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RESEARCH ARTICLE

SOCIODEMOGRAPHIC PROFILE AND CLINICAL OUTCOME OF OBSTRUCTED LABOUR.

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Key words:-

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 Obstructed labour.

Abstract

Background: Obstructed labour is the condition that results from failure of descent of the fetal presenting part in the birth canal for mechanical reasons inspite of good uterine contractions. It remains an important cause of maternal and perinatal morbidity and mortality in developing countries.

Materials and Methods: A hospital based cross sectional study was conducted over a period of one and a half years in which 120 cases of obstructed labour were evaluated after applying preselected inclusion and exclusion criteria. Detailed history including that of sociodemographic profile, medical history and obstetric history was taken from every patient. Maternal outcome in the form of mode of delivery and complications was noted. Fetal condition was also evaluated.

Results: The study revealed that obstructed labour was common in illiterate women mostly from rural areas (87.5%) of low socioeconomic status (88.4%). Majority were primigravidas (49.2%) with mean age 30.5 ± 3.29 . Most cases were due to cephalopelvic disproportion (62.5%). Majority were delivered by caesarean section (87.5%). The most common complication was abdominal distension (51.7%) followed by postpartum hemorrhage (37.5%). There was no maternal death. There were 108 live births (90%) out of which 8 (7.4%) died in neonatal period. Obstructed labour was a significant cause of low apgar scores at 5 minutes of birth (34.2%).

Conclusion: Obstructed labour is still a great contributor of maternal and perinatal mortality in developing world. Sociodemographic and health facility factors were strongly associated with the outcome. Our aim should be universal and inexpensive good obstetric care to avoid it and prompt diagnosis and timely intervention in established cases to improve the outcome.

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Introduction:-

Obstetrics is concerned with the health and wellbeing of both mother and baby. The main aim is to ensure that every pregnancy culminates in a healthy baby with minimal detrimental effects on maternal health. Obstructed labour remains an important cause of maternal and perinatal morbidity and mortality in developing countries despite significant improvement in healthcare facilities.

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Obstructed labour is defined as the condition that results from failure of descent of fetal presenting part in the birth canal despite adequate uterine contractions¹. Additional features include prolonged labour, hypertonic uterine contractions, bandl's ring²(pathological retraction ring between upper and lower segment), signs of maternal exhaustion , excessive moulding^{3,4} of fetal head, caput succedaneum⁵, vulval edema and clinical signs of shock. The estimated prevalence is 1 to 2 % in developing countries. Causes include⁶:

A) MATERNAL: 1) Bony causes like contracted pelvis and cephalopelvic disproportion.

2) Soft tissue causes like cervical fibroid, impacted ovarian tumour ,non-gravid horn of bicornuate uterus below presenting part.

B) FETAL:1) Malpresentations and malpositions of fetus:

a) Transverse lie

b) Brow presentation

c) Compound presentation

d) Occipitoposterior position

2) Congenital malformations of fetus:

a) Hydrocephalus

b) Fetal ascites

c) Big baby

d) Locked twins

Several studies have been conducted regarding obstructed labour. In majority of studies lower segment caesarean section (LSCS) was the common mode of delivery. The perioperative complications included abdominal distension, postpartum hemorrhage, perineal injuries, sepsis, uterine rupture and urinary tract injuries. It is also a significant contributor to stillbirths and neonatal mortality.

The aim of this study was to evaluate maternal and perinatal outcome in obstructed labour with an effort to determine predisposing factors.

Materials & Methods:-

This cross- sectional study was conducted in LD Hospital , Department of Gynaecology and Obstetrics, Government Medical College, Srinagar, Kashmir over a period of one and half years from February 2015 to August 2016 which is the main tertiary care obstetric hospital of Kashmir.

Sample size:

120 cases of obstructed labour were selected.

Inclusion criteria were:

1 Term pregnancy.

2 Singleton live pregnancy.

3 Maternal age 20-35 years.

4 Primigravida to gravida 5.

Exclusion criteria were :

1 Preterm pregnancies .

2 Multiple pregnancies.

3 Previous caesarean section or hysterotomies.

4 Maternal medical disorders.

5 History of substance abuse or addiction.

Methodology:-

The information collected included obstetric history, sociodemographic history, medical and surgical history of the patient. General condition of the patient was noted with detailed clinical examination. Appropriate management was done and the details thereof of the mode of delivery and associated complications were noted. All patients were followed upto six weeks in postpartum period. Fetal condition was evaluated in terms of occurrence of asphyxia, number of live and stillbirths and neonatal deaths. Apgar score at 5 minutes of less than 4 was taken as birth asphyxia⁷.

Data Analysis:-

Continuous variables were summarized as mean+ standard deviation . Categorical variables were summarized as percentages.

Results:-

About 120 cases of obstructed labour were studied. The mean age was 30.5 ± 3.29 in years (table 1). Cephalopelvic disproportion was the most common cause in 62.5% followed by malpresentations of fetus in 30.8% and congenital fetal malformations in 6.7% (table 2). Most of the patients were primigravidas (49.2%) followed by parity more than or equal to 3 in 22.5% as shown in table 3. Majority (87.5%) were from rural areas (table 4). Many patients were illiterate (39.2%) or had received only primary education (27.5%) as depicted in table 5. Most patients (52.5%) were unbooked (table 6) and had no antenatal checkups done (table 7). 64.2% were of average and 24.2% of poor socioeconomic status (table 8). Majority (87.5%) were delivered by LSCS (lower segment caesarean section) followed by forceps in 4.17%, ventouse (vacuum) in 4.17%, laparotomy with repair of uterine rupture in 1.66%, subtotal hysterectomy in 1.66% and total abdominal hysterectomy in 0.84% as shown in table 9. Most common complication was abdominal distension (51.7%) followed by postpartum hemorrhage in 37.5% as shown in table 10. 5 cases (4.2%) of rupture uterus were reported. No case of vesicovaginal fistula was seen and there was no maternal death. Mean postpartum hospital stay was 8.9 ± 2.43 days (table 11).

There were 108 livebirths (90%) and 12 stillbirths (10%) as depicted in table 12. Neonatal asphyxia and NICU admission was seen in 34.2% livebirths and neonatal death was seen in 7.4% as shown in table 13. Majority of babies (56.5%) has 5 minute apgar score more than or equal to 7, while 34.2% had apgar score less than 4 as shown in table 14.

Table 1:- Age distribution of study population

Age (years)	Frequency	Percentage
20-24	3	2.5
25-29	43	35.8
30-34	55	45.8
≥ 35	19	15.8
Total	120	100
Mean \pm SD= 30.5 ± 3.29		

Table 2:- Causes of obstructed labour

Cause	Frequency	Percentage
Cephalopelvic Disproportion	75	62.5
Malpresentation / Malposition of fetus	37	30.8
Congenital malformations of fetus	8	6.7

Table 3: Showing obstetric history among study population

Parity	Frequency	Percentage
0 (primigravida)	59	49.2
1	18	15.0
2	16	13.3
≥ 3	27	22.5
Total	120	100

Table 4:- Showing distribution of study population as per residence

Area of residence	Frequency	Percentage
Rural	105	87.5
Urban	15	12.5
Total	120	100

Table 5:- Showing educational status of study patients

Educational Status	Frequency	Percentage
Illiterate	47	39.2
Primary	33	27.5
SSC	9	7.5
HSC	18	15.0
Graduate	13	10.8
Total	120	100

Table 6:- Distribution of booked / unbooked cases among study population

Parameter	Frequency	Percentage
Booked	57	47.5
Unbooked	63	52.5
Total	120	100

Table 7:- Showing antenatal check up among study population

Antenatal check up	Frequency	Percentage
Nil	63	52.5
1-2	28	23.3
3-4	14	11.7
5-6	15	12.5
Total	120	100

Table 8:- Showing socio economic status of study population

SE Status	Frequency	Percentage
Poor	29	24.2
Average	77	64.2
Good	14	11.7
Total	120	100

Table 9:- Showing mode of delivery among study population

Mode of Delivery	Frequency	Percentage
LSCS	105	87.5
Forceps Delivery	5	4.17
Ventouse Delivery	5	4.17
Laparotomy With Repair of Ruptured Uterus	2	1.66
Laparotomy with subtotal hysterectomy	2	1.66
Total Abdominal Hysterectomy	1	0.84
Total	120	100

Table 10:- Distribution of maternal complications among study population

Maternal Complications	Frequency	Percentage
Postpartum hemorrhage	45	37.5
Abdominal Distension	62	51.7
Perineal Injuries	28	23.3
Sepsis	2	1.7
Wound Soakage	27	22.5
Urinary Tract Infection	22	18.3
Urinary Tract Injuries	2	1.7
Burst Abdomen	2	1.7
Rupture Uterus	5	4.2
Vesicovaginal Fistula	0	0.0
Maternal Death	0	0.0

Table 11:- Showing postpartum hospital stay among study population

Postpartum Hospital Stay (Days)	Frequency	Percentage
≤ 7 Days	18	15.0
8-10 Days	87	72.5
> 10 Days	15	12.5
Total	120	100
Mean ± SD=8.9±2.43		

There were 108 livebirths (90%) as shown in table 12. Neonatal asphyxia was seen in 34.2% patients. Neonatal death was seen in 7.4% patients as depicted in table 13. As shown in table 14 majority of babies had 5 minute Apgar score more than or equal to 7.

Table 12:- Distribution of fetal condition during birth among study population

Fetal Condition	Frequency	Percentage
Live Birth	108	90
Still Birth	12	10
Total	120	100

Table 13:- Distribution of perinatal complications among the live birth [n=108]

Perinatal Complications	Frequency	Percentage
Neonatal Asphyxia	37	34.2
NICU Admission	37	34.2
Neonatal Death	8	7.4

Table 14:- Apgar Score at 5 Minutes Among Live born (108)

APGAR SCORE	Frequency	Percentage
< 4	37	34.2
4-6	10	9.3
≥7	61	56.5

Discussion:-

In our study the mean age reported was 30.5±3.29 close to that reported by Amaneul et al(2003)⁸ 28.8± 7.6 with the difference being explained by rising incidence of elderly primigravidas in this part of the world. Most cases were due to cephalopelvic disproportion (62.5%). This was comparable to the study of Saad E Dafallah et al (2003)⁹ where 57% cases were due to this cause. Majority of the patients were primigravidas (49.2%) comparable to the study of Anjum Ara (1996)¹⁰ where 40.8% patients of obstructed labour were primigravidas. Majority were from rural areas (87.5%) comparable to the findings of Islam JA et al (2012)¹¹ who reported 88% from rural areas. Majority were either illiterate or with only primary education (66.7%) comparable to highest incidence in low education patients (87%) in the study of Islam JA et al (2012)¹¹. Most patients were unbooked (52.5%) comparable to 63.8% in the study of Saad E Dafallah et al (2003)⁹. Majority of patients were of poor to average class (88.4%) comparable to earlier study of Islam JA et al (2012)¹¹ where majority (93.3%) were of the same class.

In our study, 87.5% patients were delivered by LSCS, 4.17% by forceps, 4.17% by ventouse. 2 patients (1.66%) had laparotomy with repair of uterine rupture and 2 more had subtotal hysterectomy. 1 patient (0.84%) had total abdominal hysterectomy. Konje et al (1992)¹² reported caesarean section rate of 82%. Shahneela et al (2009)¹³ reported caesarean section in 81.1% cases of obstructed labour. The higher incidence of caesarean section in this study is explained by virtual non occurrence of destructive operations at our centre in view of high maternal and fetal morbidity associated with them.

In our study, the most common complication in these patients was abdominal distension in 51.7% followed by postpartum hemorrhage in 37.5% patients. 23.3% had some degree of perineal injuries. 18.3% had mild to severe urinary tract infections. 1.7% had urinary tract injuries during abdominal surgery. 5 patients (4.2%) had rupture uterus out of which 2 (1.66%) underwent laparotomy with repair of uterine rupture, 2 (1.66%) required subtotal hysterectomy and 1 (0.84%) underwent total abdominal hysterectomy. No maternal death was seen. These findings

were comparable to earlier studies like that of Islam JA et al (2012)¹¹ who reported abdominal distension as the most common complication followed by sepsis in 14.3% and postpartum hemorrhage in 9.6% cases.

No case of vesicovaginal fistula was reported over a period of six weeks due to prophylactic bladder catheterization for 7 to 10 days in these patients.

Most patients had postpartum hospital stay of 8 to 10 days(72.5%).J Wanyoike et al (2015)¹⁴ in his study reported majority of these patients with a postpartum hospital stay of 8 to 14 days(46.7%).

In our study there were 108 (90%) live births and 12(10%) still births. J Wanyoike et al (2015)¹⁴ reported 81.5% live births.

In our study 37 out of 108 live born babies (34.2%) had an Apgar score < 4 at 5 minutes of birth comparable to the study of Islam JA et al (2012)¹¹ who reported 33.3% babies with Apgar scores < 4 at 5 minutes of birth. All of these babies with neonatal asphyxia were admitted in Neonatal ICU(NICU) . Ritu Gupta et al (2012)¹⁵ reported NICU admission rate of 55.7% in their study.

8 babies(7.4%) died in neonatal period comparable to the study of Anjum Ara et al(1996)¹⁰ where 7% babies born to mothers with obstructed labour died in the neonatal period.

Conclusion:-

Obstructed labour is one of the main contributors to maternal and fetal morbidity and mortality in developing countries. Improvement in socioeconomic conditions and health education along with timely and proper intervention can help to a great extent in reducing the burden it poses on health system.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethical Committee.

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