

Primary Caesarean Section And Fetal Outcome Amongst Nulliparous Women At A Health Facility In Southern Nigeria.

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Citation

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Abstract

Background: Caesarean section in nulliparous women is of serious import because it significantly affects the Obstetric future of the woman. However, Caesarean section could be a crucial intervention measure that will enhance favourable maternal and fetal outcome.

Objective: To assess the primary Caesarean section rate, indications and fetal outcome amongst nulliparous women at a health facility in southern Nigeria.

Methodology: This was a retrospective review of delivery records at the maternity unit of Sacred Heart Hospital Obudu, Cross-River State, Nigeria, from January 2009 to June 2010.

Results: Of the total 411 deliveries by nulliparous women, 109 (26.5%) were by Caesarean section. This constituted 35.3% of total C/S (309) deliveries. Eighty (73.4%) were emergency and 29(26.6%) were elective. Indication for C/S included; CPD 25.7%, presumed fetal distress 22.0%, PIH 15.6%, prolonged obstructed labour 10.1% among others. Total perinatal deaths were 23, PMR 55.96/1000 births. Perinatal deaths from C/S were 3(27.5%); all from emergency procedures. This accounted for 13.0% of the total deaths with asphyxia as a major cause of death. Babies born through C/S were more likely to have better Apgar scores ($P=0.012$). The likelihood of fetal death in vaginal delivery was twice higher than in caesarean section {OR 2.50(0.70-8.6) 95% CI}.

Conclusion: The CSR was 26.5%. The commonest indications for CS being CPD, presumed fetal distress, PIH and Obstructed labour. Although, efforts towards reducing CSR among nulliparous women are recommended, C/S should be used when justifiably indicated so as to improve fetal outcome.

RÉSUMÉ

Contexte: Une section Césarienne dans des femmes nulliparous a d'importation sérieuse parce qu'il affecte significativement l'avenir Obstétrique de la femme. Cependant, Césarienne la section pourrait être une mesure cruciale d'intervention qui améliorera le résultat maternel et foetal favorable.

Objectif: avoir accès à la section Césarienne principal notent des indications et le résultat foetal parmi des femmes nulliparous dans une installation de santé secondaire au Nigeria.

Méthodologie: Ceci était un examen rétrospectif des records de livraison de l'unité de maternité du sacred heart Hopital Obudu, Cross-Rivers State, Nigeria.

Résultats: Du total livraisons par des femmes nulliparous, 109(26.5%) était par la Césarienne. Ceci constitue 35.0% de total C/S (309) des livraisons. Quarante-vingts (73.4%) étaient le cas d'urgence et 29 (26.6%) étaient électif. L'indication pour C/S inclut;CPD 25.7%,détresse foetale presume 22.0%,PIH 15.6%,travail entravé prolongé 10.1% parmi d'autres. Des morts périnatales totales étaient 23, PMR 55.96/1000, naissances. Des morts de C/S étaient 3 (27.5%); tout de procédures d'urgence. Ceci a représenté 13.0% des morts totales avec l'asphyxie comme une cause majeure de mort. Les bébés nés par C/S allaient plus probablement avoir mieux Apgar le grand nombre ($p=0.012$). La probabilité de mort foetale dans la livraison vaginal était deux fois plus haute que dans la Césarienne (OU 2.50(0.70-8.60) 95% CI).

Conclusion: CSR de 26.5% était haut. Les indicateurs les plus communs était CPD, détresse foetale présumée,PIH et le travail entravé prolongé. Les efforts vers la réduction CSR parmi des femmes nulliparous devrait être encouragés. Où d'une manière justifiable indique, C/S devrait être utilisé afin d'améliorer le résultat foetal.

NOTE

The abstract of this paper was presented at the 52nd annual scientific conference of the West African College of Surgeons which took place in Monrovia, Liberia from 26th February to 3rd March 2012 and hence it was published in the book of abstract.

INTRODUCTION

Caesarean section is one of the oldest surgical procedures in medical practice^{1, 2}. The rates of caesarean section in developed countries are said to be on the increase². In developing countries of the world like Nigeria however, there has been some conservatism towards the procedure over the years¹.

Studies have shown that African women express aversion to caesarean section because of fear of suffering, safety, cost and cultural perceptions of womanhood³. Recent studies have shown that the Caesarean section rates (CSR) in developing countries like Nigeria are competing with that of the developed countries^{1, 4}. This is probably due to better education/enlightenment of pregnant women and reduction in the maternal death rate following the procedure.

Favorable fetal outcome can be achieved through the provision of essential maternal and newborn health care services during pregnancy and delivery². Caesarean section is one of such important component of the essential Obstetric care. In resource-constrained nations of the world however; this care is either not readily available or poorly utilized². Nulliparous women may be less willing to accept caesarean section than women who had previously achieved vaginal delivery. This is because abdominal delivery significantly affects the Obstetric future of the parturient⁵. Few studies have been done on caesarean section among nulliparous women in Nigeria. This study was designed to assess the Caesarean section rate (CSR), indications and fetal outcome amongst nulliparous women at a health facility in southern Nigeria.

SUBJECTS AND METHODS

This study was done at the sacred heart hospital Obudu, Cross River State, Nigeria, from January 2009 to June 2010. The hospital is the largest and most equipped in the area and thus serves as a referral center to other health facilities. It offers health services to patients from neighboring Local Government Areas (LGAs) in Cross Rivers State. The hospital has facilities for performing surgical operations, ultrasonography and basic hospital investigations. The maternity section is a 33 bed unit manned by an Obstetrician

and Gynaecologist, eight trained nurses/midwives and four medical officers. The antenatal booking clinic for new attendees is held twice in a week. Approximately forty clients are attended to per clinic visit. The maternity unit records more than 1000 deliveries annually.

The study was a retrospective review of delivery records at the maternity unit. Information from the labour ward register and operating theatre were extracted and analyzed. The information gathered included; maternal age, education, occupation, booking status, gestational age at delivery, fetal birth weight, fetal status, fetal presentation, apgar scores, mode of delivery and indication for surgery.

Caesarean section was considered as elective when the decision to do the surgery was taken before the onset of spontaneous labour. All others were considered emergency. Fetal outcome were; fresh stillbirth, severe birth asphyxia (Apgar ≤ 3) and referral for admission to neonatal intensive care unit.

Data was analyzed using EPI INFO statistical software version 3.2.2 (CDC Atlanta, Georgia USA) and presented as simple percentages in a tabular format. Chi-square was used as a test of statistics with p-value of ≤ 0.05 at 95% confidence interval considered statistically significant. The hospital gave ethical clearance for the study.

RESULTS

Most (44.0%) of the women were 20-24 years of age. Majority (54.1%) had secondary level of education. Most (33.0%) did not have jobs. Those who booked for antenatal care were 93.6% while the unbooked were 6.4% (Table I). Of the total 411 deliveries by nulliparous women, 109 (26.5%) were by Caesarean section. Nulliparous women contributed 35.3% to the total CS (309) deliveries. Eighty (73.4%) were emergencies and 29(26.6%) were electives. Indication for C/S included; CPD 25.7%, presumed fetal distress 22.0%, PIH 15.6%, prolonged obstructed labour 10.1%, poor progress in labour 9.2%, breech 7.2%, multiple pregnancy with mal-presentation 3.7% and others 6.4% (Table II). Total perinatal deaths were 23, PMR 55.96/1000 births. Perinatal deaths from C/S were 3(27.5%); all among emergency procedures. This accounted for 13.0% of the total deaths with asphyxia as a major cause of death. Table III & IV showed that babies born through C/S were more likely to have better Apgar scores ($P=0.012$) and less likely to die than vaginal deliveries {OR 2.50(0.70-8.6) 95% CI}.

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Table 1

Socio-demographic characteristics of the women delivered by caesarean section.

Socio-demographic characteristics	N/109	100%
Age group		
<19	23	21.1
20-24	48	44.0
25-29	29	26.6
30-34	8	7.3
≥35	1	0.9
Education		
None	5	4.6
Primary	22	20.2
Secondary	59	54.1
Post-secondary	23	21.1
Occupation		
Civil servants	11	10.1
Farming	15	13.8
Housewife	36	33.0
Schooling	34	31.2
Traders	13	11.9
Booking status		
Booked	102	93.6
Unbooked	7	6.4
Fetal sex		
Male	59	54.1
Female	50	45.9

Table 2

Indications for primary caesarean section

Indications	N/109	100%
CPD	28	25.7
Fetal distress	24	22.0
PIH	17	15.6
Prolonged obst labour	11	10.1
Poor progress in labour	10	9.2
Singleton Breech	8	7.3
Multiple pregnancy	4	3.7
Others	7	6.4

Key: Others; APH, failed induction, myomectomies, HIV.

Table 3

Distribution of mode of delivery by fetal status

MOD	Alive/N (%)	Dead/N (%)	Total (%)	Statistics
C/S	106(97.2)	3(2.8)	109(100.0)	$\chi^2=2.27$
SVD	282(93.4)	20(6.6)	302(100.0)	df=1, P=0.13
Total	388(94.4)	23(5.6)	411(100.0)	OR 2.50 (0.7-8.6) 95%CI

Table 4

Distribution of mode of delivery by Apgar scores.

MOD	≤3	3-6	≥7	Total	Statistics
C/S	5(4.6)	21(19.3)	83(76.1)	109(100.0)	$\chi^2=8.85$
SVD	23(7.6)	27(9.0)	252(83.4)	302(100.0)	df=2
Total	28(6.8)	48(11.7)	335(81.5)	411(100.0)	P=0.012

DISCUSSION

The primary CSR for nulliparous women in the study was 26.5%. This rate appears similar to the reported rate of 26.2% in Lagos 4, 5, 25.0% in Enugu, 28.5% in Port Harcourt, Nigeria but, higher than the reported 19.5% in USA and 22.5% in UK. The contribution of nulliparous women to total Caesarean deliveries was 35.3%. This high percentage portends a negative impact on the reproductive

career of these group of women considering the socio-economic, cultural and health implication of this mode of delivery in developing countries.

Studies have shown generally a rising trend in CSR in the developed countries. This has been explained to be as a result of the fear of litigations, continuous fetal electronic monitoring in labour, and a low threshold for C/S whenever complications arise 2. In developing countries like Nigeria however, factors such as poor economic status, poor nutrition, and poor access to standard antenatal care services among other reasons have indirectly contributed to the rise in CSR 2.

More (73.4%) emergencies than elective (26.6%) Caesarean sections were reportedly performed in this study. This reflects the general findings in review of Nigerian series in contrast to the findings in the developed countries. The argument could then arise whether Nigerian birth attendants are allowing women trial of labour more than their counterparts in developed countries or more women who could have ab initio benefited from elective C/S are allowed to attempt vaginal delivery 5. Could this also be a reflection of the aversion for abdominal delivery in our environment? The commonest indication for emergency C/S in the study was CPD. The question is whether the women benefited from the ANC services offered to them considering the fact that 93.6% were booked for ANC. While true CPD following poor nutrition, pelvic deformities, big babies and fetal anthropological factors is not rare in Nigeria and could have been managed through elective C/S 5. The aversion for C/S by the women and the inconsistency in the practice of Active management of labour (AML) in the health facility could have also accounted for the high percentage of women with CPD as the commonest indication for C/S.

Labour dystocia seen in the study could have possibly resulted from poor monitoring in labour as well as under estimation of fetal and maternal parameters that would adversely affect labour progress. Fear of fetal compromise, maternal exhaustion, and apprehension by patient relations in the face of poor progress sometimes do not permit the obstetrician to wait further in deciding for C/S 2. The participation of lower cadre of health personnel in the monitoring of labour in the facility, which is a common practice in developing countries could have influence the pattern of labour progress adversely.

The absence of electronic fetal monitor, fetal scalp sampling and inexperience of labour ward staff in monitoring patients in labour are possible reasons for presumed fetal distress that was noticed in the study. Non-reassuring cardio-tocographic

(CTG) tracing is one of the commonest indications for caesarean section in developed countries 6, 7. Despite this, the provision of intrapartum fetal monitors and training of birth attendants are some of the ways of overcoming the problem of presumed fetal distress in Nigeria. There is also the need for appropriate analgesia to be given to women in labour.

Obstructed labour and hypertensive disorders continue to remain major causes of maternal and fetal morbidity and mortality in developing countries 4. There is need to improve the quality of ANC given to women so as to reduce CSR from these causes. For quite some time now C/S has been considered the safest route of delivery for both primigravid singleton breech and multiple gestations with leading fetus in breech presentation.

The findings of the term breech trial (TBT) published in 2000 in which a striking difference in serious short term neonatal morbidity in C/S versus trial of labour (TOL) 0.4% vs 5.1% could be one of the reasons for the shift in the practice of Obstetrics as regards breech delivery 8. Aside from the finding of the TBT, maternal and fetal outcome in nulliparous women are likely to be poor as a result of the difficulties that may be encountered with the various maneuvers needed to deliver the baby through an "untested" maternal pelvis.

This study has demonstrated a significant difference in the Apgar scores at the first minute between babies born through C/S and those born through the vaginal route. This finding is similar to that of other studies 9. The Apgar scores were better in the C/S group compare with the vaginal group ($P=0.012$). Similarly, babies born through the vaginal route were more than two times likely to die than those delivered through C/S {OR 2.6(0.70-8.6) 95% CI}.

Even though we do not by any means advocate for C/S for all nulliparous women, the study have demonstrated that abdominal delivery was a useful intervention measure to improve fetal outcome. Although majority booked for antenatal care, some of these parturient might have attempted delivery either at home or at non-orthodox health facilities and only presented to the hospital as referred cases that needed prompt surgical intervention. This is because booking for antenatal care at an orthodox health facility do not necessarily translate to hospital delivery.

Thus, efforts towards reducing C/S rate among the nulliparous women should be encouraged because of the effect this mode of delivery has on the subsequent Obstetric performance of the woman. She may present in the next delivery with a ruptured uterus or a previous uterine scar

whose management may pose some challenges to the Obstetrician. More so, the aversion for C/S in Nigerian women makes some of them to attempt vaginal delivery after previous C/S outside orthodox health facilities. The effect of this is better imagined than experienced.

On the other hand, with emerging evidence of safety in both developed and developing countries regarding vaginal birth after Caesarean section (VBAC), patients who are carefully selected in a well equipped health facility manned by skilled birth attendants should be allowed VBAC in order to reduce CSR 10. However, where justifiably indicated, the findings in this study showed that, C/S should be performed on nulliparous women in labour so as to avoid fetal compromise. There is also the need for continuing medical education of birth attendants in order to improve labour outcome.

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