

## Retrospective Observational Study of Caesarean Section Cases in a Tertiary Care Hospital in Odisha

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### Abstract

**Objective:** To study the incidence and indications of LSCS.

**Place and Duration:** This study was carried out from January to July 2016 in Department of Obstetric and Gynaecology, KIMS, Bhubaneswar

**Methodology:** In this retrospective analytical study, the total number of patients delivered and the number of LSCS done in the above mentioned study period were counted to find the incidence of LSCS in our hospital. Age, parity and gestational age of the patients who underwent LSCS were tabulated. The indications of LSCS were analyzed from pre operative and intra operative findings.

**Result:** In our study the incidence of LSCS was 67.67%. Of these patients 43.22% belonged to age group 26 -30 yrs and 2.6% patients were in 35 – 39yr age group. 1.49% patients were less than 20 yrs of age and 0.37% were more than 40 yrs.

58.73% of patients were primigravida whereas 28.06% were second gravid and 13.19% were gravida three or more. In 50.74% LSCS was done at > 38 – 42 wk gestational age (GA) followed by 40.89% in 34 – 38wk GA and 8.36% in <34wks of GA.

The commonest indication of LSCS was previous caesarean section in 23% followed by cephalo pelvic disproportion(CPD) in 11.3%, preterm premature rupture of membranes and premature rupture of membranes in 9.8%. Pregnancy induced hypertension (PIH), foetal distress and oligohydramnios each accounted for 9.4%. 1.67% patients underwent LSCS after some form of treatment for primary infertility and 0.73% of patients had LSCS on request.

**Conclusion:** LSCS rate is high compared to the WHO standard and previous LSCS is the commonest indication followed by CPD.

**Keyword:** Lower Segment Caesarean Section, Indication, Previous Caesarean Section

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### Introduction

Lower Segment Caesarean Section (LSCS) is the most commonly performed Obstetric operation worldwide. With advent of modern anaesthesia, availability of improvised surgical techniques and prophylactic antibiotics, caesarean section has become a relatively safe and common procedure. At present there is no strictly defined protocols for the indication of LSCS in our country. So at present the decision for LSCS is mostly individualised and depends on the Obstetrician taking care of the parturient. WHO advises that LSCS rates should not be more than 15%.<sup>(1)</sup> There exists evidence that LSCS rates above 15% are not associated with additional reduction in maternal and neonatal morbidity.<sup>(2)</sup> Caesarean section is the second commonest surgery performed on women in India after tubectomy operation. In India giving birth on an auspicious day is driving women to go for caesarean on request. The present study was an effort to determine the incidence of LSCS and evaluate the indications in the Dept. of Obst & Gyn in KIMS. This is also a step to find if any of these indications can be reevaluated to bring down the CS rate in the country to a level close to the standard set by WHO.

### Methodology

This study was carried out in the O & G department of KIMS, Bhubaneswar, from Jan 2016 to July'16. During this period the total number of deliveries were counted and of these the number who underwent LSCS were selected for the study. The indications for caesarean section in these cases were noted along with the age of the patient, parity, weeks of gestation, the foetal outcome and were analyzed.

### Result

A total of 795 deliveries occurred during the study period. Of these cases 538 underwent LSCS while 257 underwent vaginal delivery. The incidence of LSCS was 67.67%.

**Age:** Of the 538 pts (patients), 232 pts (43.22%) were in the age group 26 to 30 yrs, followed by 193 (35.87%) in the 20 to 25 age group. 14 pts were >35yrs, 8 were less than 20 yrs and 2 pts were more than 40 yrs.[Table 1]

**Table 1: Age in Years**

Age Group (in years)	No. of Pts.	Percentage
<20	8	1.49
21 - 25	193	35.87
26 - 30	232	43.12
31 - 35	89	16.54
35 - 39	14	2.60
≥ 40	2	0.37

**Parity:** Of concern was the fact that 316 of the total patients were primigravidas (58.73%). 28.06% were 2<sup>nd</sup> gravida and 13.19% were 3<sup>rd</sup> gravid or more.[Table 2]

**Table 2: Gravida**

Gravida	No. of Pts.	Percentage
Primigravida	316	58.73
2 <sup>nd</sup> Gravida	151	28.06
≥ 3 <sup>rd</sup> Gravida	71	13.19

**Gestational Age:** At the time of LSCS 45(8.36%) patients had a gestational age of less than 34 wks. 220 (40.89%) pts were between 34 weeks and 37 completed weeks. The rest 273 (50.74%) pts were in the 38 to 42 weeks group. [Table 3]

**Table 3: Distribution of Patients According to weeks of Pregnancy**

Wks of Pregnancy	No. of Pts.	Percentage
<34	45	8.36
34 – 38	220	40.89
>38	273	50.74

**Indication of LSCS:** Maximum number of LSCS, 23% (124) was done in those patients who had a previous caesarean section irrespective of the indication of the first LSCS. Cephalo pelvic disproportion was diagnosed in 61(11.3%) cases. 53 (9.8%) cases underwent LSCS as the membranes had ruptured and they had not gone into spontaneous onset of labour (PROM). This group also included 12 cases of preterm premature rupture of membranes (PPROM). PIH not well controlled with oral anti hypertensives, Foetal distress, and a reduced AFI (less than 5) on USG was the indication in 51(9.4%) cases in each group. Elective LSCS was done in 41(7.6%) cases who were post dated with a unfavourable cervix and a non-engaged head and were unwilling to go for induction of labour. Labour was prolonged with no progress in 27(5%) cases who then underwent LSCS. 18(3.34%) each were done for a bad obstetric history(BOH) and malpresentation like breech and transverse lie. BOH included cases with history of recurrent abortions or a fresh still birth or early neonatal death after a difficult or instrumental delivery. 9 cases of twin pregnancy where the first twin had a presentation other than cephalic also underwent

LSCS. Another 9 cases of Primary Infertility who had conceived with some form of treatment also underwent elective LSCS at term. In our study there were 7 cases of Placenta Praevia and 4 cases of obstructed labour who underwent emergency LSCS. All these cases of obstructed labour and 3 cases of placenta praevia were referred to this hospital from nearby smaller hospitals for better management. A small but significant number of 4 cases underwent LSCS at term electively as they did not want to undergo labour pain at all.[Table 4]

**Table 4: Indication of LSCS with percentage**

Indications	No. of Patients	Percentage
Prev. LSCS	124	23
CPD	61	11.3
PPROM & PROM	53	9.8
PIH	51	9.4
Reduced AFI	51	9.4
Foetal Distress	51	9.4
Post distress	41	7.6
NPOL	27	5
BOH	18	3.34
Malpresentation	18	3.34
Pr Infertility – conceived with trt.	9	1.67
Twins	9	1.67
Placenta Praevia	7	1.30
Medical disorders	7	1.30
Obstructed labour	4	0.74
On request	4	0.74
Others	3	0.55

**Outcome of Baby:** Of the 547 babies delivered (9 cases of twins) 93.78% (513) had Apgar Score of 8 or more. 33 babies had Apgar Score of 5-7 or mild depression and one baby had moderate depression. 2 babies were still born.[Table 5] Of these 2 cases 1 was taken to OT with severe foetal distress but could not be revived after delivery. The other was a case of HELLP Syndrome with uncontrolled BP and IUD (Intra Uterine Death), where LSCS had been done to save the mother. 49 mothers had their babies admitted to the NICU. Of these all the babies except 3 were discharged from NICU in good condition. 2 of these babies died after 4 and 6 days of birth due to prematurity and the third baby left against medical advise as the parents could not afford the treatment and was lost to follow up.

**Table 5: Apgar score of babies delivered**

Apgar Score	No. of babies	Percentage
0 – 2 Severe Depression	1	0.18
3 – 4 Mod. Depression	1	0.18
5 -7 Mild depression	33	6.03
8 – 10 No depression	512	93.60

P.S No. of babies are more due to 9 twins

## Discussion

There has been a steady increase in the rate of caesarean section in both developed and developing countries. Although the WHO recommends that there is no justification to increase caesarean rate in excess of 10 to 15%, it may be difficult to contain the rates in tertiary institutes, catering to a large population of transferred cases.<sup>(3)</sup>

In our study the maximum number of caesarean sections were done for those with a previous LSCS which was a significant 23%. No trial of labour for vaginal birth after caesarean section (VBAC) was undertaken in any of the cases of previous LSCS. Some of them were referred cases from nearby hospitals.

After one LSCS there is a 67% chance of having repeat caesarean delivery.<sup>(4)</sup> The low threshold for performing VBAC is probably due to fear of uterine rupture in labour which is 5.2/1000 compared with (1.6/1000) ERCD (elective repeat caesarean delivery) and it can be catastrophic leading to perinatal death (1/1000) and very rarely maternal death.<sup>(5,6,7)</sup>

These guidelines were laid down as factors favouring VBAC – if the previous caesarean involved a low transverse incision then there is less risk of uterine rupture; a previous successful vaginal delivery increases the chances of successful VBAC; the indication for previous caesarean section should not be present in the current pregnancy; location at an institute equipped to respond to emergencies.<sup>(8)</sup>

In a study of 614 cases conducted in Pakistan at Nawaz Sharif social security hospital at Lahore, it showed similar results with previous LSCS being the most common indication accounting for 56.3% of cases followed by foetal distress (17.5%).<sup>(9)</sup> Similar study done in Mymensingh medical college showed the most common indication for LSCS was previous LSCS (16%), followed by foetal distress (15%), obstructed labour (14%), and Pre Eclampsia and Eclampsia for 12%.<sup>(10)</sup>

Serious maternal morbidity progressively increased as the number of previous caesarean deliveries increased. The rate of hysterectomy, blood transfusions, adhesions and surgical injury all increased with increasing number of caesarean deliveries. The incidence of placenta praevia increased from 10/1000 deliveries with 1 previous caesarean delivery to 28/1000 with 3 caesarean deliveries. They also had a statistically significant increase in the risk of placenta accreta.<sup>(11)</sup>

In our study the next common indication for LSCS was CPD (11.3%). Not all these cases were diagnosed in labour. A non engaged head with clinical pelvimetry before onset of labour was also taken as CPD. In a study on risk factors for LSCS in CPD from Thailand it was concluded that the risk factors were – symphysis fundal height greater than 35 cm, nulliparity, maternal height less than 152 cm and weight gain more than 15kg.<sup>(12)</sup>

Foetal distress was the next leading indication for performance of a caesarean section in the present study series. Foetal distress refers to foetal hypoxia, but often no efforts are made to document this condition which would be desirable for medico legal purposes later. Also a significant rise in caesarean section could be attributed to electronic foetal monitoring. A study by Levens et al. published in the New England journal of medicine confirms, higher caesarean section rates for foetal distress with no significant difference in the perinatal mortality rates in the caesarean versus vaginal route of delivery.<sup>(13)</sup>

PIH as an indication of LSCS was also seen in 11.3% of cases. The mode of delivery should be individualised taking into account the gestation, presentation and cervical favourability for induction of labour and well being of foetus. Vaginal delivery is generally preferable but in cases of extreme prematurity or foetal compromise caesarean section is more likely.<sup>(14)</sup> Recurrent seizures refractory to medical management, Refractory severe hypertension >160/110 mm of Hg, Maternal or foetal deterioration without impending delivery and Severe Pre eclampsia with unfavourable cervix at <30 wk gestation are usually the patients requiring a surgical interference.<sup>(15)</sup>

Oligohydramnios (AFI <5) also was an indication for LSCS in 11.3% of cases. It is associated with a high rate of pregnancy complications and increased perinatal morbidity and mortality. This parameter helps to identify women who need increased antepartum surveillance for pregnancy complications.<sup>(16)</sup> However some studies show that AFI is a poor predictor of adverse perinatal outcome and isolated oligohydramnios should not be the only parameter for predicting perinatal outcome.<sup>(17)</sup>

In discussing the ethics of medically elective caesareans, the American College of Obstetricians and Gynaecologists states, in the absence of significant data on the risks and benefits of caesarean delivery, if the physician believes that caesarean delivery promotes the overall health and welfare of the woman and her fetus more than vaginal birth, he or she is ethically justified in performing a caesarean delivery.

In contrast, the International Federation of Gynaecology and Obstetric states, at present because hard evidence of net benefit does not exist, performing caesarean section for non – medical reasons is not ethically justified. In 2004, Queenan noted that the underlying “question is not the ethics of patient choice, but lack of scientific proof of risks and benefits.” Medically elective caesarean delivery (compared with the combination of planned vaginal and unplanned caesarean delivery) was associated with:

- a. A decreased risk for maternal haemorrhage
- b. An increased risk of respiratory problems for infants

- c. Greater complications in subsequent pregnancies, including uterine rupture and placental implantation problems, and
- d. Longer maternal hospital stays<sup>(18)</sup>

This study in the department of obstetrics and gynaecology at KIMS initiated an introspection in the same department, the result of which is produced in brief here. From October to December 2016 there were a total of 371 deliveries. Of this 218 (58.76%) had LSCS. This was a definite reduction from the previous 67.67%. Till the publication the effort is continuing and is expected to further reduce the LSCS rate.

### Conclusion

In modern Obstetrics, Caesarean Section is a common surgical procedure for delivery. In spite of its low rate of maternal morbidity and mortality due to improved surgical technique and modern anaesthetic skill, it still carries a slightly greater risk than normal vaginal delivery and risk is more in subsequent pregnancies. The incidence of LSCS in our study was 67.67% which is much more than the WHO guideline. Previous caesarean section was the leading indicator in the study group. Therefore a careful individualisation of every case, meticulous clinical examination and use of intensive intrapartum fetomaternal surveillance could probably reduce the caesarean section rates.<sup>(19)</sup>

In conclusion it would be ideal to initiate obstetric audits by intradepartmental meetings, to assess the intrinsic role of caesarean section in influencing outcome. Precise interpretation of foetal heart tracing and using foetal pH might be effective in reducing the caesarean section rate.<sup>(20)</sup> Use of standardized management guidelines and practice will go a long way in balancing the rates of caesarean section.

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