



ROBSON'S CLASSIFICATION: A TOOL TO OPTIMIZE CAESAREAN SECTION RATE

Dr. Vinutha Sharma*

Flat No: 814, 3s6, Rehabilitation Institute Campus, Christian Medical College, Vellore, Tamil Nadu, India.

*Corresponding Author: Dr. Vinutha Sharma

Flat No: 814, 3s6, Rehabilitation Institute Campus, Christian Medical College, Vellore, Tamil Nadu, India.

Article Received on 30/05/2021

Article Revised on 19/06/2021

Article Accepted on 09/07/2021

ABSTRACT

Background: The increase in rate of caesarean section is a matter of public health concern. Hence, Robson's criteria was appreciated and adopted by WHO in 2001. The objective of this study is to classify cesarean sections according to this classification and find audit the raising rate. Methods: This is a retrospective study conducted in a study period March to April 2020. The record is classified in the Robson groups. Results: The maximum number of caesarean sections is seen in group 5- 15.03%, followed by group 2- 10.13%. Group 3 and group 10 contribute 0.03% to the classification, group 4 and 9 contribute 0.69%. Group 6 and 7 contribute 1.74% each and group 1- 4.89%. Conclusion: By decreasing the CS rate in nulliparous the rate of CS in multiparous with previous CS can be decreased to a significant rate. Judicious use of induction of labor in day-to-day practice can reduce the CS rates in nulliparous.

KEYWORDS: Hence, Robson's criteria was appreciated and adopted by WHO in 2001.

INTRODUCTION

Caesarean section (CS) is one of the most common surgeries a woman would undergo in her life. The first caesarean was documented in 1020 AD. Since then, this procedure has evolved tremendously. There is an upward trend seen in the rate of caesarean sections in the past few decades. The caesarean delivery rate in India was 5% in 1970, 16.4% in the year 2013-14 and 18% in the year 2015-16 by National Family Health Survey. The average CS rate in Asian countries is 27.3% whereas it is 31.1 % in USA.

This increasing rate of caesarean sections is a matter of major public health concern as it increases the caesarean section related maternal morbidity. According to the WHO guidelines and the US Healthy initiative 2000, the rate of caesarean sections should not exceed 15%. Hence, Robson criteria (Ten group classification system-TGCS), proposed by Dr Michel Robson, National Maternity Hospital, Dublin in 2001 was appreciated and adopted by WHO in 2014 and by FIGO in 2016. This system classifies women into 10 groups based on their obstetric characteristics (parity, previous CS, gestational age, onset of labor, fetal presentation and number of fetuses).

The classification system is clinically relevant, reproducible and a prospective instrument for evaluating, monitoring and comparing CS rates globally. Since 2001, many countries have incorporated this in their routine clinical practice to monitor CS rate and to

evaluate the impact of changes in the management that may alter it.

The objective of this study is to.

- 1. Classify caesarean sections according to their cause,
2. Identify the group with raising caesarean section.

Table no: 01; Robson's classification of caesarean section

- 1. Nulliparous, singleton, cephalic, >=37 weeks in spontaneous labor.
2. Nulliparous, singleton, cephalic, >=37 weeks, induced or CS before labor.
3. Multiparous (excluding previous CS), singleton, cephalic, >=37 weeks in spontaneous labor.
4. Multiparous (excluding previous CS), singleton, cephalic, >=37 weeks, induced or CS before labor.
5. Multiparous with previous CS, singleton, cephalic, >=37 weeks.
6. All nulliparous breeches.
7. All multiparous breeches (including previous CS).
8. All multiple pregnancies (including previous CS).
9. All abnormal lies (including previous CS).
10. All singleton cephalic, <=36 weeks (including previous CS).

METHODS

This is a retrospective study conducted in a government medical college in Maharashtra, during March and April 2020.

Exclusion criteria: vaginal and instrumental vaginally delivered patients were excluded.

Inclusion criteria: All patients who delivered by caesarean section were included irrespective of their risk factors and medical comorbidities.

RESULTS

The total number of deliveries in our hospital in the study period is 286. Of these, 184 were normal vaginal deliveries and 102 were caesarean sections. The

percentage of caesarean section in our hospital was found to be 35.66.

The maximum number of caesarean sections is seen in group 5- 15.03% (multiparous with previous CS, singleton, cephalic, >37 weeks), followed by group 2- 10.13% (nulliparous, singleton, cephalic, >37 weeks, induced or CS before labor). Group 3 and group 10 contribute 0.03% to the classification, group 4 and 9 contribute 0.69%. Group 6 and 7 contribute 1.74% each and group 1- 4.89%.

Table 02: Caesarean section rate and their contribution in each group.

Robson's criteria	number of caesarean sections	number of vaginal deliveries	total no of deliveries	contribution of each group to overall CS rate
1	14	22	36	4.89
2	29	47	76	10.13
3	1	26	27	0.03
4	2	54	56	0.69
5	43	16	59	15.03
6	5	1	6	1.74
7	5	2	7	1.74
8	0	4	4	0
9	2	0	2	0.69
10	1	12	13	0.03
total :	102	184	286	

Of the group 1 patients, 14 women, who were in active labor, ended up in CS mostly due to fetal distress. 20 patients who had induction of labor landed up in CS due to obstetrical indications. 9 patients were taken to CS directly on admission due to direct indication for CS. In the group 2, one patient who was 3rd gravida (previous vaginal delivery) underwent CS indication being obstructed labor. 2 patients of placenta previa and one patient with anhydromnios (all 3 being multiparous with previous vaginal delivery) underwent CS. 10 patients with previous 2 CS underwent CS without trial of labor. One elective CS on maternal request was carried out. 16 patients who had a trial of labor ended up in CS due to obstetrical reasons. 5 nulliparous patients with fetus in breech presentation and 5 multiparous with breech presentation had CS done. One patient of 3rd gravida underwent CS for transverse lie and one primigravida had to undergo CS for hand prolapse. One patient who was primigravida with precious pregnancy had abruptio-placenta at 33 weeks, hence was posted for CS.

DISCUSSION

Robson's classification system is highly in use nowadays due to its ease and simplicity. Because of the ease of implementation and interpretation, this system is used as an important tool in the clinical and administrative management in maternity wings of most of the hospitals.

The caesarean section rate in our hospital is found to be 35.66% which is lower than that seen in the study by Kant A et al (53.86%)^[12], but comparable to the rate in the study by Gomathy E et al (30.84%).^[13] This higher

rate in our hospital can be substantiated by saying that, ours is a tertiary hospital, where referrals to our hospitals are high, mostly from primary health care centres where the provision for CS isn't available and facility of transfusion is low.

Our study showed the highest CS rate in group 5 of Robson's classification (i.e. patients with previous CS, term, singleton, and cephalic presentation) which is similar to the results seen in the studies by Gomathy and Sara Vargas.^[14] This depicts the strong need to evaluate the need for CS in nulliparous. We also found that most of these patients had undergone induction of labor, later being posted for CS for obstetrical indication. Hence, a decrease in the CS rate in nulliparous will eventually decrease the rate in multiparous with previous CS. Vaginal birth after CS (VBAC) should be used cautiously in this group of patients after valid consent from the patient, but not at the cost of maternal and fetal safety.

Our next higher contribution was found in group 2 (i.e. nulliparous with induced labor or CS before labor). The maximum among these is those who had induced labor. This shows the necessity to limit induction of labor and should be only evidence-based. ACOG recommends clinical guidelines to restrict the CS in non-medically indicated and induction of labor before 39 weeks of gestation.^[15] Only one patient had her elective CS on request which is a very small figure compared to many other studies. CS on maternal request is becoming a trend in recent days may be due to apprehension towards

pain, higher socioeconomic status, higher education qualification and increased sedentary lifestyle. CS should be reserved as emergency surgery for the needed patients.

Breech deliveries in nulliparous are hardly seen these days as they undergo CS before spontaneous onset of labor. Increased use of versions and by experienced hands vaginal birth of breech deliveries can be made possible, hence reducing the rate of CS in these patients.

CONCLUSION

By decreasing the CS rate in nulliparous the rate of CS in multiparous with previous CS can be decreased to a significant rate. Judicious use of induction of labor in day-to-day practice can reduce the CS rates in nulliparous. Timely education and counselling to the patients and their families can reduce the need for induction of labor on maternal request.

The simplicity and flexibility of the classification make it easy for clinicians to use it on regular basis. This classification is clinically relevant and helps in classifying patients prospectively, making implementation and evaluation of the necessary intervention to the target groups possible.

REFERENCES

- Evidence-based surgery for caesarean delivery., Berghella V, Baxter JK, Chauhan SP, American Journal of Obstetrics and Gynecology, 2005 Nov. [PubMed PMID: 16260200]
- ACOG Practice Bulletin No. 205: Vaginal Birth After Caesarean Delivery. Obstetrics and Gynecology. 2019 Feb; [PubMed PMID: 30681543]
- Unicef.org.1. UNICEF DATA. (online) Available at [http://data.unicef.org/topic/maternalhealth/delivery-care/.](http://data.unicef.org/topic/maternalhealth/delivery-care/)
- MacDorman MF, Menacker F, Declercq E. Cesarean birth in the United States: epidemiology, trends, and outcomes. ClinPerinato, 2008; 35(2): 293-307.
- Lumbiganon P, Laopaiboon M, Gulmezoglu AM, Souza JP, Taneepanichskul S, Ruyan P, et al. methods of delivery and pregnancy outcomes in Asia; the who global survey on maternal and perinatal health 2007-08, Lancet, 2011; 375(9713): 490-9.
- FIGO Working group on challenges in the care of mothers and infants during labor and delivery, "best practice advice on the 10 – group classification system for caesarean deliveries," Int J Gynecol Obstet, 2016; 135(2): 232-3.
- Vogel JP, Betrán AP, Vindevothel N, et al; WHO Multi-Country Survey on Maternal and Newborn Health Research Network. Use of the Robson classification to assess caesarean section trends in 21 countries: a secondary analysis of two WHO multicountry surveys. Lancet Glob Health, 2015; 3(05): e260–e270. Doi: 10.1016/S2214-109X(15)70094-X.
- Cabeza Vengoechea PJ, Calvo Pérez A, Betrán AP, Mas Morey MM, Feblés Borges MM, et al. (2010) Clasificación de cesáreas por Grupos de Robson en dos periodos comparativos en el Hospital de Manacor. *Progresos en Obstetricia y Ginecología*, 53: 385–390.
- Kazmi T, Saiseema S, Khan S (2012) Analysis of Cesarean Section Rate - According to Robson's 10-group Classification. *Oman Med J*, 27: 415–417.
- Betran AP, Gulmezoglu AM, Robson M, Merialdi M, Souza JP, et al. (2009) WHO global survey on maternal and perinatal health in Latin America: classifying caesarean sections. *Reprod Health*, 6: 18.
- Kelly S, Sprague A, Fell D, Murphy P, Aelicks N, et al. (2013) Examining Caesarean Section Rates in Canada Using the Robson Classification System. *J Obstet Gynaecol Can*. Costa ML, Cecatti JG, Souza JP, Milanez HM, Gulmezoglu MA (2010) Using a Caesarean Section Classification System based on characteristics of the population as a way of monitoring obstetric practice. *Reprod Health*, 7: 13.
- Kant A, Mendiratta S. Classification of cesarean section through Robson Criteria: an emerging concept to audit the increasing cesarean section rate. *Int J Reprod Contracept Obstet Gynecol*, 2018; 7: 4674-7.
- Gomathy E, Radhika K, Kondareddy T. Use of the Robson classification to assess cesarean section trends in a tertiary hospital. *Int J Reprod Contracept Obstet Gynecol*, 2018; 7: 1796-1800.
- Sara Vargas, Susana Rego, Nuno Clode, Robson classification system applied to induction of labor, *Rev Bras Ginecol Obstet*, 2018; 40: 513-517.
- Atavrou EP, Ford JB, Shand AW, et al. Epidemiology and trends for cesarean section births in New South Wales, Australia: a population-based study. *BMC pregnancy childbirth*, 2011; 11(1): 8.