Neonatal Tetanus after Home Delivery: A Case Report in Ethiopian Somali Region, December 2015

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Abstract

Tetanus is a vaccine-preventable disease and remains an important cause of under five morbidity and mortality, especially in the developing countries. Tetanus is considered as a failure of public health system. Here the clinical course of neonatal tetanus of eighteen days old female baby who was presented to Daror health centre with complaints of refusal to take feeding, inability to open her mouth, repeated jerky movement of the body and persistent facial grimace since eighth day of her birth. The neonate was admitted in paediatric ward. On admission (Tetanus Anti Toxoid) TAT injection was given, put on Intravenous(IV) antibiotic, start mechanical ventilation and feed with (Naso Gastric Tube) NGT, plus all the necessary nursing care were carried on. The condition was not improved and patient expired on the 5 days of admission. The Federal Ministry of Health of Ethiopia was committed to eliminate (Neonatal tetanus) NNT through implementing (Tetanus Toxin) TT supplemental immunization activities through immunization of women in child bearing age with two doses of tetanus toxoid, and clean delivery practices.

Keyword:

Neonatal tetanus; Clean delivery practice; Antenatal care; Immunization; Ethiopian Somali region; Daror district

Introduction

Tetanus is an acute infectious, non-contagious disease that is triggered by the action of neurotoxins - in particular, tetanosasmin- that are produced by the gram-positive bacillus Clostridium tetani, an anaerobic spore-forming bacterium. C. tetani is found throughout the environment [1].

Tetanus is a vaccine-preventable disease and remains an important cause of under five morbidity and mortality, especially in the developing countries. Tetanus is considered as a failure of public health system [2].

Neonatal tetanus thus refers to a case of tetanus infection of usually newborn babies. It is a common infection among neonates due to contamination of the umbilical cord. Neonatal tetanus is an acute disease of the nervous system caused by contamination of the umbilical cord by anaerobic spore forming gram-positive bacillus called Clostridium tetani. The organism produces an acute central nervous system intoxication resulting in the typical muscular spasms, a symptom associated with the illness [3,4].

The Federal Ministry of Health of Ethiopia in collaboration with EPI partners was committed to eliminate MNT, and started implementing TT supplemental immunization activities in 1999, in the selected high risk zones for women of childbearing age (WCBA); TT supplemental immunization activities (SIAs) were progressively implemented from 1999-2011 including corrective rounds to address limitation of performance of some TT SIAs. In addition, to EPI monitoring, the progress was evaluated on the reviews conducted in 2003, 2006, 2008 and 2011. The weighed coverage of SIAs was 75.6% and TT2+ coverage nationally with six regions attaining coverage greater than 80% [5].

The occurrence of one suspected case of NNT is considered as an outbreak as per national guideline of Ethiopia [5]. The diagnosis is based on case definition of NNT posted at health facilities since the current case fulfil case definition(Suspected case definition of NNT was any infant with a history of tetanus-compatible illness during the first month of life who fed and cried normally for the first 2 days of life) [5]. Therefore, notification and the investigation process have to start immediately. The finding of investigation will give for the program managers a good insight to identify high-risk areas, plan response activities, take action to prevent additional cases and reduce the transmission risk for neonatal tetanus.

Here we present a case of neonatal tetanus occurring in a baby born at home under unsterile condition to a mother with no history TT immunization and without the assistance of a skilled birth attendant but residing within the reach of health care system.

Case Presentation

A full term female (unknown birth weight) born to a Daror pastoralist mother at home was admitted at 18 days of age. This eighteen day's old female baby presented to Daror health centre on 27/11/2015 with complaints of refusal to take feeds, inability to open her mouth, repeated jerky movement of the body and persistent facial grimace since eighth day of her birth. On 29/11/2015, the case referred to Karamara hospital. The newborn was immediately shifted to the paediatric intensive care unit.
On physical examination the neonate has muscular stiffness in the jaw (i.e., lockjaw), and after admission of two days the neonate develops neck stiffness, difficulty swallowing, rigidity of abdominal muscles, and spasms. The kid was often a febrile.

Regarding treatment, the neonate were managed accordingly, first admitted in paediatric ward, at admission TAT injection was given, put on IV antibiotic, oxygen administered and feed with NGT, plus all the necessary nursing care were carried on. The condition was not improved and expired on the 5 days of admission.

About mother obstetric history, she reported that she delivered at home assisted by her neighbours and the new born umbilicus was severed with a blade which was not boiled or sterilized, she has no history of immunization and ante natal care (ANC). Investigation revealed that the patient was delivered at home with assistance of an untrained birth attendant.

Patients mother resides in rural Burccoduray main kebeles Gufais sub village of Daror District. Ethiopian Somali region, were geographically remote rural with poor infrastructure and communication.

The delivery was conducted on the floor over mattress on top a blanket was laid indicating no aseptic care was taken during delivery. Unsterilized blade and cloths was used to cut and tie the umbilical cord. No any additional things were applied to the umbilical cord stump. Twenty-year old mother was a primigravida with no history of TT immunization during the entire period of pregnancy, no ANC care during her pregnancy. She was not aware of its importance. Any primary health care worker did not visit her during her pregnancy. Both the parents were illiterate.

Discussion
In this case report the obstetric history of the mother reviled that she delivered at home assisted by her neighbours, the newborn umbilicus was severed with a locally made blade, which was not boiled or sterilized, and she has no history of immunization and antenatal care (ANC).

Therefore, the main contributing factors for current neonatal tetanus cases from Daror District of Ethiopian Somali region may relate to neonatal tetanus is associated with unsafe delivery practice and poor umbilical cord care. It is clear that the mother with antitoxin insufficient levels to protect the newborn against tetanus via transplacental transfer of maternal antibody [6].

This baby may acquired Neonatal tetanus (NNT) infection during unsafe delivery and poor umbilical cord management as the spores of Clostridium tetani introduced into the child usually through the umbilical stump tissue, contamination from unclean delivery conditions and tools used to cut the umbilical cord, or contaminated materials placed on the umbilical stump [5].

Maternal immunization is the best prevention for Neonatal Tetanus. Two doses of tetanus toxoid produce sufficient Immunoglobulin G in mother to prevent neonatal tetanus in the newborn [4]. The patient in the present case was born from unimmunized mother hence was vulnerable to the disease.

Lack of awareness was among risk factors identified in our investigation as NNT can be prevented by immunizing women of childbearing age before or during pregnancy with tetanus toxoid (TT), by hygienic obstetric and umbilical cord care practices.

The current case was fulfilled the case definition of confirmed NNT, as there are no specific laboratory tests that show abnormalities, which are characteristic of tetanus. Therefore, the diagnosis was made based on clinical finding [5,6].

Neonatal tetanus is a sign of three failures (failure of ANC, failure of vaccinating the mother and failure of cord care) therefore, the mother should be vaccinated to prevent future NNT and she should practice ANC and visit health facility [5].

Supplementary immunization activity is recommend in the village of affected as quick as possible as the areas is believed to have immunity gaps. Health education should be providing to the community on the importance of ANC, clean delivery, immunization of infants and mothers using missed opportunity.

Acknowledgement
We would like to thank District Health Office & Karamara Hospital Administration and those Nurses working at Paediatric Intensive Care unit for helping in collection of data.

References