

## CASE REPORT

### A Case of Furious Rabies – A case study from Kerala

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#### ABSTRACT :

**Introduction:** Rabies is a viral zoonotic disease that causes acute progressive encephalitis that accounts for over 59 000 human deaths and over 3.7 million disability-adjusted life years (DALYs) lost every year. Vaccination of humans is an effective preventive intervention for rabies control after exposure to RABV, still, rabies cases are being reported. This report aims to evaluate the etiological profile of this patient that leads to the development of Rabies and to find the existing gaps in the health system in the prevention of rabies. **Case:** A 70-year-old male known case of psychiatric illness but not on treatment reported GMC, Thiruvananthapuram because of altered sensorium, agitation, inability to take food, and drooling of saliva for the past 3 days. He had a history of unprovoked stray dog bite on the face two and half months back. He didn't take the rabies post-exposure prophylaxis (anti-rabies vaccination & rabies immunoglobulin). On examination, he was agitated and had aerophobia and hydrophobia. Despite supportive measures, he expired on the third day of admission.

**Conclusion :**

This case report has provided an insight into the importance of awareness of preventive measures of rabies, emphasizing the need of intensifying the IEC activities.

#### INTRODUCTION:

Rabies is a viral zoonotic disease that causes acute progressive encephalitis which is almost invariably fatal once the clinical signs appear. Rabies accounts for over 59 000 human deaths and over 3.7 million disability-adjusted life years (DALYs) lost every year. Even though the Rabies virus affects all mammals, 99% of all human deaths occur from a domestic dog. Rabies has its great impact mainly on the under served populations of both rural and urban areas. Vaccination of humans is an effective preventive intervention for rabies control after exposure to RABV .

Even though all the preventive measures are available free of cost in all government institutions, an exceptional number of rabies cases are occurring due to ignorance and lack of treatment.

On 29th October 2021, a 72-year-old man came to our hospital with clinical features suggestive of Rabies. In spite of supportive measures, he expired on 31st October 2021. This report aims to evaluate the etiological profile of this patient that leads to the development of Rabies and to find the existing gaps in the health system in the prevention of rabies.

#### CASE REPORT:

A 72 year old male patient, from Aryanadu village of Thiruvananthapuram district, reported to the medicine casualty of Government medical college Thiruvananthapuram on 29th October 2021 with chief complaints of altered sensorium, reduced intake of food and drooling of saliva since 4 days, and aerophobia since 3 days. He was a known case of psychiatry illness, but not on any regular medications.

Upon questioning, his relatives gave a history of a dog bite on the face, over the nose two and half months back. It was a stray dog and bitten him while he was sleeping outside the house in Aryanadu village following which he developed a laceration of

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3× 1 cm on the nose. However, the patient didn't seek any medical advice. The wound was not even washed with soap and water. His neighbors who witnessed the incident advised the patient to seek medical advice, but he refused. His relatives were not aware of the incident, as he was staying away from the family, in a house near the mosque where he was working. When enquired about the possible reasons that he didn't seek medical advice, his grandson opined that he was afraid of injections and hospital visits and also the wound was not severe and it healed without any medications. History of prior immunization with Anti Rabies vaccine was not available.

No history of similar dog bite cases was reported from the village.

The status of the dog was unknown. Later on 26th October, the patient became sick, the inmates of the mosque noted that he had developed altered sensorium, drooling of saliva and food intake was also reduced. He had no history of fever, seizure, loss of consciousness, and vomiting associated with it.

The relatives were informed. Before the visit to Government medical college, Thiruvananthapuram, the patient was taken to General hospital Thiruvananthapuram on 29th October 2021 at 15.44 , where the doctor diagnosed aerophobia. Later his findings were substantiated with the history of a dog bite that the patient's relatives mentioned. Other vital parameters were stable. He was then referred to Government Medical College Thiruvananthapuram by the Medical officer of GH for final diagnosis and further management

He was reported to, medicine casualty GMC, Thiruvananthapuram at 9.24 PM. He was admitted to the ward. He was conscious but not obeying commands. On examination, a pooling of secretions was present in the throat. Upon blowing a book in front of his face, he started gasping confirming aerophobia. Hydrophobia was demonstrated by asking him to take a sip of water, upon seeing the water he became agitated. Local examination showed a scar of 3 ×1cm on the nose. Vital parameters were stable. Further examining his chest and abdomen by palpation and auscultation showed no apparent abnormal findings. He was treated with IV antibiotics, steroids, and other supportive measures.

His saliva, corneal, and CSF was sent to the Institute of Animal and Veterinary Biologicals Palode for rabies antigen detection. RT PCR sample was sent to rule out COVID 19. Neuromedicine and Infectious disease consultation was sent for further evaluation and management

While inward, he became agitated, he was shifted to MICU on 30/10/2021 because of worsening prognosis. Since Remdesvir is found to have anti-Rhabdoviral activity, Remdesvir was started on a compassionate basis.

By the time, the results of the sample sent for antigen detection came to be positive.

On 31.10. 2021, 7:45 am patient became unresponsive, vitals were not recordable, CPR was initiated. Injection adrenaline was given. The patient was intubated and given a bag and mask ventilation. Despite continuous resuscitative measures, he expired at 8.15 am.

## DISCUSSION:

Human rabies is a major health problem in India . In a systematic review by Denny John, Abhishek Dayal, and Omesh Bharti on "Burden of illness on dog mediated rabies in India" among all cases of human bite, a dog was the main biting animal and the majority of the dogs were stray.– In human rabies, the different forms are Furious and paralytic. The earliest symptom in 50% of cases of paralytic rabies and 30% of cases of furious rabies are a local manifestation in the form of itching, pain, or paresthesia at the site of the bite.

The furious rabies manifestations resemble an acute anxiety reaction. Initially, attention span will be shortened, followed by typical features like phobia, altered level of consciousness, and autonomic dysfunction.

Whereas paralytical rabies is manifested by ascending paralysis, however, the signs of furious rabies are also seen.

In our case, none of the primary symptoms were reported early in the patient. It might be either due to the psychiatric illness of the patient, lack of awareness of symptoms of rabies or due to the negligence of the symptoms. Isolation from the family might have also hampered the early detection of symptoms.

The patient could reach the health system only at a very late stage when the patient started to show typical signs like agitation, autonomic dysfunction like hydrophobia, aerophobia, and excessive salivation suggestive of furious rabies.

Different factors have been associated with vulnerability to infection and varying incubation periods. These factors include host animal species, virus variant, inoculum concentration, body location, the severity of exposure, and host immune status

The incubation period for rabies usually varies from 1 to 3 months but may also vary from less than a week to greater than a year. The local replication time could determine the interval between exposure and manifestation of clinical signs. The virus remains at the site of inoculation during the early incubation period and propagates to the CNS from the site of inoculation via

axonal transport in a retrograde fashion at a fairly constant rate of 12 to 24 mm per day.

Direct viral entry into the nerves without local replication results in very short IP, as occurs in cases with multiple bites in the head and neck region. Successful treatment and prevention require strategies that can target the virus before entry into CNS.

Once the symptoms set in, there is no definite cure for rabies.

An effective immune system prevent the spread of the disease by preventing the viral replication at the site of entry–

In our case, it took nearly 75 days to manifest the clinical symptoms, which was within the expected incubation period for rabies following the exposure. Here the treatment was ineffective as the neurological symptoms have already set in. Rabies infection in this patient could have been prevented if he had followed the Post Exposure Prophylaxis at any time before the onset of clinical symptoms. In addition, the proximity of the wound to CNS might have accelerated the disease progression.

The most critical steps in the prevention of rabies include thorough wound cleaning and the use of post exposure prophylaxis with hyperimmune serum and active immunization, based on the category of bite . In this patient, none of these measures were followed, which in turn resulted in rabies infection.

These measures together reduce the mortality risk from 37 to 60 % to almost zero following a bite from a rabid animal

### CONCLUSION :

This case report has provided an insight into the importance of awareness of preventive measures of rabies. Despite having effective vaccination and immunoglobulin, rabies cases are being reported. This emphasizes the need of intensifying IEC activities among the public regarding rabies prophylaxis. Prophylactic vaccination should be given to high-risk individuals and post-exposure vaccination should be initiated immediately to the exposed persons.

WHO leads the collective United Against Rabies with an objective of zero human deaths from dog-mediated rabies by 2030 .WHO wants every country to take an active role in ending human deaths from dog-mediated rabies. Lack of awareness is one of the key factors which is hindering in tackling this fatal disease. Our health department can play an active role in promoting IEC activities, especially in rural areas.

The key points to be included in the IEC are

- Do not neglect any animal bite.
- Practice washing with soap and water for 10 - 15 minutes after any animal bite.
- Report to the nearby health center following an animal bite.
- Utilize Anti Rabies prophylaxis available at free of cost in all government institutions from PHC to medical college.
- Timely action will prevent this fatal disease 100%.

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