

Case Report

Rabies Case on Dog in Debre Tabor Town, Amhara Region, Ethiopia: Case Report

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A B S T R A C T

This report is about a rabies case in a dog in Debre Tabor Town, Amhara region, Ethiopia. The dog was owned but unknown; it developed signs of rabies and was found dead after the quarantine period. The dog has no known history of being bitten by another dog. After the death of the dog, the sample was collected by decapitating and submitted to the laboratory in collaboration with the local veterinary clinics and animal owner, and a confirmatory test was done by using a lateral flow assay and direct fluorescent antibody test, and the result was positive on both tests. Proper vaccination of the owned and stray dogs, community awareness, and active surveillance conduct early detection of the case in the town and provide pre-exposure vaccine for veterinarians.

Keywords: Dog, Rabies, Stray, Vaccination

Introduction

Rabies is a viral disease that affects the central nervous system of domestic or warm-blooded animals. 99% of the disease or case is transmitted by domestic dogs to other animals and humans in the developing countries. Rabies is transmitted from infected animals to other animals and humans mainly by bites. But there may be other possible ways of transmission, such as scratch, open wound, and mucus membrane contact and licking of the infected animal.¹

The disease kills about 60,000 humans yearly in the world, which is mostly in Asia and Africa. Children are more exposed to the disease as compared to other women, elders, and youth. The reason behind this is playing with animals and likely receiving a bite to the face or neck; and not reporting bites or scratches received during play to their family.²

Rabies was present for a long period in Ethiopia, but it was confirmed and recorded in August 1903 at Addis Ababa. It causes significant loss of human and animal life yearly.³ Each year, an estimated 2,700 people die, and the highest rabies

death rates in the world, the actual deaths of humans that are caused by rabies, are unknown because the disease is not properly reported and rabies diagnostic laboratories are not organized.⁴

A total of 2,094 animal suspected rabies cases and 1,682 (80.3%) deaths were reported from different parts of Ethiopia in the years from 2018 to 2023. Among those deaths, the highest was recorded by dogs (73%), followed by cattle (17.3%), equine (6.8%), and others (2.9%). The number of diseases may be greater than this because of incoordination and unavailability of rabies diagnostic tests in animal health laboratories.⁵

Dogs are held for the purpose of guarding their properties from enemies, which serves as an easy transmission of the disease to other animals and humans.⁶

Large dog population size in combination with poor dog population management are contributors of the disease in Ethiopia. The report of the disease in Ethiopia varies from region to region because of location and cultural differences. In some rural parts of the country, individuals who have

been exposed to the disease want to go to or choose traditional healers rather than the modern treatment.⁷

Rabies is a notifiable disease in Ethiopia and classified as the top 5 prioritized zoonotic diseases based on its severity and potential economic loss.⁴

A rabies outbreak occurred in Debre tabor town, Amhara region, Ethiopia, on July 5, 2022. A 6-year-old male dog showed clinical signs of rabies and was reported by the owner to the local veterinary clinic for any assistance from them, and the local veterinary clinic recommended restraining and quarantining him in his home for 10 days. On the following day of quarantine the dog was found dead, and the local veterinarian reported to the laboratory for a confirmatory diagnosis of the case. The laboratory collected the sample and submitted it.

Case presentation

The dog was a hound that was kept for the purpose of safeguarding the compound. The dog was not restrained the whole day; sometimes it was released from the compound and went everywhere and returned back to its home. The likelihood of an unnoticed exposure to a rabid animal remains high while being released from the compound that may be in contact with other free-roaming dogs that may be infected.

Clinical finding

The case was started on July 3, 2022, with clinical signs of depression, decreased feed and water intake, inability to close its mouth, biting two children and one goat, and being found dead. The owner said that the dog was vaccinated but has no certificate.

Laboratory finding

After collection, the sample was submitted to the laboratory and took the appropriate sample by the foramen magnum technique and tested by lateral flow assay and direct fluorescent antibody test. The result was positive on both tests.

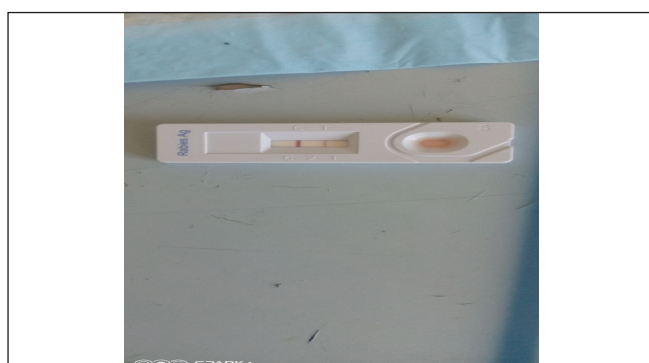


Figure 1.lateral flow assay

Discussion

The present case study report revealed that rabies is a major livestock and public health problem in the Deber Tabor town. Since the disease resembles other diseases, it is difficult to differentiate from other diseases. In the ante mortem there is not any confirmatory diagnostic technique for rabies; due to this, veterinarians are jeopardized to diagnose and give treatment for the suspected animal. The animal handlers, veterinarian, and animal owner should take care when managing a rabies-suspected animal or take a pre-exposure vaccine and wear appropriate personal protective equipment.

The owner tries to quarantine the dog in its house for 3 days, and it is found dead in its house. When there is a suspected animal, it is recommended to quarantine for 10 days for dogs and cats, but due to low awareness of the community and unavailability of government quarantine stations, the community kills the suspected animal inhumanely and does not sample properly collected for diagnosis in most cases in our country.

"In the present case study there is no known rabid animal that has bitten this dog," said the owner. This may be due to the presence of a large free-roaming dog in the town and the owner not restraining his dog so that it may come into contact with this free-roaming dog.

The presented case was vaccinated, said the owner, but has no certificate. This may be because the owner does not emphasize the importance of the certificate, and if the dog is vaccinated, there may be no booster, an underdose administered, or the vaccinator may not properly store and transport the vaccine. Mass dog vaccination is one of the key ways for the prevention method of the disease in the country, in addition to other methods like dog management and awareness. But due to low availability of the vaccine and awareness of the community of the vaccine, most dogs were not vaccinated against rabies in the country.

The victims were started on a post-exposure vaccine. Since the currently available post-exposure vaccine is the old type that is nerve tissue, which is not recommended by the World Health Organization, due to this, most affected individuals choose to go to traditional healers by fearing the painfulness of the vaccine.

Conclusion

The present case study revealed that rabies is a threat in Debere Town due to the presence of large free-roaming dogs and low coverage of rabies vaccination in both owned and stray dogs in the town. Adopting a One Health approach is critical, as it integrates human, animal, and environmental health considerations to create a cohesive framework for the prevention of rabies. To control the disease, the

government shall provide adequate vaccines, control dog populations, educate children in school, and raise awareness in the community by using different media. The concerned bodies recommended going to a clinic when there is contact with a rabies-suspected animal and washing with tap water and sopping for 15 minutes.

Conflict of Interest: None

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