



CRITICAL ANALYSIS OF CAESAREAN SECTION CASES BY ROBSONS CLASSIFICATION SYSTEM IN A TERTIARY HOSPITAL, AP

Dr. Paidi DurgaKumari	MD, DGO Associate Professor OBGYN, Vijayawada
Dr. R. Subhashini	Associate Professor OBGYN, Vijayawada
Dr. P. Vijaya Sheela	Associate Professor OBGYN, Vijayawada
Dr. Gollapalli. Aruna	Associate Professor OBGYN, Vijayawada
Dr. R. Sowjanya	Associate Professor OBGYN, Vijayawada
Dr. K. Sireesha	Postgraduate, OBGYN, Siddhartha Medical College, Vijayawada

ABSTRACT **Background-** CS rate has been increasing worldwide over the last 50 years and rising cesarean section rate is of global concern. World Health Organization in 2015 has proposed the use of Robson-10 group classification system as a standard for assessing and monitoring CS both within and across the healthcare facilities[2]. There are many modifications for this classification to critically analyse caesarean sections in an institute. **Aims and Objectives of the study:** is to analyse the indications of cesarean sections in our hospital, to do audit of C-sections by Robsons groups in order to properly plan to avoid unnecessary caesarean sections. **Material and Methods- Study design:** Prospective, Cross sectional study This study was conducted at OBGYN department, Siddhartha Medical College, Vijayawada during the period of 1.01.2021 to 30.06.2022. In all antenatal women five parameters were considered mainly gestational age, fetal presentation, number of fetus, onset of labour and history of CS[3] and indications for CS and Robson groups (1-10) were allocated. **Results:** Total number of deliveries included in our study are 13,894. C- sections in the study are 6959 accounts for 50%. Majority of cases are repeat caesarean sections about 3254 [46.7%] of C-sections and primary caesarean sections are 3705 [53%]. Hence for convenience grouped as A [Primary] and B [Repeat] Caesarean section. Only 0.2% had VBAC, rest of the cases had repeat C-Section. In Primary C-Sections group 1 and 2 contribute to 20%, Multigravidae about 11%, Preterm 18% and rest by others. **Conclusion:** It is a common surgical procedure, have both short-term and long-term risks associated with it.[2].Hence its indications has to be limited.

KEYWORDS : Caesarean [CS], Robson ten group classification system

INTRODUCTION:

In 1985, WHO has proposed the ideal rate for caesarean sections to be between 10-15%.^[1] When strictly indicated, a timely CS can effectively prevent maternal and perinatal mortality and morbidity. Caesarean section like any other surgery have its own inherent complications and its complications are far more when compared with normal delivery. There is no uniformity in performing C-sections especially in private sector. Hence there is a need for an internationally accepted classification system for caesarean sections that would allow meaningful and relevant comparison of CS rates.

Among the classification systems available, the 'Robson' system has been widely used in various countries. This system was proposed by Dr. Michael Robson in 2001. WHO also recommends this system as a global standard for assessing, monitoring and comparing CS rates within healthcare facilities over time (WHO systematic review 2011). The categories are based on 5 basic obstetric characteristics^[1] mainly gestational age, fetal presentation, number of fetus, onset of labour and history of CS^[3] and indications for CS and grouped as 10 Robson groups.

Robson classification system

Class 1: Nullipara, 37 or more weeks, single, cephalic, spontaneous labor.

Class 2: Nullipara, 37 weeks or more, single, cephalic, induced labor or CS before labor i. 2a: induced labor ii. 2b: CS before labor

Class 3: Multipara, 37 or more weeks, single, cephalic, spontaneous labor [previous CS not included]

Class 4: Multipara, equal to or >37 weeks, single, cephalic, induced or CS before labor (excludes previous CS) i. 4a: induced labor ii. 4b: CS before labor

Class 5: Multipara, previous CS, equal to or >37 weeks, single, cephalic

Class 6: Nullipara, single, breech

Class 7: Multipara, single, breech (including previous CS)

Class 8: Multiple pregnancy (with or without previous CS)

Class 9: Singleton pregnancy, oblique/transverse lie (with or without previous CS)

Class 10: Single, cephalic less than 37 weeks

AIMS and Objectives of the study:

is to analyse the indications of cesarean sections in our hospital, to do audit of C-sections by Robsons criteria in order properly plan to avoid unnecessary C.sections

Study Design:

Prospective cross sectional study.

Sample Size:

The study population included all the cases of Caesarean sections at our department of Obstetrics and Gynaecology, Government General Hospital, Siddhartha Medical College, Vijayawada.

Study Period: From 1.01.2021 to 30.06.2022.

Inclusion Criteria:

All cases who delivered by Caesarean section in our hospital

Exclusion Criteria:

Women who had LSCS in other hospitals

Study Method- Collection Of Data-

All antenatal women admitted in labor room and antenatal wards were studied by means of a detailed C-section audit proforma. Five Parameters are considered for our study. 1.gestational age, 2.fetal presentation, 3.number of fetus, 4.onset of labour and 5.history of

CS)⁽³⁾ and 6.indications for CS and Robson groups (1-10 were allocated. All cases of caesarean section were systematically and critically evaluated and grouped by modified Robsons system.

A- Primary Caesarean Sections, B- Repeat Caesarean sections

RESULTS:

Total number of deliveries in the study group- 13,894
 Total number of Caesarean sections- 6959 [50%]
 Total number of Primary Caesarean sections- 3705 [53.3%]
 Total number of Repeat Caesarean sections - 3254 [46.7%]

Relative contribution to overall CS (%) = No. of CS in the group/Total No. of CS in the hospital x 100;

Absolute contribution to overall CS (%) = No. of CS in the group/Total No. of women delivered in the hospital x 100.

Table - 1

Robsons Groups	A Group		Number of cases in the group	relative % cases in group/total C-sections	Absolute % cases in group/total deliveries	Cases in group/primary C-sections	MCI
1.	Nulliparous, single, cephalic, equal to or >37 weeks	Spontaneous	723	10.4%	5.2%	20%	9.8%
2.	Nullipara, 37 weeks or more, single, cephalic	Induced	825	11.9%	5.9%	22%	39.9%
3.	Multiparous, single, cephalic, equal to or >37 weeks	Spontaneous	301	4.3%	2.1%	8%	3%
4.	Multipara, equal to or >37 weeks, single, cephalic	Induced	485	7%	3.5%	13%	6%
5.	All nulliparous breech		46	0.6%	0.3%	1.2%	57%
6.	All multiparous breech		24	0.3%	0.7	0.6%	-
7.	Multiple pregnancies		39	0.6%	0.2%	1%	-
8.	Other abnormal lies		20	0.2%	0.1%	0.5%	-
9.	All cases < 37 weeks		1242	18%	9%	34%	65.7%
B Group							
10.	All cases of one or more C-sections irrespective of gestational age		3254	46.7%	0.2% VBAC gestational age	----- ---- -----	74%

Note- Multi country survey [MCI]

Table 2

	My Study	Thrissur study	JIPMER Study	Ethiopia Study
Live births	13,894	-----	15 -18000	-----

Primigravida term	22%	21%	21.9%	38%
Multigravidae term	12%	16%	21%	23%
Abnormal presentation	2%	-----	----	
preterm	18%			
Rpt section	46.7%	Trail of scar in 65% and 64% success	34.9% 10% induction done	

Table 3

Indication	My Study	Thrissur study	JIPMER Study	Ethiopia Study
Maternal factors like PE,DM etc.,	1582 [23%]			
Cephalopelvic disproportion	987 [14%]			
Failed induction	1034 [15%]		8.3%	
oligamnois	1256 [18%]			
Fetal distress	878 [13%]	33%	67%	
malpresentations	180 [2.5%]	18.7%		
Obstructed labour	564 [8.1%]	14%	13.7%	
Doubtful Scar integrity	1875 [27%]	Most common cause	Most common cause	Most common cause
Multiple pregnancy	39 [0.5%]			
Cord factors	56 [0.8%]			
Placenta previa	35 [0.5%]			
Abruptio placenta	576 [8.2%]			
Precious pregnancy	344 [5%]			

DISCUSSION:

The present study included 13894 women who delivered in our hospital for a period of one and half year, and the overall CS done were 6959 [50%] which is above the national average. The CS rate in our center is higher than WHO MCS (31.2%) and global survey (26.4%) as we are dealing with a multitude of high risk and referral patients. In our institute the rate of repeat caesarean sections was 46.7percent which is high due to referrals from peripheral hospitals. The resources are not sufficient to give TOLAC in repeat C-sections in our institute, and Vbac is done in only 24 cases during this period. Other studies showed 65% of cases induction of labour and 64% had successful VBAC⁽²⁾ We modified the Robsons system and classified women with previous CS into separate group regardless of their other obstetric characteristics. Hence it helps to directly measure the Primary as well as the Repeat CS rates separately WHO MCS witnessed almost doubling of CS rate in this group. As it is mentioned, this group is heterogeneous with previous 1 or more CS and in some women the previous intraoperative findings or the current obstetric history may preclude the possibility of TOLAC⁽³⁾. Hence, a detailed subgroup analysis will help us to focus on specific subtype of women with previous one CS.

Almost 90% of the women in our study belonged to groups 1–4 when considering primary sections. These are low risk women who had either spontaneous or induction of labor at term. The quite striking indication for CS in all these four groups was fetal distress which included fetal heart abnormalities by clinical diagnosis, NST/CTG or abnormal doppler changes or meconium stained liquor. Past dates and oligohydramnios were also the common indications for induction of labor in these groups (Groups 1–4) However, the ratios of group 1, 2, 3, 4, 9 and 10 were higher compared to Robson and MCS reference levels [Table1]. Group 9 is much higher than other studied because our hospital is the common referral centre for high-risk pregnancy who needs multidisciplinary care with level III neonatal care unit. So the CS rate in group 9 (singleton, cephalic, preterm) is 18% which is well above the reference rates of Robson and MCS [Table1]. Almost a third of CS in each group was for fetal distress (13% to 23% which close to other studies. Of the total CS in this group, 58.8% of women had previous one or more CS; We didnt have induction of labour in any case of previous Caasarean section, whereas the induction rate study at Jipmer in group 10 was 10.6% [Table2].

In Group 5 and 6 the rate of vaginal delivery is far less when compared to WHO MC studies and other studies. The rate of vaginal breech delivery in study 2 was 25.3%. Almost 95% of women who underwent

CS in groups 5 had an uncomplicated breech at the time of CS. More than improving the skill on vaginal delivery, increasing the performance of external cephalic version in appropriate cases could help in decreasing CS rate and size of these groups.

Among the ten groups, this group had the highest group-specific CS rate after the group 9. The C-sections are done for better neonatal care in cases of PROM or established preterm and various medical complication like preeclampsia.

CS was performed in women who conceived following assisted reproductive techniques because of coexisting maternal comorbidities and maternal request. In Study at JIPMER 80.5% of the CS in this group was performed for nonvertex presentation of first twin, twin gestation in women with prior CS, and IVF conception. includes the study setting.

The major weakness was nonassessment of perinatal outcome while auditing CS^[6]. ACOG has set definite guidelines on labor management aiming to limit growing primary caesareans. They have suggested to include strategies to avoid unindicated early labour inductions and to promote ECV for Breech and twin vaginal deliveries^[4]

CONCLUSION:

Improving the quality of care is an essential part of clinical care and CS is one of the important components of Comprehensive Emergency Obstetric and Neonatal Care^[2]. Hence auditing CS and assessing its rate is essential in improving the maternal and neonatal care especially where the maternal and neonatal mortality remain high. Our target should be to achieve a target of a primary CS rate of around 15% which will definitely reduce previous CS in the long run^[4]. This in turn helps in reducing maternal and perinatal mortality and morbidity.

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