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Obstructed Labor: Still a Harsh Reality

MAIMOONA QADIR, MEHAK SALEEM GHAURI*

ABSTRACT

Background: Obstructed labor is one of the preventable causes of maternal and perinatal morbidity & mortality. If detected and managed in time, optimum results will be obtained for both mother & baby.
Aim: To assess the incidence, socio-demographic characteristics, causes and outcomes of obstructed labor in pregnant patients attending Mardan Medical Complex, Mardan.
Methodology: This descriptive cross sectional study was conducted at Gynaecology and Obstetrics Department of Mardan Medical Complex, Mardan from February to July 2017. All pregnant patients of any age, parity, booking status who presented at term with diagnosis of obstructed labor or developed obstructed labor in same hospital were included. Detailed history, per abdominal and per vaginal examination were performed and cesarean section done in all cases, noting all the intra and postoperative complications. Data was analyzed by SPSS 20.0.
Results: Incidence of obstructed labor was 1.8% as 61 patients presented with diagnosis of obstructed labor. The most common age group was 21- 30 years where 40(65.57%) patients fell. Mean age was 26.5±4.2 years and 32(52.4%) women were primiparous. 54(88%) patients were rural citizens and 57(93.44%) were nonbooked cases. Cephalopelvic disproportion was seen as cause of obstruction in 37(60.6%) cases, followed by malposition in 12(19.6%) and malpresentation in 10(16.3%) cases. Intra and postoperative complications were febrile morbidity in 21(34.4%), uterine rupture in 14(23%), wound sepsis in 10(16.3%) and urinary tract infections in 7(11.4%) cases. Maternal mortality was seen in 2(3.2%) and perinatal mortality in 21(34.4%) babies.
Conclusion: Improvement in nutrition, timely diagnosis, early referral and intervention can help in reduction of this preventable cause of maternal and perinatal morbidity and mortality.
Keywords: Obstructed Labor, Postpartum Haemmorhage, Uterine Rupture, Hysterectomy, Maternal Mortality, Cesarean Section.

INTRODUCTION

Maternal health is the basic right of all women and includes the phases of pregnancy, delivery and puerperium. The provision of health services for contraception, antenatal, intrapartum and postnatal care are the pillars of maternal health[1]. In developing countries like ours, pregnancy complications are very high and one woman dies due to complications related to delivery of baby every minute worldwide[2].

Obstructed labor is defined as 'labor when the presenting part of fetus fails to enter the birth canal, despite efficient uterine contractions[3]. According to World Health Organization, obstructed labor is an obstetrical emergency[4]. It's common cause being cephalopelvic disproportion, which is differences in the proportion of fetal head and maternal pelvis, malposition and malpresentation being few other causes.

Obstructed labor is responsible for 8% of maternal mortality in developing countries like Pakistan[5]. Thirty nine percent of hospitalization of obstetric patients is attributed to obstructed labor[6]. It is an important cause of maternal and perinatal mortality[7] with maternal mortality rate ranging between 1-13% and perinatal mortality rate between 74-92%[8]. About half of the maternal deaths are attributed to obstructed labor in a direct or indirect way. Out of the 210 million women who become pregnant annually worldwide, 500,000 die because of complications of pregnancy/delivery and obstructed labor is an important cause[9,10].

Obstructed labor is responsible for a number of complications in mother as well as fetus. Maternal complications include uterine rupture, septicemia, postpartum haemmorhage, secondary infertility, fistulas and skeletal and neurological disorders[11]. The fetal complications include perinatal mortality, cerebral palsy and developmental disabilities[12].

Our study aims to detect the frequency, aetiology, outcome and complications of obstructed labor in a tertiary care hospital of Mardan, so that preventive strategies for early intervention are formulated to decrease the maternal and perinatal morbidity and mortality.

Specialist Registrar, Department Of Gynaecology & Obstetrics, Mardan Medical Complex, Mardan.
**HO, Medicine, Sh. Zayed Hospital, Lahore*
Correspondence to Dr.Maimoona Qadir, Email : dr.maimoona1983@gmail.com Cell:. 03469196731 H.80, St.6, Sector H-3, Phase 2,Hayatabad, Peshawar.
Res. Ph. No. 091-5822995.

MATERIAL AND METHODS

This descriptive cross sectional study was conducted at Gynaecology and Obstetrics Department of Mardan Medical Complex, Mardan from February 2017 to July 2017.Sixty One patients were included in the study. Inclusion criteria was all pregnant women of any age, parity and booking status with features of obstructed labor attending the labor room or developing obstructed labor within this hospital. Pregnant patients with prolonged labors not developing features of obstruction were excluded.

Approval was taken from ethical committee of hospital. Written informed consent was taken from patients and purpose of study explained. All data was collected in a predesigned proforma. Detailed history regarding age, parity, booking status, past obstetric history, details of referral place and referral notes, antenatal care if received and trial of instrument if attempted at referral place or same institution was recorded. Detailed general physical, per abdominal and per vaginal examination was perfomed. Notes were made of any cephalopelvic disproportion, malposition, malpresentation, condition of vulva/vagina, urinary bladder and urine (blood present or not), Bandl's ring, status of fetal head if moulding/caput present or not.

Mother was examined in detail for any fever, dehydration, shock, uterine rupture, postpartum hemorrhage and vesicovaginal fistula. Mortality if occurred was noted. State of fetus was also recorded whether alive or stillborn, APGAR score, early neonatal death was recorded. As cesarean section was performed in all cases, so all intraoperative and postoperative complications were recorded, including the cases where hysterectomies or repair of ruptured uterus was performed. Patients were kept in high dependency unit for first 24 hours and then shifted to general ward with close watch on vital signs and any complication. They were discharged on fifth postoperative day and asked to report two weeks later for follow up.

Datra was collected and analysed using SPSS 20.0. Numerical variables were calculated using mean and standard deviation whereas frequency and percentages were calculated for categorical variables. All data was presented in form of tables.

RESULTS

During the study period, 3,392 deliveries took place and 61 patients had the diagnosis of obstructed labor, making the incidence 1.8%.

We divide the patients into four age groups and observed that 7(11.47%) patients fell into age group of 15- 20 years, 40(65.57%) belonged to age group of 21- 30 years, 9(14.7%) were in 31- 40 years age range and 5(8%) were more than 40 years age. Mean age was 26.5±4.2 years. Thirty two (52.4%) were primigravida, 26(42.6%) were multigravida with parity 2-4 and 3(4.9%) had parity 5 and above. 54(88%) were rural citizens and 7(11.47%) were urban citizens. 57(93.44%) were nonbooked and 4(6.55%) were booked patients (Table I).

Regarding the causes of obstructed labor, 37(60.6%) patients presented with cephalopelvic disproportion, followed by malposition in 12(19.6%) cases, malpresentation in 10(16.3%),fetal congenital anomaly in 1(1.6%) and the cause remained unidentified in 1(1.6%) woman (Table II).

Uterine rupture was observed in 14(23%) women, out of these,11(18%) were repaired and 3(4.9%) ended in hysterectomy. Maternal mortality was seen in 2 cases (3.2%), both due to uterine rupture and shock. Perinatal mortality was seen in 21(34.4%) cases. Perinatal morbidity was seen in form of birth asphyxia in 50(82%), sepsis in 14(22.9%), jaundice in 9(14.7%) and meconium aspiration syndrome in 7(12%) babies.

Complications of obstructed labor were observed as maternal febrile morbidity in 21(34.42%), uterine rupture in 14(23%), wound sepsis in 10(16.3%), urinary tract infections in 7(11.4%), postpartum haemmorhage in 6(10%), abdominal distension in 5(8%), vesicovaginal fistula in 3(5%) and bladder injury and broad ligament hematoma in 1(1.63%) each case (Table III).

Table I: Socio-demographic characteristics of patients (n=61)

Characteristic	Frequency	%age
Age		
15- 20 years	7	11.47
21- 30 years	40	65.57
31- 40 years	9	14.7
40 years	5	8
Parity		
P1	32	52.4%
P 2- 4	26	42.6%
P 5 and above	3	4.9%
Residence		
Rural	54	88%
Urban	7	11.47%
Booking Status		
Booked	4	6.55%
Unbooked	57	93.44%

Table II: Causes of obstructed labor (n=61)

Causes	Frequency	%age
Cephalopelvic disproportion	37	60.6
Malposition	12	19.6
Malpresentation	10	16.3
Fetal Congenital Anomaly	1	1.6
Unidentified	1	1.6

Table III: Complications of obstructed labor (n=61)

Complications	Frequency	%age
Maternal Pyrexia	21	34.42
Uterine Rupture	14	23
Wound Sepsis	10	16.3
Urinary Tract Infections	7	11.4
Postpartum Haemmorhage	6	10
Abdominal Distension	5	8
Vesico-vaginal Fistula	3	5
Bladder Injury	1	1.6%
Broad Ligament Hematoma	1	1.6%

DISCUSSION

Obstructed labor is an important cause of maternal mortality in underdeveloped and developing countries, and has many short and long term complications. Reduction in the mortalities resulting from complications of obstructed labor will be considered an indication for the improvement and upgradation of obstetric care system and financial status of a country.

In the present study, the incidence of obstructed labor in our institution was 1.8%.This is very close to the results of studies done by Rizvi SM et al who reported 1.7% and Mondal S et al who reported 1.6% incidences in their studies conducted at India [13,14],but lower as compared to the study conducted at Hyderabad, Pakistan by Sheikh SR et al where this rate was 3.6% and another study at Lady Reading Hospital, Peshawar where it was 4.5%[15,16]. The higher rates in our studies is a reflection of need for better health delivery system especially at doorstep of financially underprivileged people.

The most common age group in our study where obstructed labor cases were in majority was 21- 30 years with mean age of 26.5±4.2 years. Our findings are supported by results of study by Fantu S et al on 179 cases of obstructed labor where they found that the commonest age was same as ours in 61.5% of cases[17] as compared to 65.57% in our analysis. Mean age was 27.7±5.9 years in another local study [18].Primigravidas were more prone to obstructed labor as we can see from ours as well as other national and international studies[18,19]. 88% of our study population belonged to rural areas, same results are concluded by two other studies[14,20]. 93.44% of our patients were unbooked, just like the results of Sheikh SR et al who reported 95.45% of their study population being unbooked and Rizvi SM et al whose 78% cases were unbooked[13,15]. Although antenatal care is not a very predictor of obstructed labor, discussion about the preparation for delivery and visit to appropriate health care facility can help.

Cephalopelvic disproportion was major cause of obstructed labor in our study, being responsible for 60.6% cases. Close figures were observed in a study at Ethiopia where 67.6% cases were caused by CPD[17] and figures as high as 77% were seen in a local study[15]. Malposition caused 19.6% cases of obstructed labor in our study, whereas it caused 22.9% cases of obstruction at a study in India in 2015[13]. Malpresentation was responsible for causation of 16.3% cases in our study, whereas it caused 18.2% cases in study by Mondal S et al at West Bengal, India[14].

Maternal febrile morbidity was the main postoperative complication in our study, being present in 34.42% cases, whereas it was observed in 39.3% postoperative cases in another research[17]. Uterine rupture occurred in 23% of our patients, just like it occurred in 25% patients in research done by Ukke GG et al[21].The reason might be more time since onset of labor or high proportion of multiparous women in our study who are more prone to rupture. Next common complication was wound infection being seen in 16.3% patients, and postpartum haemmorhage in 10% cases, close results were seen in a studies where wound sepsis was seen in 12.8% and PPH in 8.2% cases was seen[13,17]. Vesicovaginal fistula which is the uncommon and embarrassing complication was seen in 5% cases, much lower than the results of other researchers [21].

Maternal mortality rate was 3.2%, much higher than other national and international studies[14,15,21], but this also depends on the state in which those two women arrived in hospital. Perinatal mortality rate was 34.4%, still higher than the studies done by other authors[14,22,23]. Commonest perinatal morbidity parameter was birth asphyxia seen in 82% neonates, consistent to 88.9% by Ukke GG et al [21] and Jaundice in 14.7%, close to 16.8% in study done by Mondal S et al [14].

There were several limitations in our study. Firstly, the follow up period was short as most patients were lost to follow up. A long term follow up might have helped us to sort out long term complications in both women and neonates. Secondly, only Mardan Medical Complex was taken as the study place, inclusion of other hospitals of same locality could have given better idea about prevalence and outcome of this disorder in that particular area. Finally, as it was a hospital based study so its results could not be generalizable to whole community.

CONCLUSION

Obstructed labor is basically a complication of mismanaged pregnancies which are allowed to proceed thus resulting in prolonged labors and resulting obstruction and challenging cesarean sections. Good antenatal care, timely diagnosis and

early intervention can help in reduction of its incidence. The Ministry of Health should put their efforts to strengthen the antenatal care system so the high risk pregnancies are detected in time, and proper referral and ambulance systems should be made functional.

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