Case Report

Congenital Chikungunya in Ad-Din NICU - A Case Report

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Abstract

Chikungunya virus is member Alpha virus genus, in Togaviridae family. Infected mosquitoes can spread the virus human to humans when they bite. Symptoms are fever, petechial or maculopapular rash and arthralgia or arthritis affecting multiple joints mainly in adults. This self-limiting illness resolve with time. The time of greatest risk of transmission from mother to fetus appears during birth if mother acquired the disease days before delivery. There are not many reports of confirmed chikungunya infection in newborns. Here we report a neonate infected with Chikungunya virus which was confirmed by ELISA test.

Introduction

Chikungunya is a relatively rare viral fever caused by an alphavirus that is spread by mosquito bites from the Aedes aegypti mosquito. Marion Robinson and W.H.R. Lumsden first described the disease in 1955, following an outbreak on the Makonde Plateau, along the border between Tanganyika and Mozambique, in 1952. Symptoms appear between 4 and 7 days after the patient has been bitten by the infected mosquito. High fever and headache with significant pains in the joints (ankles, wrists) and can persist for several weeks. There are not many reports of clinical features of confirmed chikungunya infection in newborns[1,2]. Neonates present at 3-5 days of life with fever, excessive crying, dermatological manifestations like maculo papular rash, nasal blotchy erythema, freckle like pigmentation over centrofacial area, vesiculobullous lesions, apnea, shock, disseminated intravascular coagulation (DIC). The time of greatest risk of transmission from mother to fetus appears during birth if mother acquired the disease days before delivery. Viral chikungunya perinatally transmitted leads to encephalitis in newborn[3-5]. Chikungunya is a self-limiting febrile illness and responded to supportive therapy. report a case of chikungunya infection in neonate is reported here which was confirmed by ELISA test and fully recovered with conservative management.

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Case study

B/O Moli, a 5 days old preterm appropriate for gestational age (AGA) baby girl admitted with N.Seizure, poor feeding, lethargy and fever for 2 days. Baby was born to a 28-year-old mother by elective lower segment cesarean section (LSCS). Antenatally, mother had high-grade fever and severe multiple joint pains 1 day before delivery and maternal antichikungunia IgM was positive. Mother continued to be symptomatic with severe arthralgia in the postnatal period as well and also developed diffuse hyper-pigmentation of body within 4 days of onset of symptoms. Immediate postnatal period was uneventful. On the 5th day of life, baby developed high-grade fever (103°F), seizure and was admitted in neonatal intensive care unit. After admission relevant investigations were sent and treatment was started with anticonvulsant, IVF and antibiotics as per protocol. On the 20th day, baby developed bi-pedal edema, tenderness, paradoxical cry and pigmentation around mouth and nose. Feed was

started by OG 5 ml 6 hourly which gradually increased as tolerated and subsequently changed to per oral feeds. Her initial CRP was 80 mg/L which is increased to 109 mg/L. Initial CBC show PC 21,000/cmm which is raised to 99,000/cmm. Her ICT for chikungunia IgM is +ve. Her ALT 2 U/L, S.Creatinine 1.1 mg/dl, PT initially 12 sec later 14 sec, FDP 400 ng/ml for which she was transfused FFP and platelet. Her S. Albumin was 21.8g/L for which She got albumin infusions. Her first USG of brain revealed cerebral edema which was treated accordingly.Gradually baby's clinical condition got improved.On detailed evaluation of history, similar clinical condition was reported to be present in the nearby areas and it was found that chikungunya was frequently diagnosed in that particular area. Mother was tested for chikungunya IgM and IgG, of which IgM was reported positive. However, the serology of the baby was reported positive. However, the diagnosis of congenital chikungunya was made based on the typical clinical manifestations in the mother and baby and on the strong epidemiological profile. With supportive management, the baby improved. However, the irritability and paradoxical cry persisted until the discharge of the baby. She was discharged after 3 weeks of intensive care stay and kept under follow-up.

Bullous dermatosis

Paradoxical cry, Pigmentation

Paradoxical cry

Discussion:

Chikungunya is an RNA virus belonging to the Alphavirus genus of Togaviridae family. It is transmitted to humans by mosquitoes of either the Aedes or Culex genus. The word chikungunya has been derived from a Makonde word meaning "that which bends up".Chikungunya was first described in Tanzania, Africa in 1952.

The incubation period can be 2-12 days, usually 3-7 days. It can cause a debilitating illness and symptoms mainly in adult include abrupt onset of fever, chills, headache, and severe joint pain with or without swelling (usually the smaller joints), low back pain, and rash. This reported case presented with fever, irritability, pigmentation, tender swelling of feet. Unlike dengue, hemorrhagic manifestation relatively rare and as a rule shock is not observed in chikungunya virus infection. Neonates present at 3-5 days of life with fever, excessive crying, dermatological manifestation like maculopapular rash, nasal blotchy erythema, freckle like pigmentation over centrofacial area, vesiculobullous lesions, apnea, shock, DIC. Neurological complicatio ns such as meningoencephalitis have been reported in patients during the first Indian outbreak as well as the recent French Reunion islands outbreaks [3-6].

Mother to child transmission of chikungunya virus was reported during the recent epidemic in dhaka. The time of greatest risk of transmission from mother to fetus appears during birth if mother acquired the disease days before delivery. Of the thirty three with viremia at the time of delivery, sixteen newborns were symptomatic in the neonatal period[7,8]. Robillard PY et al[9] also reported that transplacental transmission of chikungunya can also occur before 16 weeks and suggest that virus played a direct role in fetal deaths. Diagnosis is made by CHIK IgM and PCR. Most often chikungunya is a self-limiting febrile illness and responded to conservative or supportive therapy [3,9]. In Ad-din we receive 4 cases of suspected congenital chikungunia cases ,out of these our case is CHIK IgM +.

The neurocognitive outcome of infected children is poor and must be monitored throughout childhood to anticipate the psychomotor, cognitive and behavioral therapies. The neurocognitive outcome of children exposed to perinatal mother-to-child CHIKV infection is poor. Severe CHIKV neonatal encephalopathy is associated with an even poorer outcome. In conclusion, this case report shows that viral chikungunya can be transmitted from mother to babies and clinical presentation is similar to that of septicemia or meningitis.

Gradual improvment

Ready to discharge

References:

1. Carman RH, Jadhav M, Namboodripad M, Carey DE, Myers RM Chikungunya disease in infants and children in Vellore: a report of clinical and haematological features of virologically proved cases. Indian J Med Res 1965; 53: 764-776.
2. Mourya DT, Mishra AC Chikungunya fever. Lancet 2006; 368: 186-187.
3. Chikungunya Fever Fact Sheet Division of Vector-Borne Infectious Diseases, Centers for Disease Control and Prevention, Atlanta, U.S.A.
4. Lahariya C, Pradhan SK Emergence of chikungunya virus in Indian subcontinent after 32 years: A review. J Vector Borne Dis 2006; 43: 151-160.

5. Ravi V. Re-emergence of chikungunya virus in India. Indian J Med Microbiol 2006; 24: 83-84.

6. Alba-Silvera L2, Villamil-Gómez W, Menco-Ramos A3, Gonzalez-Vergara A4, Molinares-Palacios T3, et al. Congenital Chikungunya Virus Infection in Sincelejo, Colombia: A Case Series. J Trop Pediatr. 2015.

7. Quatresous I; Investigation Group E-alert 27 January: Chikungunya outbreak in Reunion, a French overseas department. Euro Surveill 2006; 11: E060202.

8. Barau G, Lenglet Y, Robillard PY, Randrianaivo H, Michault A, et al) Chikungunya infection in pregnancy: Evidence for intrauterine infection in pregnant women and vertical transmission in the parturient. Survey of the Reunion Island outbreak. J GynecolObstet BiolReprod 2006; 35: 578-583.

9. Boumahni B, Gérardin P, Michault A, Robillard PY, Fourmaintraux A, et al. [Vertical maternal fetal transmission of the chikungunya virus. Ten cases among 84 pregnant women]. Presse Med 2006; 35: 785-788.

10. Ramful D, Gérardin P, Sampériz S, Boumahni B, Bintner M, et al () Neurocognitive Outcome of Children Exposed to Perinatal Mother-to-Child Chikungunya Virus Infection: The CHIMERE Cohort Study on Reunion Island. PLoSNegl Trop Dis 8: e2996. 2014.

11. CD Alert, the Monthly News Letter of National Institute of Communicable Disease, Directorate General of Health Services, Govt. of India, February 2006; 10(2).

12. Chikungunya Fever Fact Sheet. Division of Vector-Borne Infectious Diseases, Centers for Disease Control and Prevention, Atlanta, U.S.A. Available at URL: http://www.cdc.gov/ncidod/dvbid/chikungunya/Accessed on 5 august, 2006.

13. Quatresous I; Investigation Group. E-alert 27 January: Chikungunya outbreak in Reunion, a French overseas department. Euro Surveill. 2006; 11: E060202.1

14. Lenglet Y, Barau G, Robillard PY, Randrianaivo H, Michault A, Bouveret A, et al. Chikungunya infection in pregnancy: Evidence for intrauterine infection in pregnant women and vertical transmission in the parturient. Survey of the Reunion Island outbreak. J Gynecol Obstet Biol Reprod (Paris). 2006; 35: 578-83

15. Robillard PY, Boumahni B, Gerardin P, Michault A, Fourmaintraux A, Schuffenecker I, et al. Vertical maternal fetal transmission of the chikungunya virus. Ten cases among 84 pregnant women. Presse Med. 2006; 35: 785-788