Acta Otorrinolaringol Esp. 2017;68(5):284–288

Acta Otorrinolaringológica Española

www.elsevier.es/otorrino

BRIEF COMMUNICATION

Treatment of the First Bite Syndrome☆

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Received 9 November 2016; accepted 16 November 2016

KEYWORDS
Parotid;
First bite syndrome;
Botulinum toxin

Abstract First bite syndrome is a potential complication of surgery involving the infratemporal fossa, deep lobe of the parotid gland and parapharyngeal space. It is described as an acute and intense pain in the parotid region caused with the first bite of each meal. It is related to damage to sympathetic innervation of the parotid gland. Parasympathetic hyperactivation is believed to stimulate an exaggerated myoepithelial cell contraction causing pain. Usual analgesic treatments have poor results. Botulinum toxin type A causes parasympathetic nerve paralysis of the parotid gland and this fact would minimise salivation and decrease first bite syndrome. The aim of this study is to show the details of the technique and our outcomes in 5 patients treated with botulinum toxin type A.

PALABRAS CLAVE
Parótida;
Síndrome del primer mordisco;
Toxina botulínica

Tratamiento con toxina botulínica del síndrome del primer mordisco

Resumen El síndrome del primer mordisco es una secuela potencial de la cirugía del espacio infratemporal, lóbulo profundo de parótida y del espacio parafaríngeo. Se trata de un dolor agudo e intenso en la región parotídea que se desencadena con el primer mordisco de cada comida. Se relaciona con el daño de las fibras simpáticas que inervan la parótida, lo que resulta en una hipersensibilidad de las células mioepiteliales a la inervación parasimpática, provocando una intensa contracción de las mismas, responsable del dolor causado. No responde a los analgésicos habituales. La inyección de toxina botulínica tipo A en la parótida afectada se presenta

☆ Please cite this article as: Costales-Marcos M, López Álvarez F, Fernández-Vañes L, Gómez J, Llorente JL. Tratamiento con toxina botulínica del síndrome del primer mordisco. Acta Otorrinolaringol Esp. 2017;68:284–288.

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como un tratamiento sencillo y eficaz contra este problema por el bloqueo colinérgico que produce. Presentamos la técnica y los resultados de 5 pacientes a los que se les inyectó la toxina botulínica en la parótida afectada.

Introduction

First bite syndrome was described by Haubrich in 1986.[1] It is a potential sequela of surgery to the infratemporal space, deep lobe of the parotid gland and the parapharyngeal space.[2,3] It is characterised by acute, sudden facial pain in the parotid region, which often irradiates to the ear and typically occurs at the first bite of each meal. It lasts a few seconds, improves with mastication and is worse at the first meal of the day or after several hours without eating. The symptoms vary from mild to very intense and can even affect quality of life, making eating difficult. Some patients report pain with the salivation that occurs when thinking of food and that the pain is more intense with sialogogue foods (acid).[2–4]

It is postulated that first bite syndrome occurs due to damage to the fibres responsible for the sympathetic innervation of the parotid gland (sympathetic superior ganglion of the sympathetic cervical chain), specifically its myoepithelial cells.[2,3] The release of parasympathetic neurotransmitters (acetylcholine) that occurs with salivation and mastication would trigger an intense response in the myoepithelial cells, responsible, in the final instance, for the pain described. Botulinum toxin type A inhibits the release of acetylcholine in the synapses which would lead to a reduction in contraction of the myoepithelial cells and pathological secretion from the glands.

We present 5 patients in this study that experienced this syndrome postoperatively after a parapharyngeal approach and were treated by botulinum toxin type A injection.

Methods

Patients

Five patients were identified who presented first bite syndrome after being operated for a tumour in the parapharyngeal space. They were all treated with botulinum toxin type A injection in the parotid gland. The main characteristics of the patients are summarised in Table 1.

All the patients answered a survey with 4 items (Table 2). Based on a previous study, they were assessed for the presence/absence of symptoms, intensity of pain on the visual analogue scale, the qualitative characteristics of their pain (whether it worsened after time without eating, whether it was worse with sialogogue foods) and whether, if they had known of the existence of this complication, they would have refused or rethought the operation.[3] The survey was completed prior to the injection, and at one month, 3 months and 6 months after it.

Injection Technique

All the patients were informed of the details of the treatment and the possible side effects and were given an informed consent form. The injection was given between 2 and 17 months after the surgery.

The patients were given a local injection of botulinum toxin type A, reconstituted with 0.9% physiological saline solution. We used insulin syringes (1 ml) for the injection with subcutaneous injection needles (25 G). Each affected parotid gland was injected with 30 U of toxin, distributing the total dose into doses of 10 U injected into different sites of the gland (Fig. 1). The injection was given without local anaesthesia and was well tolerated by all the patients. The details of the dose and injection time for each patient are shown in Table 1. The injection was repeated in 3 patients. Two of them received another 50 U of botulinum toxin type A after six weeks, because their pain had not decreased after the first injection. One case was injected with a further 50 U 7 months after the first injection because their symptoms had worsened.

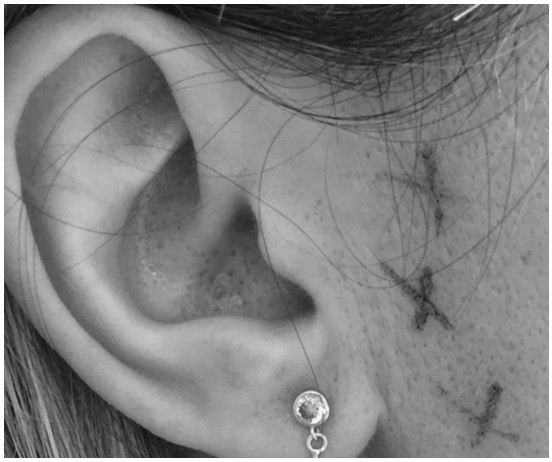

Figure 1 Botulinum toxin injection sites. It is injected at 1.5 cm from the tragus and is distributed through the parotid region. Although it might be near the facial nerve, botulinum toxin blocks the release of acetylcholine at the level of the neuromuscular plate and therefore the risk of paralysis is low.