
CASE REPORT**Premature birth, poverty and cultural practices: A case report of neonatal mortality from rural- tribal Gujarat, India***Abhishek Malu^{1*}, Nilesh G Patel¹, Niraj B Pandit¹, Dhruv J Pandya¹, Srishti Mishra¹**¹Department of Community Medicine, Smt. B. K. Shah Medical Institute and Research Centre, Sumandeep Vidyapeeth, Vadodara- 391760 (Gujarat), India*

Abstract

Early delivery and infant deaths are significant public health issues in rural and tribal areas of India, because poverty, lack of accessibility and deeply rooted cultural practices may hinder prompt access to health care facilities. Despite improvement in institutional delivery and neonatal care, neonatal deaths due to preventable causes continue to occur because of gaps beyond clinical management. This is a case of an 18-year-old primigravida, a severely anaemic and undernourished tribal woman of rural Gujarat who presented with premature labour while on her way to a health facility and had a chance encounter with a community medicine resident doctor. Subsequently, the resident performed an emergency roadside delivery of a preterm, low birth-weight (1 kg) female neonate. The neonate was provided initial stabilization and care at a community health centre and then referred to a tertiary care hospital where the neonate received free-of-cost intensive care for 47 days and showed clinical improvement. However, early discharge driven by indirect financial burdens, loss of wages and prevailing cultural practices including discarding colostrum led to deterioration after discharge. The family left the hospital against medical advice and the neonate died at home three days later. The experience of this case reflects how poverty, limited health literacy, cultural beliefs and lack of social support can undermine the benefits of timely and high-quality clinical care. In tribal settings, addressing neonatal mortality demands a comprehensive approach that embeds culturally sensitive health education, continuity of care across health system levels and social protection measures to reduce indirect costs and ensure equitable access to maternal and newborn healthcare.

Keywords: Socio-cultural practices, Premature labor, Neonatal mortality, Rural-tribal community, Cultural beliefs

Introduction:

Premature delivery continues to be one of the leading factors responsible for causing sickness and death among newborns worldwide, with many babies dying within the first 28 days of life. In India, prematurity contributes to over one-third of neonatal deaths despite the availability of evidence-based interventions [1]. The burden is greater in low-resource settings where maternal anemia, undernutrition, early pregnancy and inadequate antenatal care are common. Neonatal mortality remains particularly high among tribal and marginalized populations due to poverty, geographic isolation, poor transport, limited

health infrastructure and sociocultural barriers that delay access to skilled care [2]. Although institutional deliveries and neonatal intensive care services have improved, preventable causes such as prematurity, low birth weight, infections and harmful feeding practices continue to contribute to neonatal deaths. Financial constraints and indirect costs further affect continuation of care even when treatment is free [3]. Neogi & Zodpey (2015) highlighted the importance of essential newborn care, timely referral and continuity of care in improving neonatal survival in resource-limited settings [4]. Thus, current case report from

low-resource and tribal settings is valuable for highlighting the intersection of biomedical, social and health-system factors that contribute to neonatal mortality.

Case Report

While traveling to a rural outreach camp in a tribal area of Gujarat, a community medicine resident doctor encountered a vehicle halted at the roadside due to a medical emergency. Inside the vehicle was an 18-year-old primigravida in advanced labor, accompanied by family members who were transporting her to the nearest health facility located approximately 20 km away. The woman belonged to a socioeconomically marginalized tribal community characterized by persistent poverty, low literacy and strong reliance on traditional practices.

On assessment, the woman was found to be in active preterm labor with crowning already in progress. Given the imminent nature of delivery and the absence of nearby obstetric services, the resident doctor conducted an emergency roadside delivery inside the vehicle using basic protective measures. A premature female infant weighing approximately 1 kg was delivered. The newborn was extremely low birth weight, weak and had poor respiratory effort at birth. Immediate essential newborn care, including airway clearance and thermal protection, was provided and the mother–infant dyad was urgently referred to the nearest Community Health Centre (CHC). Further history revealed that the mother had received irregular antenatal care and was severely undernourished and anaemic, with minimal nutritional or medical support during pregnancy. The provisional diagnosis at birth was extreme prematurity (estimated gestational age 32–34 weeks), low birth weight and neonatal respiratory distress. The CHC provided initial

stabilization for both the mother and the newborn. However, due to personal constraints and limited awareness of the critical state of the newborn, the family left the facility against medical advice on the same day. Following harmful cultural practices, colostrum was discarded and initiation of breast-feeding was delayed after reaching home, thereby increasing the risk of infection and nutritional compromise.

A routine postnatal home visit was made by the resident doctor and social worker as part of the community outreach program. The newborn was weak, dehydrated and in respiratory distress; the mother was febrile and further weakened by untreated anemia. Repeat counselling and allaying of concerns related to wage loss and hospital stay led to the family giving consent for referral to a tertiary care hospital.

The newborn was admitted to the NICU, where she received thermal support, oxygen therapy, intravenous fluids, antibiotics and was kept on close surveillance for infection. The mother was treated for anemia and post-partum infection with IV antibiotics and blood transfusion. Over the ensuing 45 days, the newborn improved gradually, weight gain up to 1.3 kg with stabilization of vital parameters and achieved partial feeding tolerance. In spite of free medical care, indirect financial losses due to loss of daily wages, transportation costs and so on, including loss of support provided for managing the household, began to mount. On the 47th day of admission, the family demanded discharge against medical advice. Counselling was provided at length, yet the family left the hospital. The infant rapidly deteriorated at home and was declared dead three days later.

This case underscores the fact that even prompt emergency intervention and advanced neonatal care

can be undermined by powerful social determinants such as poverty, cultural beliefs, low health literacy and inadequate community support. It emphasizes the importance of culturally sensitive health education, improved post-discharge follow-up, and social support systems for indigenous communities.

Discussion

This case highlights the intersecting roles of prematurity, maternal undernutrition and anemia in determining neonatal outcomes. Maternal anemia and undernutrition have been recognized as major risk factors for preterm birth and low birth weight, conditions that lead to increased mortality among neonates [5-6]. The mother in this case belonged to a rural tribal community where antenatal care utilization is often irregular due to geographic isolation, poverty and sociocultural barriers. Studies from tribal populations in India consistently demonstrate higher rates of maternal undernutrition, anemia and adverse birth outcomes, reflecting cumulative disadvantages across the life course [3]. Although timely emergency intervention and prolonged NICU care enabled temporary survival of the very low birth weight infant, survival beyond hospital settings requires sustained postnatal care and family support. Socioeconomic inequalities significantly influence the utilization of postnatal services in India, with poor families being more prone to stop seeking care due to indirect costs such as wage loss, transportation and household responsibilities, even when medical treatment is provided free of cost [7]. In this case, financial pressures and

lack of social support led to early discharge against medical advice, undermining the benefits of advanced neonatal care. Swarnkar & Vagha (2016) reported that Kangaroo Mother Care and continuous maternal involvement significantly improve growth, thermal regulation and morbidity outcomes among low birth weight infants, highlighting the importance of sustained family participation and post-discharge follow-up in neonatal survival [8]. Harmful cultural practices, like the dumping of colostrum and delayed breastfeeding, also contributed to the risks the infant already possessed. In addition, the dumping of colostrum among tribals is a common practice, particularly in rural India and is associated with risks of infections and nutritional hazards.

Conclusion

The current case underscores that the survival of neonates in rural and tribal areas does not only require immediate medical attention but also calls for consideration of the wider socio-economic factors that impact health. Poverty, malnutrition during pregnancy, poor antenatal care, cultural practices that may be detrimental, and financial costs that indirectly affect families can greatly offset the advantages gained from modern neonatal care. The enhancement of community-oriented maternal and neonatal care programs, culturally-appropriate health education, and continued follow-up after discharge are vital in reducing neonatal mortality rates.

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