



Original Research Article

Obstructed Labour: A Preventable Tragedy but Still a Long Way to Go In Developing Countries

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Received: 02/07/2015

Revised: 20/08/2015

Accepted: 21/08/2015

ABSTRACT

Background: Obstructed labour is a major cause of both maternal and newborn morbidity and mortality in developing countries. This study was conducted in order to determine the burden of obstructed labour in our setup so that effective measures could be taken to prevent it.

Objective : To review the incidence, socio-demographic details, causes and fetomaternal outcome of obstructed labour in the Department of Obstetrics & Gynecology, UP Rural Institute of Medical Sciences & Research, Saifai, Etawah, Uttar Pradesh, India.

Method: A retrospective review during the period from January 2013 to April 2015 was done and all the details of the patients admitted with the diagnosis of obstructed labour were noted.

Results: Out of 12,223 deliveries reviewed, 199 or 1.63% had obstructed labor. Majority of the patients were unbooked, primigravidas, illiterate and belonged to low socio-economic status and rural area. The commonest cause of obstructed labour was cephalopelvic disproportion (72.3%). Caesarean section was the only mode of delivery. Perinatal mortality was 20.60%. Incidence of rupture uterus was 3.5%. Maternal mortality was 1.5%.

Conclusion: Obstructed labour is a preventable condition. Antenatal detection of the factors likely to produce prolonged labour, continuous vigilance, timely referral, use of partograph and timely intervention can prevent obstructed labour.

Keywords: Obstructed labour, Cephalopelvic disproportion, Caesarean section, maternal mortality, Perinatal mortality.

INTRODUCTION

Obstructed labour is one where in spite of good uterine contractions, the progressive descent of the presenting part is arrested due to mechanical obstruction. The common causes of this condition are cephalo-pelvic disproportion (CPD), fetal malposition and malpresentation.

In few cases soft tissue obstruction in maternal passage (like pelvic tumors) or congenital malformation of fetus (like hydrocephalus) can also lead to obstructed labour. [1]

Fortunately, advances in obstetric care have made obstructed labour nearly obsolete in the developed world. However,

obstructed labour is still a major preventable and avoidable cause of maternal morbidity and mortality and also of perinatal mortality in developing countries. Obstructed labour causes 8% maternal mortality in developing countries like India. [2] 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 post-partum hemorrhage and infection are more common in women with long labour. Obstetric fistulas are long-term problems. Traumatic delivery affects both mother and child. [3,4]

Antenatal detection of the factors likely to produce prolonged labour, continuous vigilance, timely referral, use of partograph and timely intervention can prevent obstructed labour.

Before proceeding for any definitive operative treatment, rupture of uterus must be excluded. A balanced decision should be taken about the best method of relieving the obstruction with least hazards to the mother. The management of cases where the fetus is alive requires urgent caesarean section. However, with the fetus either dead or having severe fetal distress and the mother is severely dehydrated with features of ascending infection, use of destructive procedures or caesarean section is debatable. Prior to the advent of antibiotics and their rapid evolution, the popular method was to reduce the bulk of the fetal head or trunk by destructive operations to allow its extraction through the birth canal. These procedures had very high mortality and morbidity. In the modern era, lower segment caesarean section (LSCS) under good antibiotic coverage has a very low mortality and morbidity and seems to be the best option. [5]

This study was conducted in order to review the burden of obstructed labour in our setup so as to decide strategy and

effective measures for its prevention or at the least early diagnosis and management.

MATERIALS AND METHODS

This was a hospital based retrospective study conducted in the Department Of Obstetrics And Gynecology in a rural tertiary institute in Uttar Pradesh, India between the time period of Jan 2013- April 2015. All the antenatal women admitted in the Labour room with the diagnosis of obstructed labour were included in the study. The data regarding socio-demographic details, parity, previous obstetric history, antenatal care, duration of labour, details of referral history, examination findings, management given and fetomaternal outcome were recorded from the delivery and operation theatre record register.

Standard terminology was used to define the terms.

RESULTS

During this study period, total number of deliveries was 12,223, out of which 199 cases were diagnosed to have obstructed labour. Thus, the incidence of obstructed labour in our setup is 1.63%. (Table-1)

Table -1 Incidence of obstructed labour during the study period

Statistical data	Frequency	Percentage
Total no. of deliveries	12,223	
Total no. of caesarean deliveries	4210	34.44
Total no. of vaginal deliveries	8013	65.56
Incidence of obstructed labour	199	1.63

Maximum of the patients (89.4%) were in the age group of 20-30 years. The highest frequency (64.3%) was found among the primigravida. Majority of the patients (71.3%) were illiterate. Majority of the patients (89.9%) were from low socio-economic status and belonged to rural area (88.9%). Maximum patient (57.9%) did not

attend any antenatal clinic, 38.6% had irregular antenatal checkups. (Table-2)

Table-2 Socio-demographic details of obstructed labour cases (n=199)

Socio-demographic characteristics	Frequency	Percentage
Age(in years)		
<19	Nil	Nil
20-25	127	63.8
26-30	51	25.6
31-35	15	7.5
>35	6	3.1
Parity		
Primi	128	64.3
1-4	65	32.6
>4	6	3.1
Educational status		
Illiterate	142	71.3
Primary	52	26.1
Highschool	5	2.5
Socioeconomic status		
Low	179	89.9
Middle	20	10.1
Upper	Nil	Nil
Residence		
Rural	177	88.9
Urban	22	11.1
Antenatal checkup		
Nil	115	57.9
Irregular	77	38.6
Regular	7	3.5

The commonest cause of obstructed labour was cephalo-pelvic disproportion (72.3%). Malposition like occipito-posterior, brow, face was present in 16.1% of the cases. 6.1% of the cases had malpresentation. Fetal anomaly (hydrocephalus) was present in only 4% of the cases. Pelvic tumor and myoma accounted for only 1.5% of cases. (Table-3)

Table -3 Causes of obstructed labour (n=199)

Causes	Frequency	Percentage
Cephalopelvic disproportion	144	72.3
Malposition	32	16.1
Malpresentation	12	6.1
Fetal anomaly	8	4.0
Others	3	1.5
Total	199	100

Caesarean section was the only mode of delivery performed. 7(3.5%) cases were diagnosed to have ruptured uterus for which laparotomy was performed. Out of these 7 cases, repair was performed in 4 patients and

subtotal hysterectomy in 3 patients. (Table-4)

Table 4- Distribution of modes of delivery (n=199)

Mode of delivery	Frequency	Percentage
Caesarean section	192	96.5
Laparotomy	7	3.5
With repair of rupture	4	2.0
With subtotal hysterectomy	3	1.5
Total	199	100

Perinatal outcome is shown in Table-5 and Table-6. Thirty one foetuses (15.6%) were still birth and one hundred and sixty eight foetuses (168) were live births. Complications noted among live born were birth asphyxia (30.9%), meconium aspiration syndrome (24.4%), septicaemia (23.2%), neonatal jaundice (22.6%), convulsions (8.9%). Many of the neonates have more than one complications. There were total 10 neonatal deaths. Thus, the perinatal mortality was 20.60%.

Table -5 Distribution of fetal condition during birth (n=199)

Parameter	Frequency	Percentage
Still birth	31	15.6
Live birth	168	84.4
Total	199	100

Table-6 Distribution of complications among the live births (n=168)

Complication	Frequency*	Percentage
Birth asphyxia	52	30.95
Meconium aspiration syndrome	41	24.4
Septicemia	39	23.2
Neonatal jaundice	38	22.6
Convulsion	15	8.9
Neonatal death	10	5.95

*Many of the neonates have more than one complications.

Many of the patients had more than one complication. Common being maternal sepsis (20.1%) paralytic ileus (12.5%), postpartum hemorrhage(12.06%). Rupture uterus was present in 7(3.5%) cases and subtotal hysterectomy performed in 3 cases.

There were three maternal mortalities, two due to hemorrhagic shock in case of rupture uterus and one due to septicaemia with multiorgan failure. (Table-7)

Table -7 Distribution of maternal complications (n=199)

Maternal complications	Frequency*	Percentage
Maternal sepsis		
Pyrexia	28	14.07
Wound infection	12	6.03
Paralytic ileus	25	12.5
Postpartum hemorrhage	24	12.06
Rupture uterus	7	3.5
Hysterectomy	3	1.5
Bladder injury	2	1.0
ICU admission	2	1.0
Maternal death	3	1.5

*Many of the patients had more than one complications

DISCUSSION

The incidence of obstructed labour in the present study was 1.63%, which was lower than the incidence of obstructed labor-12.2%. reported by Fantu *et al.*, [6] 2.7% reported by Ikojo *et al.*, [7] 4% reported by Melah *et al.* [8] in a study conducted at the Specialist Gombe Hospital (SHG), Gombe State, over a period of 5 years, and 3.2% reported by Aboyeji *et al.* [9] in a study conducted in University of Ilorin, Nigeria, 4.2% reported by Islam *et al.* [10] in their study in Dhaka; comparable to 1.64% reported by Mondal *et al.* [11] in their study in West Bengal, India; but higher than 0.56% reported (Checked) by Adhikari *et al.* [5] In India and 1.1% reported by Gupta *et al.* [12] in their study conducted in teaching hospital in Rajasthan , India, and 1.27% reported by Dafallah *et al.* [13] in a study conducted in a teaching hospital in Sudan. This decreasing trend in incidence is probably a reflection of improvement in antenatal and intranatal care.

Mostly, obstructed labour occurred in nonbooked, primigravida, patient from rural area and those belonging to poor class, illiterate or having primary education. Literate sections of people have better financial status and more health awareness and are more likely to utilize the health services.

In the present study, the common causes of obstructed labour were found to be cephalopelvic disproportion (72.35%),

malposition (16.1%), malpresentation (6.1%)

In West Bengal India, Mondal *et al.* [11] in their study, observed following as the causes of obstructed labour- cephalopelvic disproportion (55.59%), malposition (23%), and malpresentation (18.21%). Gupta *et al.* [12] in a study done in Rajasthan India, showed that 63% patient had cephalopelvic disproportion and 27% malposition. Islam *et al.* [10] in Bangladesh noted that the commonest cause of obstructed labour was cephalopelvic disproportion (44.8%) followed by malposition (persistent occipitoposterior) (25.7%), malpresentation mostly shoulder presentation (10.5%) and breech presentation (9.5%). Fetal abnormality was found mostly severe hydrocephalous (2.8%). Fantu *et al.* [6] in Ethiopia the causes of obstructed labour were cephalo-pelvic disproportion in 67.6% and malpresentation in 27.9%. In Sudan, Dafallah *et al.* [13] showed that 57% cases suffered from cephalopelvic disproportion. In a study in Enugu, Nigeria, by Nwogu-ikojo *et al.*, [7] they showed that the cause of obstructed labour was cephalopelvic disproportion in 56.6% cases. A study conducted in University of Ilorin, Nigeria, by Aboyeji *et al.* [9] Showed that the commonest cause of obstruction was fetopelvic disproportion in 56.7% of cases.

Caesarean section was the only mode of delivery performed. Destructive operations were not performed. Gupta *et al.* in their study in India, performed caesarean in all the cases. Mondal *et al.* [11] from India performed caesarean in 85.4%. Konje *et al.*, [14] from Ibadan, performed LSCS in 82%. A study from India by Adhikari *et al.* [5] showed that 63.27% were delivered by LSCS and 36.73% by destructive operations. In a study conducted at Ethiopia, Gessesew *et al.* [15] that cesarean section was performed in 88 of the 195 cases (46.1%), craniotomy in 31 (16.2%), instrumental

delivery in 27 (14.1%), hysterectomy in 28 (14.6%), and repair of ruptured uterus in 17 (8.9%), among 5980 hospital deliveries during the study period. A study in Enugu, Nigeria, by Nwogu-ikojo *et al.* [7] showed the most common intervention was LSCS. Advent of new generation of antibiotics, better surgical method, anesthetic facilities, good pre-operative and postoperative care has made caesarean section safe and destructive operations obsolete. Patients on discharge were counselled for early antenatal booking in subsequent pregnancies and deliver in well established health care facilities where adequate monitoring is available with facilities for caesarean section.

Regarding the perinatal outcome, perinatal mortality in our study was 20.60% Thirty one foetuses (15.6%) were still birth and one hundred and sixty eight foetuses (84.4%) were live births. Complications noted among live born were birth asphyxia (30.9%), meconium aspiration syndrome (24.4%), septicaemia (23.2%), neonatal Jaundice (22.6%), convulsions (8.9%).. which was comparable to that reported by Mondal *et al.* [11] Perinatal mortality reported in various studies are as follows: Gupta *et al* 22.8% , [12] Dafallah *et al.* [13] 27.1%, and Nwogu-ikojo *et al.* [7] 30%. In our study, perinatal outcome was better from many studies, because of better NICU facilities.

In present study, maternal mortality rates were 1.5%. Maternal complications reported were also lower. Maternal mortality rates in other studies were higher than those reported by Mondal *et al* [11] (1.6%)..,Adhikari *et al.* [5] (2.04%), and Nwogu-ikojo *et al.* [7] (3.3%).Melah *et al.* [8] suggested that puerperal sepsis was the most frequent morbidity. Aboyeji *et al.* [9] showed that the common complications included wound infection (34.3%) and genital sepsis (31.3%). In the study by Mondal *et al.* [11] the common maternal complications

included pyrexia (49.8%), PPH (33.9%), UTI (10.9%), subinvolution (9.3%), and wound infection (7.7%).

CONCLUSION

Obstructed labour is totally preventable but unfortunately it is yet not prevented. Poor referral system, low socioeconomic status, illiteracy, and inadequate antenatal care services produce many cases of obstructed labour. Our main aim should be to provide universal good obstetric care and avoid obstructed labour. Good antenatal care, education of primary health care providers and traditional birth attendants on dangers of obstructed labour and the need for early referral is suggested to reduce the incidence of this condition.

ACKNOWLEDGEMENT

I would like to thank Prof. Arun Nagrath, Head of the Department of Obstetrics & Gynecology, U.P. Rural Institute of Medical Sciences & Research for his continuous guidance and motivation.

Declaration:

Funding: None

Conflict of interest: None declared

Ethical approval: Not required

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How to cite this article: Sharma P, Kumari K, Kanti V et al. Obstructed labour: a preventable tragedy but still a long way to go in developing countries. *Int J Health Sci Res.* 2015; 5(9):99-104.
