Caesarean section in a Secondary Health Hospital in Awka, Nigeria.

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SUMMARY

Setting: Amaku General Hospital, Awka is a state government owned secondary health facility in South East Nigeria.

Objectives: To determine the rate, indications, outcome and complications of caesarean sections with a view to improving on our service delivery.

Patients and Methods: A retrospective review of all caesarean deliveries over a five year period, January 2005 to December 2009.

Results: A total of 291 caesarean sections were performed. A total of 2809 patients were delivered giving a caesarean section rate of 10.4%. The incidence was commoner in the multigravidae. The commonest indication and morbidity were cephalopelvic disproportion 72(25.6%) and wound sepsis 40 (33.3%) respectively. There was a gradual yearly increase in rate from 9.0% in 2005 to 11.4% in 2009. Maternal mortality rate was 480 per 100,000 deliveries while the perinatal mortality rate was 63.8 per 1000 total births.

Conclusions: The rate of caesarean section has shown a gradual yearly increase. There is need to improve on the facilities and manpower in the secondary health care facilities as these will impact positively on the quality and safety of its services.

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Key words: caesarean section, rates, secondary health centre

INTRODUCTION

Caesarean section is an essential operation and is practiced widely[1]. Recently, there has been a lot of debates on the increasing rates of caesarean section which seem to be propelled by a wide range of factors. These include increasing fetal survival compared to difficult vaginal deliveries, unbooked status of most patients, improper functioning or absence of facilities like vacuum extractor, introduction of electronic fetal monitoring leading to over diagnosis of fetal distress, societal demands for improved foetal outcome and aspirations of the obstetrician to meet these demands[2].

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Currently, caesarean section rates in Canada and the United States are close to 25% and over 20% in England, Wales and Northern Ireland[3]. In Nigeria, the rates from some tertiary institutions which serve as referral centres range from 20.8% to 34.5% 4,5,6. In a private hospital in Lagos, Nigeria a rate of 34.6% was reported[7].

In Nigeria, majority of the secondary health facilities are located in the rural and semi-urban areas where majority of the population resides. Most of the secondary health centres are either owned by the state government or by religious organizations. Several reports on review of caesarean sections in the country emanate from the tertiary institutions. This review of caesarean deliveries which is the first in this secondary health facility was undertaken to determine the rate, indications, outcome and complications with a view to improving on our service delivery.

MATERIALS AND METHODS

This was a retrospective analysis of caesarean deliveries at Amaku General Hospital, Awka South East Nigeria over a five year period January 2005 to December 2009. The hospital is a government owned secondary healthcare facility situated in Awka, the capital of Anambra State in South East Nigeria with a population of 4.1 million according to 2006 National population census figure. It has only a consultant obstetrician and two medical officers in its obstetric unit. The hospital serves as a referral centre for several private medical institutions, maternity homes and primary health centres in the area.

Awka is mainly inhabited by ethnic Ibos with pockets of other tribes. The major occupations range from trading and civil service in the central urban area to subsistence farming and traditional arts metal work fabrication in the peripheral rural area. The labour ward and theatre registers provided information on the total number of deliveries and caesarean sections. The case notes of all those who had caesarean section were examined in detail. Information extracted included age, parity, booking status, indications for surgery, type of caesarean section, intra operative and postoperative complications and outcome of caesarean operations.

For patients with multiple indications, a single main reason for caesarean operation was chosen. For example, in a patient with pre-eclampsia whose foetus developed foetal distress, the later was chosen as the indication for surgery. The main exclusion criteria were women with ruptured uterus. The medical records were reviewed by trained staff using pre-established and piloted data extracted forms. The data was analysed using tabulations and simple percentages.

RESULTS

Over the five year period, there were a total of 2809 deliveries of which 291 were caesarean section giving an overall caesarean section rate of 10.4%. Two hundred and thirty one, 231 (79.4%) patients were booked while 60 (20.6%) were unbooked. Overall 184 (65.4%) of the operations were performed as emergency procedures, while 97 (34.6%) were elective. All the patients had lower segment caesarean section and all were done under general anaesthesia. About 230 (79.0%) of the caesarean operations were done by the resident obstetrician while the remaining were done by the medical officers.

Figure 1 shows the yearly trends in the total caesarean delivery rate form 2005 to 2009. There was a gradual yearly increase over the period of study. Further analysis was done on the 281 (96.6%) retrievable case notes. Table 1 shows the age distribution of the patients. Majority of the patients 197 (70.1%) were within the age bracket 21-35 years, 50 (17.8%) were within the age bracket 36-40 years and 34 (12.1%) were above 40 years. No patient under 20 years of age had caesarean section.

Table 2 shows the parity distribution of the patients. Ninety four (33.4%) were nullipara, 142 (50.6%) were multipara and 45 (16.0%) were grandmultipara. Table 3 shows the indications for caesarean sections. The commonest indication for caesarean section was cephalopelvic disproportion 72 (25.6%). Of the 65 patients with previous caesarean, 44 had 2 or more and were delivered electively by caesarean section. The remaining 21 had one previous caesarean in association with other adverse obstetric factors and were also delivered electively.

Table 1: Age distribution of the patients

Age	No	%
≤20	0	0
21 – 25	65	23.1
26 – 30	72	25.6
31 – 35	60	21.4
36 – 40	50	17.8
Above 40	34	12.1
	281	**100**

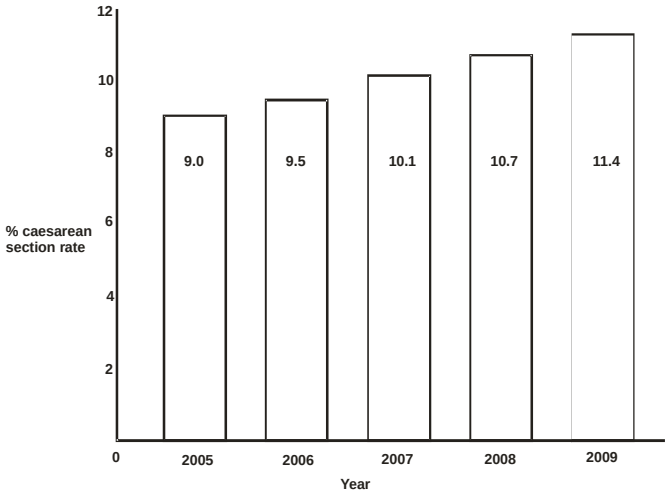

Figure 1: Yearly trends in the total caesarean delivery ate from 2005 to 2009.

Table 2: Parity distribution of the patients

Parity	No	%
0	94	33.4
1–4	142	50.6
≥5	45	16.0
	281	**100.0**

Table 3: Indications for caesarean section

Indication	No	%
Cephalopelvic disproportion	72	25.6
Previous caesarean section	65	23.1
Foetal distress	40	14.2
Antepartum haemorrhage	26	9.3
Pre-eclampsia	21	7.5
Failed induction of labour	15	5.2
Breech presentation	10	3.6
Multiple pregnancy	7	2.5
Cord prolapse	6	2.1
HIV/AIDS	5	2.1
Primary Infertility	5	1.8
Eclampsia	3	1.1
Bad obstetric history	3	1.1
Intrauterine growth restriction	3	1.1
Total	**281**	**100.0**

Of the 26(9.3%) patients with antepartum haemorrhage, 23 had various degrees of placenta praevia and were delivered electively by caesarean section while the remaining 3 with abruptio placentae had emergency caesarean section. One of the patients in the later group developed disseminated intravascular coagulation (DIC) and died post operatively. Table 4 shows the maternal morbidity in the series. Wound sepsis 40 (33.3%), malaria infestation (28.3%) and postpartum anaemia 22 (18.3%) were the commonest morbidities. Twenty six (65%) of the patients with wound sepsis were unbooked and had emergency caesarean section. Of the 19 with primary post partum hemorrhage, 11 (7.9%) occurred intra operatively. The commonest cause was uterine atony. Two patients had caesarean hysterectomy due to uncontrollable intra operative haemorrhage. There was one maternal death related to caesarean section giving a maternal mortality rate of 480/100,000. There were a total of 298 births and 19 perinatal deaths (2 stillbirths and 17 early neonatal deaths). The perinatal mortality rate was 63.8 per 1000 total births. Table 5 shows the causes of the perinatal deaths. The unbooked mothers contributed 16(84.2%) of the perinatal deaths while the commonest cause of perinatal death was asphyxia 7(36.7%).

Table 4: Maternal morbidity post caesarean section

Morbidity	No	%
Wound Sepsis	40	33.3
Malaria Infestation	34	28.3
Postpartum anaemia	22	18.3
Post partum haemorrhage	19	15.9
Urinary tract infection	5	4.2
	120	**100%**

Table 5: The causes of the perinatal deaths

	Cause	Unbooked	Booked	Total	%
Fetal	Asphyxia	6	1	7	36.7
	Prematurity	2	1	3	15.8
	Neonatal Jaundice	0	1	1	5.3
Obstetric	Cephalopelvic disproportion	4	0	4	21.1
	Antepartum haemorrhage	3	0	3	15.8
	Eclampsia	1	0	1	5.3
		16(84.2%)	**3(15.8%)**	**19**	**100**

DISCUSSION

The overall incidence of caesarean section, 10.4% noted in this review was comparable to 13.6% recorded by Umoh[8] in an institution of similar level. It was however lower than the rates of 20.8% to 34.5% recorded in some tertiary institutions in Nigeria[4,5,6]. This may be attributed to the fact that these hospitals are referral centres which meant that a high proportion of women with complications from other lower category hospitals would have been sent to these hospitals.

However, the yearly review of rates showed a gradual increase from 9.0% in 2o05 to 11.4% in 2009. This may be done to the lower fees charged in this government owned facility compared to several private for profit hospitals and also to the presence of a resident obstetrician. Majority of the patients, 70.1% were within the age bracket 21–35 years. This agrees with other reports[9,10]. This age bracket represents the period of highest reproductive performance and complications requiring caesarean section are likely to be higher. It was also observed that no teenager had caesarean section during the period suggesting a low incidence of teenage delivery in the area. The increasing socio-economic difficulties and the high cost of marriage among the Ibos who constitute the bulk of the study population make it difficult for the young ones to marry[11]. Higher caesarean section rate was noted among the multipara. This is contrary to other reports which showed higher rates amongst the nullipara.[4,5] This is probably due to the reason that from this group came the repeat sections.

The commonest indication for caesarean section was cephalopelvic disproportion. This is in line with other reports[4,5]. It has been estimated that 500 million women in developing countries are stunted as a result of malnutrition in childhood[12]. Many of these women have inadequate development of the bony pelvis thus increasing the risk of obstructed labour. In this series, previous caesarean section was the second commonest indication for surgery. It was however the commonest indication for caesarean section in other reports[5,13]. This has been partly attributed to the policy of elective caesarean section after two or more previous caesarean sections. Also, in the absence of adequate fetal and labour monitoring devices like fetal scalp sampling or cardiotocography, there is a tendency to lower the threshold for caesarean section in trials of vaginal delivery after caesarean section even when the criteria for such trials were met.

Wound sepsis was the commonest morbidity in this report. This was a similar observation by Ezechi[7]. This may be related to the number of unbooked cases and procedures performed on emergency basis. Apart from the fact that asepsis may have been compromised in these circumstances, most of these patients had constitutional changes from dehydration, exhaustion and infection. Malaria infestation also contributed to post operative morbidity. This could be as a result of the endemicity of malaria in Nigeria and also to the cohort of unbooked patients who may not have received malaria prophylaxis in pregnancy. Diagne[14] report that susceptibility to malaria may extend even to the post partum period and this may be due to the extension of pregnancy associated immunosuppression. It is suggested that patients admitted as emergencies without prior antenatal care should be given antimalarial drugs. Wide spread use of Insecticide Impregnated bed net (ITN) which has been shown to significantly reduce morbidity and mortality in the community should be encouraged[15].

Two patients had caesarean hysterectomy due to uncontrollable postpartum haemorrhage. This was necessary to save their lives as undue procrastination would have been fatal. The importance of this procedure in such circumstances irrespective of parity has been emphasized[7].

The caesarean mortality of 480/100,000 was lower than 1180/100,000 reported by Etuk[16] in Calabar, Nigeria but higher than 1 in 200,000 quoted by Harrison in Sweden[17]. The difference in the mortality rates between developed and developing countries has been attributed to non-utilization of antenatal services in the later where acceptance level is as low as 30%[18]. In the booked patients, most of the problems were detected during antenatal period and action taken to counter them. In this review, 79% of the caesarean operations were done by the resident obstetrician with close supervision of the medical officers for the rest. This may have contributed to the low mortality rate.

The perinatal mortality rate associated with caesarean section in this review 63.8/1000 was higher than 12.9/1000 reported by Efetie in Abuja.[4] This may be attributed to the extreme degrees of asphyxia suffered by babies of unbooked mothers before admission. The use of partogram during labour and improvement in the skills for neonatal resuscitation could save many lives. In addition, general anaesthesia was used in all the operations which is at variance with current world wide trend where regional anaesthesia is favoured[4]. The neonatal respiratory depressant effects of general anaesthesia may have aggravated the conditions of the already asphyxiated babies. This underscores the need for improved training in anaesthesia.

In conclusion, this review has shown a gradual increase in caesarean section rate and this calls for improvement in the manpower and facilities in the secondary health centres as these will impact positively on the quality of services and safety of the procedures. Antenatal care should be properly organized and affordable. This will consequently reduce the number of unbooked mothers and hence their disproportionate contributions to maternal and perinatal morbidity and mortality.

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