

Cesarean Audit for fetal distress an indispensable tool to reduce Obstetrician Distress

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Abstract

Background and Objectives: Overuse of cesarean section and its implications are of growing concern. Suspected fetal distress has been the commonest indication for cesarean in last few decades heart rate changes shown by fetus without being adversely affected and CTG has been criticized to create unnecessary higher rate of operative deliveries. There is need to know which fetal heart rate abnormality is important and leading to two adverse neonatal outcome to decrease unnecessary operative deliveries. Therefore Caesarean Audit was planned.

Material and methods: A total of hundred women were included who underwent emergency cesarean section for suspected fetal distress in labour or without labour detected by cardiotocography or intermittent auscultation were included for analysis. Details were noted in pre designated proforma.

Results: During the audit period, total number of caesarean done due to fetal distress analysed during the period were 100. The most common fetal heart rate abnormality was nonspecific in form of single or transient deceleration seen in 63% of cases where records were also incomplete, it was followed by persistent deceleration on cardiotocography which was present in 16% of the cases.

In 57 women who were primigravida 14 (24%) patients had nonspecific fetal heart rate patterns and intra operative findings were normal in this group. These were avoidable cesareans.

Various Intraoperative findings, observed ,maximum no. of cases had meconium stained liquor seen in 63% of the cases followed by abruption in 9 cases followed by other findings like loop of cord around the neck of foetus, thin scar or scar dehiscence . Maternal resuscitation was carried out only in 53% of cases. Detection delivery interval of less than 30 minutes was present in 4% of cases. In fetal outcomes 16% of babies diagnosed with fetal distress, had poor outcome where Apgar score < 7 and 12 babies had asphyxia related NICU admission. 82% of babies had absolutely normal fetal outcome among which majority (78%) did not require any form resuscitation. which were thus avoidable cases.

Conclusions: Correct Knowledge about Standardized fetal heart rate interpretations on CTG and there standardized management protocols like Maternal resuscitative measures ,follow up to ensure fast detection delivery interval should be practiced strictly in all cases of non reassuring Fetal Heart rate patterns.

There should be consistent efforts in reducing the rate of cesarean sections particularly primary cesarean deliveries and in order to understand the degree to which cesarean delivery is preventable it is important to know no why cesareans are being performed. Therefore caesarean audit is need of the hour

Key Words: caesarean Audit, fetal distress

Introduction

The overuse of cesarean section and its implications are of growing concern. The global rate of cesarean section has increased and doubled in the past 15 years and is increasing by 5% suspected fetal distress has been the commonest indication for cesarean in the last few decades heart rate changes shown by fetus without being adversely affected and CTG has been criticized to create an unnecessary higher rate of operative deliveries. There is a need to know which fetal heart rate abnormality is

important and leading to two adverse neonatal outcomes to decrease unnecessary operative deliveries.

Material and methods

A prospective observational study was done in our hospital which is a tertiary care center. A total of hundred women were included who underwent emergency cesarean section for suspected fetal distress in labor or without labor, detected by cardiotocography or intermittent

auscultation, Maternal age, parity, associated high-risk factors. Demographic profile abnormal fetal heart patterns which led to diagnosis and cesarean section were recorded. Birth weight, fetal Apgar scores at 1 minute and 5 minutes were noted. Details about intrauterine resuscitation which included change in maternal position, oxygen administration, intravenous fluids were noted, Detection to delivery intervals intraoperative findings was recorded in pre-designated proforma.

Results

During the study period number of cesarean sections done due to fetal

distress analyzed were 100. The mean age of patients in the study group was 24.9 years. Out of the total hundred women majority (59%) were registered antenatal patients. 57 women (57%) were either primigravidae or had one previous abortion. History of previous one cesarean was present in 15% of the cases. The various fetal heart rate abnormalities observed for which the cesarean section was performed are given in table 1. The most common fetal heart rate abnormality was nonspecific in form of single or transient deceleration seen in 63% of cases where records were also incomplete, it was followed by persistent deceleration on cardiotocography which was present in 16% of the cases.

Patterns	No. of cases (out of hundreds)
Nonspecific/Not specified	63
Persistent declaration	16
Variable declaration	6
Tachycardia	6
Late declaration	2
Mixed	1
NSNST	6

Table 1. FHR Patterns

FHR abn	Number	Intraop findings+	No abnormality No intraop findings	Normal apgar	Affected babies/poor APGAR	Nsy/NICU admission
Nonspecific	63/100 (63%)	39/63	24/63 (36%)	26/63	9/63	5/9 (Asphy. Related nsy admission)
Not specified		MSL-29 1. Loop of cord 6- abruption 2. Thin scar 1 DTA-	22 normal fetal outcome	41%	(14% of thick non vigorous MSL, Extreme prematurity)	1. NND-28 weeks-s. pet
Persistent declation	16/100 (16%)	9/16	8/16	11/16 (68%)	5/16	4/5 (2 asphyxia related)

Table 2. FHR patterns and fetal Outcomes

In 57 women who were primigravida, 14 patients had nonspecific fetal heart rate patterns and intraoperative findings were normal in this group. These were avoidable cesareans. (Figure 3). In various Intraoperative findings, observed, maximum no. of cases had meconium-stained liquor

seen in 63% of the cases followed by abruption in 9 cases followed by other findings like a loop of cord around the neck of the fetus. Findings of thin scar or scar dehiscence were present in 5 cases. Maternal resuscitation was carried out only in 53% of cases (Figure 1).

- ◉ Maternal resuscitation ---53 cases(53%)
- ◉ Detection to delivery interval(D-D)- ideal <30 minutes - in 4%

Time	no
<30 min	4
30-60 min	34
60-120 min	32
>120 min	22
Not specified	8

Figure 1.

The ideal detection to delivery interval recommended as less than 30 minutes was present in only 4% of cases and maximum patients had

detection delivery intervals of 30 to 60 minutes seen in 34% cases (Table 3).

FHR abn	Number	Intraop findings+	No abnormality No intraop findings	Normal apgar	Affected babies/poor APGAR	Nsy/NICU admission
Variable declarations	63/100	5/6 (MSL, 1 Thin scar)	1/6	6/6	0/6	0/6
Tachycardia	6/100	3/6 (2 MSL, 1 abruption)	1/6	5/6	0/6	2/6 (non asphyxia related)
NRNST	6/100	4/6 (1 abruption, 3-MSL)	2/6	5	0	
Mixed pattern	1/100	1	1	1	0	0
Late declaration	2/100	0	0	0	2 (5, FGR)	1 asphyxiz related

Table 3. FHR patterns and fetal Outcomes

Analysis of fetal outcomes revealed (Figure 2) revealed that 16% of babies diagnosed with fetal distress had poor outcome where Apgar score < 7 and 12 babies had asphyxia related NICU admission, 82% of babies had a normal fetal outcome in which majority (78% - 64/82 cases) did not

require any form resuscitation. Among babies who did not require resuscitation (16 out 64 cases - 23.4%) had normal intraoperative findings which were thus avoidable cases.

FETAL OUTCOME

Normal-----82 babies/100(82%)

With resuscitation- 18/82

Without resuscitation 64/82(78%)



49/64 had intraop findings.

30 MSL, 3 Thin Scar, 1 scar dehiscence, 4 mild abruption, 3 cases with loop of cord)

Rest 15/64(23.4%) cases were normal without findings-----Avoidable Caserean

Figure 2

RESULTS

Outcomes in Primigravida

Primigravida/ Prev abortions-57/100 (57%)

14/57(- Non specific FHR patterns, intraop findings normal, Apgar score normal)

24.5% AVOIDABLE Caesarean (add on to rising caesarean rate)

Figure 3

Discussion

The most common indication of cesarean especially intrapartum cesarean is fetal distress in the past few decades. In 2011 in a population-based study the most common indication of primary cesarean delivery included labor dystocia and abnormal or indeterminate nonreassuring fetal heart rate patterns. Therefore this audit was planned for cesarean which was done due to fetal distress. In 57 (57%) women who were primigravidas, 14 patients had nonspecific fetal heart rate patterns and intraoperative findings were normal in this group. These were avoidable cesareans (Figure 3).

In the present audit, it was found that 63% of the cases were done on basis of single deceleration in fetal heart rate which was non-specific and was the most common fetal heart rate abnormality resulting in cesarean delivery. The various intraoperative findings and fetal outcomes in this group are given in table 2. Among these 63 cases, 39 patients (61.9%) had intraoperative findings in form of meconium-stained liquor, the loop of cord around the neck, abruption, and thin previous cesarean scar. Rest 24 out of 63 cases (38%) had no intraoperative findings. 41% (n= 26) of women in this group had babies who were born with a normal APGAR score of more than 7. 9 babies out of 63 cases had poor APGAR scores and were having thick vigorous meconium-stained liquor. 5 out of 9 affected babies had asphyxia related admissions in nursery neonatal ICU, this group also included one early neonatal death.

The next most common fetal heart rate pattern observed was persistent decelerations seen in 16% of total cases. The various intraoperative findings and fetal outcomes in this group are given in table 1. 11 babies out of 16 cases (68%) had normal intraoperative findings. 5 out of 16 babies were born with poor APGAR score and 4 required asphyxia related NICU admission and one baby had an early neonatal death.

Other fetal heart rate patterns that were observed were fetal tachycardia or nonreactive NST (TABLE 3) observed in around 6% of cases each. The majority had positive intraoperative findings but despite that maximum babies were born having normal APGAR scores. Lack of adverse outcomes in this group could reflect our timely decision of cesarean section before a clinically significant fetal compromise occurs which was beneficial for these babies thus decreasing the perinatal morbidity and mortality in this group.

It also suggested that persistent deceleration is an important finding on CTG and should always be looking for causes leading to persistent deceleration such as meconium stained liquor. Hypoxia of fetus, hemorrhage, the effect of epidural anesthesia.

When fetal outcome (Figure 2) was observed in current audit it was seen that 82% of babies we are born with normal APGAR score and 64 out of these 82 cases (78%) does not require initial resuscitation signifying the importance of timely intervention as 49 out of these 64 cases (76%) had positive intraoperative findings supporting the cause of fetal compromise, in form of meconium-stained liquor, previous thin cesarean scar abruption or loop of cord around the neck.

It was also observed that among 64 cases in which babies did not require any form of resuscitation 15 patients (23.4%) did not have any significant intraoperative findings suggesting that these were avoidable cases and work performed without any clear indication.

it was observed that clinical diagnosis of fetal distress correlated with positive intraoperative findings in 54% of cases in form of Meconium stained liquor, abruption, but only 16% of babies had poor outcome where Apgar score < 7 and 12 babies had asphyxia related NICU admission. Among the study group 82%, of babies had a normal fetal outcome in which the majority (78% - 64/82 cases) did not require any form of resuscitation. Among babies who did not require resuscitation (16 out 64 cases - 23.4%) had normal intraoperative findings which were thus avoidable cases.

Although cesarean deliveries can have lifelong implications for both mother and the fetus like complications from surgery for mother to respiratory and immunological problem to infants later in life, a rapid increase in rates of cesarean deliveries without any evidence of a concurrent decrease in maternal or neonatal morbidity and mortality had raised significant concerns that cesarean delivery is overused. It is important for healthcare providers to understand both short term and long-term complications associated with cesarean delivery and to use consistent efforts in reducing the rate of cesarean sections particularly primary cesarean deliveries and to understand the degree to which cesarean delivery baby preventable it is important to know no why cesareans are being performed. Therefore cesarean audit is need of the hour

Conclusions

Improved and standardized fetal heart rate interpretations on CTG and their standardized management protocols will be effective in preventing and curbing the rising cesarean rate due to fetal distress

Conflict of Interest

None

References

1. Gregory KD, Jackson S, Korst L, Fridman M. (2012) Cesarean versus vaginal delivery: whose risks? Whose benefits? *Am J Perinatol* 29:7-18.
2. Hornbuckle J, Vail A, Abrans KR, Thornton JG. (2000) Bayesian interpretation of trials: the example of intrapartum electronic fetal heart rate monitoring. *Br J Obstet Gynaecol* 107: 3-10.
3. Olofsson P. (2003) Current status of intrapartum fetal monitoring: cardiotocography versus cardiotocography + ST analysis of the fetal ECG. *Eur J Obstet Gynaecol Rep Biol*; 110: S113-S118.
4. Nielson JP, Grant AM. (1993) The randomized trails of intrapartum electronic fetal monitoring. In Spencer JA, Ward RH, eds. *Intrapartum fetal surveillance*. London; RCOG Press.
5. CS for suspected Fetal distress, continuous FHM and decision to deliver time KK Roy et al *Indian Journal of Pediatrics*, Volume 75—December, 2008