

## Case Report

### A Rare Case of Tetanus with Aspiration Pneumonia

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## Abstract

Tetanus is a rare bacterial disease caused by infection with clostridium tetani. Because of its rarity in developed world many of the current generation of clinicians can be unfamiliar with the disease. Here we are sharing our experience regarding a case of tetanus we have come across. A 58-year-old male presented with 1-month history of difficulty in walking and stiffness in all 4 limbs. His chest x-ray showed non homogenous opacities in right lower zone. Patient was admitted to ICU in view of low O<sub>2</sub> saturation and low GCS, and kept on mechanical ventilation. He was kept in a dark environment with minimal disturbances. After tracheostomy was done his O<sub>2</sub> saturation has improved. Increased secretions were managed by regular suctioning and anticholinergics. Patients condition gradually improved and spasms have stopped after 6 weeks, O<sub>2</sub> saturation was maintaining on room air and with eye opening spontaneously. Tracheostomy tube was removed after shifting out of ICU.

**Keywords:** Tetanus, muscle spasms, muscle relaxants, tetanus toxin

## Introduction

Tetanus is a rare bacterial disease caused by infection with clostridium tetani. It is most commonly seen in developing countries. Low vaccine coverage plays an important role in disease causation.<sup>1</sup> Spores of this gram-positive anaerobic bacilli are resistant and can survive in soil for longer duration. During injury these spores enter into body, bacteria multiply in wounds under anaerobic conditions and produce tetanus toxin. This toxin enters nervous tissue and cause disease manifestations.<sup>2</sup>

## Case History

A 58 years old male Patient was brought with history of injury to his left leg 40 days back. 20

days following injury he developed difficulty in walking, speaking and swallowing which are sudden in onset, and rapidly progressive. He experienced giddiness and had a fall. There is history of loss of consciousness. History of previous vaccination is not available.

Patient consulted a local doctor who referred him to another hospital where he was admitted for 3 days after which he got discharged against medical advice. His attenders admitted him in another hospital for 10 days after getting discharged. He was given tetanus immunoglobulin in this hospital. As patients condition deteriorated his attenders got him discharged and brought him to our center for further treatment. He is a known smoker for 30 years. His vitals are - Pulse: 112 b/min, RR: 30cpm, Blood pressure: 120/70 mmHg.

On auscultation bilateral normal vesicular breath sounds with infra-axillary and interscapular area crepitations are heard. His GCS is 3/15. Spasticity is present in all extremities.

## Investigations

Hemoglobin: 14.5gm/dl, TLC: 23.68 Thousands/cumm  
Blood Urea: 47mg/dl, SC: 0.9mg/dl  
Random blood sugar : 117mg/dl, Sodium: 136mEq/l,

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Potassium: 4.9mEq/l, Magnesium: 2.5mEq/l  
 HIV & HbsAg – Non-reactive  
 Blood culture: no growth after 7 days  
 Endotracheal aspirate culture & sensitivity: Isolated-  
 1. pseudomonas aeruginosa  
 2. Klebsiella species  
 ECG: Sinus tachycardia  
 CXR: Non homogenous opacities in right lower zone

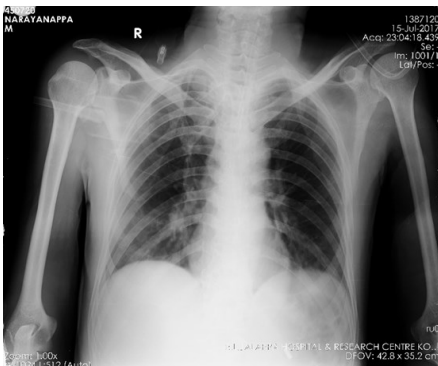
### Course

Patient was admitted to ICU in view of low O<sub>2</sub> saturation and low GCS. He was intubated, and was kept on mechanical ventilator support. As the patient is having spasms, he was kept in a dark environment with minimal disturbances. After tracheostomy was done his O<sub>2</sub> saturation has improved. Increased secretions were managed by regular suctioning and anticholinergics.

He was treated with parenteral antibiotics, benzodiazepines, muscle relaxants, physiotherapy and DVT prophylaxis. Patients condition gradually improved and after 6 weeks his spasms have stopped completely, his O<sub>2</sub> saturation was maintaining on room air and he was opening eyes spontaneously. He was shifted out of ICU. As the patient's condition has improved tracheostomy tube was removed.



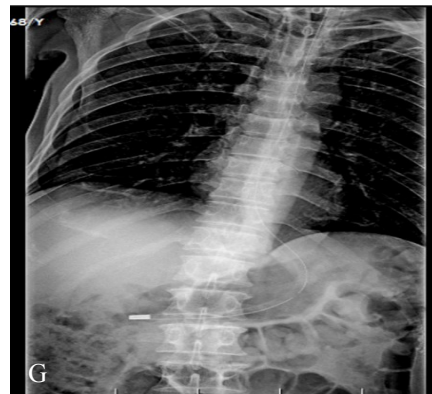
**Figure A :** 2 ½ months following admission, after removal of tracheostomy tube



**Figure B :** Chest x ray (AP view) showing non homogenous opacities in right lower zone



**Figure C,D,E,F :** X-rays of cervical, lumbar and thoracic spine to rule out tendon avulsions and crush fracture due to muscle spasms.



**Figure G :** Repeat chest x-ray showing clearance of Opacities.

### Discussion

Tetanus is an acute disease presenting with repeated muscle spasms and autonomic disturbances.<sup>2</sup> It is a rare bacterial disease caused by infection with clostridium tetani. It is most commonly seen in developing countries.<sup>1</sup> Spores of this gram-positive anaerobic bacilli are resistant and can survive in soil for longer duration. During injury these spores enter into body, bacteria multiply in wounds under anaerobic conditions and produce tetanus toxin, tetanospasmin. This toxin travels intra-axonally to reach motor nuclei of cranial nerves and horn of spinal cord where it blocks inhibitory interneuron discharge. Increased

activation of motor nervous system is responsible for various cause disease manifestations.<sup>2</sup>

These patients are better managed in quiet and dark environments. Autonomic disturbance in these patients manifests in the form of fluctuations in heart rate, blood pressure, increased sweating and increased tracheal secretions.<sup>1</sup> Trismus, muscle pain and stiffness, back pain, and difficulty in swallowing are the commonest initial manifestations.<sup>3</sup> With prompt intensive care management mortality can be reduced from 45% to 15%.<sup>4</sup> Because of the rarity of the disease in developed world many of the current generation of clinicians can be unfamiliar with the disease manifestations. Administration of antitoxin, sedatives, muscle relaxants and ventilatory or tracheostomy care are required for treating patients of tetanus.<sup>5</sup>

### **Conclusion**

Early recognition and longer intensive care management may be required in cases of tetanus. Vaccination coverage and giving tetanus immunoglobulin as soon as possible should never be overlooked. Despite poor prognosis and prolonged hospitalization, complete recovery can be achieved in the survivors of this disease.

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