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Prolonged trismus post tetanus in a Nigerian boy: the role of oral baclofen- a case report and literature review

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Abstract Background: Tetanus is characterized by increased muscle tone and spasms caused by the neurotoxin, tetanospasmin. Management principles include wound debridement, antibiotic therapy, neutralize circulating toxins, spasm control, supportive care and initiation of active immunization.

Aim: To highlight the use of oral baclofen in tetanus treatment.

Method: The management of a peculiar case of tetanus was highlighted. Medscape and Pubmed were also searched for some related literatures.

Case Presentation: A nine year old boy with antecedent history of dirty wound presented with trismus and generalized spasms of one week duration. Though fully conscious, he could neither talk nor eat. He was from a poor socio-economic background.

He had wound debridement, I.V metronidazole for seven days, a

cocktail of diazepam infusion 5mg/kg/day, I.V chlorpromazine 25mg 12hourly and I.M phenobarbitone for 14 days. Five days into treatment the spasms stopped but trismus persisted up to the third week. By this time the maximal inter-incisors distance was 0.5cm. Baclofen syrup was commenced at 10mg daily. Five days later the maximal inter-incisors' distance was 1.0cm, and a week later it was 2.5cm. By the second week of oral baclofen there was complete resolution of trismus and recovery of speech.

Conclusion: This report suggests the need for further studies on the use of enteral baclofen during tetanus. Although intrathecal baclofen is in use, during recovery from tetanus, treatment with oral baclofen may reduce morbidity.

Key words: Prolonged trismus tetanus oral baclofen

Introduction

Tetanus results from intoxication by *Clostridium tetani*. It is characterized by increased muscle tone and spasms caused by the neurotoxin, tetanospasmin.

The clinical forms of the disease include generalized, local, neonatal and cephalic tetanus. In most cases its occurrence is in neonates and children.^{1,2} The principles of treatment include debridement of infectious tissues at the portal of entry, use of appropriate antibiotic to kill clostridium tetani, neutralization of circulating toxins, control of spasms, supportive care, and initiation of active immunization. In severe cases mechanical ventilation and intensive care may be needed.³ Much is known of the role of intrathecal baclofen in its therapy but little has been documented on possible enteral use of the drug in treating tetanus.

We report a boy from an urban Nigerian slum with prolonged trismus following tetanus. The trismus abated following treatment with oral baclofen.

Case report

A nine year old boy presented with trismus and generalized spasms of one week duration. He sustained an injury to his jaw from a dirty stick while playing a week prior to trismus. Local concoction and mentholatum were applied to the wound at home. There was purulent discharge from the wound. He could neither talk nor eat but was conscious throughout the illness. He was from a poor socio-economic background.

At presentation there was a discharging wound from the left side of the jaw. He had trismus, risus sardonicus and

intermittent provoked spasms. The vital signs were normal. The assessment was moderate tetanus. The septic wound was debrided and managed, and it healed after seven days. He was given anti-tetanus serum 10,000 units stat and intravenous metronidazole 200mg eight-hourly for seven days. He also had a cocktail of titrated intravenous diazepam 5mg/kg/day, intramuscular phenobarbitone 7.5mg/kg/day and intravenous chlorpromazine 25mg every 12 hours for fourteen days. Five days into treatment the spasms stopped, but by the third week of therapy there was no improvement in trismus. By this time the maximal inter-incisors distance was 0.5cm, he was spasm free, was fully conscious, ambulant and could interact with others except that he could neither talk nor eat solids.

He was then started on oral baclofen (compounded into syrup) at 10mg daily. Five days later the maximal inter-incisors' distance was 1.0cm, and a week later it was 2.5cm. There was improvement in speech and by the second week of oral baclofen there was complete resolution of trismus and recovery of speech.

Discussion

The relationship between poor wound management cum dirty environmental conditions and tetanus has long been established.⁴

This in part explains the differences in the burden of tetanus prevalence and mortality between developed and developing countries.⁵ The disease is prevalent in developing countries because of low coverage of tetanus vaccination amongst pregnant women and children.⁶⁻⁸ It was reported in separate Nigerian studies that neonatal tetanus is a reasonable contributor to newborn morbidity and mortality in some parts of the country.⁹⁻¹¹

Deep penetrating dirty wounds such as noted in this report favour the occurrence of tetanus. The first, unmistakable feature of tetanus in most cases, as in this case is trismus due to masseter muscle spasm.¹²

Nuchal rigidity and dysphagia produce the scornful facial appearance termed risus sardonicus. Opisthotonus may occur with severe and frequent spasms. Sound, light or touch can trigger these spasms. The patient remains conscious, but unfortunately in agony because of the fear of the next spasm. Cranial nerve palsy and facial spasms are features of cephalic tetanus.¹³

For spasm control, centrally acting and skeletal muscle relaxants are options. The former has the advantage of tranquilizing the patient while controlling spasms. However, the need for respiratory support in some cases necessitates caution in their use. Magnesium sulphate is increasingly being used as an option in controlling tetanus muscle spasm¹⁴⁻¹⁶ and intrathecal baclofen is also used to produce skeletal muscle relaxation and to control spasms during the disease.^{17,18} Guglani et al have used enteral baclofen to control spasms that was unresponsive to high dose midazolam.¹⁹

Conclusion

The successful treatment of prolonged trismus following tetanus in this report indicates the need for further studies on the use of enteral baclofen in the treatment of mild to moderate tetanus. Although intrathecal baclofen is currently in use, in less severe cases early commencement of enteral baclofen may reduce the severity and morbidity of the disease. Again, oral baclofen is non-invasive and it is available in poor countries.

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