Case Report

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Case report on fatal human rabies infection in central India

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ABSTRACT

Rabies is a zoonotic disease that affects the central nervous system of mammals and has a high mortality rate. It is a viral disease that can be prevented by vaccination. Dogs are the leading cause of human rabies deaths, accounting for up to 99% of all human rabies transmissions. On 15th December 2019 an 8 years old male child was bitten by a stray dog outside of his house. The patient visited with his parents to a nearby primary health care center on same day where his wound was washed with water. He received first dose of anti-rabies vaccine and was referred to a tertiary care center for immunoglobulin because of a history of wound bleeding. They did not visit tertiary care center for immunoglobulin as advised. 15 days after exposure on 1st January 2021 the patient presented with unusual behavior like fear of water and tremor. On examination his pupils were found dilated and he was referred to isolation ward of tertiary care center. Based on the history of animal bites and clinical signs, the patient was diagnosed as probable case of rabies. The patient eventually died within 24 hours of admission. Such kind of incident shows that there is lack of awareness regarding rabies in community. In this case, if the patient had completed the anti-rabies vaccination schedule and visited a higher centre on time for immunoglobulin, death could have been avoided. Mortality due to rabies can be prevented by raising public awareness about immunization.

Keywords: Rabies, Post exposure prophylaxis, Dog bite

INTRODUCTION

Rabies is one of the world's oldest and deadliest illnesses, causing substantial human mortality with Asia and Africa accounting for more than 95% of all human deaths. This deadly viral encephalitis is a zoonotic disease spread to humans by rabid animals through licks scratches and bites. Although it is found in almost every country, the prevalence is higher in developing countries, with India accounting for more than 36 percent of global mortality each year, the majority of which are caused by bites from stray dogs. ^{2,3}

In India, rabies is a serious public health issue that kills an estimated 20,000 people each year.4 Children are more vulnerable to dog bites and rabies due to their playful

nature; they frequently play with dogs without being aware of the bite and disease. Children usually hide their bites/wounds from their parents for fear of being scolded. Rabies deaths are rarely reported globally, and children aged 5–14 years are frequent victims. These tragic deaths continue to occur because the vast majority of victims do not receive vaccine against rabies, and some of them do not complete the course.

The disease can be completely avoided by giving bite victims post-exposure prophylaxis as soon as possible, and it can be managed by universal immunization of domestic dogs. Despite this, rabies remains a major problem in underdeveloped nations, particularly among populations with inadequate access to health care. Because most victims die at home, the disease is also underreported in

these locations. In rural India, there is a documented lack of adequate knowledge of the preventive measures taken by primary health care providers, including post-exposure prophylaxis.⁵ Furthermore, there is evidence that some physicians are unaware of the proper preventive steps to take to avoid rabies, and that this lack of properly qualified medical and paramedical personnel contributes to India's rabies control strategy's failure.^{6,7}

According to one research, most children who were bitten by dogs were unaware that they had been bitten, and their parents generally disregarded the attacks or simply treated the wounds with home remedies like hot peppers or turmeric. Only a few parents visited to hospital mostly with delay.8 In India only 70% of the people have ever heard of rabies, in which only 30% know correct method to wash the wounds after animal bites and, of those who get bitten, only 60% get a modern cell-culture-derived vaccine.^{4,9}

CASE REPORT

An 8 years old male child residing in a village Darwha, yavatmal District, Maharashtra came to anti rabies OPD with the chief complaints of difficulty in drinking water, tremors since 24 hours. According to the parents 15 days back on 15th December 2019 he was bitten by a stray dog while playing outside of his house. The bite was on exposed skin of left thigh and bleeding was present (WHO Class III bite). There was history of bite to other people by the same dog. Parents visited with child to a nearby primary health care center on same day, where wound was washed with water only without soap. He received first dose of cell culture anti-rabies vaccine (ARV) and advised to take remaining four doses as per Essen regimen. He was referred to a tertiary care center for immunoglobulin due to unavailability of immunoglobulin. Patient skipped rest doses and received only one dose of anti-rabies vaccine. They did not visit tertiary care center for immunoglobulin as advised. After 15 days of exposure on 1st January 2021 the patient presented to Tertiary care hospital with unusual behavior like fear of water and tremor. On examination patient was nourished, conscious, responding to oral comments, with absence of pallor, icterus, cyanosis, clubbing, lymphadenopathy and oedema. Vitals- Afebrile, PR- 90 bpm, BP- 100/70 mm Hg. Pupils were dilated. Patient had jerky movements of entire body. Signs of hydrophobia and aerophobia were present. Other systematic examination were found normal. Based on the history of the dog bite and clinical features patient was diagnosed with Rabies. Patient was referred to isolation ward where he died within 24 hours of admission.

DISCUSSION

In the present study an 8 years old male child was bitten by a stray dog. Children are more vulnerable to animal bite.¹⁰ In a study 72.4% male and 47.5% children aged 2-18 years were victims of animal bites.9 Children engage in more playful activities, which makes them more exposed to animal bites and makes them more likely to fall prey to

animals due to their reduced capacity to react to any type of threat situation.¹¹ According to World health organization survey stray dogs (75.2%) were the mainly responsible for rabies death followed by pets (11.1%).⁴

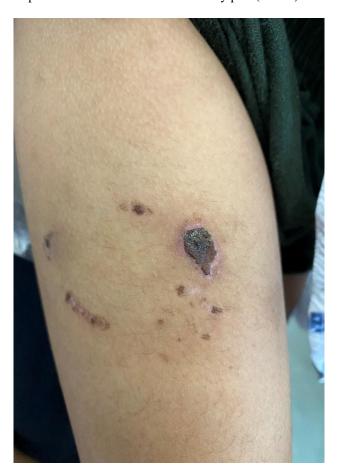


Figure 1: Dog bite.

In this study wound was not washed at home, patient visited to primary health care center where wound was washed only with water. It shows that no one was aware of the primary wound management procedure, including medical health professionals. This was similar to a study conducted in Karnataka, India, which found that just 12.5% of victims properly handled their wounds, while 33.3% resorted to indigenous treatments, and 27.1% received no wound care at all. 12 In another study of India it was found that only 24 % victims properly washes the wound after animal bite.¹³ This demonstrates the critical importance of raising public awareness about rabies and basic wound management following an animal bite.

In our study patient was not compliant with anti-rabies vaccination schedule. Similar findings were observed in the other studies of India. 14-16 This indicates a rabies awareness gap among the beneficiary, as well as the need for ARV. Noncompliance with the ARV schedule can be linked to a lack of awareness of the necessity to complete the full dosages; therefore health education and sensitization in the above context are critical for control and prevention of the fatal disease.

CONCLUSION

Above, death could be avoided if all necessary preventive measures were taken, such as proper wound washing, completion of the ARV schedule, and immunoglobulin administration. It all happened due to lack of awareness of rabies, improper training of medical staff regarding counselling of patients and the handling of wounds. Public health personnel play an important role in rabies prevention because they may raise community knowledge about proper animal bite management techniques. Based on the findings of this study, awareness initiatives should be reinforced even more in order to promote healthseeking behavior. The policies should be geared toward making rabies immunoglobulin more available and accessible. It is necessary to address the requirement for public health employees to get ongoing professional training at regular intervals.

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