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## A Scratch With Hind Toes by Rabid Dog Causes Rabies- Some Case Studies

### KEYWORDS

rabies, scratch, intradermal antirabies vaccination, rabies immunoglobulins.

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**ABSTRACT** Rabies is a fatal disease of zoonotic origin. Every half an hour, a person dies in India due to rabies. This year, the author learnt of a death of a referred patient due to rabies. The patient was referred from Rampur in Shimla District of Himachal Pradesh, India. The patient was bitten on his lower lip and developed symptoms of rabies within two weeks of the bite by a rabid dog. Similarly, another patient who had a scratch by hind toes of a rabid dog on the right forearm, died of rabies after 14 weeks and 4 days (102 days) in 2009 in village Talai of Matiyana block of district Shimla. Therefore, size and site matters in rabies and it should not be neglected as incubation period varies from few days to months. Another important aspect is that one should not stitch the wound without RIGs infiltration as it can be life threatening to the patient. The wounds on the face or head region deserve special attention and care. Abrasions due to toes should not be neglected as they can also cause rabies because animals keep on licking their toes, soiling them with infected saliva.

### Introduction:

Rabies is a fatal disease of zoonotic origin. Every year 50,000 patients die of painful death due to rabies globally and 20,000 die of rabies in India only. People neglect animal bites thinking that a scratch cannot cause rabies or full treatment is not given to people who are bitten in the head region. Sometimes wounds in the head region are stitched without rabies immunoglobulins (RIGs) infiltration and can be life threatening to the patients. Three such case studies are described in this paper to make people and medical fraternity aware of the consequences of neglect in animal bite cases.

### Case Report 1:

In the year 2009, the author learnt of a death due to rabies in village Talai (7200 ft above MSL) of Matiyana block of district Shimla through a newspaper report and decided to investigate the death and contain the outbreak.

### Methods:

The death of the patient, 21 yrs old, was reported by a newspaper on Jan 25, 2009 and a rapid response team comprising the author, block medical officer and veterinary doctor, a female health worker and a driver was constituted on Jan 26, 2009, to investigate the death and initiate the containment through vaccination of human and dog populations. A line list of all the households and contacts of the patient, who died, was made along with the line list of dogs and cattle in the village.

**Results:** On investigation, it was found that the death was due to clinically confirmed rabies. 46 contacts were immunized with intradermal antirabies vaccination and all the three pet/ stray dogs in the village were vaccinated.

A dog had caused an abrasion with his hind toes on the right forearm of the deceased on Oct 15, 2008. The deceased developed symptoms of backache on Jan 21, 2009

and next day, he developed the symptoms of hydrophobia and died on Jan 25, 2009.

The incubation period was unusually long, 14 weeks and 4 days (102 days), and case fatality was 100%. The diagnosis was confirmed clinically as due to lack of lab support, the samples could not be taken for analysis.

There was disparity in reporting dogbite cases to higher institutions. While the search of records of the block hospital showed total dog bite cases to be 32 in the first quarter of 2009, the records of the single main health institution in the block showed the number of dog bite cases to be 98 and no death due to rabies was reported.

**Conclusions:** Lack of awareness regarding the fatality of even a scratch and no knowledge of wound wash and vaccination as the first aid to ward off rabies was the main reason for the death. Therefore, a poster was designed to be circulated throughout the state for creating awareness on the issue. A low cost intra-dermal clinic was started at the nearby health institution and the discrepancies in reporting dog bite cases and death were brought to the notice of higher authorities.

### Case Report 2:

In another case that was referred to Indira Gandhi Medical College (IGMC), Shimla from a distant civil hospital, a 32 years male who was bitten on the lower lip by a suspected rabid dog on September 5, 2014 developed rabies within 2 weeks of the bite. He was given all doses of rabies vaccine IM but RIGs were not available in the market. He succumbed to the disease later in the medical college, before he could be handled at our clinic.

While in case report 1, the patient died after a long incubation period of months, as there was a scratch in the forearm and more time may have been required by the

rabies virus to multiply locally and then ascend to CNS. In the case report 2, the patient died within two weeks of bite by a rabid dog in the lower lip. The patient was given rabies vaccine IM at Rampur in Shimla district of Himachal Pradesh, India. He was not given RIGs as RIGs were not available and also hospital did not insist on their use. Since the bite was cat III as per WHO definition and, moreover, it was in the head region, the hospital should have insisted on the use of RIGs. The situation further aggravated when the patient went to a private doctor and got his sagging lips, that were torn apart, stitched, which is totally contra-indicated in type III wounds inflicted by animals. On Day 14, the patient started developing hydrophobia and was referred to IGMC, Shimla where he died on third day after intensive care failed to revive him.

The attendants of the patient rued that if they could have been told about the necessity of RIGs, they could have arranged it from anywhere, but nobody told them that RIGs are essentially required. They were also furious that if the suturing of lip was contra-indicated, why the doctor did not tell this fact to them or to the patient?

**Case Report 3:** Another case having stitches inside the upper lip came to our clinic on January 13, 2015 bitten by a domestic dog. The lip was badly stitched from inside (**Picture 1**) and no vaccine or RIGs was given. The staff at the clinic removed the stitches and RIGs were infiltrated locally and vaccine was given intra-dermal. Though there was no need to remove stitches once they are there so as to not to disturb the wound further as the patient came to the clinic on day 3. However, RIGs can be given in and around stitches that are already there. Patient is being followed up further.

#### Lessons Learnt:

Size and site matters in rabies and should not be neglected as incubation period varies from few days to months together. Suturing animal bite wound can be fatal and equally fatal can be not cleaning the wound, not giving the rabies vaccine and RIGs. All type III wounds essentially require RIGs and not giving RIGs in such cases can be life threatening. Even scratch caused by toes can cause rabies and should not be ignored.

#### Picture 1:

**Stitches on the lip without RIGs infiltration-A bad practice in animal bite cases**



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