

## Tetanus Presenting with Back Pain

Unluturk Z\*, Erdoğan C and Kutlu M

Pamukkale University Faculty of Medicine

\*Corresponding author: Unluturk Z, Pamukkale University Faculty of Medicine, Tel: +905366690290, E-mail: zeynepunluturk@gmail.com

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### Abstract

Tetanus is caused by *Clostridium tetani*, which one of its toxins, tetanospasmin is the cause of clinical symptoms. The incubation period is generally 3 days to 3 weeks. The clinical severity is due to the amount of toxin and the neural distance to reach the neuronal body.

The clinic outcome may be localized, generalized and cephalic which can be mild to severe. Trismus, risus sardonicus, dysphagia, abdominal rigidity and opisthotonos can be a part of clinical picture in generalized form.

Here we report a case who previously admitted several clinics with back pain which was resistant to analgesic drugs.

**Keywords:** Tetanus; Back pain; Muscle Spasm; Trismus

### Introduction

Tetanus is caused by *Clostridium tetani*, a Gram-positive bacillus, which one of its toxins, tetanospasmin is the cause of clinical symptoms. The incubation period could be 3 days or 3 weeks. The clinical severity is relevant to the amount of toxin and the neural distance to reach the neuronal body.

By retrograde axonal transport, tetanospasmin reaches to presynaptic inhibitory neuron where it blocks the release of inhibitory mediators and cause excitatory effect. This exotoxin affects interneurons inhibiting alpha motor neurons first and pre-ganglionic sympathetic neurones later. The clinic outcome may be localized, generalized and cephalic which can be mild to severe. Trismus, risus sardonicus, dysphagia, abdominal rigidity and opisthotonos can be a part of clinical picture in generalized form.

Even tetanus is a rare disease in the developed countries, it maintains to be a major cause of death worldwide and is associated with high mortality, especially in developing countries. Since the elderly constitute the majority of the population in developed world, tetanus still is in the disease group that needs attention. Typical and dramatic clinical picture of this disease makes it seem easy to diagnose, but sometimes it may present with atypical forms. Cause of common vaccination, tetanus incidancy has decreased so it has become a rare disease in Turkey. Therefore, the diagnosis sometimes could be hard if it not come to mind.

The aim of this case report is to point out that if a common complaint such as muscle spasm is resistant to treatment, it may be a sign of a serious disease such as tetanus.

### Case History

A 59-year-old man admitted to our outcome neurology clinic with back pain in recent 2 weeks. His pain was intermittent, and was becoming more frequent and severe as the time goes on. For the last couple of days, he also had pain in his chin.

He had a history of trauma in his left thumb 18 days ago which caused local swelling and rash. He did not consider the wound serious enough to seek medical treatment, but the wound was not healed. His left thumb was red, swollen and had a scab. The wound was oozing pus.

His medical history revealed hypertension and diabetes. He had no idea about his tetanus vaccination history.

His medical examination demonstrated intermittent muscles spasms in his back and masseter muscle which could also be triggered by external stimulus.

The needle electromyography has demonstrated muscle activity while he defines pain and fotic/auditory stimulation has increased this activity.

With the suspicion of tetanus, he was redirected to infectious disease department where he had 500 IU intramuscular tetanus immunoglobulin and vaccination. The patient was informed and confirmed for all procedures. He was isolated from noise and light. Intravenous benzodiazepine was given for the muscle spasms. He was discharged after 2 weeks with complete resolution of symptoms.

## Discussion

Tetanus generally has a specific and dramatic clinical picture which may be mortal. Nowadays it is common to have Tetanus booster vaccination. Tetanus vaccine is included in the infant vaccination schedule, and young women are had booster dose during pregnancy. Also, an additional dose of vaccination is administered if one shows up with a dirty wound to the emergency room and doesn't know vaccination history. With the help of this vaccination policy tetanus became a rare disease. However, the ones who had no vaccination or the ones in whom the immunity of vaccination lessened (elderly, the ones with last vaccination more than 10 years ago) are under risk.

Tetanus generally follows an injury that patient recognise. Wounds are contaminated with soil, human/animal feces, or rusty metal. After the incubation period, the neurotoxins decrease the release of inhibitory mediators and cause excitatory effect [1,2]. Clinical severity is depended on the amount of toxin and on the duration of reaching neuronal body [2].

Localized, generalised and cephalic forms could be observed. The clinic can take many forms mild to severe. The most common form of tetanus is generalized form which muscles throughout the body are affected. Our patient had a generalised moderate form which caused back pain due to muscle spasms and masseter rigidity resulting trismus. He did not need ventilatory support in follow up.

For the ones in whom the toxins did not thought to reach central nervous system, 500 IU human Ig is recommended for immunization [3,4]. Also, benzodiazepines are recommended for muscle spasms. [5] Our patients clinical symptoms responded to treatment and spasms completely resolved in his follow up.

Tetanus is a rare disease, which generally cause a typical clinical. Diagnosis is important because the disease could be mortal. But sometimes it may have atypical outcomes as it is in our patient [6,7]. Back pain was reported to be the presenting symptom of generalised tetanus as it is in our patient [7]. So, the diagnosis must be kept in mind in patients suffering from intermittent back pain. Although there are similar case reports in the literature, our case is one of a few [5-7].

Back pain and muscle spasms are such common complaints that anyone can experience once in a lifetime. Since the patient can apply to many different clinics such as general practitioner, physical therapy and rehabilitation, orthopedics.etc with this complaint, it is important that the physician be awake and guiding the patient correctly. On the basis of this case, we recommend tetanus workup in a patient presenting with an unusual onset of back pain and a recent history of injury/laceration.

## Conclusion

Tetanus is a fatal disease that may present a common clinical symptom, such as back pain. This case is presented with the aim of bringing Tetanus to clinicians' mind and giving treatment without delay, especially in intermittent spasms that continue despite treatment.

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