Brief communication

A confirmed rabies case in a French resident in Cambodia, June 2015

Arnaud Tarantola, MD, Msc¹*, Channa Mey, MD¹, Sowath Ly, MD, PhD¹, Cornelia Haener, MD, MscPH², Nareth Chhor, MD³, Uong Meng, MD³, Sovann Ly, MD⁴, Didier Fontenille, PhD¹, and Philippe Dussart, PharmD, PhD¹

¹Institut Pasteur du Cambodge, Phnom Penh, Cambodia, ²Sonja Kill Memorial Hospital, Kampot, Cambodia, ³Emergency Department, Calmette Hospital, Phnom Penh, Cambodia and ⁴Department of Communicable Disease Control, Ministry of Health, Phnom Penh, Cambodia

*To whom correspondence should be addressed. Epidemiology and Public Health Unit, Institut Pasteur du Cambodge, 5, Bvd. Monivong, BP 983, Phnom Penh, Royaume du Cambodge. Tel: +855 (0) 12 333 650. Email: atarantola@pasteur-kh.org

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Abstract

A case of confirmed rabies in a French resident is a wake-up call for improved access to timely and adequate rabies post-exposure prophylaxis for all those living in Cambodia, as well as for improved pre-exposure prevention in travellers to Cambodia and other highly endemic settings.

Key words: Rabies, post-exposure prophylaxis, prevention, travelers, Southeast Asia, dog bite, pre-exposure prophylaxis

Rabies causes many dog and human deaths each year in Cambodia and much of Southeast Asia. An Institut Pasteur du Cambodge (IPC) modelling study on 2007 data in Cambodia estimated 810 human rabies deaths in 2007 (95%CI: 394–1607), for an incidence of 5.8/100 000 (95%CI: 2.8–11.5).¹ That year, 57 suspected rabies deaths were reported through the national surveillance system, a gross 93% underestimation.

This incidence is extremely high primarily because rabies circulates widely among dogs in Cambodia, including in urban settings. It is also high because of the large number of dogs in the country, estimated at one dog per three Cambodians.¹² Tourists and backpackers may be at increased risk of dog bites during their travel compared with the general population,³ but longer-term residents—Cambodian and expatriate—are exposed to longer-term, cumulative risks.

Case Report

A 25 year-old French national, 8-month resident in Kep province, Cambodia, sustained a WHO-Grade III⁴ bite on the middle finger of the right hand while feeding a stray dog in early May 2015 (exact date unknown). The dog then disappeared. The bite victim had not undertaken pre-exposure rabies vaccination before moving to Cambodia, a rabies-endemic setting. She self-referred to a local clinician immediately after the bite in nearby Kampot for wound cleansing and wound management. There, she received one dose of vaccine according to a witness who was present but could not identify whether that one dose was rabies or tetanus vaccine. According to the witness, there was no clinical record to be checked, a rather typical situation. Additionally, the witness was visiting and could not identify the clinic, which therefore could not be contacted. He did, however, confirm that the victim did not visit the clinic again during the following month. Available data on rabies vaccine use in Cambodia makes it unlikely that this was rabies vaccine.⁵

The patient returned to the clinic on June 13 because her wound had become infected. No injections were administered. On June 19, the patient developed fever and pharyngeal spasms preventing hydration. She was admitted to Sonja Kill Memorial Hospital in Kampot, which documented diarrhoea/vomiting, difficulty swallowing, high fever (not measured), hypersalivation and hydrophobia and established a presumptive diagnosis of rabies. She was immediately transferred to Calmette Hospital, a national reference hospital in Phnom Penh, the capital. There, the patient was hospitalized in the Emergency Medicine unit (‘Lits Porte’) and received an intravenous infusion and diazepam. She died on June 20 of cardio-respiratory arrest.
Exchanges between the managing clinician and staff at IPC established what samples were to be taken. Rabies diagnosis was virologically confirmed by positive genome detection using Reverse transcription polymerase chain reaction (RT-PCR) at the rabies reference laboratory, IPC Virology Unit, on three saliva swabs received on 21 June 2015. Sequence of the PCR products (~200bp) targeted polymerase gene present 97% of homology with rabies virus strain 8743THA (GenBank accession no. EU293121) previously detected in the Region. This confirmed rabies case was duly notified to the health authorities.

Comments

With a documented dog bite followed by rapidly progressive neurological signs leading shortly to death, this patient would have met the WHO standard case definition for probable rabies.7 This case was also virologically rabies confirmed by a reliable laboratory, a rare event in developing settings. Laboratory-confirms cases among citizens of industrialized countries visiting or living in endemic areas are even more rare.8

How can rabies deaths in Cambodian population, travellers, expatriates and travellers or the rest of the Cambodian population best be prevented? The preferred large-scale and long-term mode of rabies prevention is effective vaccination of dogs against rabies.9 While we wait for all dogs to be vaccinated in endemic and resource-limited settings, the first preventive measure is to avoid contact with unfamiliar animals, especially non-immunized dogs, and not only if they appear sick as the rabies virus can be excreted in the saliva of dogs even before clinical signs appear.10 Unvaccinated cats can also transmit if infected.11

The second preventive measure is for travellers to be vaccinated. Although the current recommendations remain debated,12,13 pre-travel immunization is recommended for travelers to isolated settings, who may be at risk of exposure or travelling for prolonged periods.4,14–17 Many travel clinics specialists, however, may underestimate the risk of exposure during one or successive trips to endemic areas and immunization coverage in travellers and expatriates remains extremely low.12,13

The third mainstay of rabies prevention in humans is post-exposure prophylaxis (PEP). This highly effective and time-tested preventive measure, however, supposes accessing timely and quality wound management and rabies prevention, which—as shown by this tragic case—can be a challenge in many endemic countries, as in Cambodia where most private clinics and hospitals do not use rabies vaccine.5 Additionally, vaccine available in most private clinics are of uncertain provenance and may not have been adequately preserved through an unbroken cold chain.18,19 Thanks to longtime adequate anamnestic response7—pre-immunized bite victims may have to seek PEP but do not require rabies immunoglobulin, which is available only in a very few centres in developing settings,7 following exposure.

Canine rabies elimination is realistic and has been achieved in some Asian countries20 through canine vaccination, dog licensing and responsible pet ownership. Controlling rabies in dogs will spare human lives in the medium term. Considering the necessary lag for rabies control in dogs to take effect, simultaneously improving access to timely and quality PEP for all people living in Cambodia would spare human lives in the short term. This will require informing and training all healthcare workers so they can better identify and prevent rabies risks. It also will require structuring a network of PEP centres, a task which IPC will actively support by contributing expertise and experience to train healthcare providers in the public and in the private sectors. Finally, travel clinics worldwide must also remind repeat travellers or would-be expatriates to get immunized against rabies, especially for long-term travel or residence in any rabies-endemic settings with potentially limited access to timely and adequate PEP.

Conflict of interest: None declared.

References