

Emergency Caesarean Section in a Nigerian Tertiary Health Centre

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Abstract

Background: Caesarean delivery is an important aspect of emergency obstetric care and a major tool in the reduction of maternal and perinatal morbidity and mortality. This study was done to determine the caesarean section rate, ascertain the trend of emergency caesarean section, indications for emergency caesarean section and emergency caesarean morbidity and mortality at the Federal Medical Centre Makurdi.

Method: A retrospective analysis of the clinical records of all patients delivered by caesarean section between January 2004 and December 2006 at the Federal Medical Centre Makurdi in north central Nigeria was conducted.

Results: There were 4011 deliveries with 420 caesarean sections during the review period giving a caesarean section rate of 10.5%. Emergency caesarean sections accounted for 351 (83.6%) caesarean deliveries. The rate of emergency caesarean section decreased from 89.7% in 2004 to 77.2% in 2006. The leading indication for emergency caesarean section was cephalopelvic disproportion, accounting for 138 (39.3%) cases, while antepartum haemorrhage and foetal distress followed in that order. There were 9 maternal deaths associated with emergency caesarean section giving a caesarean mortality rate of 2.1%

Conclusion: Emergency caesarean sections account for 5 out of every 6 caesarean deliveries in our centre with a decreasing trend relative to elective caesarean sections. The emergency caesarean mortality is high.

Key words: Caesarean section, Emergency, Obstetric care, Indication, Mortality, Nigeria.

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Introduction

Caesarean section is the commonest major surgical procedure performed on women worldwide.¹ The World Health Organization has proposed 15% as the highest acceptable caesarean section rate based on the rates for countries with the lowest perinatal mortality.² However, the global rate of caesarean delivery has risen dramatically despite a lack of evidence of any increase in obstetric emergencies and it is beginning to emerge in developing countries.^{3,4,5} The rates vary widely by country,

health care facility and delivering physician, because of differing perceptions by health care providers as well as by pregnant women of its benefits and risks.⁶⁻⁸ Historically, most caesarean deliveries were performed for obstetric complications or medical illness.⁹ The decision to perform emergency caesarean section is taken during labour or delivery when there is danger to the mother, foetus or both in contrast to the planned procedure which is not urgent and may be scheduled well in advance of time.¹⁰ Caesarean delivery is not without its complications.^{11,12} Emergency caesarean delivery is more hazardous than elective caesarean and vaginal deliveries^{13,14}, yet more studies have been done on elective caesarean section.^{3,10,15} Regular audits of emergency caesarean section with a view to improving its safety and effectiveness will help in combating aversion to the procedure in Nigeria^{16,17} and engender safer motherhood.

Methodology

This was a retrospective analysis of 420 consecutive caesarean sections performed at the Federal Medical Centre Makurdi Nigeria over a three year period between January 2004 and December 2006. The clinical records of all patients that had caesarean section during the period of review were retrieved from the medical, theatre and labour ward records. Data extracted included age, parity, booking status, type of caesarean section (emergency or elective), type of anaesthesia, type of abdominal and uterine incision used and maternal morbidity and mortality following the procedure. The data was analyzed using Epi info 3.3.2 (CDC Atlanta Georgia USA). Simple descriptive statistics were produced.

Results

During the three year study period, there were 4011 deliveries of which 420 were by caesarean sections. Three hundred and fifty one (83.6%) were emergency procedures while 69 (16.4%) were elective procedures. There was a progressive decrease in the rate of emergency caesarean section from 89.7% in 2004, 84.6% in 2005, to 77.2% of all caesarean sections in 2006. A concomitant rise in elective caesarean section

rate from 10.3% in 2004, 15.4% in 2005, to 22.8% of all caesarean sections in 2006 was noted.

The age range of patients offered emergency caesarean section was between 17 and 45 years, with a mean age of 28.4 ± 6.1 years. The frequency of emergency caesarean section was highest (32.2%) in the age group 30–34 years. Only 184 (52.4%) of patients who had emergency caesarean section were booked for antenatal compared with to 63 (91.3%) of patients undergoing elective caesarean section (Table I).

Table I: Demographic Characteristics Of Patients With Caesarean Section

CHARACTERISTIC	DELIVERIES N = 4011	EMERGENCY CS N = 351 Number (%)	ELECTIVE CS N = 69 Number (%)
AGE GROUP (YEARS)			
< 20	397	19 (5.4)	9 (13.0)
20 – 24	995	59 (16.8)	13 (18.4)
25 – 29	1287	95 (27.1)	15 (21.7)
30 – 34	722	113 (32.2)	18 (26.1)
≥ 35	610	65 (18.5)	14 (20.3)
PARITY			
0	1231	79 (22.5)	5 (7.3)
1 – 4	2026	276 (61.5)	47 (68.1)
≥ 5	754	56 (16.0)	17 (24.6)
BOOKING STATUS			
Booked	2843	184 (52.4)	63 (91.3)
Unbooked	1168	167 (47.6)	6 (8.7)

NB CS = caesarean section

Table II: Indications for Emergency Caesarean Section

INDICATION	NUMBER	PERCENTAGE
Cephalopelvic disproportion	138	39.3
Antepartum haemorrhage		
Placenta praevia	32	9.1
Abruptio placenta	19	5.4
Foetal distress	36	10.3
Severe pregnancy induced hypertension and eclampsia	31	8.8
One previous caesarean section with other		
Obstetric risk factors	18	5.1
Breech presentation	17	4.8
Cord prolapse	14	4.0
Failed induction of labour	14	4.0
Transverse lie in labour	10	2.8
Two or more previous caesarean section	9	2.6
Bad obstetric history	6	1.7
Retained second twin	4	1.1
Triplets	1	0.3
Florid vaginal warts	1	0.3
Cervical cancer	1	0.3
TOTAL	351	100.0

The main indications for emergency caesarean section were cephalopelvic disproportion 138 (39.3%), antepartum haemorrhage 51 (14.5%), foetal distress 36 (10.3%) and severe pregnancy induced hypertension and eclampsia 31 (8.8%) (Table II).

The Pfannenstiel incision was used in 259 (73.8%) of the 351 patients who had emergency caesarean section, while the midline subumbilical incision was employed in 92 (26.2%) patients. The transverse lower uterine segment incision was the popular procedure in 349 (99.4%) patients, while 2 (0.6%) patients had a classical

uterine incision. Majority (95.4%) of patients had general anaesthesia. Twelve (3.4%) of the emergency procedures were done by consultant obstetricians while 339 (96.6%) were performed by residents. The mean blood loss, blood transfusion pattern, mean duration of surgery and decision - delivery interval could not be ascertained because of the retrospective nature of the study.

The complications following emergency caesarean section included infections (44.3%), postpartum anaemia (33.6%), postpartum haemorrhage (15.5%), bladder injury (2.5%), caesarean hysterectomy (2.5%), obstetric fistula (0.8%) and burst abdomen (0.8%). In contrast, postpartum anaemia was the commonest complication following elective caesarean section.

All 9 maternal deaths followed emergency caesarean section giving a caesarean mortality rate of 2.1% during the study period. Two (22.2%) of the deaths occurred in booked patients while 7 (77.8%) were in unbooked patients. Five (55.5%) of the deaths were related to overwhelming puerperal sepsis, 3 (33.3%) were complicated with severe Preeclampsia and eclampsia, while 1 (11.1%) was related to postpartum haemorrhage.

Discussion

The caesarean section rate in this study was 10.5%. This was much lower than 15.8%¹⁰ and 18%¹⁸ reported in Jos, 22.2%¹⁹ in Benin City, 26.5%²⁰ in Enugu and 34.6%¹⁷ in Lagos, but similar to 10.2%²¹ in Kaduna and 11.4%²² in Iyi Enu Mission Hospital, all in Nigeria.

Emergency caesarean section accounted for 83.6% of caesarean sections in this review. This was higher than 74.3% reported in Iyi Enu Mission Hospital²² and 79.7% reported in Benin City¹⁹, but less than 85.2% reported in Jos.¹⁰ The observed decline in the incidence of emergency caesarean section with a concomitant rise in elective caesarean section in this review agrees with previous studies in Nigeria.^{10,22} This is explained by the ever increasing list of indications for elective caesarean section such as HIV infection in pregnancy and larger cohorts of patients with two or more previous caesarean sections.¹⁰ Better patient selection by clinicians with the use of improved diagnostic techniques such as ultrasonography also contributes to this trend.¹⁰

Cephalopelvic disproportion was the commonest indication for emergency caesarean section in this review accounting for 39.3% of cases. This agrees with findings in Maiduguri¹², Lagos¹⁷ and Jos.¹⁸ Adinma²² reported foetal distress as the commonest indication in

a secondary level Nigerian hospital. Elsewhere, a recent Polish study also reported foetal distress as the commonest indication for emergency caesarean section.²³

Although increasing numbers of caesarean sections are performed under regional anaesthesia²⁴, majority of patients (95.4%) in this review had general anaesthesia for emergency caesarean section. This may be informed by the time constraint in emergency caesarean section.

The emergency caesarean morbidity rate of 20.2% in the study was lower than 44.4% reported in Maiduguri¹² and 39.3%¹⁹ reported in Benin City. It was however higher than 15.6% reported in a Lagos private hospital.¹⁷ Emergency caesarean sections accounted for 81.6% of patients with complications in this review. This may be explained by the fact that most of the patients offered emergency caesarean section may have been already septic at presentation. Elsewhere, it has been suggested that in emergency situations, detailed precautions to

reduce complications before and during surgery may have been waived in order to salvage the foetus or to prevent more serious maternal morbidity or death.¹⁷

The emergency caesarean mortality of 2.1% in this study was higher than 0.51% and 0.78% reported in Lagos¹⁷ and Benin City¹⁹ respectively. It was also much higher than 0.01–0.4% reported by Hickl²⁵ in developed countries, but was within the range of 1 and 4% reported by Chama et al.¹² Majority of the maternal deaths (55.5%) in this study were related to overwhelming puerperal sepsis in contrast to severe Preeclampsia and postpartum haemorrhage in Benin City¹⁹ and Lagos¹⁷ respectively.

In conclusion, emergency section remains an important tool in the reduction of maternal morbidity and mortality. Unfortunately, the increasing safety of the procedure as reported in developed countries²⁶ was not observed in this review. All pregnant women should endeavour to book for antenatal care as the bulk of mortality (77.8%) in this review was accounted for by unbooked patients.

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