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Botulinum Toxin Type A Injections in a Woman with Uncontrolled Drooling and Hypersalivation from Tardive Dyskinesia: A Case Report

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ABSTRACT

Tardive dyskinesia (TD) is a debilitating, residual effect from the long-term use of typical antipsychotics medications. Botulinum toxin type A (BTX-A) has shown benefit in numerous neuromuscular disorders and conditions involving muscular spasm.

The purpose of this case study was to introduce the use of BTX-A injections as a novel method for the management of TD complicated with sialorrhea.

Case report of a 73-year-old woman presenting with orofaciolingual movements and tongue protrusion was treated. 100 units of BTX-A was prepared. 20 units were administered in the left anterior sternocleidomastoid (SCM) muscle, and an additionally 20-40 units were injected into the inferior aspect of the tongue through the mandibular region.

At six week follow up, the patient had normal cervical range of motion and improved tongue-forward movement. She experienced 100% relief from drooling 21 months after the initial procedure. 19 treatments were administrated over an eight-year period, and the patient remained stable with decreased salivation and aspirations when receiving regular treatments. Lapses in therapy resulted in worsening pneumonia symptoms.

This case report highlights BTX-A as an alternative strategy to manage patients who no longer require antipsychotics but suffer residual TD and drooling.

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INTRODUCTION

- Tardive dyskinesia (TD) is a potentially irreversible, severe side effect of long-term use of antipsychotic medications called dopamine receptor blocking agents (DRBAs). TD commonly includes dyskinetic movements of the lips, jaw and tongue, which can cause problems with eating and speaking. Patients with TD experience impaired function and diminished quality of life, leading to embarrassment and social withdrawal.[1,2]
- Over the last 20 years, Botulinum toxin type A (BTX-A) has gained support as a treatment for cervical dystonia, painful involuntary jaw movements, and tardive lingual dystonia.[3-5] The toxin binds to the presynaptic cholinergic nerve terminals, decreasing frequency of acetylcholine release and resulting in relaxation of spastic muscles or reduction of abnormal movements.[6] In a few reported cases, patients with orofacial TD complicated with tongue protrusion were treated successfully with BTX-A injections in the genioglossal area.[7] However, we found no reports where BTX-A was used to manage secretions and drooling in patients with TD-related tongue protrusion.

CASE PRESENTATION

- A 73-year-old female presented to our clinic for management of drooling and orofaciolingual movements from tardive dyskinesia. Her history includes neuroleptic medication use to treat schizophrenia. She stopped the medication two years prior, with a one-year latency between stoppage and onset of TD. She reported mild dysphagia and chronic drooling associated with her TD movements, but otherwise ate and spoke well.
- Examination revealed that she kept a towel under her chin for continuous drooling. Profound TD with anterior-superior jaw and tongue thrusting occurring rhythmically at approximately 1-2 Hertz, with variability and occasional thrusting with lateral movement, was noted. The patient's orofaciolingual movements prevented normal posterior movement of salivary secretions, forcing them forward instead. The movement and drooling was suppressed during speaking. Cervical dystonia was evident.
- A 25-gauge tuberculin needle was used to inject 20 units under EMG guidance into the left SCM muscle two fingerbreadths below the mastoid process. Again using EMG, an additional 20 units were injected into the inferior aspect of the tongue through the mandibular region, one fingerbreadth under the jawline. At a six-week follow-up exam, the patient exhibited no swallowing problems and reported no pain.

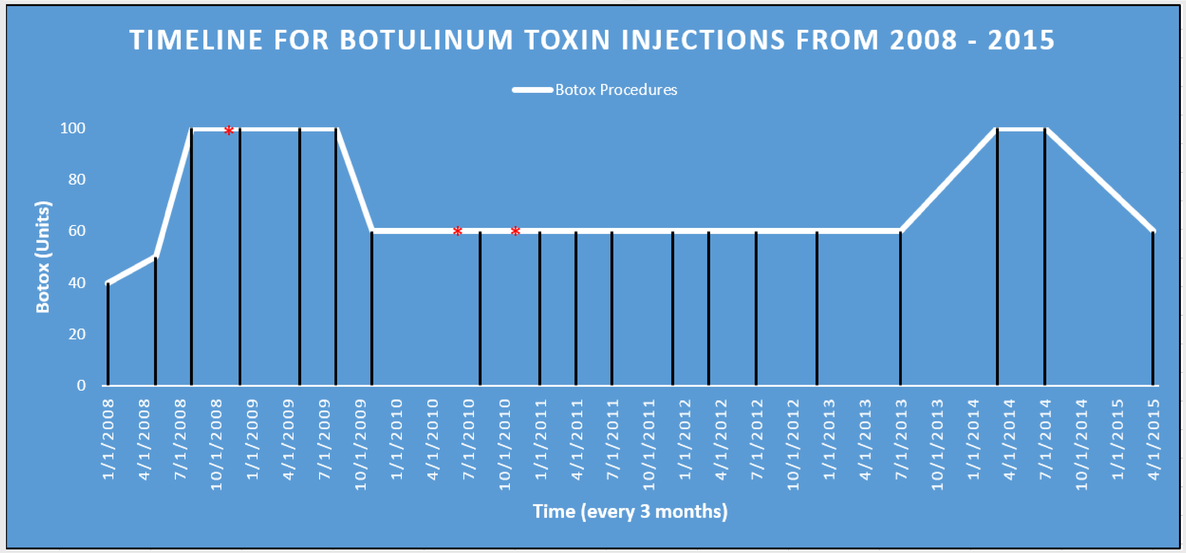

Fig 1: This figure displays the total number of **BTX-A** treatments and the frequency in which the patient received them over the span of seven years. The **asterisks** correspond to time points in where treatment was delayed due to **pneumonia** or **aspirations**.

DISCUSSION & CONCLUSIONS

- BTX-A injections into the genioglossal area over an eight-year period markedly improved our patient's TD and severity of tongue protrusions, granting her better quality of life.
- 20-unit injections in the SCM consistently relieved pain associated with cervical dystonia. Lingual dosage fluctuated between 40 and 80 units, depending on intervals between injections and severity of presentation.
- Initially, therapeutic dosage required 80 units divided between the right and left tongue region. After stabilization, dosage was tapered to 40 units for the next four years.
- Although older studies attributed complications of dysphagia and aspiration pneumonia to BTX-A therapy, recent reports describe good drug tolerability at a dose of 100-120 units in treating TD and tongue protrusion[8-10].
- It bears noting that our patient repeatedly developed pneumonia if treatment was delayed, likely related to her tongue movements and inability to control secretions. We believe that she might have eventually succumbed to pneumonia complications without BTX-A treatment.
- Valbenazine and deutetrabenazine constitute current standard treatment for patients who require continued DRBAs[9]. Neither is curative, and both often cause somnolence, fatigue and headache[10]. This report suggests that BTX-A injection merits further review as a potential treatment for TD.

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