

CASE REPORT

A Case of Tetanus from Urban Slum of Latur City

Vidyadevi Kendre¹, Milind Davane², Shyam Kulkarni¹, Shital Hawanna¹, Saurabh Saraf¹,
Basavraj Nagoba^{2*}

¹Department of Pediatrics, ²Department of Microbiology, Maharashtra Institute of Medical Sciences
and Research, Medical College, Latur-413531 (Maharashtra) India

Abstract:

Tetanus remains an important health problem, particularly in the developing world. We report a case of 8-year old unimmunized female child from an urban slum of Latur city, who presented with the typical symptoms of tetanus clinically following injury to right great toe. The clinical diagnosis of tetanus was confirmed microbiologically and case was treated successfully with anti-tetanus regimen. The results indicate that the awareness regarding immunization is not yet rooted well in urban areas also, especially in slum areas and hence, cases of tetanus can be reported from urban areas also.

Keywords: Tetanus, Immunization, Awareness, Urban Areas

Introduction:

Tetanus is an acute and potentially fatal muscle spasm disease caused by *Clostridium tetani*. It has been reported to be an important public health problem in rural and tribal areas of developing world [1-3]. Since the implementation of the vaccination program in 1961 there has been a significant decline in the number of cases of tetanus in developed countries [4] and hence, it has become very rare clinical entity in most of the affluent countries [5]. In developing countries also, its incidence has been declined dramatically because of increased coverage of immunization, especially in urban areas, where there is effective implementation of the immunization programme. However, in rural/tribal areas, where there is less

realization of importance of immunization by population, tetanus still exists [6] and the isolated tetanus cases are frequently reported from developing countries, including India, particularly in non-immunized and inadequately immunized individuals from rural/tribal areas [1-3, 7-9]. Although frequently reported from rural and tribal areas, it is considered to be extremely rare in urban India. In the present study we report a case of tetanus in an unimmunized child from an urban slum of Latur city.

Case Report:

A 8 year old female child brought by parents with complains of fever since 4 days, difficulty in opening the jaw since 2 days, cough, neck stiffness and abdominal pain since 1 day. There was no history of vomiting, loose motions, headache, convulsions and loss of consciousness. She had history of injury to right great toe associated with bleeding 4 days back. She had not received any immunization till date and she was not given injection Tetanus Toxoid (TT) after the injury. On examination, she was found well oriented but irritable with heart rate of 130/min, respiratory rate of 40/min and blood pressure 100/60 mm of Hg. Physical examination also revealed the presence of trismus and neck rigidity. However, no cyanosis, clubbing, pallor, icterus, lymphadenopathy or edema was seen. On systemic examination, she

was found irritable and drowsy, and also found to have bilateral crepitations, generalized abdomen tenderness and tachycardia. On investigations, her hematological parameters were within normal limit. Blood sugar and electrolyte levels were normal. Examination of cerebrospinal fluid and MRI brain showed normal findings. However, X-ray chest showed bilateral haziness in both lung fields. Based on typical clinical findings and taking into consideration the history of no immunization, she was clinically diagnosed as a case of tetanus and treated accordingly. Before initiating the treatment for tetanus a pus swab from depth of wound was collected with the help of cotton swab in a Robertson Cooked Meat (RCM) broth and transported to microbiology laboratory for further processing. Gram stained smear of RCM after incubation for 2 days at 37°C revealed the presence of Gram positive slender bacilli with terminal bulging spores showing drumstick appearance typical of *Clostridium tetani* confirming our clinical diagnosis. As a part of treatment she was given injection TT, anti-tetanus serum (1000 IU), injection metronidazole QDS for 7 days and, inj. amoxicillin+clavulanic acid QDS for 7 days. Inj midazolam was given to control spasms for 3 days which was followed by oral diazepam for 1 week. With this treatment, she was able to walk slowly after 2 weeks. She was discharged after 4 weeks with regular weekly follow up for 2 months.

Discussion:

Tetanus is a disease that occurs following wound contamination by spores of *Clostridium tetani*. Spores at infection site germinate to form vegetative bacilli, which multiply by producing neurotoxin that fixes gangliosides of grey matter thereby blocking synaptic inhibition in the spinal cord and causes muscle rigidity and spasms [10].

Although tetanus is a very rare clinical entity in the developed world, it remains an important public health problem in developing world, especially in rural/tribal areas where the importance of immunization is not yet much realized because of lack of awareness, lack of education, superstition, etc. Hence, isolated cases of tetanus are still reported from rural and tribal areas of developing world [1-3, 7-9, 11] but the cases of tetanus from urban area have been rarely reported in recent past. The increased awareness regarding immunization in urban population and effective implementation of immunization programme in urban areas could be the reason for extreme rarity of cases of tetanus. However, in the present study we found a case of tetanus in non-immunized child from an urban slum of Latur city indicating that in spite of effective implementation of immunization programme by healthcare system, awareness regarding immunization is not yet rooted well in urban areas also, especially in slum areas of cities from developing countries. Hence, cases of tetanus can occur not only in rural and tribal areas but also in slum areas of cities.

References

1. Lodha R, Sareen A, Kumar RM, Arora NK. Tetanus in immunized children. *Indian Pediatrics* 2000; 37:223-24.
2. Gibson K, Bonaventure UJ, Kiviri W, Parlow J. Tetanus in developing countries: a case series and review. *Can J Anaesth* 2009; 56: 307-15.
3. Alagbe-Briggs OT, Tinubu SA. Tetanus - a case report with severe autonomic instability and: a review of the literature. *Niger J Med* 2012; 21(3):353-356.
4. Sanford JP. Tetanus – forgotten but not gone. *N Eng Gen Med* 1995; 332(12):812-13.
5. Cook TM, Protheroe RT, Handel JM. Tetanus: a review of the literature. *Br J Anaesth* 2001; 87:477-87.

-
6. Nagoba BS, Jahagirdar VL, Sheikh NK. Tetanus is not the past – It still exists. *J Patient Safety Infect Control* 2016; 4(1):25.
 7. Chang SC, Wang CL. Neonatal tetanus after home delivery: report of one case. *Pediatr Neonatol* 2010; 51:182-5.
 8. Njiki Kinkela MN, Nguefack F, Mbassi Awa H, Chelo D, Enyama D, Mbollo Kobela M, Koki Ndombo PO. Tetanus in older children in a pediatric hospital in Yaounde, Cameroon. *Pan Afr Med J* 2012; 11:37.
 9. Marulappa VG, Manjunath R, Mahesh Babu N, Maligegowda L. A ten year retrospective study on adult tetanus at the epidemic disease (ED) hospital, Mysore in Southern India: a review of 512 cases. *J Clin Diagn Res* 2012; 6:1377–80.
 10. Nagoba BS, Pichare AP. Medical Microbiology Prep manual for undergraduates, 3rd ed. New Delhi: Elsevier 2017:285.
 11. Madhu G, Sheikh N, Shah P, Mehetre G, Dharne MS, Nagoba BS. Detection of *Clostridium tetani* in human clinical samples using *tetX* specific primers targeting the neurotoxin. *J Infect Public Health* 2015; 9:105-9.
-

**Author for Correspondence: Dr. B. S. Nagoba, Assistant Dean (Research & Development), Maharashtra Institute of Medical Sciences & Research, Latur-413 531, India
Email: dr_bsnagoba@yahoo.com, bsnagoba@gmail.com Cell: 9423075786*