

# Neuropathy in Horse Bite

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## ABSTRACT

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A case of neuropathy complicating horse bite is presented. Neuropathy is reversible.

**Keywords:** Neuropraxia, Cytomegalo virus, Vascular stomatitis virus

\*See End Note for complete author details

## INTRODUCTION

Horse bites are usually playful nips that hurt a little, yet do not cause major problems. But some bites can cause serious injuries and infection by microorganisms. Bites apparently account for 3-4.5% of the approximately 100 000 annual emergency room visits in the US that is associated with horses. The authors of the paper review infections associated with bites and contact with organisms in the mouth and nose of horses.<sup>6</sup>

A large number of bacteria have been associated with horse bite infections in people, including *Actinobacillus*, *Streptococcus*, *Pseudomonas* and *Staphylococcus* species. Some viruses can theoretically be transmitted by bites, but there's little evidence that this actually happens.

Although viruses are not of as much of a concern overall, rabies needs to be considered in every bite from a mammal. We pay a lot of attention to rabies with dogs, cats and wildlife, but it often gets ignored with horses. While no reports of rabies transmission from horses to humans by a bite are available, it could happen. Fortunately, rabies is rare in horses so the likelihood of exposure from this species is very low. However signs of rabies aren't always obvious initially and rabies in horses may mimic other diseases. Sometimes, rabies looks like colic, and human exposure through bites or other contact is possible when handling, evaluating and treating affected horses.

There is no report that horse bites cause neuropathy. In this case, neuropathy is reversible.

## CASE REPORT

A 21 year old male who is a horse riding trainer, complains of numbness in medial side of the left palm and weakness of the muscles of two fingers of left palm after sustaining horse bite, two days ago. There was no history of numbness and muscle weakness in left palm before the horse bite.

**Examination** - There was a superficial bite mark of the size 3 cm x 1.5 cm on medial side of the forearm, 6 cm above the wrist joint. There was an area of hypoesthesia to touch on medial side of the palmar and dorsal area of left palm. He has developed mild weakness of interossei and lumbrical muscles of the little and the fourth fingers of left hand. He had difficulty to abduct and adduct these two fingers.

**Investigation** - Haemogram, Blood Sugar, Serum Creatinine, Blood urea, Lipid profile, Liver Function Test, Thyroid Function Test, Anti-Nuclear Antibody and Urine analysis were all within normal limits.

**Management** - Patient was already given Inj. Tetanus Toxoid 0.5 ml at the time of the bite. The wound was cleaned and dressed with povidone - Iodine 10% ointment. He was given a course of cefpodoxime in the dose 200 mg twice daily for seven days. He was also administered Inj. 2cc of liquid containing Mecobalamin 1000 mcg, Pyridoxine 100 mg. and Nicotinamide 100 mg. 1M, 10 injections on alternate days. When the injections were over, he was put on the capsule containing methylcobalamin 1500 mcg, Alphalipoic acid 200 mg, Inositol 100 mg and folic acid 1.5 mg, once a day for two months.

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Patient had remarkable recovery. The wound was healed. The hyposthesia disappeared and the muscles regained strength completely after one month.

## DISCUSSION

There is no history of numbness and muscle weakness in the left palm of the patient before horse bite. There were signs of involvement of proximal superficial part of ulnar nerve. It was due to a neuropraxia because of pressure effect on superficial part of the nerve. The neuropathy is proved to be reversible. Here the treatment accentuates the recovery of the nerve damage. There is no previous report of neuropathy complicating a horse bite.

There are reports that the secretions in horse mouth contain various microorganisms such as Herpes Simplex Virus, Cytomegalo Virus and Vascular stomatitis virus. They are transmitted to human body through horse<sup>1,2</sup> bite. A number of bacteriae such as *Rhodococcus equi*, *Staphylococcus*, *Pseudomonas* and *Serratia Rubdibacillus* are rarely transmitted through horse<sup>3,4</sup> bite. There is a report of anaphylaxis in patient sensitized to lipocalins after horsebite.<sup>5</sup>

## RECOMMENDATIONS

Attention to these points reduces the risk of disease transmission from bites and oral or nasal secretions of horses:

1. Use good general hygiene, especially hand hygiene, after any contact with horses.
2. Use gloves and gown or lab coat when examining horses in a veterinary clinic or hospital. (This might be overkill for all horses. We don't require gloves for every horse contact, just contact with mucous membranes (e.g. mouth, nose), wounds, incision sites and other high-risk areas. I think bare hands are fine for general contact as long as there is good attention to hand washing after.)
3. Consider mask and goggles if the horse is coughing or sneezing.
4. Develop standard operating procedures for handling sick horses.
5. Use isolation when needed.

6. Avoid bites. Pay attention to what you are doing around horses to reduce the risk of being bitten. Do not encourage playful behaviours (e.g. nipping) that could lead to bites.
7. If you are bitten and it breaks the skin, clean the site thoroughly with soap and water. If there is significant trauma, or if the bite is over a joint, hand, foot, or a prosthetic device, you should see a doctor immediately because antibiotics are most likely indicated. If you have a weakened immune system, you should be evaluated by a doctor after any bite.
8. Avoid contact with the horse's mouth or nose if you have skin lesions. Cuts and scrapes can allow bacteria to enter your body and cause infections. If you have a cut on your hand, make sure it is covered with a glove or waterproof dressing if you are going to have contact with the horse's mouth or something that came from its mouth (e.g. a bit).

## END NOTE

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**Conflict of Interest:** None declared

**Editor's Remarks:** Horse bites rarely cause severe injuries. This article describes a reversible neuropathy following a horse bite. No previous reports are available. This article comes from a non teaching centre.

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