CAESAREAN SECTIONS - ARE WE DOING RIGHT?

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ABSTRACT

Introduction- Caesarean section is the most commonly performed major emergency surgical procedure in Obstetrics. With the improved caesarean skill of the obstetrician and techniques of anaesthesia, the caesarean section has become a safe surgical procedure .The rate of caesarean section has shown progressive rise in last three decades in most part of the world .The immediate operative morbidity and the likelihood of complications in subsequent pregnancies, raise question marks regarding rising caesarean section rates.

Material and methods- Retrospective analysis of 3980 caesarean sections performed at tertiary care teaching hospital over six years period, was undertaken to find out the rate of caesarean sections, indications and associated maternal morbidity and mortality .

Results-The rate of caesarean section was in between 20 and 22 percent, during the study period .The rate has been fairly constant throughout the study period. The common indications were previous caesarean section, fetal distress, cephalopelvic disproportion, pre-eclampsia or antepartum haemorrhage. Anaemia and urinary infections resulted in postoperative febrile morbidity. Incidence of wound related complications were not significant .There were twelve maternal deaths, of which six were due to severe uncontrolled hemorrhage from placental bed during caesarean section.

Conclusion-Caesarean section rate can be maintained at acceptable limits by judicious selection of cases, allowing vaginal births after caesarean sections, external cephalic versions, assisted vaginal breech deliveries in selected cases and proper interpretation of results of electronic fetal monitors. Pain relief by epidural analgesia can reduce the fear of labour and rate of elective caesarean sections.

Keywords: Caesarean section rate **,** Indications of caesarean ,Caesarean morbidity and mortality

1. Introduction-

Caesarean section is the most common major emergency surgical procedure performed in Obstetrics. World health organization has recommended an arbitrary figure of 10-15 percent rate of caesarean section.[1] The rate of caesarean section has shown progressive rise in last three decades in most part of the world.[2-8] Proponents of increase caesarean section rate, consider it in favor of improved perinatal outcome. Developed countries like Sweden, Denmark and Netherland with lowest perinatal mortality rates still have caesarean section rate of 10 percent.[9] With the betterment in the caesarean skill of the obstetrician and techniques of anaesthesia, the caesarean section has become a safe surgical procedure. The immediate operative morbidity and the likelihood of complications in subsequent pregnancies, raise questions regarding increase in caesarean section rates .The caesarean scar related problems are on rise. It has added to the maternal morbidity and mortality .With this background, present study was carried out to analyze the data related to caesarean deliveries performed at a tertiary care teaching hospital located in rural area of Maharashtra.

2. Material and methods-

This retrospective analytical study was undertaken at Pravara Rural hospital, which is a tertiary care hospital attached to Rural Medical College located in rural area of Ahmednagar district in Maharashtra, India. Hospital receives complicated, high risk cases for delivery from the radius of 100 kilometres, which includes tribal area .Total of approximately 4000-5000 deliveries take place in the hospital per year. Hospital is well equipped and has round the clock availability of qualified team comprising of obstetrician, pediatrician and anesthesiologists. There is availability of laboratory and blood bank in the hospital. All caesarean sections were performed by qualified person in obstetrics and Gynecology or by postgraduate students in obstetrics and gynecology, under supervision of qualified person. Pfannenstiel skin incision was chosen in

majority of cases .Type of anaesthesia was mainly decided by anesthesiologist, unless specifically demanded by the woman. All caesarean deliveries were attended by pediatrician. Prophylactic antibiotics were administered to all women in the form of Injection Ampicillin and Metrogyl for two days following surgery, which was stitched over to oral route for total seven days. Stitches were removed on seventh postoperative day and woman with baby were discharged on the same day. Data regarding all caesarean section performed during study period of January 2006 to December 2011 were included for analysis. Data was collected from indoor case files, labour room registers and operation theatre records. Information regarding age, parity, and antenatal registration, type of operation, and indication of caesarean sections, postoperative morbidity, mortality and hospital stay was gathered. Above data was entered in case performa specially prepared for the study and thereafter keyed into the statistical package for social sciences (SPSS) computer software version 13.0 for windows. The results were analyzed using descriptive statistical methods.

3. Results-

During six years study period, there were 18,570 deliveries, of which 3980 were caesarean sections, giving an overall caesarean section rate of 21.43%. Majority of women were in the age group of 20-30 years**. (Table.1)** Seventy five percent of women were having either first or second pregnancy at the time of caesarean section. Caesarean section rate was highest in primigravidas and it came down subsequently with every subsequent pregnancy**. (Table.2)** Seventy four percent women were booked and had adequate number of antenatal visits**. (Table.3)** Most of the caesarean sections (92%) were done as an emergency procedure**. (Table.4)** Sixty six percent caesarean sections were performed under spinal anaesthesia and remaining under general anaesthesia It was observed that the rate of caesarean section was fairly constant during six years study period. It ranged in between 20 to 23 percent, with an average of 22 percent**. (Table.5)** Pre eclampsia, Breech presentation, cephalo- pelvic disproportion were the common indications of caesarean section in primigravidas, whereas previous caesarean section, malpresentations, antepartum hemorrhage and multi fetal pregnancies formed main indications in multigravidas **(Table.6).**

Six percent women developed fever in the postoperative period. In majority of cases, it was not related to the surgical procedure. Two percent women developed wound related complications in the form of infection, induration, superficial wound gape, full thickness gape or rarely burst abdomen. Wound related complications were responsible for prolonging the hospital stay. Five percent of women required either blood transfusion or parenteral iron therapy for correction of anemia. Approximately one percent of women required shifting to intensive care unit for postoperative monitoring and care. There were twelve maternal deaths following caesarean section during six years of study period. Six women died due to primary severe uncontrolled hemorrhage in cases of adherent placenta previa or due to disseminated intravascular coagulation. Two women each, died due to sepsis, embolism and hepato- renal failure. Eight out of twelve women were unbooked cases and had come in an emergency.

4. Discussion-

Caesarean section, once perfomed as life saving procedure in women, not able to deliver per via naturalis is slowly becoming a preferred mode of delivery in last three to four decades. The rate of caesarean section varies from hospital to hospital, within the country and across the nations[10]. The reported rates vary from 10% to 50%.[2-9] There has not been any regulation by any authorities in developing countries including India. In view of the possible complications, related to previous caesarean section scar, in the subsequent deliveries, there is an urgent need for caesarean section audits by the regulatory authorities in the country. The rate of caesarean section in the present study was fairly constant at 20 percent over six years period of analysis. A possible reason for constant caesarean section rate is mostly a result of institutional policies for the management of labour. Allowing vaginal birth after caesarean section (VBAC) is one such measure in properly selected cases of previous caesarean section. The reported success for vaginal delivery following VBAC varies from 60-70 percent.[11] Breech presentations for the fear of adverse perinatal outcome are often dealt by either elective or emergency caesarean section. External cephalic version at appropriate time during antenatal visits and conduct of assisted breech deliveries in selected cases can reduce the rate of caesarean section. Proper interpretation of records of electronic fetal

monitors can reduce the false interpretation in favor of fetal distress and caesarean section.[12] Meconium staining of liquor is a physiological sign of ageing placental function. Tendency to deliver all cases of meconium stained liquor add to the rate of caesarean section. Other parameters must also be considered before labelling it as a sign of fetal distress. Fetal scalp blood sampling for ph, should be done whenever facilities are available. Induction of labour with proper fetal monitoring, rather than elective section in cases of severe pregnancy induced hypertension, eclampsia, oligohydramnios and growth restricted babies can keep the caesarean section rate mounting high. Instrumental delivery, either ventouse or obstetric forceps in selected cases of prolong second stage, can reduce second stage caesarean sections, having higher maternal and perinatal morbidity. Multifetal pregnancies are on rise due to injudicious use of ovulation induction agents. Both babies presenting with cephalic presentations, in the absence of other complications can be delivered by vaginal route. There is growing tendency among obstetricians to do circlage operation as a prophylactic measure in twin pregnancy and perform elective caesarean section at term.[12] It cannot be considered as evidence based practice. There is growing demand of elective caesarean section on specific day, among elite and educated class of women.[12] Obstetrician must counsel the couple regarding drawbacks of such decision. They must be thoroughly informed about the possible neonatal and maternal complications of elective caesarean section away from term. International federation of obstetricians and gynecologists(FIGO) have reported the practice of performing caesarean section for non medical reasons as unethical.[13]

The overall maternal morbidity was not significant in the present study. The cases who developed febrile morbidity were mostly unbooked, anemic and had premature rupture of membranes. Nutritional anemia is still a major factor associated with maternal morbidity. Pre existent anemia gets further exaggerated following caesarean section. Blood transfusion and parenteral iron therapy are useful measures to prevent anemia related morbidity and mortality following caesarean section.

There were twelve maternal deaths following caesarean section. Six women died due to uncontrolled hemorrhage from placental bed of lower uterine segment in cases of placenta previa. Three cases had adherent placenta, requiring obstetric hysterectomy. Similar observations were reported by other workers[14]. In one case of placenta percreta, bladder wall was deeply involved by placental tissue. Woman succumbed in spite of having taken all possible measures to save her life. All cases of adherent placenta were cases of previous two caesarean sections. Similar observations have been made by other studies.[15,16,17,18,19] There was no major morbidity or mortality directly related to anaesthesia procedure.

5. Conclusion-

Allowing vaginal birth after previous caesarean section (VBAC) ,external cephalic version (ECV) in selected breech cases, proper interpretation of recordings of electronic fetal monitors and meconium staining of liquor (MSL), induction of labour in preeclampsia, oligohydramnios and intrauterine growth restricted babies (IUGR), second opinion regarding necessity of every caesarean, selective use of ventouse or outlet forceps in prolonged second stage , provision of epidural analgesia for pain relief and proper counseling of women for safe vaginal delivery and regular institutional caesarean audits, are some of the measures that help to keep the caesarean section rates to lower limits.

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Table.1 Distribution of Caesarean sections as per age

Sr. No	Age Group (yrs)	Number of Caesarean (n=3980)	Percentage
1	Below 20	311	07.80
2	20-30	3530	88.69
3	Above 30	139	03.50

Table.2 Distribution of Caesarean sections as per gravidity

Sr. No	Gravidity	Number of Caesarean (n=3980)	Percentage
1	G1	1649	41.40
2	G2	1381	34.71
3	G3	716	17.99
4	G4	152	03.81
5	G5 and above	82	02.07

Table.3 Distribution of Caesarean sections as per registration status

Sr. No	Registration status	Number of Caesarean (n=3980)	Percentage
1	Booked	2915	73.24
2	Unbooked	1065	26.76

Table.4 Distribution of Caesarean sections cases as per time of surgery

Sr. No	Type of caesarean	Number of Caesarean (n=3980)	Percentage
1	Elective	330	08.28
2	Emergency	3650	91.72

Table 5. Year wise rate of Caesarean sections (2006 -2011)

Year	2011	2010	2009	2008	2007	2006
Total deliveries	4881	4063	3316	2868	1892	1550
Number Caesarean section	985	887	676	661	456	315
Rate of Caesarean section	**20.18 %**	**21.83 %**	**20.38 %**	**23.04 %**	**24.10 %**	**20.32 %**

Table 6.Indications of Caesarean section

Sr. No	Indication	Number (n=3980)	Percentage
1	Previous caesarean section	952	23.88
2	Fetal Distress	488	12.26
3	Cephalo pelvic disproportion	387	09.71
4	Pre Eclampsia-Eclampsia	367	09.23
5	Breech presentation	336	08.43
6	Failed induction	304	07.64
7	Premature rupture of membranes	291	07.32
8	Oligohydramnios	260	06.52
9	Prolonged/obstructed labour	222	05.57
10	Antepartum hemorrhage	127	03.18
11	Transverse/oblique lie	89	02.22
12	Twin/Triplets	63	01.59
13	Cord complications	51	01.27
14	Others	44	01.11