

DOI: <http://dx.doi.org/10.18203/2320-1770.ijrcog20150720>

Research Article

Maternofetal outcome in obstructed labour in a tertiary care hospital

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Received: 01 August 2015

Accepted: 17 August 2015

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ABSTRACT

Background: Obstructed labour is still a major cause of maternal morbidity and mortality and adverse outcome of newborn in low income countries. It is the leading cause of hospitalization, comprising of 39% of all obstetric patients in developing countries. Objectives: To study frequency, causes outcome and complications of obstructed labour.

Methods: 402 patients admitted with feature of obstructed labour were studied. Detailed history included sociodemographic factors, obstetric history, features of obstruction, intrapartum events were recorded. Condition of patients, mode of delivery, preoperative and postoperative complications, maternal and fetal outcomes was recorded.

Results: A total of 23381 deliveries were conducted during one year, 402 cases of obstructed labour were found with incidence of 1.71%. 86.5 % of the patients were from rural areas and 78.1 % of patients were unbooked and 73.3% patients were primigravida. The commonest cause of obstructed labour was cephalopelvic disproportion (55%) followed by Malposition (22.9%) and Malpresentation (17.9%). The commonest mode of delivery was cesarean section (83.8%). Instrumental deliveries were conducted in 10.5% of cases. Destructive procedures are discouraged in out set up. Rupture uterus was seen in 16 cases (4.16%) out of which repair was done in 11 cases and subtotal hysterectomy was performed in 5 patients. The common maternal complications were sepsis [pyrexia (15.1%), wound infections (12.8%), urinary tract infection (7%), abdominal distention (11.2%), postpartum hemorrhage (9.7%). Perinatal mortality was 107/402 (26.6%), live birth rate 316/402 (78.7%), still birth rate 86/402 (21.3%). Perinatal morbidity was most commonly due to birth asphyxia (28.8%), jaundice (16.9%), septicemia (14.75%), meconium aspiration syndrome (9.9%).

Conclusions: Obstructed labour is a preventable condition prevalent in developing countries. Improving nutrition, antenatal care, early diagnosis and timely intervention may result in decrease in incidence of morbidity and mortality.

Keywords: Obstructed labour, Cephalopelvic disproportion, Perinatal mortality

INTRODUCTION

Labour is considered obstructed labour when the presenting part of the foetus cannot progress into the birth canal, despite strong uterine contractions which leads to various maternal or foetal complications.¹ Obstructed labour accounts for about 8% of all maternal deaths in developing countries like India.² It is a leading cause of hospitalization, comprising up to 39% of all obstetric patients in developing countries.³ Obstructed labour is the

single most important cause of maternal death and is one of the leading causes of perinatal mortality.⁴ Maternal mortality ranges between 1% and 13% and perinatal mortality between 74% and 92%.^{5,6} It is one of the most common preventable causes of maternal morbidity and mortality in developing countries.

Each year, 210 million women become pregnant of whom 20 million will experience pregnancy related illness and 500,000 will die as a result of complications

of pregnancy or childbirth.⁷ In 1987, the World Health Organization launched the Safe Motherhood Initiative, which aimed to reduce maternal morbidity and mortality by 50% by year 2000. This initiative did not succeed, but maternal health continues to be a major focus of WHO effort. The current WHO initiative⁸ is to reduce maternal mortality to 75% of 1990 level by 2015. If this is to be successful, the problem of obstructed labour will need to be addressed effectively.

Maternal mortality from obstructed labour is largely the result of ruptured uterus or puerperal infection, whereas perinatal mortality is mainly due to asphyxia. Significant maternal morbidity is associated with prolonged labour, since both postpartum haemorrhage and infection are more common in women with prolonged labour. Obstetric fistulas are long term problems. Traumatic delivery affects both mother and child.^{7,8}

There are differences in the behaviour of the uterus during obstructed labour, depending upon whether the woman has delivered previously. The pattern in primigravida women (typically diminishing contractility with risk of infection and fistula) may result from tissue necrosis whereas in parous women, contractility may be maintained with risk of uterine rupture.⁹

The present study was conducted to detect the risk factors, presentation, management and outcome of obstructed labour in a tertiary care centre, so that early intervention strategies may decrease the incidence of morbidity and mortality.

Objectives: To study the frequency, causes, management, outcome and complications of obstructed labour. This will help to formulate a positive strategy in our setup to prevent obstructed labour and its consequence.

METHODS

This prospective study of obstructed labour was conducted from May 2014 to May 2015 in the Department of obstetrics and Gynaecology of Government Medical College Srinagar, which is the only tertiary obstetric care hospital in the Kashmir valley where cases are referred to not only from peripheral hospitals and rural areas but also from local general practitioners. All patients admitted with obstructed labour were included in the study.

Detailed history regarding age, socioeconomic status, parity, previous obstetric history, past history, antenatal care, duration of labour, details of referral and management were recorded. During admission, the general condition of mother was assessed as well as fetal lie, presentation, position and heart sounds were recorded. Pelvic examination was carried out to assess the cervical dilatation, state of liquor amnii, position, pelvic assessment, degree of caput, moulding.

Diagnosis of maternal exhaustion, dehydration, genital sepsis, pyrexia, rupture uterus, post-partum hemorrhage, Vesico-vaginal fistula, and shock was made. Any death occurring as a consequence of obstructed labour was noted. Diagnosis of live or asphyxiated or dead fetus or neonatal death was done by taking APGAR score at 1 and 5 minutes following birth. Mode of delivery (Assisted vaginal, cesarean section), time interval between referrals, admission, intervention done at tertiary care centre and related fetomaternal outcome were noted. Destructive procedures are discouraged in our centre. At postpartum period, data regarding maternal outcome were recorded which included abdominal distension, postpartum hemorrhage, foul smelling discharge, fever, character of wound, burning micturation, urinary incontinence. Fetal condition was evaluated by the nature of feeding, development of jaundice, neonatal infections. Outcome and complications of Lower segment Cesarean Section (LSCS), instrumental deliveries (vacuum extraction, forceps) were recorded.

RESULTS

During the one year study period, there were total of 23381 deliveries of which 402 cases were diagnosed to have obstructed labour, incidence being 1.71%.

Table 1: Magnitude of obstructed labour.

Total deliveries	Obstructed labour	%
23381	402	1.71

Table 2: Demographic profile.

Characteristics	Number	%
Residence		
Rural	348	86.5
Urban	54	13.43
Antenatal Checkup		
Booked	88	21.9
Unbooked	314	78.1

Maximum cases were in age group of 19-24 years (64.4%). 86.5% of the patients were from rural areas and 78.2% of the patients were unbooked. The commonest cause of obstructed labour was cephalopelvic disproportion (55%). Other causes were Malposition (22.9%), Malpresentation (17.9%), foetal congenital abnormality (1.38%), Myomas (0.83%), others (0.83%). 4 (1.11%) cases of previous caesarean section came in advanced stage of obstructed labour and resulted in rupture uterus.

Table 3: Age distribution of patients.

Age (Years)	Number	%
19-24	261	64.9
25-29	98	24.3
>30	43	10.69

The commonest mode of delivery was caesarean section (83.8%). Instrumental deliveries were performed in 10.5% of cases. Rupture cases was present in 16 cases out of which repair was done in 11 cases and hysterectomy was done in 5 cases. The most common maternal complications were sepsis (pyrexia (15.1%), urinary tract infection (7%), wound infections (12.8%), abdominal distention (11.2%), post-partum haemorrhage (PPH) (9.7%).

Table 4: Parity of patients of obstructed labour.

Parity	Number	%
Primigravida	295	73.3
Multigravida (<3)	63	15.67
Grandmultigravida(>3)	44	10.94

Table 5: Causes of obstructed labour.

Causes	Number	%
Cephalopelvic disproportion	221	55
Malposition	92	22.9
Malpresentation	73	17.9
Fetal congenital anomaly	6	1.38
Myoma	3	0.83
Previous cesarean section	4	1.11
Others (non-dilation of cervix)	3	0.83

Table 6: Different modes of delivery.

Type	Number	%
Cesarean section	337	83.8
Instrumental delivery	42	10.5
Laparotomy with repair of rupture uterus	11	3.05
Subtotal hysterectomy	12	2.5

Table 7: Maternal complications of obstructed labour.

Complication	Number	%
Maternal Sepsis		
Pyrexia	61	15.1
Urinary Tract Infection	28	7
Wound Infection	51	12.8
Postpartum Hemorrhage	39	9.7
Rupture Uterus	16	4.16
Vesico Vaginal Fistula	6	1.11
Bladder Injury	6	1.11
Hysterectomy	12	2.9
Maternal Death	3	0.74
Broad Ligament Hematoma	3	0.83
Abdominal Distention	46	11.2
Peritonitis	5	1.38
Subinvolution	40	10
No Complications	86	21.3

Other complications were Rupture uterus (4.16%); vesicovaginalfistula (1.11%), bladder injury (1.1%), hysterectomy (2.5%), broad ligament hematoma (0.83%), and sub involution (10%). There were 5 maternal deaths due to complications associated with obstructed labour. Total live births were 568 (78.8%) and 152 (21.2%) were still births. Perinatal complications included birth asphyxia (28.8%), jaundice (16.9%), and septicaemia (14.5%), meconium aspiration syndrome (9.9%). There were total 183 perinatal deaths maximum being due to birth asphyxia (TABLES 1-9).

Table 8: Fetal outcome of obstructed labour.

Outcome	Number	%
Live Births	316	78.7
Still Births	86	21.3

Table 9: Perinatal complications of obstructed labour.

Morbidity	Number	%
Birth Asphyxia	91	28.8
Septicemia	46	14.7
Meconium Aspiration Syndrome	31	9.9
Convulsions	8	3.8
Jaundice	53	16.9
Umbilical Sepsis	11	3.6
No Complications	76	23.5

DISCUSSION

The incidence of obstructed labour in the present study was 1.71% which was lower than the incidence by Fantu et al¹⁰ (12.2%), 4.2% by Islam et al,¹¹ 2.7% by Ikojo et al¹² 3.3 % by Gassesew et al¹³ 2.1 % by Menon et al, 3.2% by Aboyeji et al.¹⁴ It was higher than the incidence by Sabyasachi et al¹⁵ 1.64%, 1.1% by Ritu et al,¹⁶ 0.56% reported by Adhikari et al,¹⁷ 0.8% by Omele-ohonsi et al,¹⁸ 1.27% by Dafallah et al.¹⁹ The decreasing trend is a reflection of improvement in antenatal and intranatal care.

In our study, common causes of obstructed labour were cephalopelvic disproportion (55%), Malposition (22.9%), Malpresentation (17.9%). Mostly the patients were primigravida (73.3%) and of age group 19-24 years (64.9%). The incidence of obstructed labour was higher in unbooked patients (78.1) comparable to study done by Shimelis and Fantu et al.¹⁰ 86.5% of the patients who presented with features of obstruction were from rural areas showing lack of proper healthcare facilities.

Lower segment cesarean section was the commonest method of delivery (83.8%), followed by instrumental deliveries (10.5%). In our center destructive procedures are not encouraged. There were total 16 cases of rupture uterus out of which 11 were repaired and 7 underwent subtotal hysterectomy.

Maternal mortality in the study group was 3/402 (0.74%), lower than study by Sabyasachi et al (1.60%), Adhikari et al¹⁷ (2.04%), Nwogu-ikojo¹² et al (3.3%) showing the timely management of the patient in our set up. In our study common maternal complications were maternal sepsis (pyrexia (15.1%), urinary tract infection (7%), wound infection (12.8%) total (34.9%), abdominal distention (11.2%), Post-partum hemorrhage (9.7%), sub involution (10%), rupture uterus (4.16%). Vesico vaginal fistula was noted in 6 patients (1.49%).

The total number of live births were 316 (78.7%) and still birth 86 (21.3%). Perinatal mortality reported from various studies was as follows: Dafallah et al¹⁸ 27.1%, Neena et al¹⁹ 38%, Sabyasachi¹⁵ et al 22.68%. In our study perinatal mortality was 107/401 (26.6%). Perinatal morbidity was commonly due to birth asphyxia (28.8%), Jaundice (16.9%), Septicemia (14.7%), Meconium aspiration syndrome (9.9%).

CONCLUSIONS

Obstructed labour continues to be a major cause of maternal and perinatal morbidity in low income countries and accounts for approximately 8% of maternal deaths globally. The common mode of delivery is by caesarean section. Poor referral system, low socioeconomic status, inadequate antenatal care services lead to many cases of obstructed labour. They are further compounded by poor road connectivity resulting in delayed specialized care. Lack of well equipped secondary and tertiary care centers that are adequately staffed is also an important factor for better obstetric care. Early recognition of obstructed labour cases and immediate safe abdominal or vaginal delivery can decrease the incidence of maternal and perinatal morbidity and mortality. Addressing socio demographic determinants will certainly contribute towards reducing the incidence of obstructed labour.

Funding: No funding sources

Conflict of interest: None declared

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

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Cite this article as: Rizvi SM, Gandotra N. Maternofetal outcome in obstructed labour in a tertiary care hospital. *Int J Reprod Contracept Obstet Gynecol* 2015;4:1410-3.