Indications and Fetal Outcomes of Caesarean Section in Sindhu Sadabahar Hospital, Sindhupalchok

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ABSTRACT

Background

There has been a sustained increase in the rate of caesarean section in the last few years around the world. Caesarean section (CS) Audit which plays an important role in the analysis of rate, indications and outcomes of caesarean section, helps to modify the trend of caesarean delivery.

Objective

This study was done to know the indications and outcomes of caesarean section in Sindhu Sadabahar Hospital, Khadichaur, Sindhupalchok.

Method

A hospital based descriptive study was conducted in gynaecological department of Sindhu Sadabahar hospital, Sindhupalchok over 14 months period from 1st Baisakh 2070 to 30thAshad 2071 (14th April 2013 to 14th July 2014) among 218 women who underwent caesarean section.

Result

The foetal distress was the leading indication of caesarean section (34%, n=74). Non-progress of labour and prolonged second stage of labour were seen in 15.6% (n=34) women respectively. There was 3.2% (n=7) fresh still birth and 1.8% (n=4) early neonatal death. Total perinatal death was 5% (n=11). There were 12.1% (n=27) low birth weight baby and 9.9% (n=22) macrosomic baby. ≤ 5/10 Appearance, Pulse, Grimace, Activity and Respiration (APGAR) score at five minutes was seen in 35.5% (n=79) neonates.

Conclusion

This study showed that majority of patients had an emergency cesarean section for foetal distress, nonprogress of labour and prolonged second stage of labour. Prevalence of caesarean section was higher than the caesarean rate (15%) recommended by World Health Organization (WHO). Cesarean sections performed for appropriate medical or obstetric indications are life saving for both the mother as well as the new born.

KEY WORDS

Cesarean section, Fetal outcomes, Indication of cesarean section

INTRODUCTION

Caesarean section (CS) rates vary worldwide, ranging from 10% in Sweden to 80% in private hospitals in Brazil.[1] Improved anaesthetic techniques and antiseptic procedures have revolutionized the modern obstetric practice.[2] It is estimated that up to one-third of the 18.5 million annually performed caesarean sections worldwide are conducted for non-medical indications. To date, middle and high income countries contribute most to the global increase in CS rates.[3]

Emergency obstetric care is crucial for reducing maternal morbidity and mortality from direct causes such as hemorrhage, infection, hypertensive disorders of pregnancy and obstructed labor. In the developing world, access to CS is one hallmark of emergency obstetric services.[4] Depending on the population and the facilities available the incidence varies in developed and developing countries. WHO indicated that a caesarean section rate greater 10-15% is not justified in any region of the world.[5]

Caesarean section is becoming popular to secondary interventions such as instrumental vaginal deliveries. Thus, caesarean section is a subject of professional controversy.[6] The four major clinical determinants of the cesarean section rate which have not changed are fetal compromise, failure to progress in labour, repeat cesarean section and breech presentation. The fifth most common reason given for performing a cesarean section is now reported to be maternal request.[7]

It is challenging to provide an operative obstetric care and neonatal intensive care in district level hospitals of remote Nepal. This study aimed to know the indication and fetal outcomes of caesarean section in SindhuSadabahar Hospital, Sindhupalchok.

METHODS

This was a hospital based, descriptive, observational study was carried out in Sindhu Sadabahar Hospital, Sindhupalchok over 14 months period from 1st Baisakh 2070 to 30th Ashad 2071 (14th April 2013 to 14th July 2014. All women who had undergone elective as well as emergency caesarean section for variable indication according to labour and delivery management procotol of our hospital, were included in this study. Women with complicated pregnancy who required referral to higher center for further management and women who did not give informed consent were excluded from the study.

Ethical clearance for this study was taken from the administration of Sindhu Sadabahar hospital Sindhupalchok. Informed consent was taken from each participant.

Age, address, ethnicity, caste, parity, period of gestation, obstetric history, labour events, indications for caesarean section, operative complications, post- operative complications and duration of hospitalization were recorded in maternal data. Number of baby, sex of baby, birth weight, colour of liquor, one minute and five minute Appearance, Pulse, Grimace, Activity and Respiration (APGAR) score, need for neonatal resuscitation, referral to neonatal intensive care unit, neonatal complications and duration of neonatal admission were documented in neonatal data. Questionnare was reviewed thoroughly for accuracy, completeness and consistency. A master table and quantitative data were entered and analysed using Statistical Package for Social Studies (SPSS) version 15. Different variables were evaluated with use of frequency and percent.

RESULTS

There were 387 vaginal deliveries in 14 months. There were total two hundred and eighteen caesarean deliveries during study period. The prevalence of caesarean section was 56.33%.

The foetal distress was the first common indication of caesarean section (34%, n=74). Non-progress of labour and prolonged second stage of labour were seen in 15.6% (n=34) women respectively. Failed induction was seen in 5% (n=11) women. Nine women (4.1%) had history of caesarean section in previous pregnancy. (Table 2)

Majority of neonates (96.8%, n=215) were live at the time of abdominal birth. Male to female ratio among new born was 1.28:1. There was 3.2% (n=7) fresh still birth and 1.8% (n=4) early neonatal death. Total perinatal death was 5% (n=11). There were 12.1% (n=27) low birth weight baby and 9.9% (n=22) macrosomic baby. ≤ 5/10 APGAR score at five minutes was seen in 35.5% (n=79) neonates. (Table 3)

DISCUSSION

Caesarean section (CS) is a safe obstetric surgical procedure that contributes to reducing maternal and perinatal mortality and morbidity. Nevertheless, its advantages do not justify its continuous increase.[8] The prevalence of caesarean section was quite high (56.33%) in this study. Different study showed different prevalence of caesarean section, but majority have higher the value than the recommended caesaren rate by World Health organization (WHO). Rafique et al. found that frequency of caesarean section in their study period was 55%.[9] The incidence of Caesarean section was 23% in Nepal Medical Teaching Hospital according to Suwal et al. Samdal et al. said that the CS rate at Okhaldhunga Community Hospital, in rural Nepal was 9.4%.[8,10] Referral center of many birthing centers of neighbouring districts, lack of neonatal intensive care unit, no facilities for instrumental deliveries and artificial rupture of membrane in early stage of labour are the major reasons for higher prevalence of CS in our center. To reduce CS rate in our center, labour management protocol should be revised along with providing better neonatal care.

Table 1. Caste, address, age in years, parity, period of gestation in weeks, stage of labour and types of operation

Characteristics	Frequency (n=218)	Percent
Caste		
Tamang/Lama	72	33.0
Bramhin/Chhetri	70	32.1
Newar	32	14.6
Nepali/Pariyar/BK	17	7.8
Sherpa	13	6
Majhi	9	4.1
Gurung/Magar	5	2.3
Address		
Sindhupalchok	180	82.6
Dolakha	30	13.8
Ramechhap	7	3.2
Others	1	0.5
Age (years)		
16-29	184	84.4
30-45	32	14.7
>45	2	0.9
Parity		
Primigravida	84.4	59.6
Multigravida	14.7	33.9
Grand multigravida	0.9	6.4
Period of Gestation (weeks)		
<37wks	14	6.4
≥37 to ≤40wks	113	51.8
≥40 to ≤42wks	75	34.4
>42wks	16	7.3
Stage of labour		
Not in labour	66	30.3
Early stage of labour	73	33.5
Active stage of labour	45	20.6
Second stage of labour	34	15.6
Type of Operation		
Emergency caesarean section	184	84.4
Elective caesarean section	9	4.1
Em CS with BTL	22	10.1
El CS with BTL	3	1.4

Table 2. Indication of caesarean section

Indication of CS	Frequency (n=218)	Percent
Foetal distress	74	34
Prolonged second SOL	34	15.6
NPOL	34	15.6
Breech presentation	15	6.8
Severe oligohydramnions	12	5.5
Failed induction	11	5
APH	11	5
Previous CS	9	4.1
CPD	7	3.2
Transverse lie	5	2.3
Twin	4	1.8
IUGR	2	0.9

Table 3. Fetal characteristics

Fetal Characteristics	Fequency (n=222)	Percent
Live Fetus		
Live	215	96.8
Dead	7	3.2
Sex of Fetus		
Male	125	56.3
Female	97	43.6
Weight of the Fetus		
<1.5kg	2	0.9
1.5-2.5kg	25	11.2
2.5-4kg	173	78
>4kg	22	9.9
APGAR score at 5 minutes		
<3/10	2	0.9
3/10-5/10	77	34.6
>5/10	136	61.2
0/10	7	3.1
Perinatal death		
Fresh still birth	7	3.1
NND	4	1.8

Majority of women 94.5% (n=206) had undergone emergency caesarean section in this study. Most of the pregnant women were unbooked in antenatal clinic of our hospital. Majority of them were tried vaginal delivery in government health center and refer for prompt delivery of fetus. The foetal distress was the leading indication of emergency caesarean section (34%, n=74). Non-progress of labour and prolonged second stage of labour were seen in 15.6% (n=34) women respectively. Jabeen et al. reaveled that Previous scar was the commonest indication of CS in 690(40.37%) women, failed induction of labour in 232(13.58%), fetal distress in 192(11.23%), fetal Malpresentation in 115(6.73%), failure to progress in 75(4.39%) and cephalopelvic disproportion (CPD) in 55(3.22%) women.[11] Rafique et al. found that repeat caesarean section was the commonest reason to undergo surgery in 345(56.3%) women, fetal distress in 107 (17.5%) and failure to progress in 88 (14.3%) women.[8] Geidamet al. stated that cephalopelvic disproportion was seen in 185 (15.5%) women who had undergone CS, previous caesarean section in 176 (14.7%), fetal distress in 115 (9.6%), eclampsia in 86 (7.2%) and failed induction in 65 (5.4%) women.[12] Because of no neonatal intensive care unit (NICU) facility, the foetal distress becomes the major concern of CS in remote place of Nepal. There was no

maternal preference for elective caesarean section in our study. But Pang et al. observed that the overall prevalence for maternal preference for elective caesarean section was 16.7% (95% confidence interval, 13.8-19.6).[13]

In this study, majority of neonate (96.8%, n=215) were live at the time of abdominal birth. There was 3.2% (n=7) fresh still birth and 1.8% (n=4) early neonatal death. Total perinatal death was 5% (n=11). There were 12.1% (n=27) low birth weight baby and 9.9% (n=22) macrosomic baby. Birth asphyxia (≤ 5/10 Appearance Pulse Grimace Activity Respiration (APGAR) score at 5 minutes) was seen in 35.5% (n=79) neonates.

Onankpa et al. showed that the overall perinatal mortality amongst the cesarean deliveries was (n=24/216) 11.1% and perinatal asphyxia was seen in(n=26/216) 12% neonates.[14] APGAR score ≤ 6/10 in 5 minutes was 9/167 (5.38%) in the study conducted by Suwal et al.[8] In Nuwakot district hospital, 10(3%) neonates developed birth asphyxia and seven (2%) had neonatal sepsis. There were 12(3.5%) perinatal deaths. Stillbirths and neonatal deaths were seen in seven (2%) and five (1.5%) neonates respectively.[2] Focusing on reducing perinatal morbities and mortalities may increase the CS rate. Both should be considered in balanced way.

The limitations of this study are short duration of the study, study population and high prevalence of the study. From this study we come to know that there are many pitfalls in providing caesarean deliveries better outcomes in remote districts of Nepal. Since foetal distress, prolonged second stage of labour and non progress of labour were major indications of CS, it will be better if we have proper labour management with instrumental deliveries in favourable conditions and better neonatal care facilities.

This study was conducted in low resource hospital of remote Nepal. Sample size was small. Instrumental delivery was not available. Neonatal intensive care unit was not established during study period. Prevalence rate of caesarean section was higher compared to other studies.

CONCLUSION

This study showed that majority of patients had an emergency cesarean section for foetal distress, nonprogress of labour and prolonged second stage of labour. Prevalence of caesarean section was higher than the caesarean rate (15%) recommended by World Health Organization (WHO). Cesarean sections performed for appropriate medical or obstetric indications are life saving for both the mother as well as the new born.

Caesarean section audit should be done every year for revision of CS indication. Further study should be conducted in larger population in this place after revision of labour and delivery management protocol. Better neonatal care should be provided to remote Nepal for better obstetric outcome.

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