

Rabid puppy-dog imported into the Netherlands from Morocco via Spain, February 2012

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In February 2012 a rabid puppy dog was imported into Amsterdam, the Netherlands from Morocco via Spain. In a joint action between the Netherlands' Food and Consumer Product Safety Authority, the Public Health Service of Amsterdam and the Centre for Infectious Disease Control all exposed human and animal contacts were traced and, when necessary, provided with post-exposure prophylaxis. During the importation, the international legislations with respect to vaccination requirements were not fully obeyed by veterinarians and custom services.

On 28 January 2012, a Dutch couple residing in Morocco obtained an eight-week-old puppy at a parking lot. They took the dog to a local veterinarian who micro-chipped the dog and issued a certificate of good health, yet no vaccinations were given. On 4 February 2012 the couple travelled by car and ferry from Morocco to Spain. At a veterinary clinic they acquired a European pet passport. On 11 February they returned to the Netherlands by air. Although the dog was cuddled by three Spanish customs officers at Malaga Airport, the dog passport was not examined by customs in Spain, nor in the Netherlands. Upon arrival the couple immediately introduced the puppy to friends and family. It showed normal behaviour at the time, yet became increasingly hostile over the following days. On 14 February, the owners contacted the veterinary practice after they had been bitten by the dog. The puppy was assumed to suffer from 'puppy stress' caused by the new environment and was given sedative medication. In the morning of 15 February the dog's behaviour became uncontrollable. When they realised that the puppy originated from Morocco, the veterinarians contacted the Netherlands Food and Consumer Product Safety Authority (NVWA). As clinical signs indicated rabies, the NVWA advised to euthanise the dog for investigation. Rapid post-mortem rabies diagnostics were performed by the

Central Veterinary Institute (CVI). On the evening of 15 February rabies (classical rabies virus, genotype I) was confirmed.

After the notification on 15 February, the NVWA, the Public Health Service of Amsterdam (PHS Amsterdam) and the Centre for Infectious Disease Control (CIb/RIVM) initiated a joint action to identify and trace all humans and animals with possible exposure to the dog's saliva in order to provide post-exposure prophylaxis and assess the risk to the general population. The dog was considered to be infectious to others during the two weeks prior to the day of onset of symptoms and until its death (28 January through 15 February).

Contact tracing

The owners were interviewed about their travel history since the date they acquired the puppy on 28 January. Throughout their journey, they had constantly supervised the puppy, and no unobserved exposure had taken place. In Morocco, no contacts were identified except for the local veterinarian. During the journey to Spain no other people or animals were in contact with the dog. In Spain, the couple stayed with two Dutch friends, visited a Spanish friend and a veterinary clinic, and stayed in four different hotels in two different towns. Apart from the three custom officers, the dog was stroked by an unknown person at a restaurant and one at Malaga airport. During the flight to Amsterdam, the dog was kept in a basket on the owners' lap, and no contacts were reported. At Amsterdam Airport they were collected by car by two friends and their dog. On 11 and 12 February they met with numerous family, friends and their children at four private locations. In one location, two cats were present. The remaining days they mostly stayed at home, except for the last visit to the veterinary clinic. A total of 43 contacts (including the two owners) residing in the Netherlands

were identified among family, friends and the animal clinic. On several occasions, unidentified people in the street were petting the dog.

Public health action in the Netherlands

Upon notification the PHS physician on call immediately arranged post-exposure treatment for the owners (rabies vaccination with human diploid cell rabies vaccine (HDCV) and human rabies immunoglobulin (HRIG) at the emergency department of the Academic Medical Centre (AMC). On the same evening most known contacts were informed by telephone. Within 24 hours their risk for transmission was assessed, and according to national and international guidelines post-exposure prophylaxis was recommended (Table) depending on the type of contact and category of exposure [1,2]. As it is known that children's recollection of exposure might be unreliable, all nine children were considered as having had a category III exposure. Casual petting on the street was categorised as category I exposure. No treatment was deemed necessary for these contacts.

As the investigations revealed no risk of rabies transmission to the general population, warning messages to alert the public were deemed unnecessary. Instead, an informative joint press statement by the PHS and NVWA was issued on 16 February describing the incident.

International public health action

The Clb/RIVM issued an EWRS (Early Warning and Response System) message to inform the Member States of the European Union about this incident.

Bilateral contact was established with Spain in order to facilitate contact tracing there. In Spain three known contacts were informed directly by the PHS. The couple's Spanish friend, considered to have category I exposure, had been previously vaccinated against rabies. Their Dutch friends, a category II and a category III contact, received treatment at a local hospital in Spain. As HRIG was not available locally, they returned to Amsterdam so that the category III contact

could receive HRIG the following day. The contact details of the Spanish veterinarian and a picture of the dog were provided to the Spanish EWRS contact point. Unfortunately, it was not possible to obtain additional information on the other contacts who stroked the puppy, nor on how many contacts were traced or vaccinated in Spain overall.

The Clb/RIVM established a bilateral contact with their counterpart in Morocco, providing them with the contact details of the veterinarian that had seen the dog prior to its departure. We have as yet no information on the actions taken there.

Veterinary action

The investigation revealed only few exposed animals. One dog and two cats were traced within 24 hours. The dog (imported from Greece in 2010 and vaccinated against rabies) received a booster vaccination. The two cats received vaccination on 15 February and quarantine was indicated. As a suitable quarantine place was not available, it was decided to euthanise both cats.

Conclusions

This is the first case of rabies (caused by the classical rabies virus) in domestic and/or wild animals in the Netherlands since 1988. The accidental import of a rabid puppy led to a resource-intensive and costly public health response. A total of 48 known contacts in three different countries needed to be traced, of whom 45 required post-exposure treatment. Including the imported dog, three animals were euthanised.

The owners tried to import the dog in a legal way, yet the international legislations were not followed properly by the consulted veterinarians in Morocco and Spain and customs in Spain and the Netherlands. In hindsight, the European dog passport was incorrectly issued by a Spanish veterinarian as, according to the EU legislation, dogs/animals from outside the European Union should be vaccinated for rabies and kept in quarantine for three months upon arrival [3,4]. Customs at three locations upon arrival and leaving in Spain and arrival in the Netherlands failed to check the vaccination status of the dog.

The NVWA is evaluating this course of events. Lessons learnt from the evaluation should be communicated internationally to urge veterinarians and customs departments to follow international legislation appropriately.

Veterinarians and customs officials across Europe should be aware of the risk of rabies importation by animals from within and outside Europe. Particular attention should be given to puppies under the age of three months, which must be vaccinated against rabies and consequently cannot be imported into Europe [3].

Illegal importation of animals from rabies-endemic countries outside the European Union probably occurs

TABLE

People exposed to the rabid dog and treated by PHS Amsterdam and/or AMC, the Netherlands, February 2012 (n=43)

Exposure category ^a	Treatment given	Number of exposed people
Category I	Not indicated	1
Category II	Vaccination	21
Category III	Vaccination and HRIG	21

HRIG: human rabies immunoglobulin; PHS Amsterdam: Public Health Service of Amsterdam; AMC: Academic Medical Centre.

^a Category I: touching animals, licks on intact skin; Category II: nibbling of uncovered skin, minor scratches or abrasions without bleeding; Category III: transdermal bites or scratches, (saliva from) licks on broken skin or on mucous membrane.

frequently. France reported nine illegally imported rabid puppies and dogs over the last ten years, of which seven were imported from Morocco [5,6]. Therefore the public should be made aware of the risks involved in bringing home a living souvenir, and of the rules and regulations governing such an action.

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