



Rates of primary and repeat caesarean at private institution: what can we do to decrease section rate

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Abstract

Background: Increasing rates of caesarean section world over has sparked an interest in measures aimed at curbing this alarming trend. We studied the indications for caesarean sections performed in unit 3 of our institute over a year in order to evaluate a viable intervention. Clinical indications for caesarean were assigned on the basis of operative notes.

Methods: Retrospective analysis of indication for caesarean section in patients undergoing caesarean section in unit 3 of our institution over a period of one year from 1st January 2017 to 31st December 2017.

Results: Totally 496 patients delivered in our unit in the period mentioned, of which, 303 patients had a vaginal delivery (61.09%) and 193 underwent a caesarean section (38.91%). Total 108 patients had a history of at least one previous caesarean section. 12 patients had a history previous 2 or more caesarean section. 16 patients were not offered VBAC in view of malpresentation, placenta previa or other contraindications to TOLAC. Of the remaining 80 patients, 42(52.5%) did not agree for TOLAC. 38 patients agreed for TOLAC and of these, 14 (36.84%) had a successful VBAC

Repeat caesarean section in patients who had undergone at least one previous caesarean was by far the most common factor for caesarean section.

Conclusions: The most important intervention that can be implemented to decrease caesarean rates in the long run is curtailing the caesarean section rate in nulliparous women which requires careful auditing and more stringent criteria, guidelines for indication for caesarean section especially in primigravidae.

Introduction

For over 30 years, since the 1985 Fortaleza WHO meeting, an acceptable caesarean section rate for an obstetric setup is 10-15%. The focus of the health care community worldwide, and of the media, is shifting to the alarming trend of rising caesarean section rates. The increase in caesarean section rates is a global phenomenon with an increase of 12.4 percent over the past 15 years

(from 6.7 percent to 19.1 percent with an average annual rate of increase of 4.4 percent). Many studies have been conducted to evaluate various causes for this increase. Studies in India too have shown a rise in caesarean section rates, with an average rate of C-section in India of 17.2 percent ranging from 5.8 percent in Nagaland to 58.0 percent in Telangana. (table 1)

The aim of this study was to investigate indication for caesarean section in our institute, classified as primary or repeat caesarean section. Only when we clearly understand the indications for

performing a caesarean section, can we effectively find interventions that can help decrease the caesarean section rate.

Table 1: state wise caesarean section rate and the private-public gap

States/Country	Percentage of women who have caesarean delivery		Gap between Private and Public Institutions
	Public Institutions	Private Institutions	
Andhra Pradesh	23.7	55.2	31.5
Assam	12.9	53.3	40.4
Bihar	2.6	31.0	28.4
Chhatisgarh	5.7	48.6	42.9
Delhi NCT	21.0	42.9	21.9
Gujarat	10.8	26.6	15.8
Haryana	8.6	25.3	16.7
Jammu & Kashmir	35.1	75.5	40.4
Jharkhand	4.6	39.5	34.9
Karnataka	16.9	40.3	23.4
Kerala	31.4	38.6	7.2
Maharashtra	13.1	33.1	20.0
Madhya Pradesh	5.8	40.8	35
Odisha	11.5	53.7	42.2
Punjab	17.8	39.7	21.9
Rajasthan	6.1	23.2	17.1
Tamil Nadu	26.3	51.3	25.0
Telangana	39.5	75.1	35.6
Uttar Pradesh	4.9	31.3	26.4
Uttarakhand	9.3	36.4	27.1
West Bengal	18.8	70.9	52.1
India	11.9	40.9	29.0

Methods

This study aimed to investigate indication for caesarean section in unit 3 of Punjab Institute of Medical Sciences, a tertiary referral centre and teaching institute, in calendar year 2017. The data was collected retrospectively from 1st January 2017 to 31st December 2017. Various details were collected from the medical records

Primary CS was classified as the first caesarean procedure for the mother, regardless of parity. Repeat CS were identified where the number of previous caesareans was at least one. Total, primary and repeat caesarean deliveries were calculated. The caesarean rate was calculated as the number of caesarean birth in a year divided by total number of deliveries in that year. We did not evaluate neonatal outcome or intra-operative complications. There was no mortality.

Results

The total number of women who gave birth during 2017 in our unit was 496, of which, 303 patients had a vaginal delivery (61.09%) and 193 underwent a caesarean section (38.91%). Other studies also have noted similar caesarean section rates in tertiary referral institutes. The total rate was also comparable to rate of c section (private sector) in adjoining states

Table 2: Caesarean rates in PIMS and adjoining states

Institute/region	Caesarean section rates
Pims/unit III	38.91
Pims/other	70.4
PGI	32%
Punjab	39.7
Himachal Pradesh	44.4
Delhi NCR	42.9
Haryana	25.3
Jammu and Kashmir	75.5

76 patients (39.37% of total sections) were primigravidae and of the remaining 117 patients,

only 23 patients were multi gravida with a primary section (11.91% of all sections).

Table 3: primary section

Gravida	Total	Caesarean section	Caesarean rate
Primigravida	248	76	30.64%
Multigravida without scarred uterus	140	23	16.42%

76 (15.3% of all deliveries) cases were primary caesarean section in primigravidae and 23 (4.63% of all deliveries) were primary section in parous women. This is similar to the study by G sharmila et al who demonstrated incidence of primary cesarean section in parous women is 3% of all deliveries and accounted for 10.1% of all sections done.

Total 108 patients (21.9% of all deliveries) had a history of at least one previous caesarean section caesarean section. Of these, 12 patients (2.43% of all deliveries) had previous 2 or more caesarean section. 16 patients with previous 1 cesarean were not offered trial of labour (TOLAC) in view of malpresentation, placenta previa or other contraindications to TOLAC. Of the remaining 80 patients, 42(52.5%) did not agree to a TOLAC. 38 patients agreed for TOLAC and of these, 14 (36.84%) had a successful vaginal birth (VBAC). Various studies have compared the criteria for attaining successful VBAC but the acceptability varies considerably from region to region and there is a worldwide decrease in the percentage of women willing to attempt a TOLAC.

Of the 193 patients at our institute who had a caesarean section, 99 patients had a primary caesarean section (51.3%) and 94 patients had a repeat caesarean section (48.7%).Caesarean caesarean rate was 87.03%section rate in primigravidae was 30.64%, primi caesarean rate in multi was 16.42% and the repeat

Table 4: primary vs repeat cearean rates

Type of cs	Total	Caesarean section	Caesarean rate
Primary section	388	99	25.51%
Repeat section	108	94	87.03%

Repeat CS group (48.7% of all CS) made the greatest contribution to the total CS rate with a section rate of 87.03% (p-value <0.00001) The only way to effectively decrease this large segment is to bring down the primary section rate.

Discussion

Acceptability and tolerance of labour pains is decreasing rapidly with many patients not willing to go through labour and many more opting for a caesarean section the moment labour gets established. In low resource setting such as in a developing country like India, there is limited access to procedures such as epidural analgesia which help make labour more tolerable. The patients in active labour and their relatives often put pressure on the attending obstetrician to perform a caesarean section rather than take the "risk" of labour and vaginal delivery. The management of a patient in labour is often akin to a high risk surgical procedure with the sword of litigation forever looming near.

Primigravidas in particular should have access to low cost, easily available pain relief which does not depend on interventions like epidural which require a specialist. Appropriate counselling of what happens during labour will help diminish the apprehension and fear that comes with the thought of labour pains. Such interventions will help increase acceptability of labour in these patients and decrease caesarean section rates. The focus has to be on preventing primary caesarean sections as this is the intervention which can most effectively decrease caesarean section rates in the long run. Changes in the guidelines such as allowing prolonged latent phase labour, considering cervical dilation of 6 cm (instead of 4 cm) as the start of active phase labour, allowing more time for labour to progress in the active phase, allowing women to push for at least two hours to three hours, using techniques to assist with vaginal delivery and encouraging patients to avoid excessive weight gain during pregnancy are all instituted in order to decrease the primary caesarean rate. The reasons why a caesarean

section is preferred over labour by patients and their doctors needs proper evaluation although it has been attributed to “non-evidence-based indications, professional convenience, maternal request, and over-mediatisation of childbirth”. Caesarean section rates above 15% are not associated with an improvement in maternal or fetal morbidity or mortality. The health care providers are often assailed and maligned for preferring a caesarean section for monetary gains and time-optimisation without mentioning about either the intolerance of labour by patients and their relatives or the fact that they prefer the quick caesarean over the patience of going through induction and are not willing to take even the slightest “risk” associated with vaginal delivery. Amongst the different branches, obstetricians everywhere face the highest litigation rates. The number of specialists willing to practise obstetrics is declining resulting in the “fading art of vaginal delivery”.

It is time that we recognise the need for a universally accepted classification of indication and make it mandatory to mention the indication as per the classification in order to permit proper auditing. Studies that even the awareness that an auditing system is in place leads to a decrease in caesarean section rates (Hawthorne effect).

76 patients (39.37% of all caesarean births) were primigravidae and of the remaining 117 patients, only 23 patients were multi gravida without a scarred uterus (11.91% of all caesarean births). This implies that if we impose stricter criteria for caesarean section in primigravidaeas has been suggested we can effectively bring down the caesarean rate (target 39.3% primigravidae directly and indirectly their re-presentation as women with previous caesarean section 48.7%)

Different classifications for caesarean section have been developed which can be indication based, urgency based, women based such as Anderson criteria, Althabe, Robson criteria and so on. The Robson system was identified as most reliable to compare surgery rates. Studies of the indication for caesarean section have shown

varying results but repeat caesarean has now become the most common indication.

The Robson Ten grade classification system:

- 1 Nulliparous, singleton, cephalic, ≥ 37 weeks' gestation, in spontaneous labour
- 2 Nulliparous, singleton, cephalic, ≥ 37 weeks' gestation, induced labour or caesarean section before labour
 - 2a Nulliparous, singleton, cephalic, ≥ 37 weeks' gestation, induced labour
 - 2b Nulliparous, singleton, cephalic, ≥ 37 weeks' gestation, caesarean section before labour
- 3 Multiparous (excluding previous caesarean section), singleton, cephalic, ≥ 37 weeks' gestation, in spontaneous labour
- 4 Multiparous without a previous uterine scar, with singleton, cephalic pregnancy, ≥ 37 weeks' gestation, induced or caesarean section before labour
 - 4a Multiparous without a previous uterine scar, with singleton, cephalic pregnancy, ≥ 37 weeks' gestation, induced labour
 - 4b Multiparous without a previous uterine scar, with singleton, cephalic pregnancy, ≥ 37 weeks' gestation, caesarean section before labour
- 5 Previous caesarean section, singleton, cephalic, ≥ 37 weeks' gestation
- 6 All nulliparous with a single breech
- 7 All multiparous with a single breech (including previous caesarean section)
- 8 All multiple pregnancies (including previous caesarean section)
- 9 All women with a single pregnancy in transverse or oblique lie (including those with previous caesarean section)
- 10 All singleton, cephalic, < 37 weeks (incl previous caesarean)

Obviously the target would be to decrease caesarean section in groups 1 and 2. If this kind of classification can be universally applied as a reporting system it would help bring accountability and transparency and help decrease caesarean section rates world over.

Conclusion

The dramatic rise of caesarean section rate has become a universal matter of concern. Efforts and evaluations of caesarean section performed with a proper auditing through an effective classification system which has clear boundaries is imperative. The Robson system fulfils these requirements and is helpful for internal auditing as well as for external comparisons. The main target is to decrease the primary caesarean rate or else vaginal delivery truly becomes a dying art and a specialisation in itself.