

Tetanus Following Dog Bite

Sir,

The exact incidence of tetanus following bites is not known.⁽¹⁾ Fatality due to tetanus is 45–50% in developing countries.⁽²⁾ A fatal case of generalized tetanus following dog bite is presented. The diagnosis of tetanus has to be entertained in dog bite, in spite of the dogmatic impulse to attribute any neurological finding to rabies. Tetanus has no confirmatory laboratory tests and still remains a clinical diagnosis.

A 50-year-old agricultural laborer had presented to the surgical department with a history of dog bite to the (R) lower limb 14 days ago and inability to walk since 5 days, which was attributed to the wound on the leg. His non immunized pet dog had bitten him on provocation. The animal remained asymptomatic even after 2 weeks. He was not previously immunized against tetanus. On examination, the patient was alert and cooperative, febrile with 39°C, and the dog bite on the (R) leg was class 3 (dirty wound). There were no co morbid factors. He had diffuse spasm of limb and back muscles. He had no drooling of saliva or laryngeal spasm. Trismus was elicited by spatula test, which confirmed tetanus. The ability to drink liquids with a straw and the fact that the animal was alive, ruled out rabies. Serum creatinine was 2.8 mg/dl. He was treated with human immunoglobulin 5000 u intravenous and tetanus antigen 0.5 ml intramuscular on the opposite limb. Crystalline penicillin one million units intravenously every 6 h and metronidazole 500 mg intravenously every 8 h were given. Midazolam drip of 1–4 mg per hour, titrated against frequency of spasm, was given. The wound on the leg was 6 × 3 cm and involved the subcutaneous tissues, which was debrided and showed signs of healing with no clinical/culture evidence of pyogenic infection, but only contaminants being isolated. The frequency of spasm reduced and midazolam could be weaned successfully. On the 7th day of admission, he developed pneumonia and progressive ventilatory failure that needed mechanical ventilation. However, he died 15 days later due to multiorgan failure. Rabies would have been the first diagnosis in the setting of dog bite. Rabies was ruled out as patient could swallow and the dog was alive even up to 30 days (time from bite to patients' death). Phenothiazine toxicity is another possibility, but there was no altered sensorium. Strychnine poisoning was ruled out as there was no definite history of poisoning and the dog bite wound was significant (class 3).

Dog bite could lead to local wound infection, tetanus, or rabies that could come from either the saliva of biter, skin flora of victim, or the environment. *Pasteurella* is clinically the most important of the 38 bacterial isolates from dog bites.⁽³⁾ Only *Clostridium perfringens* has been isolated.⁽⁴⁾ We conclude the source of infection is from the environment in our case. The largest series on tetanus is from India of 8697 patients with not a single case due to animal bite.⁽²⁾ Literature search revealed a single incidence of dog bite where the clinical presentation was of frank tetanus with board like rigidity of back muscles, similar to our case and anti tetanus antibody before immunoglobulin was low. He was given levofloxacin, but not tetanus immunization⁽⁵⁾ and he recovered well. A single case of human bite leading to tetanus has been reported.⁽⁶⁾ In developing countries, only 55% of adults have serological immunity against tetanus.⁽⁷⁾ In any dog bite, the focus is on rabies prevention, which is well founded. But the possibility of tetanus should also be kept in mind. This highlights the need for active prophylaxis in all but the most trivial of wounds and passive prophylaxis in high risk wounds. Florid tetanus is very easy to diagnose, but the focus should be suspect the disease early which would be the very first step to avoid the high fatality. So healthcare personnel need to be aware of the atypical situations leading to tetanus (dog bite, as in our case) and atypical presentation of tetanus (primarily limb spasm as in our case) to avoid the fatality of this deadly disease.

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