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Changing Trends in the Rate of Caesarean Section Over A Decade in Rural Maharashtra

Medical Science

KEYWORDS : Caesarean Section, Emergency Sections, Primary Caesarean Sections, Repeat Caesarean Section ,Vaginal Births.

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ABSTRACT

The study conducted in retrospective manner in 25 bedded Private Anand Hospital, a Maternity Hospital Islampur, Sangli in rural Maharashtra. The rates and indications of Primary and repeat Caesarean sections (CS) were analyzed among 147 live births during the year 2015 and present caesarean section rate was compared with 2005 and 2010 Caesarean rates. In our study, the Caesarean section rate was 25.85%. There is an increase in the CS rate over last decade from 17.14% in 2005, 22.77% in 2010 to 25.85% in 2015. The main contribution to this rise in CS is due to increase in number of repeat CS. CS becomes increasingly the procedure of choice in high risk pregnancies to prevent perinatal morbidity and mortality. This has become possible due to improved patient care, availability of effective antibiotics, blood transfusion services, safer anaesthesia, improved surgical technique and sophisticated neonatal care services even in rural areas

INTRODUCTION:

A caesarean section (CS) is a life-saving surgical procedure when certain complications arise during pregnancy and labour. However, it is a major surgery and is associated with immediate maternal and perinatal risks and may have implications for future pregnancies as well as long-term effects that are still being investigated [1–4]. The use of CS has increased dramatically worldwide in the last decades particularly in middle- and high-income countries, despite the lack of evidence supporting substantial maternal and perinatal benefits with CS rates higher than a certain threshold, and some studies showing a link between increasing CS rates and poorer outcomes [5, 6]. The reasons for this increase are multifactorial and not well-understood. Changes in maternal characteristics and professional practice styles, increasing malpractice pressure, as well as economic, organizational, social and cultural factors have all been implicated in this trend [7–10]. Additional concerns and controversies surrounding CS include inequities in the use of the procedure, not only between countries but also within countries and the costs that unnecessary caesarean sections impose on financially stretched health systems [11, 12]. The survey conducted by World Health Organization [13] between 2004 and 2008 in which 24 countries from the region of Latin America, Africa and Asia participated has

reported in 2010, that, in 23 countries rate of Caesarean deliveries without medical indication ranged between 0.01% and 2.10%, whereas, in China it shoots up to 11.6%.

AIMS & OBJECTIVES:

To analyse the rate of primary and repeat caesarean sections among 147 deliveries and to find out the relative contribution of various ante-partum indications, during the period from Jan 2015 to Dec 2015, in a 25 bedded Anand Hospital in rural Maharashtra

To compare the Caesarean delivery rates over the last decade.

MATERIAL AND METHODS:

The data of normal deliveries and caesarean section was collected for the years 2005, 2010 and 2015 retrospectively from Anand Maternity Hospital, a 25 bedded private hospital in Islampur in rural Maharshtra.

The factors associated with Caesarean section like age, parity, maternal stature, previous obstetric outcome were studied. Present Obstetric parameters like gestational age, lie and presentation, multiple pregnancy, and birth weight were included. Placental factors like placenta previa, abruption and various medical diseases complicating pregnancy like Diabetes Mellitus including gestational diabetes mellitus(GDM), pregnancy induced hypertension (PIH) and hypothyroidism were studied.

The categories of indications for Caesarean section like fetal distress, multiple gestation, mal-presentation, arrest of labour i.e. arrest of dilatation or arrest of descent including failed forceps or vacuum extraction, Cephalo pelvic disproportion (CPD), maternal indications, and fetal indications were studied. Fetal distress included fetal distress during labour, non reassuring and abnormal cardiotocogram when not in labour and abnormal umbilical artery Doppler study.

Obstetric indications like abruption placenta, placenta previa, cord prolapse were included.

Foetal indications such as prematurity, Intrauterine Growth Restriction (IUGR) where vaginal delivery was not possible were included.

In case of repeat Caesarean section, for 1 previous section with non recurrent indication trial of labour for VBAC after counselling the patient was given. While all patients with 2 or more previous caesarean section underwent caesarean section in this pregnancy.

RESULTS:

Table No-1 Incidence of Caesarean section Rate in 2015

Mode of Delivery	No of Deliveries	%
Vaginal delivery	109	74.15
CaesareanSection	38	25.85
Total	147	100

A total number of 38 Caesarean Sections were performed during the year 2015 were analyzed. Total number of deliveries during our study period was 147. Out of these 147 patients, 109 had normal vaginal delivery and 38 patients had Caesarean Section. Incidence of Caesarean Section at our hospital for the year 2015 was 25.85%

Table No-2 Rate of Caesarean section over a Decade

Year	*Total No of Deliveries*	*Total No of Caesarean Section*	*%*
2005	*174*	*30*	*17.14*
2010	*185*	*42*	*22*
2015	*147*	*38*	*25.85*

In the year 2005, there were total 174 deliveries. Out of these 174 deliveries 30 (17.14%) were Caesarean Section.

In the year 2010, there were total 185 deliveries. Out of these 185 deliveries 42 (22%) were Caesarean Section.

In the year 2015, there were total 147 deliveries. Out of these 147 deliveries 38 (25.85%) were Caesarean Section.

Table No-3 Incidence of Primary Vs Repeat Caesarean section

Year	*Primary CS*		*Repeat CS*	
	No	*%*	*No*	*%*
2005	*9*	*30*	*21*	*70*
2010	*9*	*21.48*	*33*	*78.52*
2015	*8*	*21.05*	*30*	*78.94*

This table shows the comparison between the incidence of Primary and repeat caesarean section over a decade. It is observed that gradually there is increase in the rate of caesarean section due to increase in the rate of Repeat Caesarean section.

Table No-4 Comparison of various indications for Caesarean section for the Decade

Indication	*Primary Caesarean Section (%)*		*Repeat Caesarean Section (%)*	
	Emergency	*Elective*	*Emergency*	*Elective*
CPD associated with medical disorders like PIH, GDM, Hypothyroidism, Rh Negative pregnancy, Epilepsy	*22.54*	*26.56*	*26.02*	*39.81*
Pelvic Abnormalities	*4.74*	*8.4*	*5.52*	*9.35*
Foetal Distress	*32.03*	*5.58*	*10.39*	-
Precious pregnancy	*4.85*	*2.92*	*2.53*	*4.40*
Big baby	*11.22*	*5.58*	*4.14*	*9.54*
Malpresentation	*3.88*	*7.88*	*6.91*	*3.31*
Scar Tenderness	-	-	*13.13*	-
IUGR	*4.31*	*5.05*	*7.37*	*7.70*

This Table shows the incidence of various indications resulting in emergency or elective Primary or Repeat Caesarean Section. From the collected data it is observed that foetal distress is the most common indication of primary Caesarean section. While scar tenderness and CPD associated with medical disorders is found to be the most common indications of Repeat Caesarean Section.

DISCUSSION:

The world health organisation withdrew its previous recommendation of a 15% CS rate in June 2010. Their official statement read a there is no empirical evidence for an optimum percentage. What matters is most is that all women who require caesarean section receive them. Goals for achieving an optimum Cesarean delivery rate should be based on maximising the best possible maternal and neonatal outcomes, taking into account available medical and health resources and maternal preferences. This opinion is based on the idea that if left unchallenged, optimal Caesarean delivery rates will vary over time and across different populations according to individual and social circumstances.

As in our study, the largest contributor to the primary CS rate was fetal distress, similar to other reports14,15,16 as per Table-17 Indian national survey report is also showed fetal distress as the largest contributor to CS rate. The increase in fetal indication in our study both big baby and IUGR was also similar to the study by Barber, et al. probably because of good ante natal care. The higher contribution by fetal indications reflects better neo natal ca improved survival of IUGR babies. For the repeat Cesarean, there is an increase in the number of cases with CPD and scar tenderness.22

fetal heart rate monitoring, risk mothers and frequent resort to elective section in high risk situation

pregnancies, avoiding difficult manipulative or instrumental vaginal deliveries. The rate of Cesarean section has increased from 2004 to 2011 with primary and repeat C equally contributing to this rise

Cesarean section rate, indications fetal distress show an increase and in Cesarean sections, scar tenderness and associated with medical disorders i.e. PIH, GDM, Hypothyroidism, Rh negative Epilepsy and Asthma and previous obstetric outcome contributed more than the fetal distress.

Table N0 : 5 Comparing the rates of Caesarean section with other studies

Various Study	*Rates of CS*	
Present study	*17.4 (2005)*	*25.8 (2015)*
Mittal Sibha, etal.[17]	*17.15 (2001)*	*28.93 (2011)*
Barber, et al.[16]	*26 (2003)*	*36.5 (2009)*
Baaquel [18]	*10.6 (1997)*	*19.1 (2006)*
Stavrou, et al.[19]	*19.1 (1998)*	*29.5 (2008)*
Chong et al.[20]	*19.9(2001)*	*29.6 (2010)*
Litorp, etal.[21]	*19 (2000)*	*49 (2011)*

CONCLUSION:

Greatest emphasis attached to fetal welfare in today's small family norm has changed the delivery practices in favour of Caesarean Section. This attitude has lead to the emergence of a new set of indications for adopting Caesarean section as a preferred mode of delivery. Reasons for rising rates of Caesarean section are due to frequent diagnosis of fetal distress on electronic fetal heart rate monitoring, risk mothers and frequent resort to elective section in high risk situation pregnancies, avoiding difficult manipulative or instrumental vaginal deliveries. The rate of Caesarean section has increased from 2005 to 2015 repeat Caesarean Section contributing to this rise. Primary Caesarean section rate, indications fetal distress show an increase and in Repeat Caesarean sections, scar tenderness and CPD associated with medical disorders i.e. PIH, GDM, Hypothyroidism, Rh negative Epilepsy and Asthma and previous obstetric outcome contributed more than the fetal distress.

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