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CASE REPORT

Botulism after cosmetic Onabotulinum toxin injection

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Summary

With an increasing demand for aesthetic procedures in Sub-Saharan Africa, balancing cosmetic benefits with patient safety remains paramount because grave somatic and psychological consequences could complicate aesthetic procedures. Greater awareness, regulatory measures, and judicious use of botulinum toxin are essential to minimize iatrogenic risks and safeguard public health. We report a case of segmental botulism complicating a cosmetic procedure in a middle-aged lady.

Keywords: Aesthetics, BoNT, Botulism, Cosmetic, Onabotulinum Toxin, Safety

Introduction

Iatrogenic botulism is a rare but potentially life-threatening adverse event that occurs when botulinum toxin unintentionally spread systemically beyond the intended injection site. The growing popularity and widespread use of cosmetic procedures have contributed to the emergence of this complication, which is now attracting increasing clinical and public health attention [1-2] We wish to bring attention to the case of iatrogenic botulism following cosmetic injection of Botulinum Toxin (BoNT), emphasizing the potential risks associated with its administration. While BoNT has revolutionised both therapeutic and aesthetic medicine, its misuse can lead to severe and potentially fatal neuromuscular complications, necessitating vigilance and appropriate skills in its administration. [3-5]

Case Description

We report the case of a 48-year-old woman who developed progressive neuromuscular weakness following cosmetic BoNT injections to the periorbital region, neck, and abdomen in an undisclosed clinic. Within seven days of the procedure, she presented

to the Aga Khan Hospital, Dar es Salaam, with droopy eyes, dysphagia, excessive sputum production, an ineffective cough, and respiratory difficulty.

Her neurological examination revealed bilateral complete ptosis (Figure 1A) with normal pupil sizes but a weak pupillary light reaction. She had a bilaterally depressed gag reflex and profound muscle weakness (2/5 MRC in the neck flexors and shoulder abductors, 3/5 in elbow flexors bilaterally, and 3/5 MRC in the elbow extensors. Wrist flexors and extensors were 4/5, with a power of 5/5 in the lower limb muscle groups. She had bilateral absent deep tendon reflexes and flat plantar responses. She had neither sensory nor cerebellar signs. A diagnosis of Botulism was suspected.

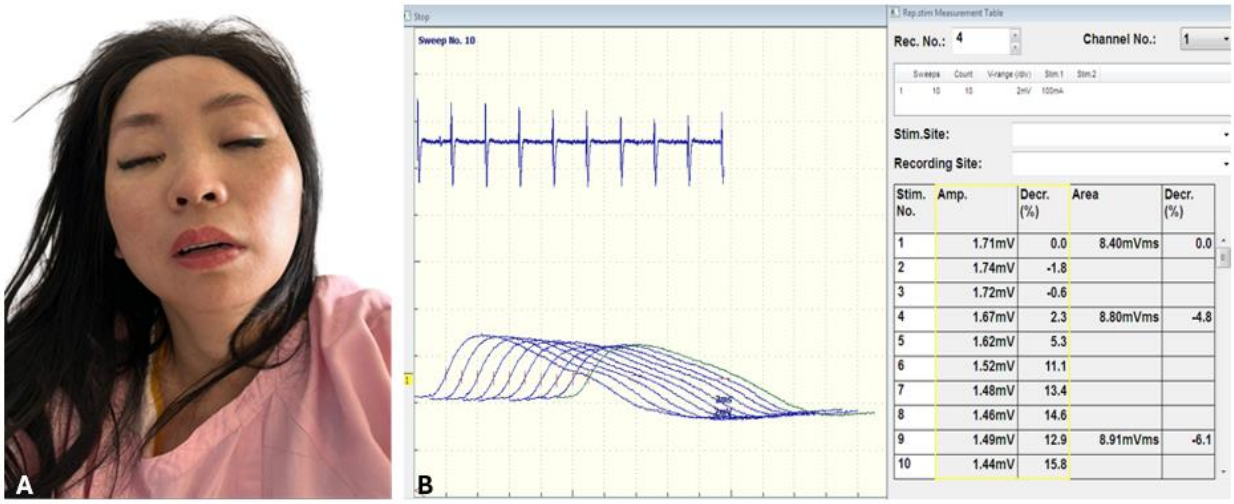


Figure 1A: Showing bilateral ptosis 10 days post BoNT -injection

Figure 1B: Low-frequency Repetitive Nerve Stimulation of the Spinal Accessory Nerve showing reduced CMAP amplitudes with no incremental CMAP amplitudes following maximum voluntary contraction.

Her nerve conduction study was normal, save for borderline reduced compound muscle action potential in some proximal motor nerves. Her needle EMG showed reduced recruitment in clinically weak muscles. She could not tolerate high-frequency repetitive nerve stimulation (RNS). Her low-frequency (3Hz) RNS of the spinal accessory nerve performed after maximal voluntary contractions showed no incremental compound muscle action potentials (CMAP) amplitudes (Figure 1B), typical of a presynaptic dysfunction. A neostigmine test showed very modest improvement in the ptosis.

The patient was managed symptomatically with pyridostigmine with modest improvement. Phenylephrine eye drops were prescribed for her ptosis. She could not get Botulinum antitoxin as this was not available in Tanzania. Enteral feeding to mitigate aspiration risks commenced via nasogastric tube. Her respiratory symptoms became stable on incentive spirometry.

Twenty-eight (28) post-injection, her condition showed gradual improvement. Her ptosis began to improve, accompanied by better neck muscle control (Figure 2). However, despite these neurological improvements, she continued to experience significant bulbar dysfunction and remained dependent on nasogastric (NG) tube feeding for nutritional support. She requested to fly to China to continue her recuperation.



Figure 2: Showing improvement in the bilateral ptosis (right >>left), 28 days after BoNT Injection. Her dysphagia was persistent at this point, requiring continued NGT feeding

Discussion

Botulinum toxin exerts its effect by inhibiting the release of acetylcholine at the neuromuscular junction, which leads to muscle paralysis.[6] Although it is widely used in aesthetic procedures, its administration requires precise dosing and injection techniques to prevent unintended diffusion. [5] Localised or systemic botulism, while rare, can occur when excessive toxin spreads beyond the targeted muscles, potentially resulting in life-threatening respiratory failure. A study by Bai et al. reported multiple cases of botulism linked to excessive or repeated injections, underscoring the need for stricter oversight. [5,6] In this patient, the multi-site injections and possible high-dose exposure likely contributed to toxicity. The increasing prevalence of unregulated beauty clinics administering BoNT heightens the risk of such complications.[5]

Diagnosis of iatrogenic botulism remains challenging due to its resemblance to other neuromuscular disorders such as Myasthenia Gravis and Guillain-Barré syndrome. [7-9] Aside from case anamnesis, key diagnostic tools include nerve conduction studies, repetitive nerve stimulation, and the Tensilon test. Careful selection of high-yield muscles is essential to increase the yield of these tests, although negative results could occur early in the disease. [5,10] Early recognition is crucial because prompt administration of botulinum antitoxin can halt disease progression. [11] Unfortunately, our patient could not procure Botulinum antitoxin due to unavailability. Anti-cholinesterase inhibitors are rarely helpful and only slightly improve the patient's ptosis. This case underscores the importance of regulation in cosmetic procedures involving neurotoxins. We advocate stricter licensing requirements, adherence to standardized dosing guidelines, and improved patient education on the risks of BoNT injections. Furthermore, clinicians should maintain a high index of suspicion for botulism in patients presenting with progressive muscle weakness post-injection, ensuring timely intervention to prevent severe complications. Efforts to make botulinum antitoxin available in our environment should be expedited, considering the increasing use of BoNT in this region.

Conclusion

Botulism is a potentially serious and fatal complication of BoNT usage. With the increasing demand for aesthetic procedures, balancing cosmetic benefits with patient safety remains paramount. This case highlights the importance of increased awareness, enhanced regulatory measures, and prudent use of botulinum toxin to mitigate iatrogenic risks and protect public health.

Competing interests: The authors declare no competing interests.

Authors' contributions : PBA conceived the idea for the manuscript. MS wrote the first draft. FZT, HK and PBA edited the first draft and contributed to its intellectual content. All authors agreed to the final manuscript.

Acknowledgement: None

Ethical consideration: Institutional approval was not required for publication of this case report under our institutional policies and applicable guidelines. However, we obtained written informed consent from the patient before manuscript submission to publish the case and the associated photograph of her full face (including the eyes).

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References

1. Bai L, Peng X, Liu Y, Sun Y, Wang X, Wang X, *et al* . Clinical analysis of 86 botulism cases caused by cosmetic injection of botulinum toxin (BoNT). Medicine (Baltimore). 2018 Aug;97(34):e10659. doi: 10.1097/MD.0000000000010659.
2. Dawson EF, Pateriya S, Blashinsky ZA, Landa-Galindez A. From Botox Party to Botulism: A Case Report and Public Health Warning on Adulterated Botulinum Toxin Injection. Cureus. 2024 Aug 28;16(8):e68016. doi: 10.7759/cureus.68016.

3. Stone HF, Zhu Z, Thach TQ, Ruegg CL. Characterization of diffusion and duration of action of a new botulinum toxin type A formulation. Toxicon. 2011;58(2):159-167.DOI: 10.1016/j.toxicon.2011.05.012

4. Yiannakopoulou E. Serious and long-term adverse events associated with the therapeutic and cosmetic use of botulinum toxin. Pharmacology. 2015;95(1-2):65-69.DOI: 10.1159/000370245

5. da Cunha MG, da Cunha ALG, Tamura BM. Botulinum Toxin: Complications and Their Management. Daily Routine in Cosmetic Dermatology. Clinical Approaches and Procedures in Cosmetic Dermatology. 2017: 1-13. DOI: 10.1007/978-3-319-16802-9_15

6. Brodsky MA, Swope DM, Grimes D. Diffusion of botulinum toxins. Tremor Other Hyperkinet Mov (N Y). 2012;2:tre-02-85-417.DOI: 10.7916/D88W3C1M

11. 4/pr.116.012658

7. LoPiccolo, M.C., Riyaz, F.R. and Ozog, D.M. (2017). Complications and Diffusion. In Botulinum Toxins (eds J.L. Cohen and D.M. Ozog). DOI: 10.1002/9781118661833.ch17 Witmanowski H, Blochowiak K. The whole truth about botulinum toxin - a review. Postepy Dermatol Alergol. 2020;37(6):853-861.DOI: 10.5114/ada.2019.82795

8. Benedetto AV. Commentary: botulinum toxin in clinical medicine. Clin Dermatol. 2003 Nov-Dec;21(6):465-468. DOI: 10.1016/j.clindermatol.2004.01.015

9. Steinsapir KD, Rootman D, Wulc A, Hwang C. Cosmetic Microdroplet Botulinum Toxin A Forehead Lift: A New Treatment Paradigm. Ophthalmic Plast Reconstr Surg. 2015;31(4):263-268. DOI: 10.1097/IOP.0000000000000282

10. Pirazzini M, Rossetto O, Eleopra R, Montecucco C. Botulinum Neurotoxins: Biology, Pharmacology, and Toxicology. Pharmacol Rev. 2017;69(2):200-235.DOI: 10.112

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