

# Generalized tetanus

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**A** 57-year-old man from the Philippines working as a ship captain was brought to the emergency department with a 1-day history of trismus and dysphagia. He had a 2-cm ulcerative wound (Figure 1) on his left elbow resulting from puncture with an iron bar 10 days earlier. To his knowledge, he had not received a tetanus vaccine. Physical examination was notable for masseter muscle stiffness and difficulty swallowing (Figure 2, Video 1, Appendix 1, available at [www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190161/-/DC1](http://www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190161/-/DC1)). We diagnosed tetanus.

After debriding the patient's wound, we infiltrated it with intramuscular human tetanus immune globulin. We administered a tetanus toxoid vaccination to his right arm, along with ceftriaxone (2000 mg loading dose followed by 1000 mg every 12 h) and metronidazole (500 mg every 6 h). Intermittent chest-wall spasm and profound diaphoresis developed the next day, requiring intubation for progressive dyspnea. In the intensive care unit, we treated the patient's intermittent tachycardia, hyperpyrexia and generalized muscle spasm with intravenous infusion of lorazepam and magnesium sulfate. The patient's condition improved slowly, and he was discharged from hospital 4 weeks later without neurological sequelae.

Tetanus is caused by tetanospasmin, a neurotoxin secreted by the anaerobe *Clostridium tetani*, which is found in soil and enters the human body via contaminated wounds, especially puncture wounds or burns. The diagnosis is clinical.<sup>1</sup> Tetanus is uncommon in developed countries because of routine immunization and wound care.<sup>1</sup> In Canada, susceptibility to tetanus increases with age. In a study of serum tetanus antitoxin levels among 710 blood donors in 1997, susceptibility rose from 9% among adults 20–30 years of age to 42% among those older than 60 years.<sup>2</sup> Modern advances in critical care have improved the survival rate, but prevention through immunization and wound care is fundamental.<sup>3</sup>

## References

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**Figure 1:** A 2-cm ulcerative wound with hyperemic margin on the left elbow of a 57-year-old man with generalized tetanus, before débridement.



**Figure 2:** Risus sardonius, the smile-like facial expression from contraction of the facial muscles, was evident on physical examination.



A video of the patient's masseter muscle stiffness and difficulty swallowing is available in Appendix 1, at [www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190161/-/DC1](http://www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190161/-/DC1)

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