Received: 12 October 2017 | Accepted: 18 December 2017

DOI: 10.1002/jgf2.153

IMAGES IN CLINICAL MEDICINE

Journal of General and Family Medicine Open Access WILEY

Tetanus without apparent history of trauma

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KEYWORDS: tetanus, trismus

Case: A 68-year-old man with dyslipidemia presented with a 7-day history of fever, neck pain, and progressive difficulty in opening his mouth. He denied history of trauma. He indicated that he grew vegetables in a field as his hobby. Physical examination revealed severe trismus (Figure 1A) and stiffness of sternomastoid muscles. There was no evidence of wounds. Laboratory findings were unremarkable except for leukocytosis and an elevated C-reactive protein level. His cerebrospinal fluid was clear, and its culture was negative. His blood cultures were negative. Computed tomography of the head and neck revealed normal findings. Based on the clinical presentations, tetanus was diagnosed. A total of 3000 units of intravenous human tetanus immune globulin and tetanus toxoid were administered, along with 10-day course of intravenous metronidazole. His symptoms were completely resolved in 14 days after the onset without upper airway obstruction (Figure 1B).

Tetanus is a nervous system disorder characterized by muscle spasms that are caused by the toxin-producing *Clostridium tetani* found in soils. Tetanus is a leading cause of mortality and morbidity in developing countries. However, the incidence of tetanus in developed countries is very low, at approximately 0.2 cases per million population,[1] because tetanus toxoid was introduced into the routine childhood immunization schedule. The incidence of tetanus in Japan is still higher than other developed countries: about 100 cases per year (0.9 cases per million populations).[2]

Tetanus is acquired mainly through accidental injuries, such as puncture wounds and burns. This case had no apparent portal of entry; there was no history of trauma, and no site was found on physical examination. However, this is not uncommon; no obvious entry site was reported in approximately 26% of cases in Japan.[3] The long incubation period of tetanus, usually in the range of 1-3 weeks, is one of the reasons that it may be difficult to identify the portal of entry.

Tetanus is regarded as life-threatening but preventable by active immunization with tetanus toxoid. It is reported that the leading risk factor for tetanus is inadequate immunization. However, tetanus cases

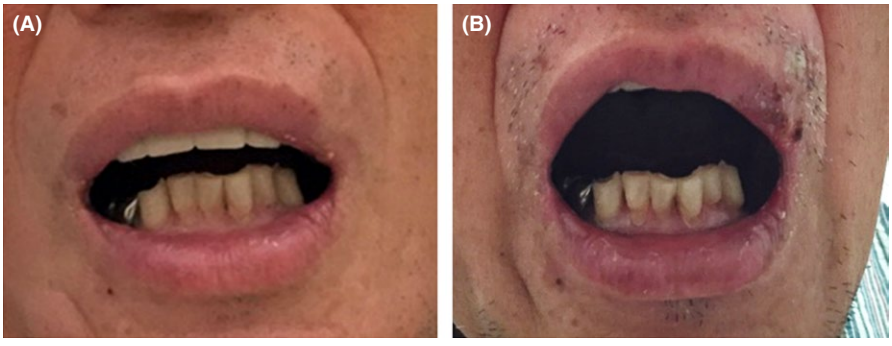

FIGURE 1 A, Clinical findings on admission. Trismus was observed. B, Trismus was completely resolved at the time of discharge

with a history of standard immunization and no apparent point of entry have also been reported.[4,5] The immunization history was unknown in the present case. In Japan, tetanus toxoid was introduced in 1968, so elderly adults who were born before 1968 have high risk of tetanus. Even if there were no evidence of trauma, it is important for clinicians to recognize tetanus as differential diagnosis at the first thought.

CONFLICT OF INTEREST

The authors have stated explicitly that there are no conflicts of interest in connection with this article.

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How to cite this article: Tomoda Y, Kagawa S, Kurata S, Nakatake N, Tanaka K. Tetanus without apparent history of trauma. *J Gen Fam Med*. 2018;19:61–62. https://doi.org/10.1002/jgf2.153