

## A Case of Rabies in One Month Old Kittens in South East Nigeria

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### Abstract

This report describes a case of rabies in one month old kittens. At physical examination, the kittens were abnormally aggressive and restless with bilateral ocular discharge. Rapid Immuno chromatographic and Fluorescent Antibody Tests on the harvested brains were positive for rabies. Though report of rabies in cats especially kitten is rare, we advise that continuous reporting by researchers can give a better prevalence statistics of these occurrences due to its great public health significance. We also recommend annual anti- rabies vaccination campaign and destruction of stray cats.

**Keywords:** Kitten; Rabies; Nigeria

### Introduction

Rabies is an acute, contagious and highly fatal disease of all warm blooded animals caused by rabies virus Ogunkoya et al. [1]. The disease affects all warm-blooded animals including man Radostits et al. [2]. The case fatality rate of rabies is almost 100 %, accounting for about 55,000 human deaths annually with most cases occurring in developing countries of Asia and Africa.

Rabies was first documented in Nigeria in humans in 1912 and in dogs in 1925 Boulger and Hardy [3], and since then many authors Umoh and Belino [4], Ezeokoli and Umoh [5], Harry et al. [6] and Okoh [7] have established that the disease is endemic in the country. Recently, Mshelbwala et al. [8], Mshelbwala et al. [9] and Hambolu et al. [10] have reported that the prevalence of the disease is still on the rise. The disease is caused by a virus of the family Rhabdoviridae and genus Lyssavirus, now called lyssa virus 1 (RABV gen1). It manifests in three classical stages, namely prodromal, excitatory stage and paralytic or silent stage. Despite the availability of vaccine in Nigeria, most dog owners fail to vaccinate their dogs in some parts of the country Mshelbwala et al. [11]. A ten year retrospective study of dog bite in Zonal Veterinary Clinic Abia, indicated that majority of the offending dogs, though owned were not vaccinated against rabies Mshelbwala et al. [11].

Despite the fact that rabies is endemic in Nigeria, dog vaccination is not a priority. Hambolu et al. [10] reported low vaccination compliance in south-Western Nigeria. He was of the opinion that dog owners do not consider the threat pose by unvaccinated dogs.

Cats have the habit to stray and are less vaccinated against rabies than dogs thus increasing their chances of contracting the disease [12]. Cats are grouped among domestic animals susceptible to rabies in the United States. Therefore, humans make more contacts with cats compare to other pets thereby increasing the chances of human exposure to rabies from an infected cat making it of great public health concern [12].

In Nigeria the number of reported cases of rabies in cats is very low. Nevertheless, cats constitute the second most frequently affected animals after dogs. We therefore report the occurrence of rabies in one month old kittens resulting from neglected attitude towards annual vaccination and consequent exposure.

### Case Report

A young kitten (one month old) was found to be ill and was subsequently brought to Animal World Veterinary, Umuahia, Abia State, Nigeria for treatment and subsequent adoption by any interested client. On physical examination, the kitten was aggressive and restless with bilateral ocular discharges (figure 1). Attempts to restrain the kitten were not successful as one of the staff was scratched on her right thumb. The kitten later died probably due to the stage of the infection. The brain was harvested. Contact was made with a client who had earlier adopted two sister kittens from the same queen. At presentation one kitten was restless and extremely aggressive (Figure 2) and the other beating the wires mesh of the enclosure (Figure 2). One death natural died while the other was euthanized. On further investigations, we were



**Figure 1:** Kitten with bilateral ocular discharge.

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**Figure 2:** Aggressive and restless kitten, making attempt to bite the wire mesh.

told by the owner of the kittens that he has two dogs and the queen was in the habit of straying. The clinic staff scratched by the kitten was referred to the Federal Medical Centre; Umuahia, Abia State, Nigeria, for full post exposure prophylaxis. A report was sent to the Director, Veterinary Services for appropriate action.

## Materials and Method

The Fluorescent Antibody Test (FAT) and rapid immunochromatographic test was carried out on the harvested brain. The kits used were obtained from Fujirebio Diagnostic Inc Malvern, Rapid Immunochromatographic Test (RICT) 19355 and Bionote, respectively and tests done according to manufacturer's protocols. Briefly, following natural death of the kitten, the head was cut off with a sharp axe and brain carefully dissected out for rapid immunochromatographic test. 10% (w/v) brain homogenate was prepared in culture medium, collected with a swab, and then dipped in the buffer supplied in the kit. After mixing for 10 seconds, four drops of the suspension were added with a dropper to the sample hole of the test strip according to manufacturer's instruction. Results were interpreted between 5 and 10 min after the beginning of the migration.

The remaining portion of the brain was cryoprotected in a polythene bag and transported in a dry ice pack to National Veterinary research institute, Vom for fluorescent antibody test. In the laboratory, a small fraction of the cryoprotected brain sample was thawed and smeared on a clean slide and air dried. It was fixed in cold acetone for one hour at  $-20^{\circ}\text{C}$ . The sample fixed slides were again, air dried and conjugated with rabies conjugate (1:40), incubated for 30 minutes at  $37^{\circ}\text{C}$  in a humid chamber and thereafter excess conjugate removed from the slides by rinsing in 7.4 pH PBS solution for 3-5 minutes and was allowed to air dry. The dried slides were mounted with buffered Glycerol Mounting medium, cover slipped and allowed to dry. Dried slides were examined using a fluorescence microscope 2 hours after staining. Brilliant apple-green fluorescence colour or greenish yellow objects exhibited against a black background shows positive to the virus. The same process was repeated for the other two kittens following euthanasia.

## Discussion

Rabies is endemic in Nigeria with dogs reported to be the major reservoir Mshelbwala et al. [8]. However, few reports in cats have been documented from the records of National Veterinary Research Institute, Vom (Ogunkoya [13] making the role of cats in the epidemiology of the disease negligible. Recently, Mshelbwala et al. [9] reported dog bite to be the major route by which humans contact the disease in Abia State,

Nigeria. They were of the opinion that majority of the offending dogs were not vaccinated against the disease, but if previously vaccinated, owners fail to revaccinate following expiration of previous vaccination. Hambolu et al. [10] reported a decline and general inadequate vaccination of dogs in Lagos State, south-western Nigeria. This further points to the dangers dogs and humans in the community face. They further postulated that low anti-rabies vaccination may result in rabies outbreak and pose potential risk to Veterinarians and their assistance, Dog owners and their family members.

Some workers have reported the problems of vaccine purity and immunogenic inadequacies in the vaccines circulated in Nigeria (Adeyemi et al. [14]) and problems of vaccination booster by owners of dogs Hambolu et al. [10]. Prevention is said to be cheaper and better than cure. Currently a single dose of human rabies vaccine for post exposure prophylaxis cost 15 US dollars which is five times more expensive than animal rabies vaccine (3.1 US dollars) and five doses are required in case of exposure to rabid bite Adeyemi et al. [14].

To the best of our knowledge, this is the first report of rabies in kittens in Nigeria. Vaccination for cats is not a priority, even when vaccination campaigns are organized. The nation's Veterinary research institute saddled with the responsible of producing vaccines do not produce High Egg Passage (HEP) Flury strain vaccine for cats. There is lack of interest by veterinarians to find out the role of cats in rabies epidemiology. This is in agreement with earlier report Oboegbulem [15]. There is evidence that rabies in domestic and pet animals in Nigeria are under reported and continuous reporting by researchers can give a better statistics of the prevalence of the disease because of its public health and epidemiological importance.

We recommended that High Egg Passage (HEP) Flurry strain vaccine be made available for use for vaccination of cats. Vaccination campaigns should include cats when conducted and studies carried out to find out the role of cats in rabies epidemiology.

## References

- Ogunkoya AB, Osinubi MOV, Jahun BM, Hassan AJ (2003) Some cases of rabies with high exposure potential: A field experience. *Tropical Veterinarian* 21: 58-64.
- Radostits ON, Blood DC, Gay CC (1995) *Veterinary Medicine*. London: ELBS Bailliere Tindall.
- Boulger LK, Hardy J (1960) Rabies in Nigeria. *West African Medical Journal* 9: 223-234.
- Umoh JU, Belino ED (1979) Rabies in Nigeria. A historical review. *Int J Zoonoses* 6: 41-48.
- Ezeokoli CD, Umoh JU (1985) Epidemiology of Rabies in Northern Nigeria. *Transaction of the Royal Society of Tropical Medicine and Hygiene* 75: 268-272.
- Harry TO, Adeiga A, Anyiwo CE, Nasidi A (1984) Anti-rabies treatment of dog-bite victims in Lagos, Nigeria: trial of suckling mouse brain and fetal bovine kidney cell rabies vaccines. *Vaccine* 2: 257-260.
- Okoh AEJ (1984) Rabies in vaccinated dogs in Plateau State, Nigeria. *Bulletin of Animal Health and Production in Africa* 32: 103-105.
- Mshelbwala PP, Audu SW, Ogunkoya AB, Okaiyeto SO, James AA, et al. (2013a) A case study of rabies in a six month old calf in Zaria, Nigeria. *Jof Exp Biol and AgriSci* 1: 218-222.
- Mshelbwala PP, Ogunkoya AB, Maikai BV (2013) Detection of rabies antigen in the saliva and brains of apparently healthy dogs slaughtered for human consumption and its public health implications in abia state, Nigeria. *ISRN Vet Sci* 2013: 468043.
- Hambolu SE, Dzikwi AA, Kwaga JK, Kazeem HM, Umoh JU, et al. (2013) Rabies and dog bites cases in lagos state Nigeria: a prevalence and retrospective studies (2006-2011). *Glob J Health Sci* 6: 107-114.

11. Graba, A (2013b) Retrospective study of dog bite cases reported to Zonal Veterinary Clinic, Umuahia, Abia State, Nigeria.XXIV Rabies in the Americas (RITA) International conference (p.5) Hyatt Regency Toronto, Canada.
12. Anon (2012) Rabies in Cats Fact Sheet. Pennsylvania Department of Health.
13. Ogunkoya AB(2010) Rabies in Nigeria: Problems and complications militating against its eradication and control. Paper presented at World Rabies day.
14. Adeyemi IG, Adetunji VO, James VO, Alonge DO (2005) Retrospective Evaluation of Vaccination of Dogs against Rabies at University of Ibadan, Nigeria.African Journal of Biomedical Research, 8:71-77
15. Oboegbulem SI (1994) Rabies in Animal and Man. 1st Edition Fidelity Publishers, Nigeria.