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FETOMATERNAL COMPLICATIONS IN PATIENTS OF OBSTRUCTED LABOUR PRESENTING TO GYNAE B UNIT HAYATABAD MEDICAL COMPLEX, PESHAWAR

Afshan Jehan Zeb[1], Sana Khan[2*], Laila Wajid[3]

[1]Medical Officer Obs and Gynae Unit Cat D Hospital, Gara Tajik, Kochian Warsak Road, Peshawar
[2*]Medical Officer Obs and Gynae Unit, Women and children Hospital, Rajjar Charsadda
[3]Medical Officer Obs and Gynae Unit, District Headquarter Hospital, Landikotal

***Corresponding author:** Sana Khan;
***Email:** dr.sanakhan143@gmail.com

Abstract

Introduction: Obstructed labor results from failure to descent of presenting part in the birth canal due to mechanical reasons despite adequate uterine contraction. It is a life threatening obstetric complication with significant maternal and perinatal morbidity.

Objective: To determine the frequency of fetomaternal complications in women with obstructed labour presenting to Hayatabad Medical Complex, Peshawar.

Study Design: Descriptive Study.

Study Setting: Department of Obstetrics and Gynaecology, Hayatabad Medical Complex, Peshawar.

Duration of Study: This study was conducted from 10th September 2020 to 10th March 2021.

Subjects and Methods: A total of 110 pregnant women with obstructed labour were included in the study. All women were followed till delivery and 5 days postpartum period and fetomaternal complications were noted.

Results: Postpartum hemorrhage was seen in 15.5% patients, ruptured uterus 20%, caesarean section 60%, paralytic ileus 33.6%, abdominal wound infection 16.4%, still birth 12.7%, birth asphyxia 28.2%, neonatal sepsis 20% and neonatal jaundice was 19.1%.

Conclusion: In our study, almost all of the cases with obstructed labor had developed maternal and/or fetal complications.

Keywords: Pregnancy, Obstructed labour, Fetomaternal complications

Introduction

Obstructed labor results from failure to descent of presenting part in the birth canal due to mechanical reasons despite adequate uterine contraction.[1] It is a life threatening obstetric complication with significant maternal and perinatal morbidity. The commonest cause of obstructed labor (OL) is craniopelvic disproportion (CPD). [2] This could arise as a result of reduced pelvic dimension, it occurs in laboring mother with childhood malnutrition, infection, poliomyelitis, deformity, sickle cell disease, or in teenagers increased diameter of the presenting part ,such as malposition and malpresention.[2] These include brow presentation, compound presentation, occipto-posterior, and mento-posterior in face presentation and congenital malformation (hydrocephalus, fetal ascites, and double monsters). Other causes include fibroid or ovarian tumor impacted in the pelvis below the presenting part, cervical and vaginal stenosis, ridged perineum in primigravida, and locked twins.[3]

Obstructed labor has impact on the fetus by causing intracranial hemorrhage due to severe molding of the head leading to tentorial tear or traumatic delivery, caput, fetal distress, and acidosis due to fetal hypoxia and maternal acidosis and neonatal sepsis.[4] If the duration of obstructed labor is prolonged without intervention, the fetus dies because of anoxia by excessive pressure on the placenta and umbilical cord. The dead fetus becomes softened by decay and may trigger the onset of coagulation failure and prolonged uterine contraction, end with rupture of uterus these leads to maternal hemorrhage and then to hemorrhagic shock, peritonitis, and septic shock, and death. Mothers may improve with longterm complications, like fistula, vaginal atresia, cervical stenosis, and secondary amenorrhea (infertility) following hysterectomy due to rupture or Sheehan's syndrome.[3]

Laboring mother presented with history of prolonged first stage of labor, early rupture of fetal membrane, and if labor delay with obstruction they present with secondary signs and complications such as, derangement of vital sign, exhaustion, metabolic acidosis, genital sepsis, and injury to the genital tract.[5] Principle of management of obstructed labor is correcting fluid, control infection, resting bladder and immediate relief of obstruction. Cesarean section followed by operative vaginal deliveries in malposition of fetal head in alive fetus and destructive deliveries in dead fetus were options of operative management.[5] In a study by Ranjana T, et al. has shown that frequency of Postpartum hemorrhage was 17.54%, ruptured uterus 21.92%, caesearen section 68.42%, paralytic ileus 52.6%, abdominal wound infection 17.5%, Still birth 32.45%, Birth Asphyxia 42.85%, Neonatal sepsis 16.88% and Neonatal jaundice was 18.18% in patients of obstructed labour.[6] In another study by Mondal S, et al. has shown that frequency of Postpartum hemorrhage was 33.9%, ruptured uterus 2.5%, caesearen section 85.94%, abdominal wound infection 2.9%, Birth Asphyxia 29.68%, Neonatal sepsis 14.84% and Neonatal jaundice was 16.80% in patients of obstructed labour.[6]

There are studies that have been done in this subject but in case of this study area, there is no data even though the problem is believed to be common. Therefore this study has paramount importance to fill the gap regarding the inadequacy of information about the problem in our general population. It also helps the policy makers to plan and implement evidence-based action to reduce the problem. Therefore, this study will be done to determine the frequency of fetomaternal complications in women with obstructed labour. The data that obtained from this study will also assist policymakers, planners, and other collaborators in the health sector to formulate appropriate strategies and interventions to tackle the problem.

Materials and methods

Study design:

Descriptive Study

Setting:

Department of Obstetrics and Gynaecology, Hayatabad Medical Complex, Peshawar

Duration of study:

This study was conducted from 10th September 2020 to 10th March 2021.

Sample size: The overall sample size was 110.

Sample size was calculated using WHO sample size software with 95% confidence interval and 7% margin of error using least prevalence of Neonatal sepsis by 16.88%.[6]

Sampling technique: Non-probability consecutive sampling

Inclusion Criteria:

- Woman age 18-35 years
- Singleton pregnancy on ultrasound
- Gestational age >34 weeks on LMP
- Any parity

- Obstructed labour as per operational definition for duration of >12 hours

Exclusion Criteria:

- H/o uterine fibroids
- H/o caesearen section
- H/o placenta previa
- Refused informed consent

Data Collection Procedure:
Patients fulfilling the inclusion criteria from Department of Obstetrics and Gynaecology, Hayatabad Medical Complex, Peshawar were included in the study after permission from ethical committee. Basic demographics like age, gestational age, parity, duration of obstructed labour were noted and Informed consent was taken from each patient.
All women were followed till delivery and 5 days postpartum period and fetomaternal complications (postpartum hemorrhage, ruptured uterus, caesearen section, paralytic ileus, abdominal wound infection, still birth , birth asphyxia , neonatal sepsis and neonatal jaundice) as per operational definition were noted and recorded on especially designed proforma

Data Analysis:
Data was analyzed with statistical analysis program (SPSS-version 23). Mean ±SD was presented for quantitative variables like age, gestational age, parity and duration of obstructed labour. Frequency and percentage was computed for qualitative variables like postpartum hemorrhage, ruptured uterus, caesearen section , paralytic ileus , abdominal wound infection, still birth , birth asphyxia , neonatal sepsis and neonatal jaundice. Fetomaternal complications were stratified among age, gestational age, parity and duration of obstructed labour. Post stratification chi square test was applied $p \leq 0.05$ was considered statistically significant.

Results
Age range in this study was from 18 to 35 years with mean age of 28.381±2.35 years, mean gestational age 38.336±1.52 weeks, mean parity 1.354±1.20 and mean duration of obstructed labour was 17.809±3.49 hours as shown in Table-I.
Postpartum hemorrhage was seen in 15.5% patients, ruptured uterus 20%, caesarean section 60%, paralytic ileus 33.6%, abdominal wound infection 16.4%, still birth 12.7%, birth asphyxia 28.2%, neonatal sepsis 20% and neonatal jaundice was 19.1% as shown in Table-II, III, IV, V, VI, VII, VIII, IX and X respectively.

Table- I: Mean±SD of patients according to age, gestational age, parity and duration of obstructed labour.

Demographics		**Mean±SD**
1	Age(years)	28.381±2.35
2	Gestational age (weeks)	38.336±1.52
3	Parity	1.354±1.20
4	Duration obstructed of labour (hours)	17.809±3.49

Table- II: Frequency and %age of patients according to PPH.

PPH		Frequency	%age
	Yes	17	15.5%
	No	93	84.5%
	Total	110	100%

Table- III: Frequency and %age of patients according to ruptured uterus.

Ruptured Uterus		Frequency	%age
	Yes	22	20%
	No	88	80%
	Total	110	100%

Table- IV: Frequency and %age of patients according to Caesarean section.

Caesarean section		Frequency	%age
	Yes	66	60%
	No	44	40%
	Total	110	100%

Table- V: Frequency and %age of patients according to paralytic ileus.

Paralytic Ileus		Frequency	%age
	Yes	37	33.6%
	No	73	66.4%
	Total	110	100%

Table- VI: Frequency and %age of patients according to abdominal wound infection.

Abdominal wound infection		Frequency	%age
	Yes	18	16.4%
	No	92	83.6%
	Total	110	100%

Table- VII: Frequency and %age of patients according to still birth.

Still Birth		Frequency	%age
	Yes	14	12.7%
	No	96	87.3%
	Total	110	100%

Table- VIII: Frequency and %age of patients according to birth asphyxia.

Birth Asphyxia		Frequency	%age
	Yes	31	28.2%
	No	79	71.8%
	Total	110	100%

Table- IX: Frequency and %age of patients according to neonatal sepsis.

Neonatal sepsis		Frequency	%age
	Yes	22	20%
	No	88	80%
	Total	110	100%

Table- X: Frequency and %age of patients according to neonatal jaundice.

Neonatal jaundice	Frequency	%age
Yes	21	19.1%
No	89	80.9%
Total	110	100%

Discussion

Obstructed labor is a life-threatening obstetrical complication associated with significant maternal as well as fetal morbidity and mortality. Early recognition and immediate intervention are important to prevent associated complications and to improve maternal and fetal outcomes [7]. Several interventions, such as the utilization of the partograph to monitor labor and provision of emergency obstetrical care services have been proposed to reduce the incidence of obstructed labor, and its squeal. However, the prevalence remains high in the developing countries [8].

The prevalence in India [9] 1.9%, Pakistan [10] 2.1%, Nigeria [11] 4.7%, and Uganda 10.5% [12]. The possible reason might be poor ANC follow up, high homebirth prevalence, teenage pregnancy, low socioeconomic status, poor infrastructure, and poor referral system in Pakistan.

This study also elucidated that, 67% of the obstructed labor cases did not have ANC follow-up during pregnancy. The result is supported by studies conducted in Pakistan [13], and Nigeria [47]. This might be the fact that not having antenatal care during pregnancy may decrease women knowledge about their pregnancy condition like multiple pregnancies, big baby, fetal anomalies, and other risk factors for obstructed labor. Moreover, women who don't have antenatal care are prone to home childbirth, poor awareness about birth preparedness and complication readiness plan, and danger signs of pregnancy which in turn increase the risk of obstructed labor.

Among mothers who had obstructed labor, 77.86% were from rural areas. The result is in line with studies conducted in Uganda [12] and Bangladesh
[13]. This could be due to women residing in rural areas, health facilities are distant, and accesses to information about institutional deliveries are limited. This might result in a delay to decide for seeking health care as early as possible and delay in reaching a health facility which contributes a lot to the occurrence of obstructed labor.

Additionally, 58.52% of mothers who had obstructed labor were referred from health centers and visited hospitals after at least 12 h of labor. The result is supported by studies conducted In Ghana [14] and Eastern Uganda
[15]. This could be explained as women might be referred after a long time of stay at the lower level facilities either due to lack of transportation, lack of infrastructure, poor decision of health care providers, and refusal of families which promote the occurrence of obstructed labor.

In our study, Postpartum hemorrhage was seen in 15.5% patients, ruptured uterus 20%, caesarean section 60%, paralytic ileus 33.6%, abdominal wound infection 16.4%, still birth 12.7%, birth asphyxia 28.2%, neonatal sepsis 20% and neonatal jaundice was 19.1%. In a study by Ranjana T, et al. has shown that frequency of Postpartum hemorrhage was 17.54%, ruptured uterus 21.92%, caesearen section 68.42%, paralytic ileus 52.6%, abdominal wound infection 17.5%, Still birth 32.45%, Birth Asphyxia 42.85%, Neonatal sepsis 16.88% and Neonatal jaundice was 18.18% in patients of obstructed labour.[6] In another study by Mondal S, et al. has shown that frequency of Postpartum hemorrhage was 33.9%, ruptured uterus 2.5%, caesearen section 85.94%, abdominal wound infection 2.9%, Birth Asphyxia 29.68%, Neonatal sepsis 14.84% and Neonatal jaundice was 16.80% in patients of obstructed labour.[6]

The main obstetric causes of obstructed labor in this study were cephalopelvic disproportion accounted for 64.65%. The result is supported by studies in Uganda [12], Nigeria [16], and India [10].

Uterine rupture resulted in 20% of obstructed cases. The result is supported by the study conducted in Uganda [17], Dar es Salaam, and the USA [18]. The reason for this could be during obstructed labor there is an impossible barrier (obstruction) preventing its descent despite strong uterine contractions, which increases the risk of uterine rupture.

This study revealed that obstructed labor results stillbirth 12.7% of cases. The result is in line with studies in Boston, Massachusetts, United States [19], and Pakistan [20]. The possible reason might be obstructed labor is when the baby does not exit the pelvis during childbirth due to being physically blocked, despite the uterus contracting, resulted in the baby not getting enough oxygen which may result in death. Moreover, as labor is obstructed, the fetal head impacts on the soft tissue of the pelvic floor, pinning the bladder base and the urethra against the pelvic bone. In the absence of any intervention, this condition may last for several days; the fetus may die and the results stillbirth.

Conclusion

This study revealed that postpartum hemorrhage, ruptured uterus, caesearen section , paralytic ileus , abdominal wound infection, still birth , birth asphyxia, neonatal sepsis and neonatal jaundice were the commonest complications of obstructed labor among mothers who gave birth in our local population. Therefore, to prevent the incidence of obstructed labor; promoting ANC service utilization during pregnancy, improving the referral system, and infrastructure to reach health faculty that had a capacity to manage obstructed labor is recommended. Moreover, it is better to promote institutional service utilization for the prevention and early management of obstructed labor and its complications.

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