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Caesarean Delivery on Maternal Request (CDMR) in a Low Resource Setting

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Abstract

Rising caesarean delivery rate across the globe is one of the major growing challenges in Obstetrics and Gynecology. Performing a caesarean section without any justifiable medical reason, but only due to maternal request is a huge burden to lot of countries while being an unaddressed problem in developing countries with poor resources. Early interventions to this growing challenge will help to prevent subsequent complications and implications on economy of the developing countries.

Keywords: Caesarean; Maternal Request; CDMR; Low Resource Setting

Abbreviations: CS: Caesarean Section; WHO: World Health Organization; CDMR: Caesarean Delivery on Maternal Request; ACOG: American College of Obstetricians and Gynecologist; SOGC: Society of Obstetricians and Gynecologists of Canada; NICE: National Institute of Clinical Excellence; RANZCOG: Royal Australian and New Zealand College of Obstetricians and Gynecologists; PHM: Public Health Midwife; IUFD: Intra-Uterine Fetal Death.

Introduction

Caesarean section (CS) is one of the commonest surgical procedures in all over the world [1]. Rising CS rate across the globe is one of the major growing challenges in Obstetrics and Gynecology. Except some parts of the Europe, CS rate has exceeded 30% (32% in the US, 32% in Oceania, 40% in Latin America, and 25% in Europe) [2]. World Health Organization (WHO) declared that there is no justification for any region to have a caesarean section rate higher than 10–15% [3]. But when medically justified, caesarean section can effectively prevent maternal and perinatal mortality and morbidity [4]. After analyzing all available evidence, WHO [5] concluded that.

- Caesarean sections are effective in saving maternal and infant lives, but only when they are required for medically indicated reasons.
- At population level, caesarean section rates higher than 10% are not associated with reductions in maternal and newborn mortality rates.
- Caesarean sections can cause significant and sometimes permanent complications, disability or death particularly in settings that lack the facilities and/or capacity to properly conduct safe surgery and treat surgical complications. Caesarean sections should ideally only be undertaken when medically necessary.
- Every effort should be made to provide caesarean sections to women in need, rather than striving to achieve a specific rate.
- The effects of caesarean section rates on other outcomes, such as maternal and perinatal morbidity, pediatric outcomes, and psychological or social well-being are still unclear. More research is needed to understand the health effects of caesarean section on immediate and

future outcomes.

CS rate in Sri Lanka had increased during last few years (32.1% in 2014 to 40.8% in 2018) [6]. These figures may vary from center to center with in the country. But this has increased the maternal morbidity and mortality [7]. CDMR is not a well-recognized clinical entity which refers to a primary CS that done due to maternal request in the absence of valid medical or obstetrics reason. Contribution of CDMR for the increment in the overall CS rate is not well understood. But the estimated contribution of CDMR for the overall CS rate in United State is 2.5-3% [8]. In Sri Lanka, statistics for CDMR is lacking. Performing a CS in a woman who is having an unscarred uterus will increase the

- Number of repeat elective CS rate.
- Number of morbidly adherent placental disorders (Table 1)
- Number of gravid hysterectomies due to post-partum hemorrhage (Table 1)
- Number of pre-mature baby unit (PBU) admissions due to neonatal respiratory distress syndrome.

Cesarean Delivery	Placenta Accreta (%)	Odds Ratio (95% CI)	Hysterectomy (%)	Odds Ratio (95% CI)
First*	0.2	—	0.7	—
Second	0.3	1.3 (0.7–2.3)	0.4	0.7 (0.4–0.97)
Third	0.6	2.4 (1.3–4.3)	0.9	1.4 (0.9–2.1)
Fourth	2.1	9.0 (4.8–16.7)	2.4	3.8 (2.4–6.0)
Fifth	2.3	9.8 (3.8–25.5)	3.5	5.6 (2.7–11.6)
Six or more	6.7	29.8 (11.3–78.7)	9	15.2 (6.9–33.5)

Table 1: Association of placenta accreta and gravid hysterectomies with CS [9].

All these facts will ultimately increase the health budget of the country which is unbearable to a developing country with a low resource setting. This becomes a crucial fact to consider when it applies to a developing country which offers free health care facilities to the people. This is the reason which encourages me to address this topic.

Discussion

Different countries have different approaches to CDMR while maintaining different CDMR rates (Tables 2 & 3). Most of the developed countries respect the maternal decision of CDMR after careful counseling by well-trained person. But some countries maintaining a different policy regarding this. Following table summarizes the recommendations by various countries through their guidelines [10-14].

Year	Guideline	Recommendation
2007	ACOG	Perform CS after counseling
2009	SOGC	Against CDMR
2011	NICE	Perform CS after counseling
2013	RANZCOG	Perform CS after counseling
2016	ISS	Perform CS after counseling

Table 2: Summary of recommendations by international guidelines for CDMR (ACOG-American College of Obstetricians and Gynecologist, SOGC-Society of Obstetricians and Gynecologists of Canada, NICE-National institute of clinical excellence, RANZCOG-Royal Australian and New Zealand College of Obstetricians and Gynecologists, ISS- Italian National Institute of Health).

Country	CDMR percentage
China	10-16
Australia	17
United State	3
Italy	8.6

Table 3: CDMR rate in different parts of the world [15].

All these countries are developed countries. So, their decisions can be justified due to the solid financial base they have. But situation is totally different in developing countries, especially where free health services are provided. So, before discuss the solution, possible reasons for CDMR should be discussed. I identified following reasons for CDMR during my career.

- Tokophobia

- Fear of sexual dysfunction after vaginal delivery
- Pelvic floor and pelvic organ dysfunction.
- Cut down the duration of hospital stay by bypassing the cervical ripening time with prostaglandin or with mechanical methods.
- Utilizing private sector for the delivery.
- Wishes to deliver the baby in an auspicious time (golden hour/lucky time)
- Previous bad experience related to child birth which can't be justified by obstetric point of view to offer a CS.
- Discussing with mothers who had vaginal deliveries, but shared only the bad memories of the labour process.
- Wrong inputs regarding the labour process through electronic, printed and social medias.
- Lack of time to discuss regarding the mode of delivery with health care providers due to the busy setup.
- Psychological pressure from the partner and other family members.
- Tendency to practice "defensive obstetrics" by the obstetricians.

What can be done to minimize CDMR in a low resource setting?

Tokophobia

Tokophobia is the fear to labour pain. This is a very sensitive issue which should be addressed in a sensual manner with multi-disciplinary team involvement. Labour pain is the most severe form of pain that a woman experience during her life time. Thus, it is no doubt that her pain should be control to a maximum possible level as health care providers. This process should be started from ante-natal period with counselling and breathing exercises. This should be done in field level with the participation of the partner. I recognize public health midwife (PHM) as the best person to handle this. Proper education about the labour process and its advantages will ensure the high participation. Both these can be done as individual level as well as group level. PHMs should be given a training to make this process successful. When it comes to the third trimester of the pregnancy, every couple should have a chance to discuss the mode of delivery with their health care provider. They should be allowed to clarify their doubts regarding the labour process. This can be easily done at the clinic visit around 36th week of the pregnancy. Importance of attempting vaginal delivery should be emphasized unless there is any valid obstetric indication for CS.

Unavailability of epidural analgesia in every delivery suit is a problem when it comes to the intrapartum pain relief. Epidural analgesia is not freely available even in tertiary care settings. But the induction of labour and augmentation of labour remain at a higher level. Almost all delivery suits use intra-muscular Pethidine as the analgesic of choice. Very few units use Entonox. Thus, every laboring mother bears their labour pain even after the induction or augmentation by getting pethidine, which is not adequate. Analgesics requirement increases with increase of induction and augmentation rate. Thus, the reduction in induction and augmentation will reduce the analgesics requirement as natural labour process gives lower pain level compare to induction or augmentation. Then what are the possible reasons to rise in induction and augmentation of labour? The reasons that I have identified are

- Fear of term intra-uterine fetal death (IUFD)
- Fear of IUFD in pregnancies complicated with diabetes, hypertensive disorders, growth restriction and obstetrics cholestasis.
- Not having proper dating scan.
- Maternal anxiety regarding postdate pregnancy.
- Myths about sexual activities during pregnancy.
- Overcrowding of antenatal wards.

Addressing all about facts in detail is not fall into the scope of this discussion. But it will help to reduce the analgesic requirement during labour and reduce the tokophobia among mothers.

Fear of Sexual Dysfunction after a Vaginal Delivery

Every pelvic organ come back to near normal pre-pregnant state after a vaginal delivery except the vagina. Laxity of the vaginal walls, poor episiotomy suturing or healing and damage to perineal body may lead to poor sexual satisfaction of the couple. Not engaging in pelvic floor exercises will exaggerate this issue. Delayed entry into marriage life, obesity, smoking, poor work-life balance, drug abuse, diabetes and other medications also contribute to the sexual dysfunction. So, couples try to overcome this crucial problem by avoiding a vaginal delivery. The worst thing is they don't tell this directly to their health care provider. They quote various things as the reason for their request for CDMR except the real reason behind it. The health care provider should be smart enough to catch the proper reason and provide adequate counselling to such couples while addressing the above-mentioned facts as well.

Pelvic Floor and Pelvic Organ Dysfunction

Many women afraid about the risk of pelvic organ prolapse (Cystocele, utero-vaginal prolapse, enterocoele and rectocele) following a vaginal delivery. They worried about overactive bladder symptoms and stress incontinence too, following vaginal deliveries. These issues should be addressed with careful counselling and providing pelvic floor exercises. Women should be encouraged to maintain

normal body mass index throughout their life through well balanced diet and regular exercises.

Cut Down the Duration of Hospital Stay by Bypassing the Cervical Ripening time with Prostaglandin or with Mechanical Methods

Induction of labour with prostaglandin (tablet or gel) is not a pleasant experience to any mother due to the duration of pain, discomfort and multiple vaginal examinations. Sometime this may take up to 48 hours. Even though a prime mother who doesn't have children bears with this, multi parous mother who is having children at her home can't stay additional few days in the hospital. Because it will compromise the care of her children at the home. So, these couples tend to go ahead with CDMR. Prevention of unnecessary early inductions and awaiting spontaneous onset of labour will help to overcome this problem unless there are any risk factors for fetal compromise. These couples need good counselling as well. Addressing the wrong attitudes about the sexual relationship during the third trimester may help to reduce the induction rate.

Utilizing Private Sector for the Delivery

Most of the child births in private sector are caesarean deliveries. Most of them are CDMR. Only very few people have vaginal deliveries in private sector. The reasons I identified are

- Obstetrician is not physically available throughout the labour process in private sector.
- Consultant obstetrician doesn't have a team just like in government sector in private sector.
- Lack of well-trained staff for labour care in private sector compare to the government sector.
- Fear of litigations for complications of vaginal deliveries
- Lack of facilities for emergency caesarean delivery or instrumental delivery.
- Not having a proper policy regarding the mode of delivery.
- Cut down the hospital stay by timed delivery and reduce the hospital bill.
- Commercialization of the maternal care in private sector (Business model of maternal care)
- Having insurance schemes or other claiming systems to pay the hospital bill.
- Promotions through electronic, printed and social Medias.

Subsequent problems of CDMR come to the government sector. If the babies develop problems following CS, they may admit to government sector for further care which increases the health budget of the government. When the mother comes to her subsequent deliveries, the couple may not be in solid financial state to bear the hospital bill in private sector due to added expenses due to their child at home. So, they tend to seek care from the government sector for the subsequent deliveries which may need a CS due to the past CS. Other thing is, if they need a hysterectomy later due to other gynecological problem, that surgery will have higher morbidity and complexity due to past CS. The chance of seek the government hospital care is high in these instances as their cost of living is high due to expanded family. So, finally government has to tolerate the unnecessary cost created by the CDMR in private sector. But one may argue that any tax paying citizen of the country have a right to reach to government health care at any time. Thus, this issue should be addressed in a sensible manner with the involvement of all relevant stake holders and national policy should be developed.

Wishes to Deliver the Baby in an Auspicious time (golden hour/lucky time)

Specially in Asian culture, it is believed that birth time will decide the fate of the person. So, people started to think that giving a timed birth at an auspicious time will make that person's life wealthy, healthy and prosperous. Even though this is not applicable to government sector, many CDMRs in private sector are done due to this reason. This is very hard to rectify through counselling by a medical person.

Previous Bad Experience Related to Child Birth which can't be Justified by Obstetric Point of View to Offer a CS

These bad experiences may be extended labour room stay due to prolonged labour, instrumental delivery, and transvaginal interventions due to post-partum hemorrhage, large perineal trauma, infected episiotomy, urinary problems and psycho-sexual problems. These things should be carefully addressed by a well-trained person in order to change the mindset.

Discussing with Mothers who had Vaginal Deliveries, but Shared only the Bad Memories of the Labour Process

This is something I observed during my career among Sri Lankan women. There may be a cultural influence to this as well. They don't share the good aspects of having a vaginal delivery. They tend to share the bad memories of it. Counselling is the only option to overcome this problem.

Wrong Inputs Regarding the Labour Process through Electronic, Printed and Social Medias

With the development of information technology and

internet facilities, lot of women tend to gain knowledge through these medias, especially from social medias which don't have any regulation. There are people who came across complications of vaginal deliveries share their experience through social medias. This makes a huge impact on a woman's mind that is getting ready for the delivery. Unfortunately, these things can't be changed. Individual counselling is required to handle this.

Lack of Time to Discuss Regarding the Mode of Delivery with Health Care Providers due to the Busy Setup.

There are lot of antenatal mothers handled by a single unit in low resource settings. Thus, these units are extremely over-crowded and mothers will not get adequate time to discuss the mode of delivery with their health care providers. Only possible options are communicating with them in larger groups at clinic level, individual communication at community level by midwifes and information through an official media.

Psychological Pressure from the Partner and other Family Members

This is something very important when it comes to Asian culture. Get the participation of the partner during antenatal clinic visits and antenatal classes will support to minimize the problem.

Tendency to Practice "Defensive Obstetrics" by the Obstetricians

Many obstetricians try to avoid risk taking management due to fear of complications. Thus, they maintain a low threshold for CS instead of attempting a vaginal delivery which needs prolonged attention. Same time every professional afraid about the personal level criticism through social medias. Thus, they tend to offer CS when requested by the mothers, especially in private sector. This should be addressed through a national level policy. Finally following recommendations can be made to reduce the number of CDMR and its subsequent complications.

- Build up a national policy regarding CDMR which includes the private sector.
- Develop a national level guideline regarding the decision of mode of delivery.
- Well planned antenatal counselling sessions in larger groups with the participation of the partners.
- Increase the availability of epidural analgesia in labour suits.
- Appoint a well-trained counsellor to every major hospital to handle the mothers who wish to have a CDMR.

Addressing this developing issue at earliest possible time will reduce the subsequent complications and unnecessary health budget to the country with a low resource setting.

Conclusion

CDMR is a developing challenge to both obstetricians and health budget of a developing country which need early interventions to reduce the unnecessary maternal morbidity, mortality and health expenses.

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