

HIV Negative Parents With HIV Infected Child: a Case Report



Microbiology

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ABSTRACT

In children, majority of infection occurs through vertical transmission, before, during and after birth. Rarely horizontal transmission has been documented, by other unusual incidents as transfusion of contaminated blood products, sexual abuse and reuse of needles. Here we present a case: An 11-month-old HIV-positive infant with HIV-negative parents presented with fever, diarrhea and weight loss. The milestones of the baby were normal and he was vaccinated as per schedule. The baby was reported positive for HIV antibodies and further confirmed by DNA PCR. Parents were negative for HIV by antibodies and PCR.

Introduction

Transmission of HIV has been attributed to four main routes: sexual intercourse, transfusion, parenteral and perinatal acquisition 1. In children, majority of infection occurs through vertical transmission, before, during and after birth. Rarely horizontal transmission has been documented, by other unusual incidents as transfusion of contaminated blood products, sexual abuse and reuse of needles. Besides all these, cases are reported where the transmission mechanism is not fully explained 2. Here we present such a case: An 11-month-old HIV-positive infant with HIV-negative parents who presented at our Integrated Counseling and Testing Center (ICTC) for confirmation of diagnosis.

Case

A term baby boy was delivered by normal vaginal delivery at PHC Sangaria, Bhilwara Rajasthan in India. Weight and general condition at birth were reported normal. The baby was exclusively breastfed by the mother for 6 months and later on weaning was started. Mother is the sole care giver of the baby and denies any possibility of surrogate breast-feeding. History and physical examination rule out sexual abuse. The milestones of the baby were normal and he was vaccinated as per schedule.

The baby suffered with fever and respiratory infection three days after birth. The quack treated the child by injectable medicines. At the age of 8 months child developed fever and diarrhea for which he was treated by quack that again treated him with injectable medicines off and on. The condition of the child did not improve and he was admitted in the hospital (at Bhilwara) for 2 month. There was no history of blood transfusion. During this hospital stay he was found positive for HIV antibodies. His parents were tested simultaneously and both of them were reported negative for HIV.

In May 2014 at the age of 11 months the child was referred to tertiary care hospital at Jaipur with complains of fever, diarrhea and distension of abdomen. Due to the discordance of HIV status of the parents and the baby they were referred to our ICTC for definitive diagnosis. The baby was reported positive for HIV antibodies. His dried blood sample was sent to the national reference laboratory for confirmation by DNA PCR and was reported as positive. This was further confirmed by RNA PCR for HIV by Cobas Taqman 48, Real Time PCR Analyzer and his viral load was 1.13×10^5 IU/ml. His CD4 count was 33%. His parents were HIV negative by serology. Due to the exceptional nature of the case, a PCR test was also done on the parents, which was negative.

This being a sensitive matter with major social and diagnostic implications, clerical errors were excluded by stringently verifying patient details and sample identification.

Discussion

HIV is a disease with specified modes of transmission. The route of infection is assigned depending on the history given by the patient or guardian. In infants vertical transmission is the accepted mode. Unusual HIV transmission can be due to nosocomial incidents, surrogate breast feeding and sexual abuse. Here we document a case of HIV infection in which all these modes of transmission could not be obviously assigned.

The probability of intentional or accidental switching of babies at the hospital, just after birth was considered. After extensive inquiry and consulting the physician at the hospital and thorough reviewing the records this possibility was disregarded. However parentage should be confirmed by DNA analysis but we could not execute it due to legal and social issues however the blood group of all the three members were A+.

Sexual abuse of the child and surrogate breast feeding was dismissed after thorough review of the history given by the parents and also in view of the fact that mother was the only care giver of the baby. There is no sign suggestive of sexual abuse on physical examination. Though perineal lesions associated with sexual abuse may not be evident after a few months and occasionally even after a few days in approximately half of all cases 3.

With the history of medical care availed by the infant nosocomial transmission of HIV is a possibility. The patient had been hospitalized for almost 2 months in two different hospitals and frequent medical injections were given. During his treatment by the quack possibility of reuse of contaminated needle and syringes cannot be denied. Of all the injections administered in India, 31.6% carried a potential risk of transmitting blood borne viruses (BBV) which is highest at immunization clinics 4. The risk for seroconversion after an average deep needle stick is estimated to be 2.3 % 5.

There are limited studies to prove alliance between nosocomial transmission and unexplained HIV positive children 2,3&6. This may be due to the fact that such cases face the serious difficulty of establishing possible events and transmission risks of HIV, which occurred a long time before diagnosis of HIV, especially in a health facility. Many medical procedures at birth and routine childhood immunization are poorly documented. Bloodstained clinical notes and patient linen can be observed in health facilities which reflect a failure to appreciate the seriousness of exposure to blood. HIV status of health care workers, who cared for the patient is also not routinely documented, although HIV transmission is probably unlikely due to this, it has occasionally been reported 7.

A number of cases of HIV infection have been documented in

which the means of transmission was not clear 8. Lodha et al 8 have documented an alarming 6.4% of cases in their study where parents were negative and there is no history of blood transmission, however the probable reason for this was not clarified

The cause of HIV infection in this child poses a major scientific dilemma. Evidence of nosocomial transmission is circumstantial not definitive. Looking at such cases we might be trying to make sense from scientifically incomplete data but it does stress the need for a platform for further research to determine the causes of horizontal or unexplained HIV transmission in children. To best of our knowledge no such case of this age group has been reported from India. Such cases must be actively reported and registries can be established at regional virology laboratories to build up a data for further research to solve this scientific dilemma. Further studies and identification of medical procedures conducive to the spread of HIV are urgently needed. Epidemiological studies are necessary to document the extent of unexplained HIV infection in children.

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