

Prevalence, Indications and Trend of Elective Caesarean Section at Federal Tertiary Institution in North-Western Nigeria: A Five (5) Year Review

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ABSTRACT

Background: Elective Caesarean Section is safer for both mother and fetus compared to emergency caesarean sections. Paradoxically, emergency caesarean sections continue to form the bulk of caesarean deliveries in our facility.

Objective: The aim of this study is to determine caesarean section rate, its indications, and ascertain the trend as well as complications associated with elective caesarean section in our setting.

Methodology: This was a retrospective study of all patients that had caesarean section in Federal Medica Center, Katsina from January 1st 2008 to December 31st 2012. Data on the number and type of caesarean section, age of patients, the indication for elective caesarean section as well as known complications were extracted and analyzed.

Results: There were 11,315 deliveries during the study period, out of which 1,585 were by caesarean sections, with a caesarean section rate of 14%. Of all the patients that had caesarean sections, 1,324 (83.5%) were emergency, while 261 (16.5%) were done electively. There was a slight increase in elective caesarean section rate from 2% in 2009 to 2.5% and 2.6% in 2010 and 2011 respectively.

Repeat caesarean section was the commonest indication for elective procedure (27.6%), followed by abnormal presentations/ lie (14.6%) and fetal macrosomia (13.8%). The commonest complication was postpartum anaemia (9.6%)

Conclusion: Caesarean section rate was high (14%), with elective procedure contributing to 16.5% of cases and accounting for 1 of every 6 procedures. The commonest indication was two or more previous caesarean sections, with postpartum anaemia as the most frequent complication.

Keywords

Elective, Caesarean section, Trend, Outcome.

Introduction

Caesarean section (CS) refers to a surgical procedure that involves deliberate incision on the lower uterine segment in order to deliver a fetus that has attained age of viability [1,2]. It can be performed as an emergency or elective procedure. The elective ('planned') caesarean section is not urgent and may be scheduled well in

advance, at a time when it is convenient for the obstetrician, neonatologist, anesthetist, and following patient's optimization [2,3]. About one-quarter of lower segment caesarean sections are performed electively, with the most common indications being repeat caesarean section and malpresentation [1,3]. Other indications include contracted pelvis, major degree placenta praevia, hypertensive disorders of pregnancy, intrauterine growth restriction, precious pregnancy, elderly primigravidae and bad obstetric history [1-4]. Women are now four times more likely to

have Caesarean section than 30 years ago, and are more likely to have repeat CS if they had a previous one [1,3,4].

Despite its increasing safety, Caesarean section cannot replace vaginal delivery due to its increased association with maternal and neonatal morbidities, and cost [1,3].

The advantage of elective caesarean section is that the date and time of admission and operation can be planned with patient and her family. In addition, the operation is performed when it is convenient for the obstetrician and the theatre; when full anaesthetic preparation is possible; and in some cases, anticipated specific dangers during labour and delivery are avoided by an earlier delivery [4,5].

Elective caesarean section could lead to iatrogenic prematurity. Thus, the pregnancy must be properly dated, with the procedure carefully timed. The operation is planned usually for a time after 37th weeks to avoid the delivery of a preterm infant [3-5].

Anaesthetic complications are more likely with emergency caesarean section, when general anaesthesia was administered sooner than 4-6 hours after last meals [2,5].

The decision to conduct this study was to determine the prevalence of elective caesarean section, establish a baseline information and to serve as a yardstick for assessing the impact of future interventions.

Objectives of the Study

- 1) To determine caesarean section rate in our facility
- 2) To determine elective caesarean rate
- 3) To identify the indications for elective caesarean section
- 4) To ascertain the trend of elective caesarean section during the study period
- 5) To determine complications associated with the procedure

Materials and Methods

This was a retrospective analysis of 1585 caesarean sections performed at Federal Teaching Hospital, Katsina, over a 5year period (1st January 2008 to 31st December 2012). The records of patients that had caesarean section were retrieved from the antenatal ward, labour ward, the operating theatre, and the postnatal ward. The records of those that had elective caesarean sections were obtained, with variables such as age, parity, gestational age, the mode of delivery, indications as well as the outcome of the procedure extracted and entered into personal computer, and analyzed using SPSS version 19. The results were expressed using descriptive statistics. Ethical clearance for the study was obtained from research and ethics unit of our facility.

Results

There were 11,315 deliveries at the facility during the period of study, of which 1,585 were via caesarean sections, with caesarean section prevalence rate of 14%.

Out of the caesarean section, 1324(83.5%) were done as an emergency, while 261 (16.5%) had elective procedure, with elective to emergency ratio of 1:6.

The age of the patients ranges from 15-44 with a mean age of 29.5+/-3.37 years. Elective caesarean section was highest among women of 30-44year age group as seen in Table 1.

Table 1: Age distribution of elective caesarean section.

Age group(years)	2008	2009	2010	2011	2012	Total
10-19	2	6	3	3	1	15
20-29	15	14	17	22	16	84
30-39	12	17	22	26	22	99
40-49	9	8	16	18	12	63
Total	38	45	58	69	51	261

Table 2: Indications for elective caesarean section.

Indications	Frequency	Percentages
Previous CS scar	72	27.60%
Abnormal lie/presentation	38	14.60%
Macrosomia	36	13.80%
Major degree placenta praevia	30	11.5
Hypertensive disorders of preg.	30	11.5
Bad Obstetric History	15	5.7
Multiple pregnancies	9	3.4
Precious babies/ IVF	3	1.2
HIV in pregnancy	4	1.5
Previous VVF/Vaginal surgery	4	1.5
Others	20	7.7
Total	261	100

The commonest indication was 2 or more previous caesarean sections (27.6%). Malpresentations and macrosomia accounted for 14.6% and 13.8% respectively. Some cases had multiple indications for the procedure (7.7%) (Table 2).

Table 3a: Yearly trend of caesarean section rates.

Year	Total Deliveries	Caesarean Deliveries	C/S Rate (%)
2008	1904	153	8.0
2009	2251	356	15.8
2010	2304	350	15.2
2011	2652	404	15.2
2012	2204	322	14.6
TOTAL	11315	1585	14%

Discussion

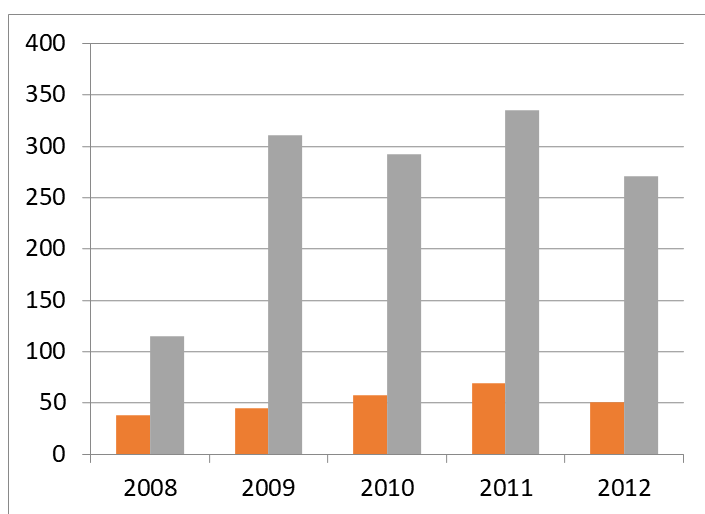
The caesarean section rate of 14% is in keeping with 10.5% reported from Makurdi, the north-western region and national average of 10.6% and 17.6%, respectively, but lower than 30.3% and 23.1% reported from South-south and south-western regions of Nigeria [1,5-8].

The elective and emergency procedures contributes to 16.5% and 83.5% of all cases, respectively. This is keeping with 24.3% and 75.7% reported across Nigeria and 26.2% and 73.8% reported from south-southern part of Nigeria [1,6]. There appear to be a

Table 3b: Yearly trend of all caesarean section rates (elective and emergency).

Year	No. of deliveries	Elective C/S	% elective C/S	Emergency C/S	% emergency C/S	Total C/S rate%
2008	1904	38	2	115	6.0	8
2009	2251	45	2	311	23.8	15
2010	2304	58	2.5	292	12.7	15.2
2011	2652	69	2.6	335	12.6	15.2
2012	2204	51	2.3	271	12.3	14.6
TOTAL	11,315	261	2.3%	1324	11.7%	14%

rising incidence of caesarean section in our setting similar to the pattern in some developed countries, with a relative rise of elective over emergency procedure even though the emergency procedures forms bulk of caesarean deliveries [6-8]. The observed trend was 2% in 2009, 2.5% in 2010 and 2.6% in 2011. These were observed in two similar studies from North-Central Nigeria, which showed a rising trend of elective caesarean section rate from 10.3% in 2004 to 22.8% in 2006 in Makurdi and 8.6% in 1985 to 27.4% in 2002 in Jos [5,9]. Certain factors such as increase in the cohort of patients with two or more previous caesarean sections, fear of litigation, and more liberal use of caesarean section for breech presentation especially in the primigravidae, could account for the rising incidence. Documented factors responsible for increased odd for caesarean section were urban residence, maternal age >35yrs, macrosomia and multiple birth [8,9].

Figure 1: Yearly distribution of caesarean sections.

Key: Red- Electives

Ash- Emergencies

Y-axis –number of caesarean section cases

X- axis- period of study in years

Table 4: Complications of Elective Caesarean Section.

Complication	Frequency	Percentage
Anaemia	25	9.60%
Pyrexia	13	5.00%
Wound sepsis	7	2.70%
Multiple	10	4

Repeat caesarean section due to two or more previous caesarean section was the commonest indication for elective caesarean section (27.6%), followed by malpresentation (14.6%). This was similar to a study from north-western Nigeria and two other studies from North-central Nigeria [5,9,10]. Although a meta-analysis of studies across Nigeria agreed with previous CS as the leading indication, its second leading cause was hypertensive disorders [1].

The leading complications of elective caesarean section was postpartum anaemia (9.6%), followed by post-operative pyrexia (5%). Wound sepsis occurred in 2.7% of cases. Anaemia was the most reported complication of caesarean section (6.4-57.1%) [1,3,4]. Compared to women who gave birth per vaginam, those who had CS have higher risk of maternal death, more extended hospital stays and uterine rupture in future pregnancy [1,3,5].

Conclusion

Caesarean section rate in our Centre was high, with repeat caesarean section as the commonest indication. There was rising trend of elective CS, with postpartum anaemia as the commonest complication of the procedure.

Recommendations

Efforts geared towards reducing CS rates via careful patient selection, offering vaginal birth after one previous CS in patients with good scar integrity and whose previous CS was not due to recurrent cause, as well as external cephalic version for patients with breech presentation, will go a long way in reducing its incidence.

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