

Post-operative tetanus following recto-sigmoidal carcinoma surgery: A case report

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ABSTRACT

Tetanus is often seen as either neonatal tetanus or adult cases of tetanus. Rarely tetanus has been reported in postoperative patients as well. We report a case of post-operative tetanus following recto-sigmoidal carcinoma surgery in a labourer in North India. Since the diagnosis is mainly clinical, so high index of suspicion should be borne in mind regarding presentation after surgery. Early diagnosis helps in instituting treatment to neutralize the toxin thus leading to good prognosis of an otherwise fatal disease.

Keywords: Gastrointestinal surgery, Post-operative, Rectosigmoidal, Tetanus

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INTRODUCTION

In India, tetanus is endemic and still remains an important public health problem. Tetanus is also called as “inexcusable disease” as it is preventable in all the patients. The incidence of the disease has been decreasing throughout the world, mainly due to effective immunization programs [1, 2]. India has reached its goal of eliminating maternal and neonatal tetanus, in what experts have heralded as a “significant public health milestone” [3]. Tetanus is the only vaccine-preventable disease that is non-communicable acquired through the exposure to the anaerobic spore forming bacterium *Clostridium tetani*. The manifestation of disease is due to the tetanospasmin toxin produced by the bacillus. The bacillus is found in soil, hospital environment and intestines of humans and animals. Exogenous traumatic implantation of spores is the most common method of acquiring the disease [4]. However, tetanus is known to occur post-operatively also mainly after gastrointestinal surgery [5, 6]. The exact incidence of non-neonatal tetanus in India is not known.

An unusual case of generalized tetanus in an adult following surgery for recto-sigmoidal carcinoma. The presentation emphasizes the awareness regarding the occurrence of disease post operatively and also importance of tetanus vaccination.

CASE REPORT

A 39-year-old male presented to outpatient department with complaints of constipation for four months. Initially patient used to pass stools every alternate day, then the frequency of passage decreased and the amount of stool also decreased with hard and dry faeces and feeling of incomplete evacuation. This

was associated with intervening episodes of diarrhea, bleeding per rectum and tenesmus. No past history of diabetes, hypertension, tuberculosis, epilepsy and surgery was found. Patient was a non-smoker and non-alcoholic. Contrast enhanced computerized tomography showed nodular increased mucosal thickening in rectosigmoid junction with mild luminal narrowing with pericolic and perirectal mesenteric fat stranding suggestive of malignancy. Sigmoidoscopy was done and there was a growth at 16 cm from anal verge from which biopsy was taken and which showed signet ring cell adenocarcinoma. On complete evaluation patient was diagnosed with carcinoma rectum. Patient was prepared for surgery and low anterior resection with proximal diversion loop ileostomy was made. On post-operative day (POD) 3, patient had fecal discharge in pelvic drain. Drain output on post-operative day four and five was 200 ml and 150 ml respectively. On post-operative day six, patient started having episodes of inability to open mouth i.e lock-jaw. Patient was evaluated for hypocalcemia and ionized calcium and serum calcium were measured and were found to be normal. Lock jaw (Trismus) as shown in Figure 1, later on progressed on the same day with involvement of both upper and lower limbs with involuntary generalized tonic and periodically spastic muscular contractions without loss of consciousness or amnesia (Figure 2). The clinical opinion was sought from the medicine department and a presumptive diagnosis of either focal seizures from brain metastasis or tetanus was kept. Non-contrast computed tomography (CT) of brain parenchyma was done and was grossly normal. Based on the symptomatology, progressive nature of disease and previous history of the patient, i.e., labourer with no history of any immunization in past, patient was suspected to be having tetanus.



Figure 1: Lock jaw (trismus) in the patient.



Figure 2: Muscular rigidity can be observed.

Considering the severity of disease and poor prognosis associated with it, patient was given 5000 units of tetanus immunoglobulin (TIG) intramuscularly and patient was shifted to isolation ward. Airway protection was done to prevent respiratory complications and oxygen inhalation was started. Then, IV diazepam and metronidazole were started. Blood sample for tetanus antibody detection and stool for microscopy was sent. Following this, patient became asymptomatic, however he complained of some weakness. He was kept under observation until fifteenth post-operative day after which he was discharged. Patient visited the outpatient department after four weeks of surgery and he had recovered well without any neurological sequelae.

DISCUSSION

The incidence of tetanus has decreased in countries that follow strict childhood immunization schedules. India has also eliminated tetanus, a disease that was once responsible for 15% of neonatal deaths in the country [7]. Tetanus is often seen as either neonatal tetanus or adult cases of tetanus. Tetanus occurs after germination of the spores and subsequent production of a potent neurotoxin by the organism. The anaerobic conditions in the wound

tissues favour the growth and replication of spores of *Clostridium tetani*. The germination of spores occurs when there is presence of ischemia, devitalized tissue, coinfection, and injury from penetration of foreign body. Tetanus also has been reported in postoperative patients, intravenous drug users, patients receiving intramuscular injections, and patients with gangrene or burns [8].

Postsurgical tetanus is a recognized entity though a rarity. The disease usually occurs due to contamination from the patient's own intestinal tract as *Clostridium tetani* is present in intestines of humans and animals [9]. Tetanus has been reported in patients who had recently undergone various gastrointestinal surgeries [6]. In gastrointestinal surgical procedures, presence of ischemic or devitalized tissues permit proliferation of *Clostridium tetani* and subsequent toxin production. Following replication there is expression of the genes encoding the tetanus toxins, neurotoxin, and tetanolysin; leading to clinical presentation of the tetanus i.e., typical symptoms of disease such as rigidity and severe muscular spasm [10]. The most common presenting complaints are tonic muscle contractions in patients followed by lock jaw or trismus, rigidity in the neck and limbs, dysphagia, restlessness, or reflex spasms. Muscle rigidity begins later in the course of the disease and typically involves the jaw and facial muscles and then spreads to the muscles of the limbs. Patients with tetanic seizures remain conscious but experience severe pain.

The point which needs to be highlighted here is that keeping high index of suspicion in diagnosing the condition early following abdominal surgery is of utmost importance. Though tetanus is a very rare complication of surgery but if not kept as one of the differential diagnosis in a post-operative case with seizures, it can prove to be fatal.

CONCLUSION

Postoperative tetanus after a gastrointestinal surgical procedure is uncommon and has not been reported in Indian literature till now. The report also highlights the importance of vaccination against tetanus and also proper history of immunization of the patients before gastrointestinal surgery.

REFERENCES

1. Vandelaer J, Birmingham M, Gasse F, Kurian M, Shaw C, Garnier S. Tetanus in developing countries: An update on the maternal and neonatal tetanus elimination initiative. *Vaccine* 2003;21(24):3442–5.
2. World Health Organization. The World health report 2003: Shaping the future. World Health Organization; 2003. [Available at: <https://apps.who.int/iris/handle/10665/42789>]
3. Cousins S. India is declared free of maternal and neonatal tetanus. *BMJ* 2015;350:h2975.

4. Murray PR, Baron EJ, Jorgenson JH, Pfaller MA, Tenover FC, Tenover FC. *Manual of Clinical Microbiology*. Washington, DC, USA: ASM Press; 2005. p. 406–9.
5. Dhalla S. Postsurgical tetanus. *Can J Surg* 2004;47(5):375–9.
6. Fleshner PR, Hunter JG, Rudick J. Tetanus after gastrointestinal surgery. *Am J Gastroenterol* 1988;83(3):298–300.
7. Annadurai K, Danasekaran R, Mani G. Elimination of maternal and neonatal tetanus in India: A triumph tale. *Int J Prev Med* 2017;8:15.
8. Richardson JP, Knight AL. The management and prevention of tetanus. *J Emerg Med* 1993;11(6):737–42.
9. Meyer KA, Spector BK. Incidence of tetanus bacilli in stools and on the regional skin of one hundred urban herniotomy cases. *Surg Gynecol Obstet* 1932;54:785–9.
10. Procop GW, Church DL, Hall GS, Janda WM, Koneman EW, Allen SD, Schreckenberger PC, Woods GL, editors. *Koneman's Color Atlas Color Atlas and Textbook of Diagnostic Microbiology*. 7ed. Philadelphia: Wolters Kluwer; 2017.

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Authors declare no conflict of interest.

Data Availability

All relevant data are within the paper and its Supporting Information files.

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