



ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor: 5.2
IJAR 2017; 3(7): 1529-1533
www.allresearchjournal.com
Received: 26-05-2017
Accepted: 04-07-2017

Dr. K Jyothi

Assistant Professor,
Department of Obstetrics and
Gynaecology, Mahavir
Institute of Medical Sciences,
Vikarabad, Telangana, India

Dr. G Sai Krishna Kumar

Assistant Professor,
Department of Psychiatry,
GSL Medical College,
Rajamahendravaram,
Jagannadhapuram
Agraharam, Andhra Pradesh,
India

A study on the impact of obstructed labour on the health of mothers at a tertiary care centre

Dr. K Jyothi and Dr. G Sai Krishna Kumar

Abstract

Background and objectives: The primary aim of this research is to ascertain the prevalence of labor constrictions and examine diverse risk variables linked to labor constriction. The aim of this study is to investigate the topics related to pregnancy, with a specific emphasis on maternal and perinatal mortality, as well as the diverse variables that contribute to these deaths. Analyze methods and approaches for reducing labor obstructions by utilizing the current resources.

Methods: A one-year prospective study was conducted at the Department of Psychiatry, GSL Medical College, Rajamahendravaram, Jagannadhapuram Agraharam, Andhra Pradesh, India. This tertiary care facility serves as a link for term pregnant women experiencing obstructed labor who present with emergency situations in the labor room, originating from outlying healthcare facilities. The study spanned from June 2016 to May 2017.

Results: The age range of the patients was 21 to 30 years, with 69% falling within this age group, followed by 19% aged 21, and 12% aged 31 and above. The average height was 142.7+14.0 cm. The study found that 59.5% of the subjects identified as primigravida, whereas 16.7% and 11.9% identified as gravidas. The prevalence of postpartum hemorrhage (PPH) was found to be 14.7% in cases with a labor duration of 24 hours, and 62.5% in cases with a labor duration exceeding 24 hours. In cases where the duration of labor was 24 hours, 11.8% of the cases and 50% of the cases had an APGAR value of 0. Conversely, in cases where the duration of labor was 24 hours and 0% of the cases had a duration of labor greater than 24 hours, the APGAR value was 10.

Conclusion: Despite the preventability of obstructed labor, it continues to have a substantial impact on maternal and baby morbidity rates within our nation. Consequently, prevention proves to be more advantageous than treatment. Improving remote healthcare has the potential to decrease an occurrence.

Keywords: Obstructed labour, perinatal mortality, maternal and infant morbidity

Introduction

Obstetric problems, such as obstructed labor, can be prevented and can lead to both immediate and prolonged disability, as well as adverse health outcomes for both mothers and newborns. Labor blockage affects around 5% of live births globally. It is prevalent in developing nations and accounts for approximately 8% of all deaths related to pregnancy^[1]. Several studies conducted in several emerging economies have revealed a prevalence rate ranging from 2% to 8% of all hospital births. The prevalence of obstructed delivery in India's referral hospitals ranges from 0.56 to 1.8% of all births. In Eastern India, it accounts for 11.4% of death rates and 39% of all obstetric hospitalizations globally, so establishing itself as a significant contributor to hospitalization. Obstructed labor refers to unattended labor in which natural birth is not possible, even after a prolonged period of strong labor. This is due to a mechanical obstruction in the baby's path through the pelvis and birth canal. This often causes significant distress for the mother and can even lead to the death of the fetus^[1].

The term "it" pertains to a scenario in which the possibility of future employment progression is unimaginable without external support. The incidence of this phenomenon is higher in humans than to monkeys due to the comparatively narrower and less straight birth canal of females. Obstructed labor is a result of mechanical problems that arise when there is a lack of access to skilled obstetric care.

It is considered a sign of inadequate obstetric practice in any situation. The actual figure is underestimated due to the tendency to categorize deaths resulting from obstructed labor as other conditions such as sepsis, uterine rupture, severe vaginal births, and postpartum

Correspondence

Dr. G Sai Krishna Kumar

Assistant Professor,
Department of Psychiatry,
GSL Medical College,
Rajamahendravaram,
Jagannadhapuram
Agraharam, Andhra Pradesh,
India

hemorrhage. However, advancements in obstetric practice in affluent countries have nearly eradicated the occurrence of obstructed labor. On the other hand, in less developed countries, obstructed labor remains a significant contributor to maternal and newborn illness and death [2]. The majority of fatalities occur among women who are impoverished, illiterate, and residing in rural regions with limited access to qualified birth attendants. This indicates a lack of sufficient and satisfactory obstetric care. To prevent obstructed labor, it is important to identify risk factors during pregnancy that are likely to lead to a prolonged labor, closely monitor the entire labor process with thorough pelvic examination and understanding of the partogram, and promptly refer and treat the condition. This objective can be accomplished through the improvement of our healthcare system and the provision of qualified birth attendants who possess the ability to identify and swiftly address challenges faced by pregnant women [2]. Disregarded Obstructed labor greatly elevates the likelihood of maternal and newborn illness and mortality due to an increased risk of postoperative complications, sepsis, uterine rupture, anesthetic complications, cesarean section delivery complications, extended hospital stays, elevated healthcare expenses, urinary incontinence, and genitourinary fistulas. If left untreated, these conditions can lead to physical ailments, infections, persistent depression, divorce, and social isolation. Common conditions include intellectual disability, cerebral palsy resulting from brain injury, and fetal hypoxia. The sole method to eliminate the obstruction is by means of a surgical procedure, such as a caesarian section, an instrumental birth, or invasive operations. Despite the advancements in antibacterial technology, Caesarean sections continue to be the preferred method for managing labor blockage. This preference stems from the inability to perform surgical vaginal deliveries or the potential hazards associated with such procedures. This reduces the probability of experiencing shock, hemorrhage, and trauma as a result of surgical procedures. An instrumented vaginal birth can be conducted in cases where the fetus is malpositioned, the birth canal is obstructed by soft tissue, or the woman is experiencing difficulty in bearing down due to analgesia [3]. In general, adopting a personalized approach and relying on the expertise and proficiency of the obstetrician to choose the most suitable way of delivery appears to be the optimal strategy. Even in challenging situations, the preference may be given to skilled surgery and improved decision-making. The provision of obstetric care in our country, where a majority of the population dwells in rural areas, is inadequate, with a significant proportion of births being carried out by untrained professionals [4]. The primary factor contributing to the rise in maternal morbidity and mortality is the inadequate quality and limited availability of obstetric care. Consequently, this study was conducted with consideration for all of the stated components.

Material and Methods

The prospective study conducted from June 2016 to May 2017, involved patients from outlying medical facilities who were referred to the Department of Psychiatry, GSL Medical College, Rajamahendravaram, Jagannadhapuram Agraharam, Andhra Pradesh, India. A total of 55 pregnant women with obstructed labor who had been admitted to the labor department emergency were selected for our study.

Methodology

Written consent was obtained from pregnant women who satisfied the specified eligibility criteria. Patients diagnosed

with obstructed labor had a comprehensive medical history, physical examinations, and any required diagnostic tests as outlined in the provided proforma. A scheduled Caesarean section was performed on the patients, and the outcomes of the pregnancy for both the mother and the infant were closely observed until the persons were granted permission to depart from the hospital. Data were inputted into a Microsoft Excel spreadsheet and subsequently subjected to statistical analysis using SPSS version 21. The mean standard deviation was used to portray continuous data, whereas categorical variables were represented as percentages. The statistical tool employed in the study was the Chi-square test. A P-value of 0.05 was used to determine statistical significance.

Inclusion criteria

All pregnant women who are in the full term and show indications of labor blockage.

Exclusion criteria

There are no observable signs or hints of a delivery.

Result

Table 1: Distribution by maternal morbidity.

Complication	Number	Percentage
Wound dehiscence	6	11%
Peritonitis	2	4%
Paralytic Ileus	9	16%
Shock (haemorrhagic + septic)	3	5%
VVF	1	2%
Puerperal Sepsis	9	16%
None	25	45%

Table 2: Distribution by perinatal outcome

Perinatal Outcome	Number	Percentage
Alive	35	76%
Still born	11	24%
Total	46	100%

Table 3: Distribution by APGAR score at 5 minutes

APGAR at 5 minutes	Number	Percentage
0	9	19%
4	4	9.6%
6	5	11%
8	11	24%
10	17	37%
Total	46	100%

Table 4: Distribution by birth weight of the baby

Birth weight	Number	Percentage
<2.5 kgs	6	13%
2.5 – 3.5 kgs	27	58%
>3.5 kgs	13	28%
Total	46	100%

Table 5: Distribution by Neonatal complications

Birth asphyxia	7	20.5%
MAS	4	11.9%
Neonatal sepsis	3	8.8%
Neonatal Jaundice	3	8.8%
No complications	18	50%
Total	35	100%

Table 6: Distribution by NICU admissions.

NICU admissions	Number	Percentage
Yes	20	40.5%
No	26	59.5%
Total	46	100%

Table 7: Distribution by Neonatal deaths.

Neonatal deaths	Number	Percentage
Yes	9	23.5%
No	26	76.5%
Total	35	100%

Discussion

Developing nations account for 98% of the annual pregnancy-related mortality, which amount to 530,000. Obstructed labor, hemorrhage, infection, and hypertension are the primary causes of mother and newborn mortality in low-income nations. The "Three Delays Model" proposed by Thaddeus and Maine posits that obstructed labor arises as a consequence of delays in medical response, hospitalization, and care. This study investigates the prevalence of obstructed labor, various risk factors, complications, outcomes for both the fetus and the mother, and strategies to enhance therapy for pregnant women throughout a one-year timeframe. The hospital had a lower rate of obstructed labor (0.47 percent) compared to similar locations in India and globally. The employment rate stands around 1-4%. Due to the COVID-19 pandemic, the hospital experienced a decrease in the number of newborns. Among the cases, 69% fell within the age range of 21 to 30, as reported by Sabyasachi Mondal *et al.*, Gayathri Mthurya *et al.*, Sangeetha Rai *et al.*, and Gebresilasea Gendisha Ukke *et al.* The high occurrence of obstructed labor in these age groups may be attributed to early marriage among illiterate individuals residing in rural and isolated places, as well as high fecundity rates. Their youthfulness, lack of knowledge about antenatal care, and insufficient health education may have hindered them from seeking medical attention at an early stage of pregnancy or until obstetric issues were apparent. Staff should exercise prudence while dealing with younger pregnant women. The primary focus of change might be directed towards addressing the obstetrical issues of young women^[5].

Grand-multiparous mothers and their offspring experience a reduced incidence of problems. From a statistical standpoint, grand multiparity may be insignificant. The majority of research, including this particular study, indicates that nulliparous women face an elevated risk. Teenagers who are not single can lead to complications. Nulliparous women exhibited vulnerability, however grand-multiparous mothers were atypical, hence potentially compromising the validity of the findings. Untrained delivery attendants in rural health centers do inadequate partographs and pelvic examinations^[5]. Unlike the studies conducted by Mihir Kumar Sarkar *et al.*, Sheetal Shinde *et al.*, Sangeetha Rai *et al.*, Babagana Bako *et al.*, and Syed Masuma Rizwi *et al.*, the current study found that 85.7% of the cases were not booked. This led to a rise in both maternal and perinatal illness and death. Enhance this by employing conventional birth attendants, providing health information, and promoting literacy. Expanding the infrastructure and personnel of health centers can yield benefits. Antenatal care plays a crucial role in monitoring

pregnancy and reducing the risk of maternal and infant mortality throughout the pregnancy and delivery process.

The WHO advises mothers, newborns, and laborers to undergo four antenatal care (ANC) visits. ANC enables midwives and nurses to identify high-risk populations. Prenatal care facilitates the identification of high-risk mothers and newborns. Timely identification and customized therapy prevent adverse consequences. Novel approach G-focus encompasses medical evaluation, information, and social help. ANC32's the primary objective of this G-ANC is to enhance healthcare accessibility and encourage healthy habits in regions with limited resources. A significant proportion of the populace resides in a remote, inhospitable region devoid of road infrastructure, situated in a steep and muddy terrain. There is an increased likelihood of complications if women delay seeking medical care for a period of 3-4 days following. One potential solution is to establish maternity waiting houses in close proximity to medical facilities that offer antenatal and emergency obstetric services, with a particular focus on individuals residing in distant or indigenous areas^[6], it was found that 78.5% of the female population in our study were illiterate. Due to a lack of medical education, women frequently fail to attend pregnancy appointments, lack comprehension of health matters, and disregard medical advice. The present study observed a high prevalence of obstructed labor, with a rate of 95.2%. India is classified as a developing nation, characterized by a significant proportion of its populace residing in rural regions and engaging in daily wage labor. 88% In the event of challenges, economically disadvantaged women tend to seek medical attention towards the end of pregnancy. The utilization of prenatal care is influenced by the expenses associated with treatment and travel^[6].

Obstetric risk is influenced by height. According to the World Health Organization (WHO), a height of 145 cm (4 ft 10 in) is considered short. Short individuals with a constrained pelvis and CPD are at a higher risk of experiencing obstructed labor. Heredity is taken into account while assessing a woman's early nutrition and health. According to Cruickshank (1969), growth is hindered by malnutrition, whereas pelvic enlargement is caused by rickets and osteomalacia. According to Lawson (1967), a pelvic flatness is caused by a height below 152 cm. Measure the height of the mother during prenatal care. Utilize maternal height as a metric for assessing CPD and ensuring optimal delivery care to prevent obstructed labor. The majority of women experiencing obstructed labor in the study have a height ranging from 140 to 145 cm (66.7%), while those with heights below 140 cm rank second (21.4%). The height of Ghanaians ranges from 150 to 153 cm (Kwawukume *et al.*, 1993), while in India it is 140 cm, and in Kenya it is 150 cm (Mati 1983) (Bhatt *et al.*, 1967). There is a correlation between anthropometric measurements and the occurrence of obstructed labor and caesarian birth (1997). Shorter women exhibit a higher prevalence of baby suffocation, low Apgar scores, and perinatal mortality. These findings indicate that 81% of the subjects experienced a brief labor. According to Islam JA 2010 *et al.*, laboring for 24 hours or more leads to higher rates of maternal and perinatal illness and mortality. Genito-urinary and recto-vaginal fistulas may develop as a result of protracted and obstructed labor caused by cephalopelvic disproportion, malpresentation, or malposition^[6].

To prevent obstructed labor, it is necessary to have a partogram and implement controls. Partographs are infrequently employed. Improper utilization of partograms leads to higher rates of illness and death among mothers and newborns. Partographs depict the process of labor for both the mother and the infant. This visual aid can enhance labor, decrease mother and fetal morbidity and mortality, and detect abnormal labor. A limited number of healthcare practitioners document partograph findings. It is imperative to provide instruction on the partogram and safe labor techniques. Hospitals should prioritize the correct utilization of a partograph in all patients undergoing labor to avoid prolonged and obstructed labor, which poses a threat to the health of both the mother and the baby. Retraining improves the ability to identify cases, manage files, and adhere to rules. Cephalopelvic disproportion (45.2%), restricted pelvis (16.7%), and malposition (14.3%) were the primary factors contributing to labor obstruction. Here are some comparable studies. The primary cause of multipara blockages was found to be poor presentation. LSC accounted for 90% of births in the experiment. Based on the data shown in the table, it can be observed that 7.1% (3) of the cases in question exhibited ruptured uteruses, necessitating laparotomies with uterine repairs and one Caesarean hysterectomy (2.4%). According to Tashaffi Qayoom, Sheetal Shinde, Priya Sharma, and other individuals, LSCS exhibits low rates of mortality and morbidity. Destructive techniques pose significant challenges and risks, potentially resulting in maternal injury or rupture. Cranotomies and cephalocentesis were identified as two of the most perilous surgical procedures [7].

The Patwardhan's approach was the predominant method of fetal extraction during Caesarean section, accounting for 52.4% of cases. This was followed by the vertex approach at 33% and the breech route at 14.3%. The presence of a large caput and molding poses challenges to head delivery. The lower uterine area was normal in 92.9% of patients, while it was not in 7.1% of patients. According to Bairwa *et al.* Patwardhan observed lateral uterine angle increase in 11.9% of instances, which is more than the 2% observed in previous methodologies. The incision's length prevents future vaginal birth. Blood transfusions were required to address the issue of postpartum hemorrhage., bladder injuries were found to be present in 4.8% of the patients [7].

Similar to prior research presented in the table, a total of 7.1% (3/42) of female participants experienced uterine rupture. Primigravida is responsible for two-thirds of occurrences, but multigravida ruptures occur more frequently. All instances took place within a time frame exceeding 12 hours following the birth. The majority of individuals residing in underdeveloped and developing countries reside in rural regions characterized by limited educational opportunities, inadequate healthcare access, prevalence of anemia, malnutrition, and contraception. Additional ruptures were identified by Sangeetha Rai and Sheetal Shinde. Primigravidae are 20/25. PPH in multigravidae (n=17). The incidence of PPH is higher in Multigravidae. PPH is characterized by its traumatic and atonic nature. The atonic PPH was treated with medication, while the traumatic PPH underwent surgery. Compression sutures, devascularization, and hysterectomy are employed in cases where treatment is ineffective [8].

Out of the 17 mothers in this study, 40% experienced difficulties. Sepsis and paralytic ileus were observed in 19%

of cases. Shock, peritonitis, and VVF each constituted 4.8% of the total cases. Post-operative difficulties were observed in 29.4% (n=10, p=0.004) and 87.5% (n=7, p=0.003) of cases with 24-hour labor. The risk of dehydration and metabolic acidosis in obstructed labor is heightened by heightened muscular activity and insufficient fluid intake. Genital sepsis is the result of premature rupture of the uterine membrane, allowing bacteria to enter the uterus, as well as repeated vaginal examinations or manipulation.

The incidence of surgical site infections (SSI) and wound dehiscence rose from membrane rupture until delivery. Hazards the primary hazard we faced was anemia. Anaemia is associated with an increased likelihood of puerperal sepsis and wound infection. Anaemia induces puerperal sepsis by reducing immunological activity. Anemia is indicative of hunger due to the necessity of nourishment for wound repair. Iron deficiency and micronutrient deficiencies impede the process of wound healing (zinc, copper). The presence of anemia is associated with an elevated likelihood of postpartum hemorrhage, infection, and wound dehiscence. In contrast to existing evidence, there is a correlation between SSI and intraoperative blood loss. Surgical blood loss increases the risk of infection. Tran TS *et al.* [9] found that blood loss increased the probability of SSI by 30% per 100 ml.

Extended surgical procedures impact surgical site infections (SSI). The comprehensive methodology employed in this study results in the infection of participants. Devajani *et al.* found that 53.3% of procedures beyond a duration of 45 minutes were contaminated. Lilani *et al.* established a connection between SSI and 2-hour operations. According to Johnson *et al.*, LSCS durations ranging from 31 to 60 minutes were associated with a higher SSI. Shapiro *et al.* found that the rate of infection increases double for every hour of operation. A fistula is a type of birth damage. Women who experience obstructed labor fistulas are susceptible to various adverse outcomes, including divorce, family turmoil, poverty, malnutrition, and misery. Goal 3 aims to enhance maternal health by focusing on the prevention and treatment of obstetric fistulas.

Mothers were fatally affected by septic shock and multiorgan failure. The following studies were compared: Sharma *et al.* (2015), Shinde *et al.* (2018), and Bako *et al.* (year). The delayed identification and referral of unscheduled, critically ill individuals resulted in the death of a mother. Perinatal mortality was shown to be 38%. There are 81% live births and 20% stillbirths. Long labors were associated with an increased number of stillbirths and lower APGAR scores. The mean birth weight of the newborns was 3.2+4.6 kg. The rate of NICU admissions was 40%. Newborns born after 24-hour labors were welcomed by the NICU. The most prevalent conditions observed in this investigation were jaundice (8.8%), sepsis (20.5%), and birth asphyxia (20.5%). Infant mortality and NICU stays increased as a result of baby complications. The mortality rate among babies was 25%. Multiple neonates perished.

Prolonged labor hinders the exchange of gas within the placenta, leading to intrauterine hypoxia and subsequently resulting in unfavorable fetal outcomes and neonatal mortality. To mitigate perinatal mortality, it is imperative to tackle several social, economic, behavioral, and healthcare determinants. It is imperative to implement many measures such as improved prenatal care, prenatal tetanus toxoid immunization, provision of sterile disposable cord care kits,

allocation of resuscitation supplies to delivery attendants, establishment of neonatal care units within healthcare institutions, and efficient referral of high-risk newborns and mothers [10]. It is imperative to provide training to traditional birth attendants in rural India to enable them to recognize high-risk characteristics, as 90% of deliveries occur in home settings. ASHAs and ANMs play a crucial role in health education and the provision of patient care.

The implementation of monthly perinatal mortality audits has the potential to enhance the performance of hospital maternity staff and doctors. It is advisable for young mothers to plan their delivery by the 36th week.

Conclusion

Although obstructed labor can be prevented, it nonetheless leads to significant mother and neonatal morbidity in our country. Hence, prioritizing prevention over therapy is more advantageous. Enhancing remote healthcare can reduce the occurrence. Recruiting skilled and extensively trained staff at local medical facilities to promptly identify labor dystocia, malpresentation, and malpositions, and subsequently refer cases to more advanced centers. Dietary habits of girls and young females. Engaging in comprehensive conversations with healthcare professionals and patients can provide valuable insights into the underlying causes of delays and unfavorable outcomes experienced by infants and mothers.

The establishment of maternal waiting houses in close proximity to hospitals or health centers that offer antenatal care and emergency obstetric treatment, with a specific focus on women residing in remote areas and tribal communities. Group antenatal care (G-ANC) has the potential to enhance the quality and use of services for pregnant women, particularly in situations where care circumstances are insufficient.

Funding support: Nil.

Conflict of interest: None.

References

1. Rush D. Nutrition and maternal mortality in the developing world. *The American Journal of Clinical Nutrition*. 2000;72(1):212S-240S.
2. Khan S, Roohi M. Obstructed Labour. The Preventable Factors. *Journal of the Pakistan Medical Association*. 1995;45:261-262.
3. Mekbib T, Kassaye E, Getachew A, Tadesse T, Debebe A. The FIGO save the mothers initiative: the Ethiopia–Sweden collaboration. *International Journal of Gynecology & Obstetrics*. 2003;81(1):93-102.
4. Melah GS, El-Nafaty AU, Massa AA, Audu BM. Obstructed labour: A public health problem in Gombe, Gombe State, Nigeria. *Journal of Obstetrics and Gynaecology*. 2003;23(4):369-373.
5. Mathuriya G, Pandey S. Maternal and perinatal outcome in obstructed labour in MYH Indore. *Age*. 16(20):30.
6. Rai S, Dwivedi D, Gupta S. Obstructed Labour-Still a Challenge. *Indian Journal of Obstetrics and Gynaecology Research*, 2018, 8(4).
7. Höcker J, Tonner PH, Böllert P, Paris A, Scholz J, Meier-Paika C, Bein B. Propofol / remifentanyl vs sevoflurane / remifentanyl for long lasting surgical procedures: A randomised controlled trial. *Anaesthesia*. 2006;61(8):752-757.
8. Johnson A, Young D, Reilly JV. Caesarean section surgical site infection surveillance. *Journal of Hospital Infection*. 2006;64(1):30-35.
9. Kwawukume EY, Ghosh TS, Wilson JB. Maternal height as a predictor of vaginal delivery. *International Journal of Gynecology & Obstetrics*. 1993;41(1):27-30.
10. Bastola P, Bhagat H, Wig J. Comparative evaluation of propofol, sevoflurane and desflurane for neuroanaesthesia: A prospective randomised study in patients undergoing elective supratentorial craniotomy. *Indian Journal of Anaesthesia*. 2015;59(5):287.