Zangir-Zani as a mode of Hepatitis B transmission: Case Report

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Abstract

Hepatitis B is transmitted by vertically or horizontally via sexual or percutaneous routes. In India the most common route of transmission is horizontal and the age of transmission is either in childhood or young adulthood. The probability of developing acute hepatitis and clearance of virus is higher when one gets infected in adulthood. We here for the first time in literature describe a case report of hepatitis B transmission and development of acute hepatitis in a 27 year old male who took part in zangir Zani during a holy procession. There was no other significant past history to associate the infection to that cause. Luckily, he cleared the virus during the follow up.

Keywords: Hepatitis B; Zangir-Zani; Case report; Route of transmission

Introduction

India has over 40 million HBV carriers and accounts for 10–15% of the entire pool of HBV carriers of the world [1]. Of the 25 million infants born every year in India, it is estimated that over 1 million run the lifetime risk of developing chronic Hepatitis B Virus (HBV) infection. A meta-analysis of the prevalence of HBV had estimated that the point-prevalence of hepatitis B among nontribal and tribal populations was 3.07 and 11.85% respectively and the overall prevalence was 3.70% (CI: 3.17–4.24) (corresponding to a chronic carrier rate of 2.96%) [2]. Lodha et al did a systemic review of literature of prevalence of hepatitis B in India and concluded that the true prevalence of hepatitis B in India was 1–2% [3]. Every year over 100,000 Indians die due to illnesses related to HBV infection [4].

Routes of transmission for Hepatitis B include vertical (mother to child or generation to generation through close contact and sanitary habits), early life horizontal transmission (through bites, lesions, and sanitary habits), and adult horizontal transmission (through sexual contact, intravenous drug use, and medical procedure exposure) and are evident to varying degrees in every country [5]. In the western population, the most important cause of hepatitis B transmission are heterosexual as well as homosexual contact, intravenous drug use and needle stick injury. Spread of HBV infection in many South Asian countries is attributed to unsafe blood supply, reuse of contaminated syringes, lack of maternal screening to prevent perinatal transmission and delay in the introduction of hepatitis B vaccine [6]. The predominant mode of transmission is horizontal rather than vertical in India [7]. Children usually acquire infection from infected mothers at the time of birth or from infected household contacts. The risk of hepatitis B virus transmission between children in day-care centers and schools is very low. Among adults and adolescents sexual activity and injecting drug use are the most common risks for acquisition of infection, yet at least 30% of reported hepatitis B among adults cannot be associated with an identifiable risk factor [8].

The Mourning of Muharram, Remembrance of Muharram, or Muharram Observances, is a set of rituals associated with Shia Islam, which takes place in Muharram, the first month of the Islamic calendar [9]. Many of the events associated with the ritual take place in congregation halls known as Hussainia. Expressions of grief such as sine-zani (beating the chest), zangir-zani (beating oneself with chains), and tage-zani or qama-zani –also known as tahir (hitting oneself with swords or knives)– emerged as common features of the proliferating mourning-processions (dasta-gardani) during Safavid rule [10]. Mourning rituals take place in assemblies held in so-called Hussainia or takia, as well as in mosques and private houses. We here for the first time in literature report a case of Acute Hepatitis B caused by Zangir-Zani.

Case Report

A 27 year old gentle man hailing from Bhiwandi (Mumbai), presented to the outpatients clinic of Kasturba Hospital on 26th February 2015 with complaints of jaundice for 2 weeks. He was ill from 25 days and had the onset of illness with fever, abdominal pain, malaise, loss of appetite, nausea and vomiting which proceeded for 10 days before the appearance of jaundice. After the onset of jaundice though most of the symptoms disappeared, his appetite remained low. He visited a local doctor for treatment who prescribed him multivitamins, glucose powder and bed rest. However as he was not improving he consulted Kasturba Hospital. He denied any past history of jaundice or any history of decompenation in form of ascites, pedal edema or gastrointestinal bleed in past. He also denied any history of surgery or blood transfusion ever in past. On inquiry of family history and screening in last 1 year. He also denied any history of surgery or blood transfusion ever in past. On inquiry of family history and screening all family members, his mother, father and a younger brother (24 years) turned out to be negative for hepatitis B. There was no family history of any liver disease in any family member. He denied intake of alcohol or illicit or prescription drugs in last 6 months. Neither he nor any family members of his were ever vaccinated for hepatitis B. He had given a positive history of taking part in a Muharram procession on 4th November, 2014 where he was involved in Zangir Zani and he gave history that the same chains were used by many during the procession. On examination, he had jaundice and a soft tender hepatomegaly of 4 centimetres. There was no evidence of chronicity like splenomegaly, ascites, pedal edema, spiders or any sign of encephalopathy. He had undergone a routine checkup at a health camp at his locality a year back which showed normal liver enzymes, ultrasound and negative HIV and HBsAg.
On investigations, his reports showed haemoglobin 15.2 g/dl, total count 8690/cumm, platelets 3.46/cumm, MCV 82, bilirubin 16 g/dl, direct bilirubin 12 g/dl, ALT 978 IU/L, AST 774 IU/L, alkaline phosphatise 134 IU (Normal upto 110), GGT 22 IU, Albumin 4.7 g/dl, INR 1.23 and creatinine of 0.5 mg/dl. His serological markers were negative for IgM Antibody against HAV and HEV twice (repeated at interval of 7 days) and antibody against hepatitis C. His HBsAg turned out to be positive and so on further investigations, his IgM antibody against Hepatitis B core antigen turned out to be positive and sample/cutoff for IgM Anti HBc was 20. His Hepatitis B viral quantification showed a viral load of 569 IU/ml. He was negative for HBe antibody but positive for HBe antigen. He underwent an ultrasound which showed hepatomegaly with decreased echogenicity corroborating the finding of acute hepatitis. There was no evidence of splenomegaly/portal hypertension or cirrhosis on ultrasound.

He was managed conservatively and symptomatically. He was advised to take plenty of glucose and a nutritional counselling by a dietician was done for him to maintain adequate calorie and protein intake. He was followed up weekly and his transaminases repeated weekly. His bilirubin normalised (<2mg/dl) in a period of 5 weeks from the time of presentation. His HBsAg was repeated at 3 months and at 6 months from the time of presentation. Both the reports turned out to be negative. To confirm, a viral DNA was measured which was TN0 (Target Not Detectable) at six months. His IgG Anti HBc was positive while his Anti HBe IgM was negative.

A diagnosis of acute hepatitis B was made in retrospect.

**Discussion**

To our knowledge, this is the first case in literature which attributes zangir zani as a mode of transmission of hepatitis B. During the procession a lot of individuals come together and share the chains to beat on themselves and during which oozing of blood from the injury site is common. We assume that the chain used by our patient was contaminated with the blood of a hepatitis B individual and that caused the transmission of hepatitis B via percutaneous route. Documentation of a negative hepatitis B a year back, clearance of HBsAg status and serology during the jaundice suggest it to be an acute hepatitis B.

The main objective of mourning and lamentation during 'Ashura', is to respect the signs and symbols of religion and remember the suffering of Imam Hussain (as), his companions, and his uprising to defend Islam and prevent the destruction of the religion by Bani Umayyad dynasty. These rites must be done in such a way that in addition to serving that purpose, it draws the attention of others to these lofty goals. Also its ritual aspect should be preserved. So those actions which are not understandable for the enemies of Islam and non-Shia Muslims and causes misunderstanding and contempt for the religion must be avoided.

The average incubation period for patients developing acute hepatitis B (time from exposure to onset of jaundice) is 90 days (range: 60–150 days) [11]. The likelihood of developing symptoms of hepatitis as a result of a new HBV infection is age-dependent. Over 90 percent of perinatal HBV infections are asymptomatic, while the typical manifestations of acute hepatitis are noted in 5–15 percent of newly infected young children (1–5 years of age) and in 33–50 percent of older children, adolescents, and adults [12]. Persons with acute hepatitis B can show signs and symptoms that include nausea, abdominal pain, vomiting, fever, jaundice, dark urine, changes in stool color, hepatomegaly or splenomegaly [13]. According to the WHO report on prevention of HBV in India 13, HBsAg prevalence among general population ranges from 0.1% to 11.7%, being between 2% to 8% in most studies. HBsAg prevalence rate among blood donors ranged from 1% to 4.7%. With the exception of higher HBsAg positivity in some North Eastern states (~7%), no substantial geographical variation was apparent in other parts of India. A large study involving 8575 pregnant women from Northern India, documented HBsAg carrier rate in antenatal mothers to be 3.7%, HBeAg carrier rate 7.8% and vertical transmission was observed in 18.6% [14].

HBV is transmitted by percutaneous or mucosal exposure to infected blood or other body fluids. Routes of transmission for Hepatitis B include vertical (mother to child or generation to generation through close contact and sanitary habits), early life horizontal transmission (through bites, lesions, and sanitary habits)
and adult horizontal transmission (through sexual contact, intravenous drug use, and medical procedures. It has been estimated that HBV infection in India is largely acquired by horizontal transmission in childhood and perinatal transmission plays a less important role [14]. The peaking of infection rates in adulthood in certain Indian population also suggests a close relationship of acquisition of infection in the adults [15]. In an earlier study, frequent exposure to percutaneous injuries, repeated use of parenteral injections for trivial illnesses and the untrained para-medical personnel, lacking in knowledge about modes of sterilization in primary care centres have been found to be the major factors that facilitate transmission of HBV, as well as other viruses in this population [15]. Transmission of HBV via transfusion of blood products has been largely eliminated in most parts of the world by screening blood donors and implementing techniques that ensure viral inactivation of products made from blood, such as factor concentrates. Because HBV can remain stable and infectious on environmental surfaces for at least 7 days, transmission may occur indirectly via contaminated surfaces and other objects. HBsAg contamination of surfaces is widespread in homes of chronically infected persons, which may explain the non-sexual interpersonal spread of HBV such as among household contacts [16]. Intrafamilial horizontal transmission is more significant mode of transmission than sexual mode of transmission in later life for maintaining HBV carrier pool in community [17].

According to Board of Istifa, Office of Grand Ayatollah Sistani, there is no harm in using the drum, cymbal, and trumpet in the traditional way. As far as mourning is concerned and getting attention of entire world, then it should be done very nicely with “beating chests and heads with hands” and with complete discipline. As far as mourning is concerned and getting attention of entire world, then it should be done very nicely with “beating chests and heads with hands” and with complete discipline. As far as mourning is concerned and getting attention of entire world, then it should be done very nicely with “beating chests and heads with hands” and with complete discipline. As far as mourning is concerned and getting attention of entire world, then it should be done very nicely with “beating chests and heads with hands” and with complete discipline. As far as mourning is concerned and getting attention of entire world, then it should be done very nicely with “beating chests and heads with hands” and with complete discipline. As far as mourning is concerned and getting attention of entire world, then it should be done very nicely with “beating chests and heads with hands” and with complete discipline. As far as mourning is concerned and getting attention of entire world, then it should be done very nicely with “beating chests and heads with hands” and with complete discipline. As far as mourning is concerned and getting attention of entire world, then it should be done very nicely with “beating chests and heads with hands” and with complete discipline. As far as mourning is concerned and getting attention of entire world, then it should be done very nicely with “beating chests and heads with hands” and with complete discipline. The significance of such a procession is quite holy to its followers and it is not expected that the processions are going to stop in near future. However, we recommend using these chains for each individual separately rather than sharing of the chains as a solution to prevent hepatitis B transmission by zangir zani.

Conflicts of Interest

All the authors declared that there are no conflicts of interest to disclose.

References


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