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Botulinum Toxin Injection in Crocodile Tears Syndrome: A Review Serving as Clinical Guide

Topic: Injections (Joint, Spine, etc.)

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BACKGROUND

Crocodile tears syndrome (CTS) is a rare sequela of peripheral facial palsy (PFP) where excessive lacrimation occurs as response to mastication, deglutition or salivation. Such phenomenon occurs from the misdirection of regenerating salivary nerve fibers and innervation of the lacrimal gland via the greater superficial petrosal nerve post-PFP. This greatly affects the patient's quality of life, so managing the symptoms is of great importance. The transconjunctival injection of botulinum toxin (BT) type A has been growing as a therapeutical option, though it is still rarely implemented and there are no standardized protocols available for clinical practice.

Our aim is to review the current literature on the use of BT on the CTS in adults, using two clinical cases, reviewing the importance of clinical evaluation, establishing therapeutical goals, reviewing injection protocols and possible complications.

METHODS

We present two cases. A female patient presenting with left PFP sequelae after Ramsay-Hunt syndrome and a male patient presenting with right PFP sequelae following temporal bone trauma. Both patients presented with facial asymmetry and CTS worsened by mastication. We set goals of improving facial symmetry and reducing lacrimation through onabutulinum toxinA (OT) application on both patients' lacrimal glands' palpebral lobe.

We conducted a literature review on Pubmed, using the keywords crocodile tears syndrome; toxin injection; facial palsy; articles released in the last 10 years and including studies describing CTS, TB injection protocols in adults, its effect and possible complications.

RESULTS

We identified four articles. All recommended anamnesis and systematic clinical evaluation, including pre- and postprocedure Schirmer test and establishing therapeutical goals. The BT used was OT or incobotulinumtoxinA injected transconjunctivally, with doses ranging from 1 to 10 U to a maximum of 20 U, most commonly ranging from 4 to 5 U, with resolution of epiphora in 1 to 7 days. Some authors recommended starting with a lower dose and if necessary, reinjecting in 2 to 3 weeks to avoid overdosing. Reinjection intervals ranged between 3 to 6 months. Despite relatively painless and safe, described side effects included palpebral ptosis (most common), hematoma, xerostomia, diplopy, lagophthalmos, ectropion and other temporary ones.

CONCLUSION

Transconjunctival BT injection has been shown to be an effective therapeutic method in CTS. It's generally safe, however with possible complications, therefore careful clinical assessment, establishing clear treatment goals and using an adequate application protocol (based on the best clinical practice) is essential for the therapeutical success and patients' well-being.

Statement of Disclosures

None

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