



INTERNATIONAL JOURNAL OF ADVANCE RESEARCH, IDEAS AND INNOVATIONS IN TECHNOLOGY

ISSN: 2454-132X

Impact Factor: 6.078

(Volume 10, Issue 5 - V10I5-1188)

Available online at: <https://www.ijariit.com>

Perinatal Outcomes of 100 Consecutive Cesarean Sections at a Nursing Home in Urban India

Arrman Sanganeria
arrman.s@gmail.com
Independent Researcher

Gaurav Desai
gdesai83@gmail.com
Mothercare Clinic

ABSTRACT

Background: Cesarean section has become an important obstetric intervention both in institutions and nursing home setup. Outcomes of cesarean sections nursing homes are not well documented in literature.

Objectives: To analyse data of 100 consecutive cesarean sections done at a nursing home in urban India.

Method: This was a retrospective study carried out at Mothercare Nursing Home in the city of Mumbai over a period of six years. Medical records of patients who underwent a cesarean section at our nursing home between 2015 to 2021 were recorded. Demographic data including patient's age, mean parity, previous medical and surgical history, USG findings, cesarean section and newborn records were documented. Caesarian sections done were classified as per Robson criteria. Data was analysed using Microsoft excel.

Results: A total of 100 consecutive patients (mean age=30.9±4.2 yrs, mean parity=0.6±0.7 yrs, mean BMI= 23.4±1.4 kg/m²) who satisfied our inclusion criteria were included in this study and underwent a cesarean section. In total 78 patients underwent an elective cesarean delivery and 22 had an emergency cesarean section. Primary and secondary cesarean section was done in 66 and 34 women respectively. There were 104 conceptions (n=4 twin gestation) resulting in 43 male and 61 female births. Number of women who were normal weight (BMI 18-25 kg/m²) were 72 and total number of overweight and obese women were 28 (BMI over 25 kg/m²). Majority of patients were categorised into modified Robson class 2 and 5. A majority of women were in the 25-35-year age group (n=83). Most deliveries occurred at term (n=98, mean birth weight 2.87±0.47 kg). Two preterm newborns required NICU care. There was no maternal mortality in our cohort.

Conclusions: Cesarean delivery is a safe and feasible procedure in a nursing home. Good backup systems and protocols are a must to conduct this surgery in a safe and effective manner. Most patients were modified Robson criteria 2 and 5.

Keywords: Cesarean section, perinatal morbidity, Robson criteria

1. INTRODUCTION

Cesarean section has become an important obstetric intervention both in institutions and nursing home setup. Outcomes of cesarean sections nursing homes are not well documented in literature.

2. MATERIAL AND METHODS:

This was a retrospective study carried out at Mothercare Nursing Home in the city of Mumbai over a period of six years. Medical records of patients who underwent a cesarean section at our nursing home between 2015 to 2021 were recorded. Demographic data including patient's age, mean parity, previous medical and surgical history, USG findings, cesarean section and newborn records were documented. Each patient was categorised according to their BMI and modified Robson criteria (1). Data was analysed using Microsoft excel.

a) Inclusion criteria:

- i. Those patients who underwent a cesarean section at our nursing home
- ii. Emergency cesarean delivery
- iii. Elective cesarean delivery

b) Exclusion criteria:

- i. Patients who had a vaginal delivery

- ii. Women who underwent an assisted vaginal delivery
- iii. Those that were not in the time frame of this study

3. TECHNIQUE OF CESAREAN DELIVERY

A written and verbal informed consent is taken. Spinal anaesthesia is given and patient kept in supine position. Urinary bladder is catheterised. Savlon and povidone iodine is applied over the surgical field. Patient is draped. After checking the adequacy of anaesthesia, Pfannenstiel incision is made and abdomen opened in layers. Peritoneum is opened either by blunt finger technique or with scissors after lifting it up with two artery forceps. UV fold of peritoneum is opened and urinary bladder retracted by a Doyen's retractor. Uterine incision is made and baby delivered. Cord clamped after 10-15 seconds and baby handed over to paediatrician. Ten units oxytocin is given iv/im. Methyl ergometrine and prostaglandins are administered in case of heavy bleeding. Placenta is delivered with cord traction. Uterine cavity is mopped and membranes removed. Incision is closed with vicryl 1 suture continuous manner in two layers. Uterus placed back into abdominal cavity. Hemostasis checked. Peritoneum closed with catgut 0 and rectus muscle approximated with vicryl 1 suture material. Rectus sheath closed with continuous vicryl 1 suture. Skin closed with monocryl 3-0. Povidone iodine ointment applied after cleaning surgical field and dressing applied.

4. RESULTS

A total of 100 consecutive patients (mean age=30.9±4.2 yrs, mean parity=0.6±0.7 yrs, mean BMI= 23.4±1.4 kg/m²) who satisfied our inclusion criteria were included in this study and underwent a cesarean section. There were 104 conceptions (n=4 twin gestation) resulting in 43 male and 61 female births. Number of women who were normal weight (BMI 18-25 kg/m²) were 72 and total number of overweight (BMI 25-30 kg/m²) and obese women (BMI over 30 kg/m²) were 22 and 6 respectively.

5. OBSTETRIC COURSE

A majority of women were in the 25-35 year age group (n=83). Anemia (n=5) and hypertension (n=11) were the common medical problems in the antenatal period. Others were gestational diabetes mellitus (n=4), carpal tunnel syndrome (n=2). In total 78 patients underwent an elective cesarean delivery and 22 had an emergency cesarean section. Primary and secondary cesarean section was done in 66 and 34 women respectively. Majority of patients were categorised into modified Robson class 2 and 5. Robson class 2 (singleton cephalic at term cesarean delivery) accounted for 31% of cases while Robson class 5 was in 32% of patients.

6. PERINATAL OUTCOME

Most deliveries occurred at term (n=98). The mean birth weight of the patients in our study was 2.87±0.47 kg. Mean Apgar score at 1 and 5 minutes was 8.1±0.5 and 8.9±0.2. Two preterm babies required NICU admission (twins, Robson 10). There was no maternal mortality in our cohort. One newborn male child weighing 3 kg was stillborn. One male child had penile hypospadias. The mean birth of twin gestation (n=4 patients) was lower than the total cohort (2.25±0.25 kg).

7. DISCUSSION

Our nursing home is located in suburban Mumbai, a metropolitan city in India. We analysed the demographic details and perinatal outcomes of a 100 consecutive cases of cesarean section done at our nursing home. Further we classified these cesarean sections into categories of Robson criteria (2). This categorisation into standardised criteria would help to analyse healthcare practice in different setups and situations. Additionally, it would help assess and compare the performance of emergency obstetric teams locally as well as globally. In our study we noticed that most patients we operated upon were from modified Robson class 2 and 5.

A number of publications emphasise on the rise in cesarean section rate with extensive data (3). Mittal et al even state the rising rates in primary cesarean sections at an institutional level (4). Further data from Brazil shows that more than 90% of women in private setup undergo a cesarean section (5). There are those who believe a lowering of threshold is the reason for the rise in rates (6, 7). Debates also exist on when to perform the cesarean sections in relation to labor, preference of which is subjective at both an institutional and non-institutional level (8, 9).

Several studies have documented Caesarean section data according to Robson criteria however these are at large institutions (10-12). Uniform classification systems are needed to be put in place to only at institutions but also in nursing homes and clinics where this surgery is performed. Recording and analysis of data will help in improving standards of healthcare given to women during childbirth. Limitations of our study were its retrospective nature and the inability to carry out statistical analysis due to a limited number of patients. We however had complete detailed records of all 100 consecutive patients.

In our study a majority of women in normal, overweight and obese categories had a successful perinatal outcome. However, our numbers of obese category patients were not large enough to carry out statistical studies and compare the results to determine if obesity is linked to worse perinatal outcome as has been done in some studies (13). There are some who practice single layer closure and those who prefer double layer closure of the uterus (14). In our series we usually performed double layer closure especially in previous cesarean section patients. We haven't experienced any case of uterine rupture at our clinic on followup.

While common indications for emergency cesarean sections at an institutional level include fetal distress and malpresentations those at nursing home level are different (4, 15). In our study emergency cesarean was performed for meconium staining and for prolonged labor. Previous cesarean section and loop of cord around the fetal neck were common reason for women to consent for elective caesarean delivery in our study.

8. CONCLUSION

Cesarean delivery is a safe and feasible procedure in a nursing home. Good backup systems and protocols are a must to conduct this surgery in a safe and effective manner. Majority of patients were categorised into modified Robson class 2 and 5.

CONFLICT OF INTEREST: None

ACKNOWLEDGEMENT: The authors would like to acknowledge the staff at the clinic for their help with patients and medical records.

REFERENCES

- [1]. Zeitlin J, Durox M, Macfarlane A, Alexander S, Heller G, Loghi M, Nijhuis J, Sól Ólafsdóttir H, Mierzejewska E, Gissler M, Blondel B; Euro-Peristat Network. Using Robson's Ten-Group Classification System for comparing caesarean section rates in Europe: an analysis of routine data from the Euro-Peristat study. BJOG. 2021 Aug;128(9):1444-1453.

doi:10.1111/1471-0528.16634. Epub 2021 Feb 1. PMID: 33338307; PMCID: PMC8359161.

[2]. Farine D, Shepherd D, Robson M. Classification of caesarean sections in Canada: the modified robson criteria. J Obstet Gynaecol Can. 2012 Dec;34(12):1133. PMID: 25162083.

[3]. Mahadik K. Rising Cesarean Rates: Are Primary Sections Overused? J Obstet Gynaecol India. 2019 Dec;69(6):483-489. doi: 10.1007/s13224-019-01246-y. Epub 2019 Jun 13. PMID: 31844361; PMCID: PMC6889110.

[4]. Mittal S, Pardeshi S, Mayadeo N, Mane J. Trends in cesarean delivery: rate and indications. J Obstet Gynaecol India. 2014 Aug;64(4):251-4. doi: 10.1007/s13224-013-0491-2. Epub 2014 Jan 3. PMID: 25136169; PMCID: PMC4126949.

[5]. Almeida MA, Araujo Júnior E, Camano L, Peixoto AB, Martins WP, Mattar R. Impact of cesarean section in a private health service in Brazil: indications and neonatal morbidity and mortality rates. Ceska Gynekol. 2018 Winter;83(1):4-10. English. PMID: 29510632.

[6]. Saleh SS. The changing trend in the rate of caesarean section at a teaching hospital. J Obstet Gynaecol. 2003 Mar;23(2):146-9. doi: 10.1080/014436103000074664. PMID: 12745557.

[7]. Leitch CR, Walker JJ. The rise in caesarean section rate: the same indications but a lower threshold. Br J Obstet Gynaecol. 1998 Jun;105(6):621-6. doi: 10.1111/j.1471-0528.1998.tb10176.x. PMID: 9647152.

[8]. Anuwutnavin S, Kitmithee B, Chanprapaph P, Heamar S, Rongdech P. Comparison of maternal and perinatal morbidity between elective and emergency caesarean section in singleton-term breech presentation. J Obstet Gynaecol. 2020 May;40(4):500-506. doi: 10.1080/01443615.2019.1634018. Epub 2019 Sep 3. PMID: 31478414.

[9]. Mhaske N, Agarwal R, Wadhwa RD, Basannar DR. Study of the Risk Factors for Cesarean Delivery in Induced Labors at Term. J Obstet Gynaecol India. 2015 Jul;65(4):236-40. doi: 10.1007/s13224-014-0596-2. Epub 2014 Jul 23. PMID: 26243989; PMCID: PMC4518020

[10]. Yadav RG, Maitra N. Examining Cesarean Delivery Rates Using the Robson's Ten-group Classification. J Obstet Gynaecol India. 2016 Oct; 66 (Suppl 1):1-6. doi: 10.1007/s13224-015-0738-1. Epub 2015 Jul 21. PMID: 27651569; PMCID: PMC5016390.

[11]. Hans P, Rohatgi R. Proposing a Hybrid Model Based on Robson's Classification for Better Impact on Trends of Cesarean Deliveries. J Obstet Gynaecol India. 2017 Jun;67(3):183-189. doi: 10.1007/s13224-016-0953-4. Epub 2016 Nov 21. PMID: 28546665; PMCID: PMC5425641.

[12]. Kazmi T, Saiseema S 5th, Khan S. Analysis of Cesarean Section Rate - According to Robson's 10-group Classification. Oman Med J. 2012 Sep; 27(5):415-7. doi: 10.5001/omj.2012.102. PMID: 23074555; PMCID: PMC3472574.

[13]. Meenakshi, Srivastava R, Sharma NR, Kushwaha KP, Aditya V. Obstetric behavior and pregnancy outcome in overweight and obese women: maternal and fetal complications and risks in relation to maternal overweight and obesity. J Obstet Gynaecol India. 2012 Jun; 62(3):276-80. doi: 10.1007/s13224-012-0215-z. Epub 2012 Aug 1. PMID: 23730029; PMCID: PMC3444556.

[14]. Hegde CV. The never-ending debate single-layer versus double-layer closure of the uterine incision at cesarean section. J Obstet Gynaecol India. 2014 Aug;64(4):239-40. doi: 10.1007/s13224-014-0573-9. Epub 2014 Jul 23. PMID: 25136167; PMCID: PMC4126934.

[15]. Bhargava S, Hooja N, Kala M, Mital P, Tulani K, Arora S, Kumavat B, Gupta S. Cesarean Delivery in the Second Stage of Labour at a Tertiary Care Hospital. J Obstet Gynaecol India. 2019 Dec;69(6):558-560. doi: 10.1007/s13224-018-1179-4. Epub 2018 Oct 12. PMID: 31849391; PMCID: PMC6889256.

TABLE 1 Demographic details of 100 consecutive patients who underwent a cesarean section

	Mean value
Age	30.84±3.8 yrs
Weight	23.4 ±18 kg
BMI	23.4±1.4 kg/m ²
Parity	0.6±0.7 yrs
Elective	78
Emergency	22
Mean Apgar (1 and 5 min)	8.1±0.5 and 8.9±0.2
Birth weight	2.87±0.47 kg
M:F	43:61

TABLE 2 Classification of patients undergoing cesarean section in this study as per modified Robson criteria

Category	Number of patients
1	16
2	31
3	0
4	11
5	32
6	2
7	1
8	4
9	1
10	2

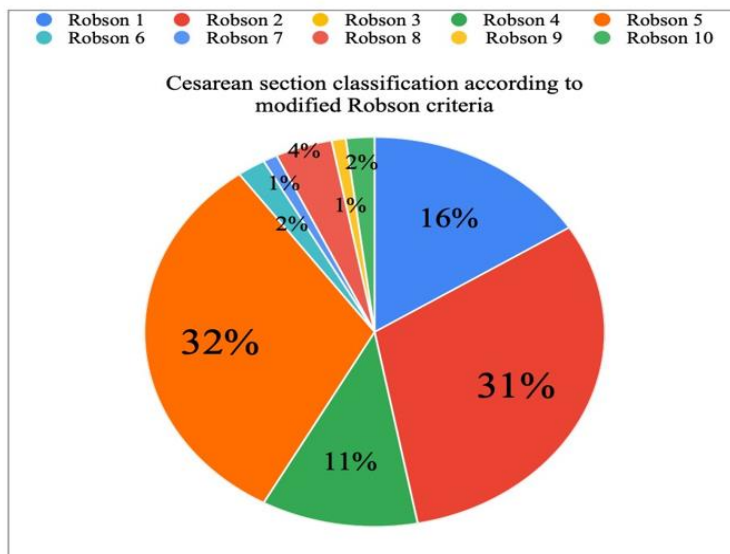


FIGURE 1 Pie chart showing classification of cesarean sections performed in this patient cohort. As per modified Robson criteria. Figures shown as a percentage of the total number of patients (n=100).