

*JOURNAL OF VETERINARY AND APPLIED SCIENCES*  
*2012 VOL. 2(1): 41 - 44*

Manuscript No. JVAS/2012/007; Received: 22/05/2012; Accepted: 19/06/2013

Published by: Faculty of Veterinary Medicine, University of Nigeria, Nsukka, Nigeria

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**A CASE OF RABIES IN A FIVE-MONTH OLD MALE DOG PRESENTED  
AT THE UNIVERSITY OF NIGERIA VETERINARY TEACHING  
HOSPITAL, NSUKKA, NIGERIA**

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**ABSTRACT**

*A dog was presented to the Veterinary Teaching Hospital, University of Nigeria, Nsukka (VTHUNN) with the primary complaints that it was off feed and had been bitten by a stray dog three weeks earlier. On closer observation, the dog was noted to manifest clinical symptoms suggestive of rabies and was subsequently placed under quarantine for further observation. The animal died two days later and was confirmed to have died of rabies by the presence of Negri bodies in squash brain smears stained by the fluorescent antibody technique. The case suggests that canine rabies is still present in Nsukka area of Enugu State and highlights the public health implications of this observation in the area.*

**Keywords:** Rabies, Dog, Nsukka

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**INTRODUCTION**

Rabies is a zoonotic disease that causes acute encephalitis (inflammation of the brain) in warm-blooded animals. All mammals, including humans are susceptible to infection with the rabies virus. The rabies virus is the type species of the Lyssavirus genus, in the family Rhabdoviridae, order Mononegavirales. Lyssaviruses have helical symmetry, with a length of about 180 nm and a cross-sectional diameter of about 75 nm [1]. Rabies is transmitted from animals to man, most commonly through close contact with infected saliva via bites or scratches [2,3]. The incubation period of the disease is usually a few months, depending on the distance of the infective bite site from the central nervous system. Once the rabies virus reaches the central nervous system and symptoms begin to manifest, the infection is effectively untreatable and usually fatal within days [1,4].

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ISSN: 2315 - 6856

Generally, the early symptoms of rabies are similar to those of many other illnesses and these include fever, headache, and general body weakness or discomfort. The disease progresses into either of two forms, viz; the furious and the paralytic forms [5]. In the furious form, the infected animal exhibits signs of hyperactivity, excited behaviour, hydrophobia and sometimes aerophobia. After a few days, death occurs by cardio-respiratory arrest [3]. The paralytic form runs a less dramatic and usually longer course than the furious form. The muscles gradually become paralyzed; starting at the site of the bite or scratch. Coma slowly develops and eventually death occurs [6]. Death usually occurs within days of the onset of these symptoms with respiratory insufficiency as the primary cause.

The vast majority of human rabies cases worldwide (approximately 97%) come from dog bites [2,3,7,8]. Cotran *et al.*, [4] claim that in several countries, including the United Kingdom, Estonia, and Japan rabies carried by animals that live on the ground has been eradicated entirely but that concerns exist about transmission by air-borne and mixed habitat animals including bats. Small rodents are almost never found to be infected with rabies and are not known to transmit rabies to humans [9]. It has also been reported that more than 95% of human deaths due to rabies occur in Sub-Saharan Africa with dogs as 99% source and about 40% of the people who are bitten by suspected rabid dogs are children under 15 years [4]. The economic impact is also substantial as rabies is a significant cause of livestock deaths in some countries [2].

There has been a dearth of information regarding the continued existence of rabies in Nigeria. This dearth of information on rabies outbreaks in Nigeria has therefore contributed to the erroneous belief by the World Health Organization that there is no rabies in Nigeria [3].

#### **CASE HISTORY**

On the 14<sup>th</sup> of February 2011, a five month old male mongrel dog was presented to the University of Nigeria Veterinary Teaching Hospital (UNVTH) with the primary complaint that the dog was bitten by a stray dog about 20 days earlier and was presently off feed. The stray dog could not be identified. The history revealed a change in behavior of the bitten dog about 2-3 days after the bite, with the animal becoming anxious, uneasy, irritable and increasingly sensitive to noise and light. Thereafter, the previously friendly pet turned aggressive and attacked without or at the slightest provocation. Later, the dog became depressed and withdrawn, hiding in dark and cold places and continually bit and scratched at the site of the bite. By the fifth day, the dog had become increasingly nervous, irritable and vicious and would bite and attack its feeding plate, chain and other inanimate objects including the kennel, the soil, wood and shoes. There was also lack of coordination, difficulty in and later refusal to swallow, with drooling of frothy saliva from the mouth.

The dog grew progressively weaker and by 10 days following the bite, was completely unable to eat, bark or walk. The dog was presented to the UNVTH at this stage. The dog had no previous history of rabies vaccination. On the basis of a tentative diagnosis of rabies, the dog was quarantined at the UNVTH. Although food and water were provided *ad libitum*, the dog was unable to eat or drink during the period and died 2 days post quarantine. Thereafter, the head was severed and the brain harvested and sent for confirmatory diagnosis at the National Veterinary Research Institute, Vom, Plateau State, Nigeria.

#### **CLINICAL EXAMINATION AND DIAGNOSIS OF RABIES**

The reference method for diagnosing rabies is by performing PCR or viral culture on brain samples taken after death or using skin samples taken before death [10]. It is also possible to make the diagnosis from saliva, urine and cerebrospinal fluid samples, but these are not usually very sensitive. Inclusion bodies called Negri bodies are 100% diagnostic for rabies infection but are found in only about 80% of cases [6]. At the National Veterinary Research Institute, Vom Plateau State, Nigeria the fluorescent antibody technique (FAT) was used to examine the squash smears of the brain and inclusion or Negri bodies were observed. This result confirmed that the dog actually had rabies virus infection.

## DISCUSSION

The primary complaint of the dog having been bitten by a stray dog, the ensuing clinical signs and death within 22 days post bite are consistent and suggestive of canine rabies [5,6,11]. The presence of Negri (inclusion) bodies in squash smears of the brain using the fluorescent antibody technique confirmed that this was a case of canine rabies [10].

At Nsukka, in Enugu State Nigeria, series of dog bites (dog-to-dog or dog-to-man) by stray or pet dogs had been ignored and unreported. When reported to clinics and hospitals (veterinary and human), many of these cases are not usually followed up such that relevant diagnostic samples could not be collected to ensure a proper diagnosis. Furthermore, such bites are usually from stray animals that could not be apprehended for routine quarantine and observation. These problems of control and diagnosis pose lots of public health threat to man and animals in the area. Several factors are contributory to these lapses: improper training of public health officers, lack of administrative willpower and the required financial resources, nonchalance and un-coordinated reporting system and non enforcement of the relevant extant laws on dog control and vaccination.

Incidentally, there are many facilities that provide medical and veterinary services to the public in Nsukka area of Enugu State but the lack of public education and awareness preclude the people from taking adequate advantage of these facilities and personnel with regard to the management of dogs and the control of rabies in the area. Furthermore, the refusal of clients/bite patients to readily report dog bite cases or suspicious dog movements and behavior militate against the confirmation of suspected rabies cases.

Other factors include the fact that many dog owners do not observe the basic vaccination routine and schedule and in fear of litigation would hide their dogs when they bite people; On the other hand, for unknown reasons, the families of the dog bite victims are usually reluctant to report the incident to the relevant Government agencies. For instance, in 2011, a young girl died at Ovoko, near Nsukka, 12 days after she had been bitten by a stray dog. Before her death, she showed full signs and symptoms suggestive of rabies but the case was neither reported nor confirmed to be rabies due to the lack of cooperation from the parents of the girl. It is, therefore, this absence of reported cases of rabies outbreak that warranted the claim that there is no rabies in Nigeria [3]. However, the present case has demonstrated that canine rabies exists in Nsukka area of Enugu State, Nigeria.

The public health dangers associated with the confirmation of the existence of canine rabies in Nsukka are enormous. The authors therefore, suggest that there should be strict enforcement of the extant laws on dog ownership and control, especially as it relates to vaccination of the animals against rabies. There is also need for public education to ensure that the people are made aware of the dangers of rabies and the need to adequately care for their pets and promptly report all cases of dog bite to the relevant government agencies.

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