Tetanus after induced abortion — a case report

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Summary

A case of tetanus occurring after induced abortion is reported. The patient gave a history of low grade fever with chill and rigors, headache, neck pain and Trismus. She subsequently developed respiratory distress. However, incorrect information from the patient resulted in the delay to locate and eradicate the source of infection. Early referral to an intensive care unit for ventilatory assistance was the most appropriate step to save the patient. Complications which occurred during the course of the disease were sometimes difficult to overcome. These complications were probably related to the duration of stay in the intensive care unit. Their incidence could be reduced by more meticulous patient care.

Key words: Tetanus, induced septic abortion.

Introduction

Tetanus is an acute, often fatal disease caused by an extremely potent neurotoxin produced by Clostridium tetani[1,2,3]. This organism is ubiquitous and its occurrence in nature cannot be controlled. The disease still represents a serious health problem in developing countries and still carries high morbidity and mortality[2,4,5,6]. This high morbidity and mortality have been related to the lack of specific therapeutic measures and orderly intensive patient care plans. Immunisation is highly effective, provides long lasting protection and is recommended for the whole population[2,3,7,8]. Tetanus usually occur as a complication of minor trauma.[2,3] It results from direct innoculation with Clostridium tetani, an anaerobic Gram-positive bacillus. The spores are found in faeces and dust especially in hot damp climates and in soil rich in organic matter. However tetanus may follow elective and emergency surgical procedures.[3] Tetanus has been reported as a complication by gynaecological surgery,[9] dental procedures[10] and a number of gastrointestinal operations[11–17]. Systemic manifestations of the infection are mediated by the effect of exotoxin (tetanospasmin) on the central nervous system. This toxin is distributed through out the body in the blood stream and is taken by peripheral endings of motor neurons, sensory and autonomic fibres.[18] The toxin reaches the central nervous system by intra axonal retrograde transport.[19] Tetanospasmin is postulated to cause disinhibition of the sympathetic nervous system.[1]

Case Report

A 29 year old female, with no history of tetanus immunisation, was admitted to a medical ward for management of tetanus. She had a one week history of low grade fever with chill and rigors and a two day history of neck pain and trismus. She was a widow with two children and her last menopausal period (LMP) was two weeks prior to admission. Previous medical history was insignificant.

On admission she was conscious and rational but febrile 38°C. She had mild trismus and stiffness in the back. No obvious recent external injuries or wounds were noted. Her vital signs were stable. A clinical diagnosis of tetanus was made. Antitetanus toxoid (ATT) 1 ampule (0.5 ml) and Tetanus Immunoglobulin Human (TIG) 5000 units were given intramuscularly; and chlorpromazine 50mg 6 hourly by intravenous injection was commenced. An intravenous infusion of diazepam started at a rate of 4 mg per hour resulted in considerable reduction in her muscle tone. She was nursed in a dark room and did well for three days. On the fourth day of admission, she developed respiratory distress and dysphagia. She also had increasing generalised muscle spasms. The arterial blood gases showed acute respiratory failure. The patient was then referred to an intensive care unit (ICU) for elective ventilation. In ICU, the patient was paralysed with d-tubocurarine 30mg I.V. and nasotracheal intubation was performed using a 7.5mm nasotracheal tube without difficulty. Controlled ventilation was indicated in this case and muscle relaxation was provided by top up doses of d-tubocurarine. She was put on crystalline penicillin 2 mega unit I.V. 6-hourly, gentamicin 60mg I.V. 8-hourly and metronidazole 500mg I.V. 8-hourly. Good control of spasms and sedation were achieved with diazepam infusion at rate of 10mg per hour. The patient remained febrile (low grade) until the third day of ICU admission, when her temperature went up to 39°C and foul smelling discharge was noted by the intensive care nurse. The source of discharge was found to be from the vagina. The patient was subsequently referred to the obstetrician and gynaecologist for further examination. A diagnostic dilatation and curretage (DD & C) was performed under general anaesthesia. The findings were: uterus 12 week size with tubular cervix and opened os. On curretting there were multiple sharp and small bamboo sticks (1 to 2 cm in length) tied together with threads, presumably broken during induced abortion. Our impression was tetanus following septic abortion. The patient had persistent fever and a repeat DD & C was performed. The antibiotics were changed to cefoperazone 1 gm I.V. 12-hourly and metronidazole 500 mg I.V. 6-hourly. She remained febrile for one week. During this time she developed upper lobe collapse – consolidation and pleural effusion. Her vital signs remained stable. Tracheal aspirate revealed methicilin resistant Staph aureus and only sensitive to rifampicin and fucidic acid. Subsequently she received these two new antibiotics. The temperature started settling down the next day. She was in ICU for five weeks and was finally discharged well.

Discussion

Clostridium tetani is not an invasive organism. The infection remains localised in an area of low oxygen-reduction potential into which spores have been introduced.[3] The presence of low oxygen, necrotic tissue and foreign bodies favour the organism to multiply.[3] The diagnosis of tetanus is usually made from clinical signs rather than laboratory investigations and the best management is a team approach in the intensive care unit. Tetanus after induced abortion begins with the use of unclean instruments. In this patient, bamboo sticks were used to induce abortion by traditional means. Multiplication of the organism is facilitated by the presence of devitalised tissue, blood clots and threads.

After an incubation period ranging from one to 54 days[3] (in this case the incubation period was probably nine days), the toxin will cause full blown clinical tetanus in nonimmunised patients. This pathophysiological sequence should remind doctors of two important levels to consider. Doctors should determine the immunisation status of every patient and secure in those with unknown or incomplete history, adequate tetanus prophylaxis prior to elective or emergency surgery. Furthermore aseptic technique should be achieved at all times of surgery, as well as to remove any foreign bodies and blood clots. All these will prevent the development of areas of low oxygen reduction potential. The diagnosis of tetanus in this case was straight

forward but the source of infection was unknown until the patient developed foul smelling discharge from the vagina. The problem here was that incorrect information given by the patient resulting in the delay to locate and eradicate the source of infection. This patient developed bronchopulmonary infection and the organism responsible was Staph aureus. She also had pleural effusion. However complications that occurred during the course of the disease were sometimes difficult to overcome and probably related to the duration of stay in ICU. Their incidence could be reduced by more meticulous patient care.[4] Fortunately this patient did not suffer from the syndrome of sympathetic nervous hyperactivity, brainstem lesions or toxic myocarditis.[1,6,20] Sympathetic nervous system disturbances in severe tetanus have been confirmed by several workers and various agents have been used to control this potentially life threatening complication. Brainstem lesions can cause sudden apnoea or sudden cardiac arrest. In some patients who have died suddenly, a patchy myocardial necrosis without inflammatory infiltrate has been found at post mortem.[20] This toxic myocarditis was thought to be due to a direct action of a tetanospasmin. Little has been written regarding parasympathetic nervous system involvement in tetanus.[20] However in severe tetanus sympathetic inhibition is defective thereby allowing intensive overriding vagal excitation to occur.[1] Or the effects of tetanus toxin on the parasympathetic nervous system have been overlooked even though preterminal bradycardia and sinus arrest, salivation and increased bronchial secretions are frequently observed in severe cases.[1]

Illegal induced abortion was most likely in this case as the DD & C revealed multiple bamboo sticks tied together with threads. Illegal induced abortion is a common cause of death among women particularly in many developing countries of the world.[21] However the number of reports on illegally induced abortion mortality is relatively small.[22] In countries where there is no liberal abortion law there is always a desperate effort at risk to the life and health of the woman to terminate an unwanted pregnancy illegally. This report should alert doctors that female patients who develop tetanus with an unclear source of infection, may have undergone an illegal induced abortion.

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