

A Three-Year Review of Caesarean Delivery at a Secondary Health Facility in North-Western Nigeria

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ABSTRACT

Background: Caesarean section is today one of the commonest surgical operations performed on women. The increased refinement in anaesthetics and surgical skills has reduced the morbidity and mortality associated with the procedures. Most of the studies on caesarean rates in Nigeria are from tertiary centres in the main cities. They may not reflect the situation in secondary facilities in rural and sub-urban areas which do not have the adequate number of staff, equipment and logistic support. **Objectives:** To determine the rates of caesarean section, indications and outcome in the general hospital located in Dutse, Jigawa, North-Western Nigeria. **Methods:** It was a retrospective review of records of women that had caesarean delivery between January 2013 and December 2015. Socio-demographic and obstetric information were extracted and analysed using SPSS statistical software. Analysis of the data was done using descriptive statistics. Ethical approval was obtained from the state ministry of health research ethics committee. **Results:** There were a total of 9,362 deliveries of which 543 were caesarean births giving a caesarean section rate of 5.8%. Majority of the procedures were emergency (90%). More than half of the women had prolonged obstructed labour as the indication. Mean age (\pm SD) of the women was 25.5 \pm 7.21 years. There were 69 stillbirths and 4 maternal deaths. The main complication was wound breakdown seen among 9.8% of patients. **Conclusion:** The rate of caesarean section was lower compared to other secondary and tertiary facilities in Nigeria. Nine out of every 10 caesarean sections were emergency and were associated with high perinatal and maternal morbidity.

Key Words: Caesarean section, Rate, Indications, Outcomes.

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Introduction

Caesarean section refers to the delivery of a foetus, placenta, and membranes through an incision on the anterior abdominal and uterine walls.¹ Caesarean section is today one of the commonest surgical operations



performed on women. It contributes significantly to improvement of maternal health worldwide.

The increased refinement in anaesthetics and surgical skills has reduced the morbidity and mortality associated with the procedures. There has been an increase in the rates of caesarean delivery. WHO recommends a rate of 10-15% of deliveries to be caesarean.² A caesarean section rate of less than 10% indicates that there are pregnant women that actually need the procedure but are not opportune to have it and likewise the rate of more than 15% indicates there are pregnant women that are offered caesarean section but do not need it.

The decision to perform a caesarean section wholly depends on the question of what is best for or may save the lives of the mother and child. The indications for caesarean section are therefore divided into absolute and relative. Elective caesarean section, performed solely at the wish of the mother, without any medical indication, is regarded as a separate indication.³ Absolute indications for caesarean sections include absolute disproportion such as small maternal pelvis, maternal pelvic deformity, chorio-amnionitis, eclampsia and HELLP syndrome, foetal asphyxia or foetal acidosis, umbilical cord prolapse, placenta previa, abnormal lie and presentation as well as uterine rupture. Relative indications comprise pathological cardiotocography (CTG), failure to progress in labour and previous caesarean section.³ Daniel and Singh⁴ in North Western Nigeria, reported that obstructed labour 25.7% (30/288) and previous caesarean section 39.8% (86/216) were the commonest indications for emergency and elective caesarean section respectively. Geidam and colleagues⁵ in Maiduguri, North Eastern Nigeria discovered that the major maternal

indications for caesarean sections were cephalopelvic disproportion (15.5%), previous caesarean section (14.7%), eclampsia (7.2%), failed induction of labour (5.5%), and placenta previa (5.1%). Foetal distress (9.6%), breech presentation (4.7%), foetal macrosomia (4.3%), and pregnancy complicated by multiple foetuses (4.2%) were the major foetal indications in the centre.⁵

Maternal and foetal outcomes of caesarean section generally depend on the type of caesarean section, whether emergency or elective, the indications for caesarean sections and the cadre of the surgeon. In a review of Maternal and foetal outcomes following caesarean deliveries in a tertiary health institution in North-Western Nigeria, the maternal complication rate was 13.3% (67/504), and the main complication was haemorrhage 59.7% (40/67). The review showed that complications were more frequent with emergency compared to elective caesarean section and with junior compared to senior residents. There were also more cases of low Apgar scores among babies delivered by emergency caesarean section when compared with elective caesarean section.⁶

Most of the studies on caesarean section rates in Nigeria are from tertiary centres in major cities. Facility-based rates range from 10.3% to 34.5%.⁷⁻⁹ Secondary facilities in rural and sub-urban areas might not have the adequate number of staff, equipment and logistic support. In addition, socio-demographic characteristics of the patients also differ from that of the major urban centres.

General hospital Dutse is a 250-bed capacity secondary health care facility. It has a compliment of a visiting obstetrician and gynaecologist, 8 medical officers, 20 midwives, a laboratory that runs blood banking service and an operating theatre.



This study was aimed to determine the rate of caesarean section, indications and outcomes in the general hospital located in Dutse, Jigawa, North-Western Nigeria.

Method

It was a retrospective review of records of women that had caesarean delivery from January, 2013 to December 2015. Theatre and labour room records were used to extract the total number of deliveries by both caesarean section and vaginal deliveries. Folders from records department were used to extract information on socio-demographic characteristics and obstetric history of all patients that had caesarean section during the study period. Folder numbers were used to ensure that each case was counted and recorded only once. A trained research assistant was employed for retrieval of data from the folders. All cases of emergency and elective caesarean section that were carried out in the centre were included in the study. Information were entered into a personal computer and analysed using SPSS version 19 computer software. (IBM SPSS Statistics Inc., IL, Chicago USA).

Analysis of the data was done using descriptive statistics; tables and figure were also used to illustrate the findings. Ethical approval was sought and obtained from the state ministry of health research ethics committee.

Results

During the period under review (January 2013 to December 2015), there were a total of 9,362 deliveries (delivery rate of 3,121 per year) of which 543 were caesarean births. The mean age (\pm SD) of the women was 25.5 ± 7.21 years. The median parity was 2 with a range of 0-14. The mean number of hospital stay was 6 days with a range of 1-63 days

The caesarean section rate was 5.8%. Yearly rates were 6.5%, 3.7% and 7.4% for 2013, 2014 and 2015 respectively. Majority of the procedures were emergency (90%).

Data on all variables were not complete for all the patients. Highest number 234 (43.1%) were done in 2015 while least number 129 (23.8%) was in 2014.

Table 1 shows the socio-demographic characteristics of the patients. More than half of the patients were within the age group of 20-25 years, 195 (36.2%) and 26-30 years, 127 (23.6%). The least number of patients were within the age group of 41 years and above 6 (1.1%).

Majority of the patients were nulliparous women, 180 (34.0%); primiparous and multiparous were 62 (11.7%) and 114 (21.6%) respectively. A staggering figure of 166 (31.4%) were grand multiparous women.

Most of the patients were from the surrounding villages of Dutse 314 (59.2%); patients from Dutse were only 133 (25.1%). Only 146 (29.7%) patients were unbooked. Up to 421 (91.7%) of the patients had no formal education. Table 1.

More than half of the patients had Caesarean section due to prolonged obstructed labour 290 (55.2%). Other indications included antepartum haemorrhage 70 (13.3%) and previous caesarean section 66 (12.6%). Table 2.

Table 3 depicts the maternal and foetal outcomes for caesarean section in the hospital. Up to 69 stillbirths were recorded while 163 babies had poor Apgar scores at birth. There were 4 maternal deaths following caesarean section, while outcomes for 22 mothers were missing.

Main complication was wound breakdown seen in 50(9.8%) patients. A good number of patients had multiple complications such as anaemia, sepsis and wound breakdown.



Table 1: Socio-demographic Characteristics of the Patients

Variable	Frequency	Percent
Age Group		
≤19	120	22.4
20-25	195	36.4
26-30	127	23.7
30-35	64	12.0
36-40	23	4.4
≥41	6	1.1
Total	539	100.0
Parity		
0	180	34.6
1	62	11.9
2-4	114	21.9
≥5	166	31.6
Total	529	100.0
Residence		
Dutse	133	27.2
Surrounding villages	314	61.3
Other places	54	11.5
Total	530	100.0
Booking status		
DGH	204	41.0
Elsewhere	148	29.7
Unbooked	146	29.3
Total	498	100.0
Educational status		
Non formal	421	91.5
Primary	21	4.5
Secondary	14	3.1
Tertiary	4	0.9
Total	459	100.0

Note: DGH=Dutse General Hospital



Table 2: Indications for Caesarean Section

Indication	Frequency	Percent
Prolonged obstructed labour	290	55.3
Antepartum haemorrhage	70	13.3
Previous caesarean section	66	12.6
Footling breech	17	3.2
Failed VBAC*	19	3.6
Transverse lie	11	2.1
Foetal distress	52	9.9
Total	525	100.0

*VBAC= Vaginal Birth after Caesarean

Table 3: Maternal and Perinatal Outcomes for Caesarean Section

Variables	Frequency	Percent
Maternal death	4*	0.043
Perinatal death (stillbirth)	69	0.74
Poor Apgar Scores at 5th minute	163	1.74

*All were attributed to Emergency Caesarean sections done (543)

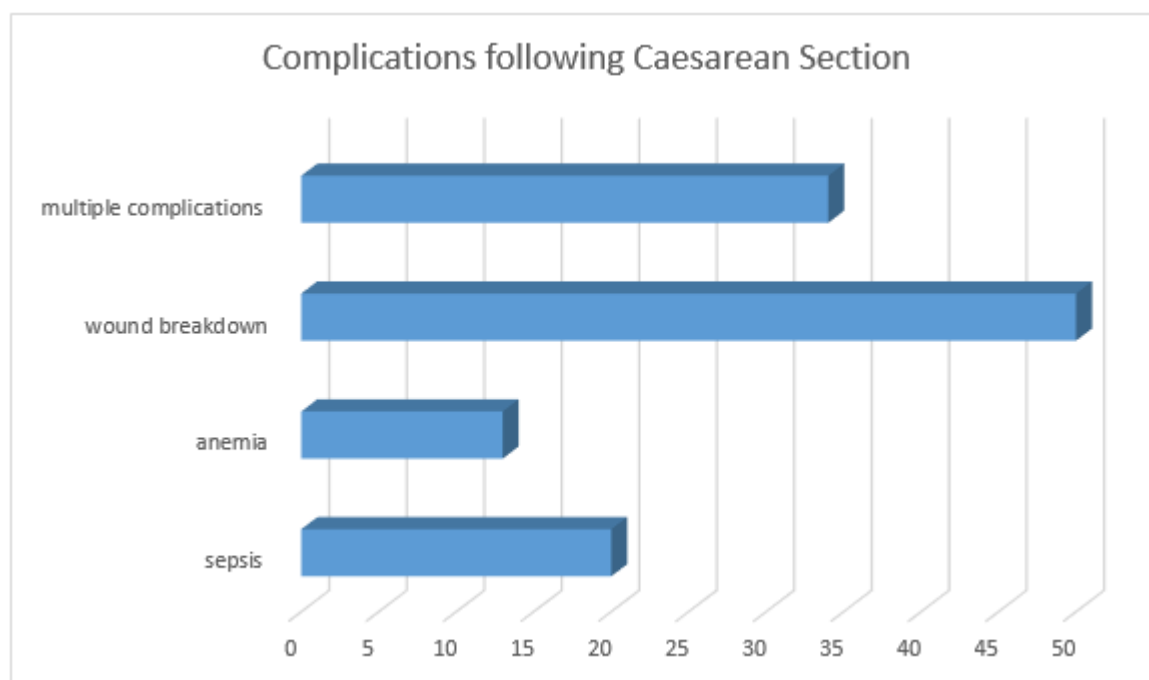


Figure 1: Complications Following Caesarean Section

Discussion

In this study, the rate of caesarean section was 5.8% which is lower than the 10-15% recommended by WHO.¹⁰

It was also lower than the figures from tertiary centres in Enugu (27.2%),¹ Kano (18.75%)¹¹ and Maiduguri (11.8%).⁵ This low rate of caesarean section may suggest underutilisation of the procedure or access.

This further indicates that there were pregnant women who actually needed caesarean section as an intervention for delivery but could not have.

Although the caesarean section rate in the year 2013 was 6.5%, the rate decreased to 3.7% in the year 2014 and rose to 7.4% in 2015.

The possible explanation was the establishment of another fully equipped tertiary health facility at Dutse with good obstetric services, hence the decrease in caesarean section rate in the year 2014.

Less than 10% of the operations were done as elective cases. A retrospective study on a five-year survey of Caesarean delivery at a Nigerian Tertiary Hospital by Ugwu and colleagues¹ showed that most cases 918 (93.7%) were by emergency caesarean sections, with elective procedure accounting only for 6.3%; our findings were similar. This higher rate of emergency caesarean section points at poor antenatal supervision by skilled birth attendants at this secondary health facility as some of the indications might be identified and planned as elective.

The mean age of our patients was 25.5±7.21 years. This was slightly lower than the mean age of 28.02±5.86 and 30.8 ± 5.1 years reported from Kano¹¹ and Nnewi¹² respectively. Early age at first pregnancy in the catchment areas of Dutse General Hospital might be responsible for the lower mean age.

Majority of the women are between 20 and 30 years. This was also lower than the age group

of 30 -34 years reported in Nnewi, North Eastern Nigeria.¹² We also found many never had formal education and of young age. More than half of the women had caesarean section due to prolonged obstructed labour. A study on caesarean section in Makurdi, North-Central Nigeria, revealed cephalo-pelvic disproportion (CPD) as the commonest indication (28.8%), followed by previous caesarean section and foetal distress (14.4% and 12.3% respectively).¹³

This clearly showed that skilled birth attendants capable of diagnosing cephalo-pelvic disproportion and the routine use of partograph in the referring hospitals are lacking hence the diagnosis of obstructed labour as the commonest indication for caesarean section in the referred hospital. Issues of the delays in seeking care, labour monitoring could also contribute to obstructed labour as the commonest indication for caesarean section.

We recorded four maternal deaths (0.043%), which translates to 43 per 100,000 maternal mortality rate and were all directly followed after Emergency Caesarean section.

This was similar to the maternal death found in Enugu where also emergency caesarean section constituted the highest proportion.¹ Emergency caesarean section is known to have poorer foetal and maternal outcome compared with elective caesarean section.^{14,15}

The perinatal death in this review was 0.74% which translate to 74 per 1000 deliveries. This figure was higher than the figure of 0.24% reported in Jos, North Central Nigeria.¹⁶ Lack of well-equipped neonatal resuscitation units managed by neonatologists could have contributed to this high perinatal death. Major complications found in this study were wound breakdown, sepsis and anaemia. These were similar to other studies.^{17,18}



Conclusion

The rate of caesarean section in Dutse General Hospital is lower than the recommended figure of 10-15% by WHO. Nine out of every 10 caesarean sections were emergency and were associated with high maternal and perinatal morbidity. Prolonged obstructed labour and antepartum haemorrhage were the main indications for caesarean sections in the centre. Wound breakdown and sepsis were the commonest complication.

Recommendations

Antenatal care coverage should be improved with availability of skilled birth attendants so that pregnant women who actually need elective caesarean section should be selected and offered which will improve the caesarean section rate to the recommended 10-15%.

Early referral of patients with features of prolonged labour should be encouraged to prevent prolonged obstructed labour with its sequelae of perinatal and maternal morbidity and mortality.

Aseptic procedures of caesarean section and good surgical techniques should be encouraged to reduce the rates of wound infections, sepsis and other complications of caesarean section.

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