

# Intractable Pharyngeal Spasm Following Tracheal Extubation in a Patient with Undiagnosed Tetanus

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Pharyngeal spasm with or without evidence of skeletal muscle spasm may be the presenting symptom in patients with tetanus.<sup>1-5</sup> In this paper we describe a patient in whom severe and intractable pharyngeal spasm followed tracheal extubation and in whom diagnosis of tetanus was delayed.

## CASE REPORT

A 56-yr-old woman developed severe dysphagia necessitating esophagoscopy. She also related mild pain and back stiffness and some difficulty with her dentures for about a week prior to the onset of dysphagia. A prior attempt at esophagoscopy during intravenous diazepam sedation was unsuccessful, and general anesthesia was requested. All laboratory examinations were normal, and a barium swallow suggested the presence of achalasia.

After morphine-promethazine preanesthetic medication, anesthesia was induced with thiopental, and after succinylcholine the trachea was intubated without difficulty. Anesthesia was maintained with 60% nitrous oxide and oxygen and 0.5–1.0% halothane and spontaneous ventilation. The anesthetic course, which lasted 30 min, was uneventful; afterward, following 100% oxygen breathing, the trachea was extubated. Shortly after tracheal extubation, upper airway obstruction occurred, followed by cyanosis and masseter spasm and an agitated appearance. Intense pharyngeal spasm prevented introduction of either an oral or nasal pharyngeal airway; however, following succinylcholine and tracheal intubation, ventilation and vital signs were normal. Two additional attempts at tracheal extubation were again accompanied by upper airway obstruction and pharyngeal spasm.

At this point, the preexisting history of back pain and neck stiffness was reassessed. Examination revealed evidence of a laceration over the right upper arm that apparently had occurred following a roadside accident 4 months earlier. Tetanus was suspected since the patient had not received either active or passive immunization against tetanus during the past 10–15 yr. During the next 3–4 days, the patient developed gross evidence of spasticity of all skeletal muscles and autonomic dysfunction. The patient recovered over the next 5 weeks, during which time mechanical ventilatory support, sedation, neuromuscular paralysis, and tracheostomy were required.

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## DISCUSSION

Unlike laryngeal and bronchial spasm, pharyngeal spasm is not initiated by local irritation and has not been previously described as a cause of airway obstruction after tracheal extubation in patients recovering from general anesthesia. Irritation of the tenth and eleventh cranial nerve nuclei is the only cause of pharyngeal spasm, and tetanus toxin (tetanospasmin) is known to cause irritation and damage of cranial nerve nuclei.<sup>6-8</sup>

Diagnosis of tetanus is usually made on the basis of clinical symptoms and, as in this case, there are numerous examples wherein diagnosis was delayed.<sup>9,10</sup> The distinctive features of tetanus and pharyngeal spasm in this case are: 1) dysphagia, as a prominent presenting symptom heralding trismus and "risus sardonicus"; 2) difficulty with lower esophageal motility, which is only rarely associated with tetanus<sup>3-5</sup>; 3) diagnosis of tetanus after an unusual episode of upper airway obstruction during recovery from anesthesia; and 4) intractable severe pharyngeal spasm triggered by laryngoscopy and extubation of the trachea.

Patients with previously undiagnosed tetanus may undergo anesthesia for reasons unrelated to the tetanus. Although the chance of such an occurrence is rare, that an episode similar to this might occur is a distinct possibility.

## REFERENCES

1. Weinstein L: Tetanus. *N Engl J Med* 289:1293–1296, 1973
2. Christensen NA, Thurber DL: Clinical experience with tetanus: 91 cases. *Staff Meetings of The Mayo Clinic* 32:146–158, 1957
3. Wang L, Karmody CS: Dysphagia as the presenting symptom of tetanus. *Arch Otolaryngol* 111:342–343, 1985
4. Watanabe H, Makishima K, Arima T, Mitsuyama S: Dynamics of swallowing in tetanus. *J Laryngol Otol* 98:953–956, 1984
5. Scholz DG, Olson JM, Thurber DL, Larson DE: Tetanus: An uncommon cause of dysphagia. *Mayo Clin Proc* 64:335–338, 1989
6. Baker AB: Medullary involvement in tetanus. *Am J Pathol* 19:707–717, 1943
7. Saltissi S, Hakin RN, Pearce J: Ophthalmoplegic tetanus. *Br Med J* 1:437, 1976
8. Wright EA, Morgan RS, Wright GP: Tetanus intoxication of the brain stem in rabbits. *J Pathol Bact* 62:569–583, 1950
9. Anonymous: The diagnosis of tetanus (editorial). *Lancet* 1:1066, 1980
10. Stoddart JC: Pseudotetanus. *Anaesthesia* 34:877–881, 1979