

Original Article

An Observation of the numerous medical risk factors for obstructed labor

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ABSTRACT

Introduction: Maternal and Child Health (MCH) services should be restructured with a focus on increasing community awareness, decentralization of maternity services, and effective health care planning from grassroots to tertiary levels, as well as the establishment of a streamlined and effective referral system, to reduce this unfortunate and mostly preventable obstetric complication. The current study was conducted to evaluate the medical reasons for obstructed labor to

enhance MCH planning and avoid such situations in the future. **Aim of the study:** The aim of the study was to observe the medical causes and risk factors of obstructed labor. **Methods:** This prospective cross-sectional observational study was conducted at the department of Obs & Gynae. Dhaka Medical College Hospital, Dhaka, Bangladesh. The study duration was 1.5 years, from August 2004 to December 2005. A total of 100 patients were selected from the total 6074 delivery cases conducted during the study period, based on exclusion and inclusion criteria. **Result:** prevalence of obstructed labor was about 4%. 52% were within 20 to 25 years of age, 55% were Primigravida, only 30% were on regular antenatal checkups, and 52% had no antenatal checkup. The medical causes of obstructed labor were cephalopelvic disproportion in 30%, malposition or malpresentation in 69%, and cervical fibroid in 1%. **Conclusion:** The limited study showed that the prevalence of obstructed labor in our hospital population was 3.59%. Obstructed labor was more common among younger women, and the incidence declined with age. The most common medical cause of obstetric labor was malposition and

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INTRODUCTION

Maternal mortality is one of the primary causes of death among reproductive-age women in practically all developing nations. It is a significant public health issue not only because of the high frequency of such deaths but also because of the terrible effect such an occurrence has on the family and the community as a whole. [1],[2] The maternal death rate in Bangladesh remains quite high, at around 171.74 per 100,000 live births. [3] Even in the twenty-first century, obstructed labor is still a life-threatening disaster all over the world, particularly in underdeveloped nations like Bangladesh. In the United States, one of the top causes of maternal death (8%) is obstructed labor. [4] This fully avoidable labor complication, which has a very high maternal and newborn morbidity and death rate, is a sign of obstetric treatment insufficiency and low quality. Obstructed labor is a special issue in Bangladesh, where the birth rate is too high, the number of educated medical workers is limited, communication and transportation are undeveloped in some areas, and 20.5 percent of the population lives below the poverty line. [5] Most women in Bangladesh currently do not have timely access to emergency obstetric care (EOC), and only approximately 5% of predicted difficulties reach medical facilities. In our nation, approximately 61 percent of the population lives in rural areas, where the

majority of deliveries are made at home. [7] Trained Birth Attendants perform 63 percent of births, with untrained TBAs performing 37 percent and trained TBAs performing 25 percent. [7] The consequences of these births include significant mother and fetal mortality and morbidity in our nation. Every day, roughly 2-3 patients with obstructed labor are admitted to Dhaka Medical College Hospital. Because it is a tertiary level hospital, patients from various places with labor complications are referred here for effective therapy. Obstructed labor is caused by a variety of factors, including medical and societal factors. Medical causes include Cephalopelvic disproportion, malposition, malpresentation, large pelvic tumors, and fetal malformations (hydrocephalus). Poverty, societal and cultural stereotypes, gender-based violence, a lack of education, and a lack of access to basic health care facilities all contribute to labor stifling. Obstetric fistulas such as V.V.F, R.V.F, ruptured uterus, and vaginal stenosis are commonly caused by obstructed labor. Obstruction of labor is responsible for a significant amount of perinatal death and morbidity. Cerebral palsy, mental retardation, and infant mortality are the consequences of perinatal asphyxia. To reduce this unfortunate and mostly preventable obstetric complication, Maternal and Child Health (MCH) services should be restructured with a focus on increasing community awareness, decentralization of maternity

services, and effective health care planning from grassroots to tertiary levels, as well as the establishment of a streamlined and effective referral system. The current study was carried out to investigate the medical causes of obstructed labor in order to improve MCH planning and prevent such cases from occurring in the future.

OBJECTIVE

General Objective

- To observe the medical causes and risk factors of obstructed labor

METHODS

This prospective cross-sectional observational study was conducted at the department of Gynae. Dhaka Medical College Hospital, Dhaka, Bangladesh. The study duration was 1.5 years, from August 2004 to December 2005. A total of 100 patients were selected from the total 6074 delivery cases conducted during the study period, based on exclusion and inclusion criteria. Informed consent was obtained from each of the participants or their legal guardians where necessary, while ethical approval was obtained from the ethical review committee of the study hospital. After admission of the patient, history was taken and clinical examinations were done. The patients and babies were followed up during the delivery and postpartum period up to discharge. All necessary data was collected using a pre-prepared questionnaire and were later analyzed using SPSS software.

Inclusion Criteria

- Women with full-term pregnancy facing obstructed labor
- Women with a history of prolonged labor despite having a good uterine contraction.
- Patients who had given consent to participate in the study.

Exclusion Criteria

- Women with pre-term pregnancy facing obstructed labor
- Unable to answer the criteria question.
- Exclude those affected with other chronic diseases etc.

RESULTS

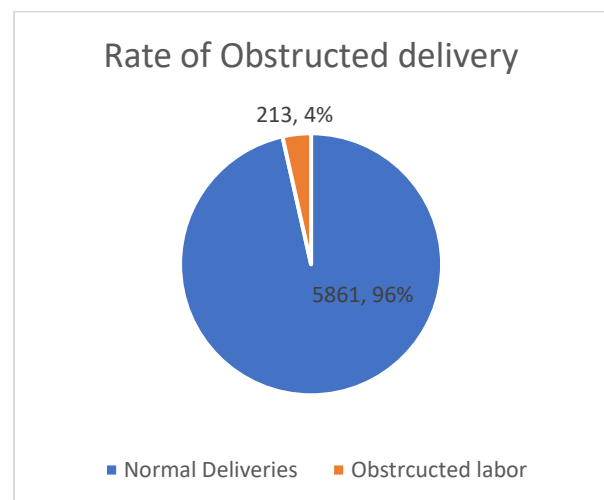


Figure 1: Incidence of Obstructed labor (N=6074)

During the study period, a total of 6074 deliveries took place in the study hospital. Among them, almost 96% were without major complications, while about 4% faced obstructed labor. Among those 213 obstructed labor cases, 100 were selected for the present study.

Table 1: Age distribution of the patients (n=100)

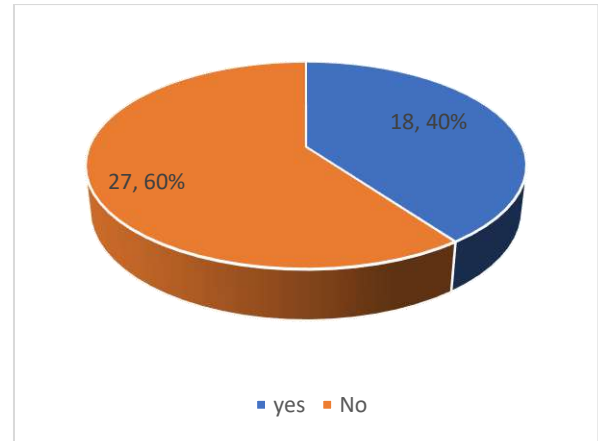
Age Group (Years)	Frequency	Percentage (%)
15-19	11	11
20-24	52	52
25-29	23	23
30-34	12	12
>34	2	2
Total	100	100

Among the participants, the majority (52%) were from the age group of 20-24 years, while 23% were between 25-29 years of age. The mean age of the participants was 24.09 years.

Table 2: Parity distribution of the participants (n=100)

Parity	Frequency	percentage (%)
Primigravida	55	55
Gravida (2-4)	37	37
Gravida (5-8)	8	8

Among the participants, 55% were Primigravida cases, while the remaining 45% had previously given birth. Among them, 37 had between 2-4 gravida, while 8 had 5-8 gravida.

**Figure 2:** Distributions of participants by the previous history of obstructed labor (n=45)

Among the 45 participants who had previously given birth, 60% had no history of obstructed labor, but the remaining 40% had a history of obstructed labor.

Table 3: Distribution of participants by antenatal check-up history (n=100)

Antenatal check-up	Frequency	percentage (%)
Regular	30	30
Irregular	18	18
No Checkup	52	52
Total	100	100

Among the participants, 52% had no history of antenatal check-ups, while 30% had regular check-ups and 18% had irregular check-ups.

Table 4: Distribution of participants by the duration of labor (n=100)

Duration of labor	Frequency	percentage (%)
12-24 hours	84	84
>24 hours	16	16
Total	100	100

The majority of the participants (84%) had labored for 12-24 hours, while 16% had been in labor for over 24 hours.

Table 5: Distribution of participants by general maternal condition on admission (n=100)

Maternal Condition	Frequency	percentage (%)
Pulse	<100	42
	>100	58
Temperature	Normal	68
	Raised	32
Anemia	Mild	53
	Moderate	26
	Severe	4
Dehydration	Mild	41
	moderate	30
	Severe	14
Color of urine	Hematuria	47
	High colored	53
Bladder Distended	Yes	99

General medical examination revealed that 58% had a pulse rate of >100 bpm, while the temperature was raised for 32% of the participants. 53% had mild anemia, 26% had moderate anemia and 4% had severe anemia. Moderate and

severe dehydration were observed in 30% and 14% of the participants. The bladder was distended for 99% of the participants, and high-colored urine was observed in 53%.

Table 6: Distribution of participants by fetal status (n=100)

Fetal condition		Frequency	percentage (%)
Fetal heart sound	Present	73	73
	Absent	27	27
Caput	Present	92	92
Meconium	Present	55	55
	Absent	45	45

Fetal heart sound was absent in 27%,
meconium was absent in 45% and caput

was present in all 92% of the
participants.

Table 7: Distribution of participants by possible medical causes of obstructed labor (n=100)

Cause	Frequency	Percentage (%)
Cephalopelvic disproportion	30	30
Persistent occipital posterior position	37	37
Deep transverse arrest	25	25
Shoulder presentation	5	5
Face presentation	2	2
Cervical fibroid	1	1
Total	100	100

37% of the participants had persistent occipital posterior position, 30% had Cephalopelvic disproportion, 25% had a

deep transverse arrest, 5% had shoulder presentations, 2% had face presentation and 1 patient had cervical fibroid

DISCUSSION

At the beginning of the new millennium modern obstetrics has developed great but in developing countries like Bangladesh obstructed labor still remains a great challenge. Obstructed labor is one of the important causes of maternal and perinatal mortality and morbidity in our country. It is a tragic consequence of pregnancy resulting

from ignorance and negligence. Obstructed labor can be influenced by not only physical and medical causes but also social causes as well. But medical causes play a greater role in obstructed labor. Obstructed labor affects an estimated 5% of pregnancies worldwide and causes for 8% of maternal fatalities. In developing countries, the incidence of obstructed labor is difficult to estimate

because most of the reported studies are based on data from a tertiary hospitals. In India, its incidence was found at 2.5%.[8] The present study had an incidence of obstructed labor at 3.59%, which was similar to other global studies.[9] This incidence rate was much lower compared to a 2010 study, where the incidence rate of obstructed labor was as high as 12.2%.[10] This study revealed that the more vulnerable age group for obstructed labor was earlier in life, especially in those under 30 years of age. This was supported by the findings of another study.[11] 55% of the participants were Primigravida, while 45% had multigravida. In the present study, antenatal care status was unsatisfactory, as over half (52%) did not have any antenatal check-ups, while only 30% had regular check-ups. This was probably influenced by the study being conducted in a government hospital where many people from the low-socioeconomic status visit, and regular check-ups become hard for them. The majority of the participants had been in labor for 12-24 hours, while 16 patients had been in labor for over 24 hours. The study showed that 44% of the patient came with moderate to severe dehydration and bladder distended in 99% of cases. Urine was high colored in 53% of cases, and hematuria in 47% of cases. In Nazia's study, 88% had bladder distension on admission. Fetal heart sound was absent in 27% of cases, caput formation due to obstruction in 92% & meconium passed due to distress in 55% of the cases. The medical causes of obstructed labor in my study population were cephalo-pelvic disproportion 30%, 69% cases due to malposition and

malpresentation; among them, the occipital-posterior position was 37%, and deep transverse arrest was 25%. Shoulder presentation was the commonest malpresentation (5%), face presentation was 2%, and cervical fibroid was 1%. This was similar to the findings of another Bangladeshi study conducted in 2002. Obstructed labor usually results from ignorance and negligence of the family and sometimes of society toward a pregnant woman. Maternal death can be avoided significantly if women have access to emergency obstetric care.

Limitations of The Study

The study was conducted in a single hospital with a small sample size. So, the results may not represent the whole community.

CONCLUSION

The limited study showed that the prevalence of obstructed labor in our hospital population was 3.59%. Obstructed labor was more common among younger women, and the incidence declined with age.

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