section (VBAC) should also be encouraged.*

Key words: *Caesarean section, high rate, review.*

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INTRODUCTION

There is widespread public and professional concern about the increasing proportion of births by caesarean section (C/S)¹. This increasing rates of caesarean births could be attributed to safety of the procedure, fear of litigation, increased awareness and increasing number of people with the expertise who could perform the procedure²⁻⁴.

However, while the global incidence of caesarian sections is unknown, it is clearly increasing⁵. The C/S rate of up to 22% has been recorded in the US and the UK⁶. In Chile, 40% of births are by this route while in Brazil's public hospitals, up to 80% of pregnant women reportedly gave birth by caesarian section⁶. In sub-Saharan Africa, rates of about 22% are not uncommon⁶. The World Health Organization (WHO) has recommended the C/S rate of 15% for both industrialized and developing countries⁶.

Caesarian section can be performed due to a number of reasons. Of all the reasons, repeat caesarian section often has been the most significant one⁷. The number of repeat caesarian sections can be reduced by encouraging vaginal deliveries after a previous caesarian birth (VBAC)¹.

A number of studies have been done on C/S in Nnamdi Azikiwe Teaching Hospital Nnewi, indicating a rise in the trend, but reasons for this marked increase have not been strongly evaluated. Also, Igbo women generally have strong aversion for C/S because those who do not deliver vaginally are thought to be weak. There is also the fear of pain and complications associated with the procedure. Against this backdrop, this study aims to determine the c/s rate, the indications and the reasons for the increasing trend.

METHODS

The obstetric records of all caesarian deliveries that occurred at Nnamdi Azikiwe University Teaching Hospital (NAUTH), Nnewi, South-Eastern Nigeria between 1st January, 1999 and 31st December, 2008 (10-year period) were reviewed retrospectively. NAUTH is a tertiary hospital situated in an urban community competing with a large number of private and public clinics with various levels of competence. The obstetrics unit consists of numerous senior registrars and some consultants.

The delivery records were obtained in order to ascertain the following: maternal age, parity, background whether booked or an un-booked case, elective or emergency c/s, and the indications. The total number of vaginal deliveries during the study period was also determined. Clinically

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diagnosed cases of ruptured uterus were excluded from the study.

Analysis was done using tables, simple percentages, mean and standard deviation. Tests of significance were also done using Chi-square (χ^2). Statistical significance was designated at $p < 0.05$.

RESULTS

During the period of the study, there were one thousand one hundred and fourteen caesarian births out of 6,015 deliveries giving an overall caesarian section rate of 18.5%. Caesarian birth rose from approximately 1 in 7 deliveries in 1999 to 1 in 4 deliveries in 2008 and for the past five years (2004 - 2008), c/s rate has been over 20.0% with a peak of 26.9% recorded in 2008. This is shown in Table I. There was also statistically significant difference in the total number of caesarian deliveries and the overall total deliveries between 1999 and 2008 ($\chi^2 = 20.75$; $df = 1$; $p < 0.05$).

Of these 1,114 patients, 697(62.6%) were multiparous (parity range 1-12) while 488 (37.4%) were primiparous. However, the mean age of the patients was 30.8 ± 5.1 years and most of the caesarian operations were performed on women in the age group 30 -34 years. Seven hundred and sixty one (68.3%) cases were done as emergency while 353 (31.7%) were done electively. Also, of the total number, 760 (68.2%) women were booked while 354 (31.8%) were un-booked, and the majority (96.4%) of these un-booked cases had emergency C/S.

Previous caesarean section (previous scar), remained the commonest indication for C/S throughout the study period, accounting for 242 (21.5%) of cases. However, the other major indications were cephalopelvic disproportion (12.3%), obstructed labour (11.7%), antepartum haemorrhage (11.6%), pregnancy induced hypertension (9.1%) and breech presentation (6.7%). The least common indications were chorioamnionitis (0.6%), transverse lie in labour (0.5%), failed vacuum (0.5%) and diabetes mellitus in pregnancy (0.3%). This is shown in Table II.

TABLE I: CAESAREAN AND VAGINAL DELIVERIES ACCORDING TO YEAR DONE AT NAUTH, NNEWI, OVER A TEN-YEAR PERIOD

YEAR	VD	C/S	VD+C/S (TD)	C/S:TD RATIO	C/S RATE (%)	OVERALL C/S RATE (%)
1999	536	91	627	1:6.9	14.5	18.5
2000	721	126	847	1:6.7	14.9	
2001	449	103	552	1:5.4	18.7	
2002	415	83	498	1:6.0	16.7	
2003	420	103	523	1:5.1	19.7	
2004	304	79	383	1:4.8	20.6	
2005	342	91	433	1:4.8	21.9	
2006	487	132	619	1:4.7	21.3	
2007	560	171	731	1:4.3	23.4	
2008	586	216	802	1:3.7	26.9	
TOTAL		1,114	6,015			

KEY: VD= Vaginal delivery
C/S= Caesarean Section
TD= Total Delivery

TABLE II: THE INDICATIONS OF CAESAREAN SECTION IN NAUTH, NNEWI OVER A TEN YEAR PERIOD

INDICATIONS	FREQUENCY	PERCENTAGE (%)
Previous Scar	247	21.5
Cephalopelvic Disproportion (CPD)	141	12.3
Obstructed Labour	134	11.7
Antepartum Haemorrhage	133	11.6
Pregnancy Induced Hypertension (PIH)	105	9.1
Breech Presentation	77	6.7
Foetal Distress	37	3.2
Failed Induction	37	3.2
Premature Rupture of Membrane (PROM)	35	3.0
Foetal Macrosomia	28	2.4
Multiple Gestation	22	1.9
Poor Progress of Labour	21	1.8
Cord Prolapse	16	1.4
Oligohydramnios	15	1.3
Malpresentation	14	1.2
Retained Second Twin	13	1.1
Cervical Stasis	13	1.1
Elderly Primigravida	9	0.8
Chorioamnionitis	7	0.6
Transverse Lie in Labour	6	0.5
Failed Vacuum	6	0.5
Diabetes Melitus (DM)in Pregnancy	4	0.3
Others	29	2.5
TOTAL	1149	100.0

DISCUSSION

The present study has revealed that the caesarean section (C/S) rate during the period of study was 18.5%. This rate was quite similar to a previous study done by Okafor and Onwusulu in Nnewi⁸. It is also consistent with recent rate of 18.3% from Ilorin⁹ and 18.5% from Minna¹⁰. However, this rate is lower than 80% from Brazil⁶, 40% from Chile⁶, 34.6% from Lagos¹¹, 27.4% from Enugu¹², and 22.2% from LAUTECH Teaching Hospital¹³. This rate was higher than the upper limit of 15% set by World Health Organization (WHO)¹. The factor responsible for the relative high rate of C/S in our center could be the status of the hospital as a referral center for other health institutions in the State, both public and private. This could also explain why 31.8% of women that delivered by C/S were unbooked.

In this survey, there was significant difference in the number of patients that underwent C/S and the total number of deliveries between 1999 and 2008 ($p < 0.05$). This is such that, on the average, a total of one C/S in every 7 deliveries seen 1999 increased to one in every 4 deliveries in 2008. The rate is really increasing. This could be due to increase in the safety, awareness and decreased aversion of the procedure, as well as increase

in the number of people with the expertise who could perform the procedure^{3,4}. Increased and efficient mobile communication networks could be responsible for the high rate of C/S in our center.

In addition, of all the indications for C/S observed in this study, repeat C/S was the commonest indication (21.5%). This finding was in line with other studies conducted by Okafor⁸, Ibekwe⁷, Komolafe¹², and Ahmed¹³, but differs from Ijaiya⁹ where cephalopelvic disproportion (CPD) was the commonest indication. The possible explanation for this finding could be the persistence of the indication for the C/S or fear of the risk of uterine rupture. However, CPD when combined with the indications for primary C/S, still remains the commonest indication for C/S, since it is the commonest indication for primary caesarean section¹⁴. Meanwhile, vaginal delivery following a previous C/S is not inappropriate, provided the reason for a previous section is not a recurrent one¹. This could also explain the reason why two previous C/S is what makes C/S mandatory in our center. Nevertheless, our center has the policy of allowing vaginal birth after one previous C/S (VBAC) provided the indication is not recurrent. VBAC is also contraindicated in women with a prior history of one classical C/S¹.

CONCLUSION

Caesarean section rate has significantly increased during the study period and repeat C/S and CPD were the commonest indications. There is urgent need for strengthening of peripheral hospitals, prompt referral and continuing education of the women on the need for booking, regular attendance to antenatal clinics and hospital delivery. The efforts to avoid unnecessary C/S should focus on reducing the frequency of first-time procedures. Vaginal birth after a previous caesarean section (VBAC) should also be encouraged with close monitoring.

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REFERENCES

1. Birth After Previous Caesarean Birth. Royal College of Obstetricians and Gynaecologists (RCOG). Green-Top Guideline No. 45; February, 2007: 393-409.
2. Arulkumaran S. Malpresentation, malposition, cephalopelvic disproportion and obstetric procedures. In : Edmonds D.K(Ed). Dewhurst's textbook of Obstetrics & Gynaecology. Seventh Edition. Blackwell publishing, UK; 2007: 213-226.
3. Ojo VA, Okwerekwu FA. Critical analysis of the rates and indications for caesarean section in a developing country. *Sia - Oceania journal of Obstetrics and Gynaecology*; 1988;14:185-193.
4. Anderson GM, Lomas J. Determinants of increasing caesarian section rate. *N. Engl. J. Med.* 1984; 311: 887-892.
5. Stafford RS. Trends in caesarian section in California, 1983 to 1990. *American Journal of Obstetrics and Gynaecology*; 1993: 168(4): 1297-302.
6. Caesarian Section Delivery, an increasingly popular option. *Bulletin of the World Health Organization (WHO)*. October 2001; 79(12): Available at http://www.scielosp.org/scielo.php?pid=s0042-96862001001200022&script=sc_arttex&tlng. Accessed on 21st September, 2009.
7. Ibekwe PC, Tabansi ST. Increase in Caesarian Section Delivery at the University of Nigeria Teaching Hospital (UNTH), Enugu, Nigeria. *Sahel Medical Journal*; 2004;7(1):6-9.
8. Okafor CI, Onwusulu DN. Rising Caesarean Section Rates: Any Hope for Decline? NAUTH Nnewi Experience. *Niger Med J*, Vol 47, No. 2, April-June, 2006:38-40.
9. Ijaiya MA, Aboyeji PA. Caesarean Delivery: The Trend Over a Ten Year Period at Ilorin, Nigeria. *Nigeria Journal of Surgical Research*; 2001;3(1):11-17.
10. Nwosu C, Agumor, Aboyeji AP, Ijaiya MA. Caesarean Delivery. *Nigerian Medical Practitioner*, 2004;46 (4): 77-99.
11. Ezechi OC, Nwokoro CA, Kalu BKE et al. Caesarean Morbidity And Mortality in a private Hospital in Lagos, Nigeria. *Tropical Journal of Obstetrics and Gynaecology*, 2002; 19 (2):5-7.
12. Komolafe JO. Caesarean Section Rate: Is Lautech Teaching Hospital WHO Compliant? *Nigerian Clinical Review*, 2004; 8(4): 11-15.
13. Ahmed N, Mehboob R. A Study of Caesarean Birth in A Teaching Hospital. *Pakistan J. Med. Res*, 2002; 44(3). Available at <http://www.emro.who.int/internet/publications/EMHJ/0601/05.htm>. Accessed on 21st September, 2009.
14. Otubu JAM. Caesarean Section. In: Agboola A (Ed). *Textbook of Obstetrics and Gynaecology For Medical Students*. Second Edition. Heinemann Educational Books (Nig) Plc. Ibadan; 2006: 495-503.