Treatment of periorbital syringomas with intradermal botulinum toxin A monotherapy versus carbon dioxide laser: a case report

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Abstract

Syringomas are eccrine-derived benign adnexal neoplasms with the highest prevalence in early adulthood. They predominantly occur in females. They are commonly located on the face, particularly the lower eyelids, which have a high demand for cosmetic enhancement. Periorbital syringomas continue to pose a therapeutic challenge, with no consistently effective treatment available. Intradermal injection of botulinum toxin A is one of the new treatment modalities for periorbital syringomas. We report a case of periorbital syringomas in a 53-year-old female patient successfully treated using intradermal botulinum toxin A monotherapy as a painless cost-effective treatment that produced better long-term results than carbon dioxide laser.

Keywords: botulinum toxin A, CO2 laser, cosmetic dermatology, syringoma, therapy treatment

Introduction

Syringomas are eccrine-derived benign adnexal neoplasms. The lesions manifest as multiple, symmetrical, small, hard, skin-colored or yellow papules (1). Syringomas have the highest prevalence in early adulthood and predominantly occur in females. They are commonly located on the face, particularly the lower eyelids. They can cause psychological stress if they are located in sensitive areas such as the periorbital region. Therefore, cosmetic enhancement is in high demand (2, 3).

Multiple therapeutic approaches are available, including surgical procedures such as excision, dermabrasion, electrocautery, electrofulguration, laser treatment, cryotherapy, and chemical cautery with carbon dioxide (CO2) laser being the most commonly used ablative laser therapy. These therapeutic approaches carry a significant risk of recurrence (2, 4).

In a case study or small case series, medical therapy alternatives such as topical retinoids, dermabrasion, and intradermal botulinum toxin A (BTX-A) monotherapy have been used in the management of periorbital syringomas (5, 6). Periorbital syringomas continue to pose a therapeutic challenge, with no consistently effective treatment available (7).

We report a case of periorbital syringomas in a 53-year-old female patient, which was successfully treated using intradermal BTX-A monotherapy with a superior result compared to CO2 laser.

Case report

A 53-year-old female visited the dermatology and venereology clinic with skin-colored papules in the area around the eyes measuring 1 to 3 mm in diameter. She had had them for 9 years, and they had gradually grown larger. The lesions did not cause the patient any pain or itching, but they bothered her cosmetically. The lesions reappeared after the patient underwent a CO2 laser treatment 5 years previously. On dermatological examination, multiple skin-colored papules consistent with syringoma findings were discovered in the periorbital region.

The patient consented to a split-face procedure using CO2 laser and intradermal BTX-A on the left and right periorbital areas, respectively. Written consent was obtained. Ablative CO2 laser was performed on the left periorbital area until the lesion resolved, with topical anesthesia given 30 minutes prior to the procedure. A vial containing 100 units of BTX-A was diluted with 2.5 ml preservative-free normal saline solution, and a total of 24 International Units (IU) were intradermally administered using a 30G × 4 mm needle with a 1 cc syringe into the lesions on the right periorbital. Between injection sites of 1 cm² in the right periorbital area, 2 IU BTX-A was injected intradermally after applying ice application. In comparison to CO2 laser therapy, the patient found intradermal botulinum toxin A injections to be more comfortable and less painful.

Significant improvement was achieved with both treatment modalities within different time frames. On the left periorbital area, which was treated with CO2 laser, the lesion disappeared immediately with wound healing time of about 2 weeks and re-emergence 4 months after treatment. On the right periorbital area, which was treated using intradermal BTX-A, significant improvement progressed gradually with no reappearance at seven-month follow-up (Fig. 1).

Discussion

Syringomas are eccrine sweat duct–derived benign adnexal neoplasms measuring 1 to 3 mm in diameter that clinically present as skin-colored or yellowish in people with skin of color, which are most typically found on the inferior periorbital and can become a significant aesthetic concern. The treatment objective is to eradicate the lesion with less invasive procedures to achieve a satisfactory cosmetic outcome. There are numerous therapy strategies with varying degrees of success in the literature, and the most common problem in the management of syringomas is recurrence (7).

BTX-A has numerous dermatological applications by inhibiting acetylcholine release from cholinergic nerve terminals, which
leads to chemodenervation of the cholinergic nerve and affects the autonomous regulation of the eccrine glands (8). The use of this modality is being studied as a novel treatment modality for various skin conditions, including hyperhidrosis, hypertrophic scars, Raynaud’s phenomenon, oily skin, facial flushing, and cutaneous lesions such as periorbital syringomas (9).

Even though the precise mechanism of how BTX-A affects syringomas is unknown, it could be explained by the suppression of SNAP-25 (synaptosome-associated protein of 25kd) of the solubl

Figure 1  (A) Before treatment, (B) 7-month follow-up after intradermal botulinum toxin A on the right periorbital area showed significant improvement, whereas the left periorbital area treated with CO2 laser showed recurrence of syringomas.

References


Conclusions

Intradermal BTX-A injection offers a painless and more cost-effective treatment with better long-term results compared to CO2 laser in the management of periorbital syringomas.