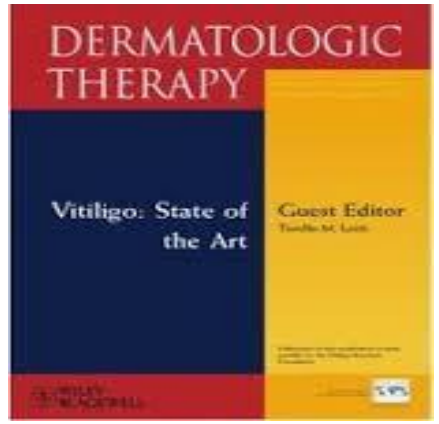
ĐIỂM BÁO DA LIỄU THÁNG 2/2021

TS.BS. Nguyễn Trọng Hào

Ngày 05/2/2021



1

Hand hygiene during COVID-19: Recommendations from the American Contact Dermatitis Society

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Aurora and Parker, Colorado; Grand Rapids, Michigan; Salt Lake City, Utah; Loma Linda and Riverside, California; Durham, North Carolina; New Haven, Connecticut; and Boston, Massachusetts

The recent COVID-19 pandemic has resulted in increased hand hygiene and hand cleansing awareness. To prevent virus transmission, the Centers for Disease Control and Prevention recommends frequent hand washing with soap and water. Hand hygiene products are available in a variety of forms, and while each of these formulations may be effective against COVID-19, they may also alter skin barrier integrity and function. As health care workers and the general population focus on stringent hand hygiene, the American Contact Dermatitis Society anticipates an increase in both irritant contact and allergic contact hand dermatitis. Alcohol-based hand sanitizers with moisturizers have the least sensitizing and irritancy potential when compared to soaps and synthetic detergents. This article provides an overview of the most frequently used hand hygiene products and their associations with contact dermatitis as well as recommendations from the American Contact Dermatitis Society on how to treat and prevent further dermatitis. (J Am Acad Dermatol 2020;83:1730-7.)

Rundle CW et al. J Am Acad Dermatol 2020;83:1730-7

Table I. Activity of antimicrobial ingredients against enveloped viruses such as coronaviruses

Ingredient	Virucidal activity against enveloped viruses[11,43]*	Allergenicity†
Chloroxylenol	High	+
Ethanol	High	-
Povidone iodine	High	+/-
Sodium hypochlorite (bleach) (0.21%)	High	-
Triclosan/triclocarban	High	+/-
Benzalkonium chloride	Moderate	+
Chlorhexidine digluconate	Moderate	+
Benzethonium chloride	Low	-
Phenolic compounds	Low	-
Quaternary ammonium compounds	Low	-

*High virucidal activity: <1 minute; moderate virucidal activity: 1 to 30 minutes; low virucidal activity: >30 minutes.
†The + symbol indicates that the ingredient is found in the American Contact Dermatitis Society core patch testing panels, +/- indicates scattered reports of contact allergy and the - symbol indicates that allergenicity is rare.[15,16]

Table II. Allergens commonly encountered with regular hand hygiene

Gloves[30,32]	Soaps, synthetic detergents, and antiseptics[33]*		Hand sanitizers[27]
I. Latex	III. Fragrance	V. Preservatives	Fragrance
II. Rubber accelerators	IV. Surfactants	• Dimethyloldimethyl hydantoin	Benzoates
• Thiurams	• Cocamidopropyl betaine	• Diazolidinyl	Cetyl stearyl alcohol
• Carbamates	• Cocamide diethanolamine	• Formaldehyde	Tocopherol
• Diphenylguanidine	• Decyl glucoside	• Iodopropynyl butylcarbamate	
• Mixed dialkyl thioureas	• Dimethylaminopropylamine	• Imidazolidinyl urea	
• Benzothiazoles	• Oleamidopropyl dimethylamine	• Isothiazolinones	
		• Quaternium-15	

*These allergens were the top North American Contact Dermatitis Group screening allergens found in skin cleansers for the years 2000 to 2014.[33]

Table III. American Contact Dermatitis Society hand hygiene recommendations

Use of soaps and synthetic detergents

- Wash hands with lukewarm or cool water and soap for at least 20 seconds.
- Avoid hot and very cold water.
- Nonfrictional, pat drying (don't rub).
- Immediate application of moisturizer after cleansing practices is recommended.
- Products with antibacterial ingredients are not necessary for proper hand hygiene.
- Look for soaps or synthetic detergents that are devoid of allergenic surfactants, preservatives, fragrances, or dyes.
- Look for synthetic detergents with added moisturizers.
- Dry hands are common with frequent use of soaps or synthetic detergents.

Use of ABHS

- At least 60% alcohol is recommended.
- Look for hand sanitizers that are devoid of allergenic surfactants, preservatives, fragrances, or dyes.
- Look for ABHSs with added moisturizers.
- Dry hands are common with frequent use. Application of a moisturizer after hand washing is recommended.

Use of moisturizers

- Avoid moisturizers in jars to prevent double dipping into and potentially contaminating the product.
- Use moisturizers packaged in tubes instead.
- Look for pocket-sized moisturizers to keep on one's person for frequent reapplication.
- At night, apply moisturizer followed by cotton or loose plastic gloves (eg, plastic clear, disposable food gloves) to create an occlusive barrier.
- For health care workers, a moisturizer under gloves can also be effective. Moisturizers with a water base are safe under all gloves; however, oil-based moisturizers can break down latex and rubber by making the material swell or become brittle.
- Latex, vinyl, and nitrile gloves are resistant to breakdown from ethanol or isopropyl alcohol.
- Soak and smear: soak the hands in plain water for 20 minutes and immediately apply moisturizer of choice to damp skin nightly for up to 2 weeks.

Rundle CW et al. J Am Acad Dermatol 2020;83:1730-7

Risk factors for induction or worsening of hand ACD and/or ICD

- Hand washing
  - Frequent hand washing
  - Washing hands with dish detergent or other known irritants
  - Washing hands with very hot or very cold water
  - Use of disinfectant wipes to clean hands
  - Working with known irritants such as bleach
- Application of known allergens
  - Products containing topical antibiotics (eg, neomycin, bacitracin)
  - Applications of superglue (ethyl cyanoacrylate) to glue inflammatory or healing fissures
  - Occluding fingers with adhesive bandage impregnated with bacitracin or benzalkonium chloride
- Occlusion
  - Increased duration of glove occlusion (without underlying moisturizer application)
  - Hands treated with a detergent or soap before glove occlusion (without underlying moisturizer application)
  - Occluding hands with self-adherent wraps
- Underlying skin disease
  - Pre-existing atopic dermatitis of the hands
  - Picking at dermatitis-induced scale

ABHS, Alcohol-based hand sanitizer; *ACD*, allergic contact dermatitis; *ICD*, irritant contact dermatitis.

2

ASDS
American Society for Dermatologic Surgery

COSMETIC AND RECONSTRUCTIVE EXPERTISE
FOR YOUR *skin health and beauty*℠

American Society for Dermatologic Surgery

Guidance Regarding SARS-CoV-2 mRNA Vaccine Side Effects in Dermal Filler Patients

Based on information available as of 28 December 2020

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https://www.asds.net/Portals/0/PDF/secure/ASDS-SARS-CoV-2-Vaccine-Guidance.pdf

Review of FDA data from the Moderna vaccine trial reveals that a total of three participants out of 15,184 patients who received at least one dose of mRNA-1273 developed facial or lip swelling presumed to be related to dermal filler placement. All events resolved after treatment. The details are summarized in the table below:

Patient Demographics	Reported Reaction	Time After Vaccine	Time of Dermal Filler Placement	Resolved
Age 51, Female	Facial swelling	2 days	2 weeks prior	Yes
Age 46, Female	Facial swelling	1 day	6 months prior	Yes
Age 29, Female	Lip angioedema*	2 days	Unknown	Yes

FDA reported reactions in patients with dermal filler who had subsequent facial swelling after dose 1 of vaccine. Cases reported as of November 25, 2020. *Classified as medically significant but not a serious adverse event; this patient had a similar reaction after an influenza vaccine in the past.

GUIDANCE

The following statements constitute guidance from ASDS on vaccine-related adverse events in patients with dermal fillers:

- Delayed dermal filler inflammatory events very rarely occur with both hyaluronic acid and non-hyaluronic acid fillers.
- Evidence suggests these reactions can be immunologically triggered by viral and bacterial illness, vaccinations such as the influenza vaccine, and dental procedures.
- These rare adverse events are temporary and respond to treatments such as oral corticosteroids and hyaluronidase, and often resolve without treatment.
- Given currently available data, patients already treated with dermal fillers should not be discouraged or precluded from receiving vaccines of any kind. Similarly, patients who have had vaccines should not be precluded from receiving dermal fillers in the future.
- Specifically, with regard to the Moderna mRNA-1273 trial, there were a total of 3 reactions possibly related to dermal fillers out of 15,184 vaccine recipients. It is unknown how many subjects in the trial had previous treatment with dermal fillers.
- ASDS encourages its members to continue their current practices with regards to dermal fillers including obtaining a pertinent medical history on all patients.
- It is the position of ASDS that dermal fillers should be administered by board-certified physicians who are experts in both the injection of dermal fillers and management of complications arising from them.

3

Dietary habits in Japanese patients with chronic spontaneous urticaria

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ABSTRACT

Background: Chronic spontaneous urticaria (CSU) is defined as the spontaneously appearing weals and/or angioedema for more than 6 weeks. Dietary habits can modulate the pathogenesis of CSU. However, dietary intakes of nutrients or food in CSU patients, compared with healthy controls, have not been examined in quality and quantity.

Methods: We evaluated dietary habits in adult Japanese patients with chronic spontaneous urticaria with high intake of beverages. The intake of coffee, caffeine-rich and non-alcohol beverage, in uncontrolled CSU patients was higher than that in controlled patients.

Conclusions: Chronic spontaneous urticaria was associated with high body mass index and high intake of eggs. Uncontrolled CSU was associated with high intake of beverages. Further studies should elucidate the relationships of these results with the development or exacerbation of CSU.

Matano Y et al. Australas J Dermatol. 2020 Aug;61(3):e333-e338.

Table 2 The association of chronic spontaneous urticaria with each variable analysed by multiple logistic regression analysis

	Odds ratio	95% confidential interval	*P*
(Intercept)	0.00000391	0.0000000105–0.00145	<0.001***
BMI (kg/m^2)	1.32	1.15–1.51	<0.001***
Age (years)	1.01	0.98–1.04	0.436
Gender (M = 1, F = 2)	2.28	0.80–6.46	0.121
Eggs (g/kcal)	1.05	1.02–1.09	0.001**
Other vegetables/mushrooms/algae (g/kcal)	1.01	0.99–1.02	0.544
Dietary fibre (g/kcal)	1.13	0.66–1.95	0.650
Alcohol (% energy)	1.02	0.95–1.08	0.627
Folic acid (μg/kcal)	0.991	0.98–1.01	0.212
Vitamin K (μg/kcal)	0.997	0.99–1.01	0.603
Vitamin D (μg/kcal)	1.02	0.88–1.19	0.785
Ca (mg/kcal)	1.00	0.99–1.01	0.904
Na (mg/kcal)	1.00	1.00–1.00	0.266
Cu (mg/kcal)	112.0	0.06–1900	0.214

To avoid multicollinearity, intakes of cholesterol, Pi, Fe, Mg and salt with a variance inflation factor >10 were excluded.
BMI, body mass index.
**Significant differences at $P < 0.01$.
***Significant differences at $P < 0.001$.

Table 3 The association of uncontrolled chronic spontaneous urticaria (urticaria control test ≦11) with each variable analysed by multiple logistic regression analysis

	Odds ratio	95% confidential interval	*P*
(Intercept)	0.440	0.0112–17.20	0.6610
Age (years)	0.992	0.9650–1.02	0.5790
Gender (M = 1, F = 2)	0.968	0.3430–2.73	0.9510
BMI (kg/m^2)	1.010	0.9170–1.11	0.8890
Beverages (g/kcal)	1.010	1.000–1.020	0.0258*

BMI, body mass index.
*Significant differences at $P < 0.05$.

Table 4 The intakes of individual beverages in controlled and uncontrolled patients with chronic spontaneous urticaria

	Controlled (UCT ≧12, n = 35)	Uncontrolled (UCT ≦11, n = 35)	P
Beverages			
Green tea (g/kcal)	128.9 ± 123.6	140.5 ± 163.4	0.818
Black and oolong tea (g/kcal)	55.0 ± 80.1	80.7 ± 150.7	0.857
Coffee (g/kcal)	96.3 ± 99.5	136.8 ± 141.8	0.0453*
Cola (g/kcal)	37.4 ± 71.2	68.3 ± 112.4	0.355
Juice (g/kcal)	14.5 ± 23.5	33.8 ± 49.3	0.268
Rice wine (g/kcal)	4.2 ± 13.3	2.1 ± 7.5	0.470
White liquor (g/kcal)	16.6 ± 44.3	6.7 ± 29.0	0.928
Beer (g/kcal)	13.8 ± 36.5	52.1 ± 103.7	0.632
Whisky (g/kcal)	0.77 ± 3.4	0.10 ± 0.46	0.965
Wine (g/kcal)	11.5 ± 35.3	6.7 ± 24.8	0.818

Results are expressed as mean ± standard deviation. Differences between groups were analysed by Mann–Whitney U test.
UCT, urticaria control test.
*Significant differences at $P < 0.05$.

Matano Y et al. Australas J Dermatol. 2020 Aug;61(3):e333-e338.

4

Intradermal injections with 0.5% minoxidil for the treatment of female androgenetic alopecia: A randomized, placebo-controlled trial

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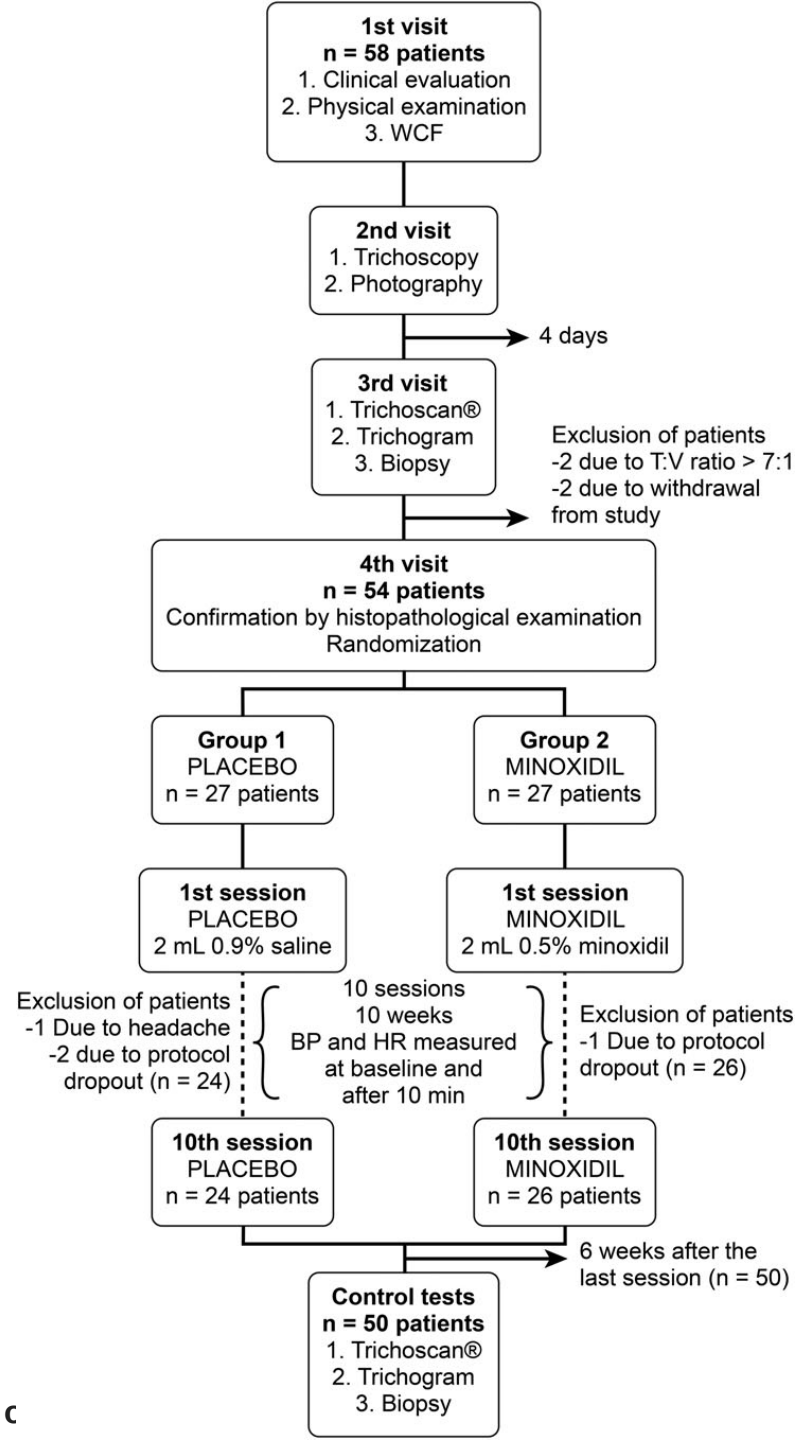
Abstract

Female androgenetic alopecia is one cause of alopecia in women, although the ideal treatment for this condition remains far from defined. The objective of this study was to evaluate the efficacy and safety of intradermal injections with 0.5% minoxidil for the management of female androgenetic alopecia in a randomized, placebo-controlled trial. A total of 54 women diagnosed with female androgenetic alopecia were divided into two groups: one group received intradermal injections of 0.5% minoxidil, and the other received 0.9% saline. Biopsy, trichogram, Trichoscan (Tricholog GmbH, Freiburg, Germany), and self-assessment findings were used to evaluate the outcomes of treatment with minoxidil. In the treated group, there was a significant increase in the terminal-to-vellus hair ratio ($P < .001$) and in the percentage of anagen hairs ($P = .048$) and an improvement in hair loss and volume ($P = .021$ and $P = .028$, respectively). These results show that intradermal injections with minoxidil were more effective than placebo ($P < .001$) in the treatment of female androgenetic alopecia with a good safety profile.

Uzel BPC et al. Dermatol Ther. 2020 Dec 2:e14622. doi: 10.1111/dth.14622. Epub ahead of print.

- Intradermal injections were administered to the affected area of the scalp weekly for 10 consecutive weeks, using the point-to-point technique every 1.5 cm, at an angle of 60! and a depth of 2 to 4 mm, and with a 3-mL BD syringe and a Lebel needle.
- Patients in the MG and the PG were treated with 2 mL of 0.5% minoxidil solution (minoxidil sulfate, Health Tech Pharmacia of S~ao Paulo, S~ao Paulo, Brazil) and 2 mL of 0.9% saline, respectively



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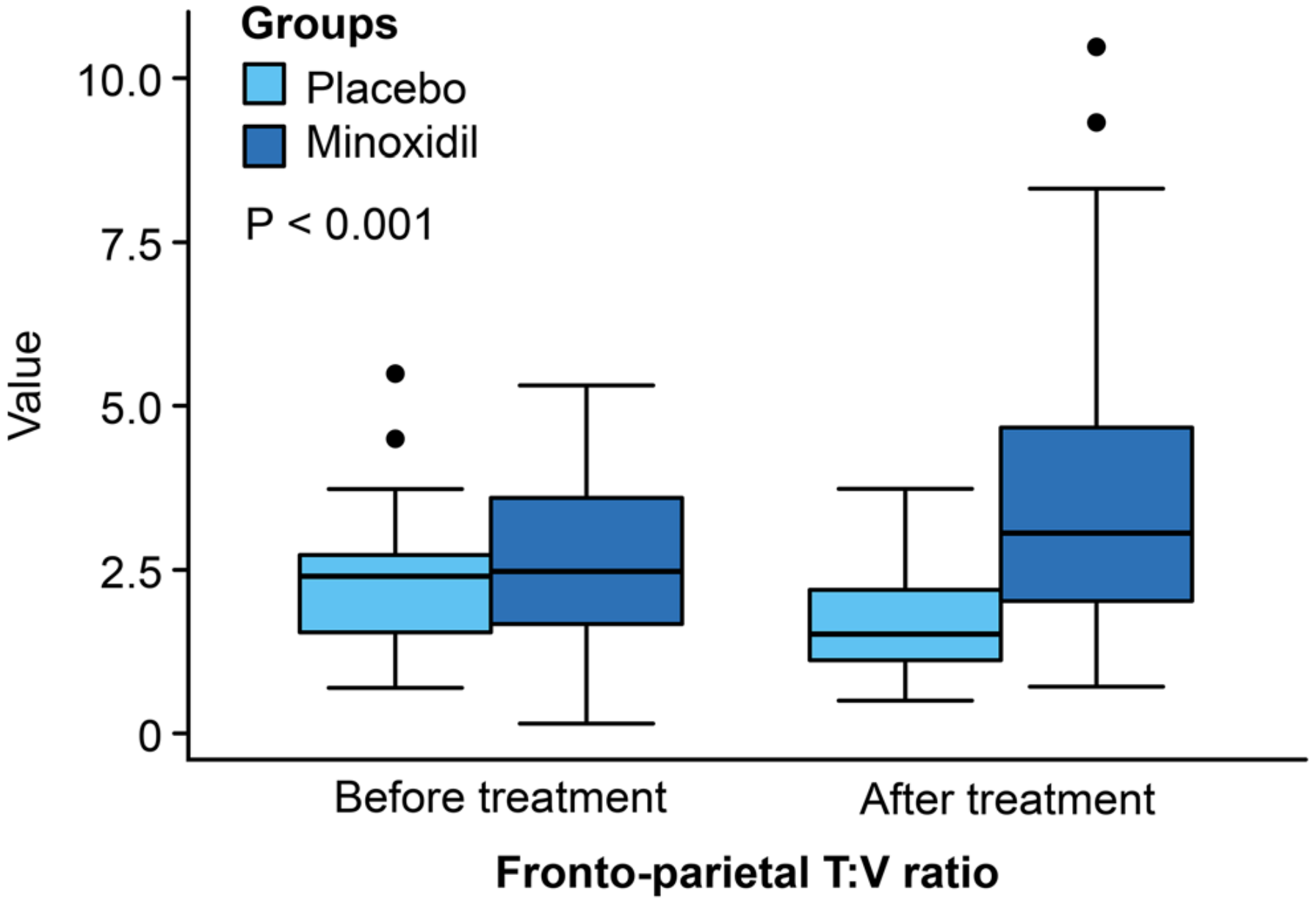

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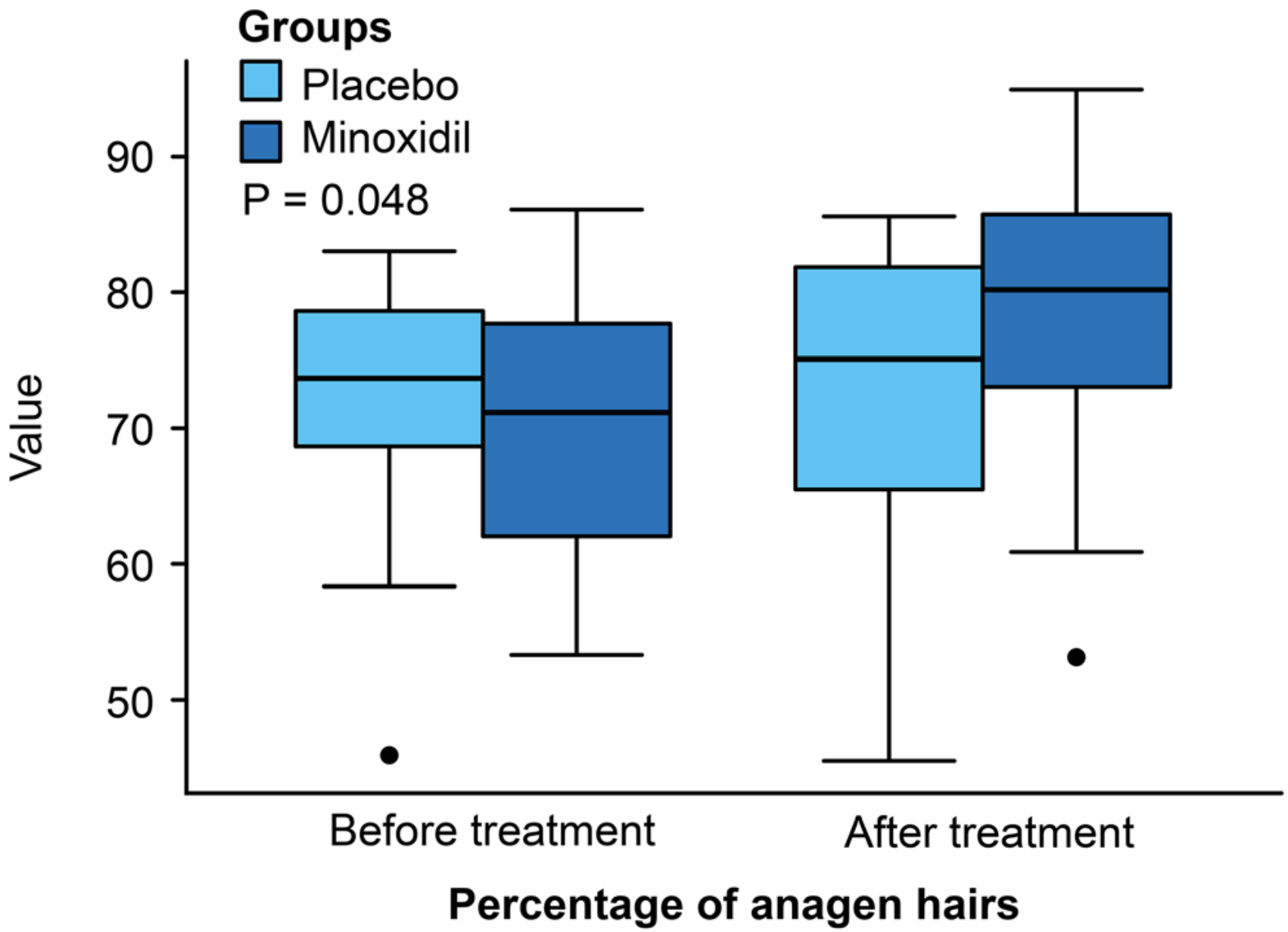

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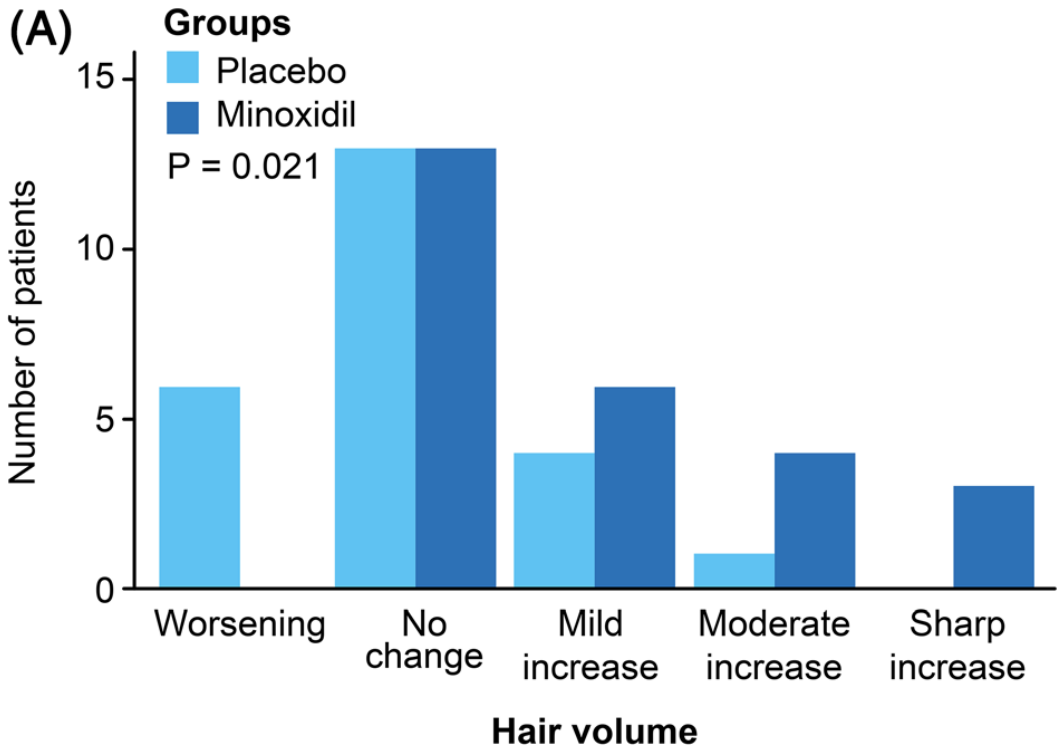

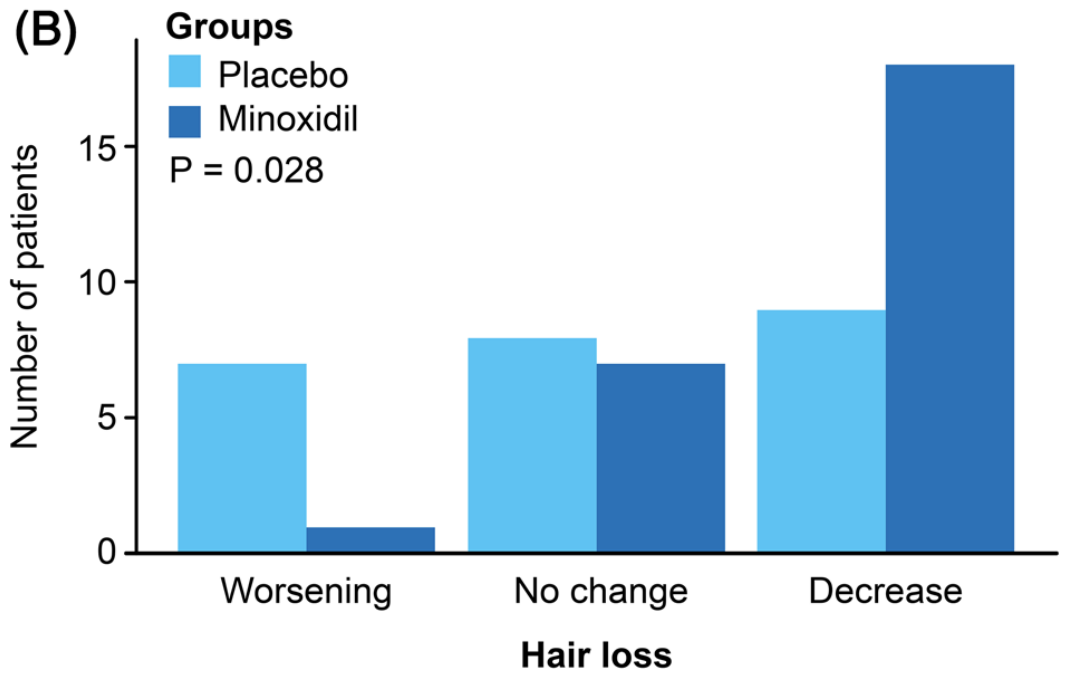

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5

Blue Light Protection, Part I—Effects of blue light on the skin

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Abstract–Part I

Background: Blue light is emitted visible light between the wavelengths of 400 to 500 nm. The main source of blue light is sunlight, but digital screens, light-emitting diodes (LEDs), and fluorescent lighting serve as additional sources. Concerns about the negative effects of blue light on the skin have rapidly increased over the past 15 years, and consequently, the urge to learn more about this topic is increasing as well.

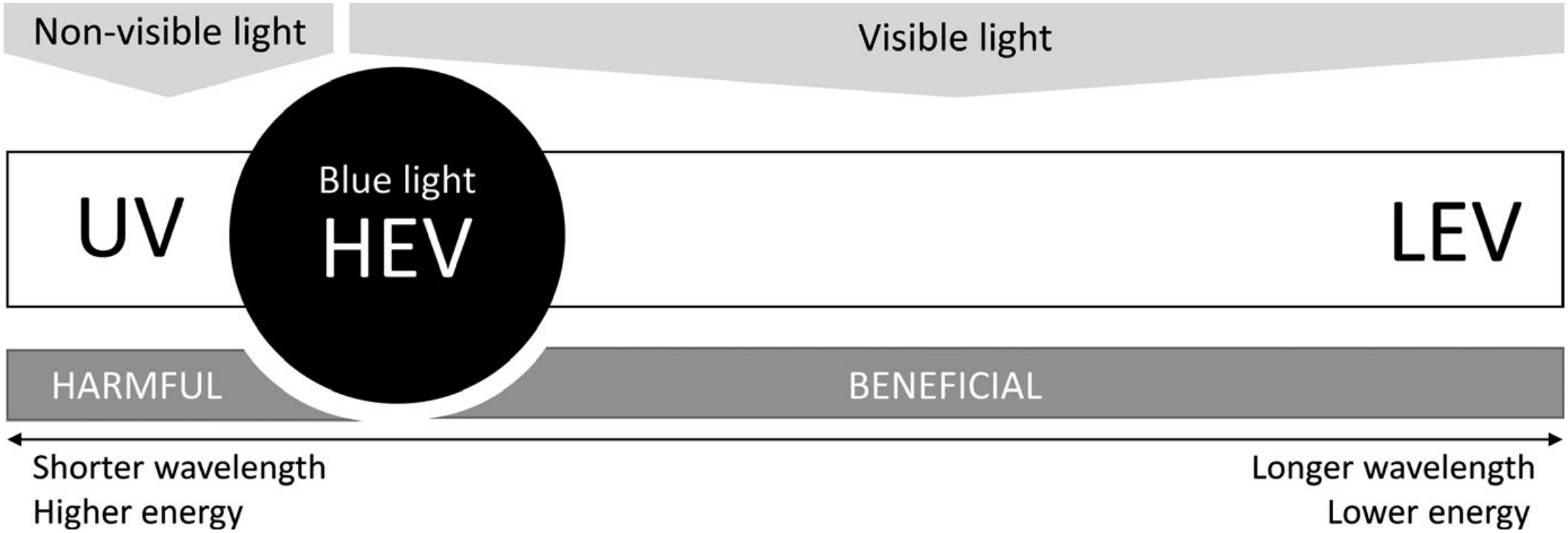
Aims: Part I of this article provides up-to-date information on the definition of blue light and the negative and positive effects of blue light on the skin.

Methods: An Internet search was completed using the Google scholar database for relevant literature.

Results: Blue light can be both harmful and beneficial to the skin, depending on intensity and wavelength. Short-term safety information is more readily available from clinical studies; however, the biological effects of repeated and/or longer-term exposure are not fully understood yet.

Conclusions: Low-energy and low exposure times to high-energy blue light can help prevent skin diseases, while studies have revealed that longer exposure to high-energy blue light can increase the amount of DNA damage, cell and tissue death, and injury, eye damage, skin barrier damage, and photoaging.

Coats JG, Maktabi B, Abou-Dahech MS, Baki G. J Cosmet Dermatol. 2020 Nov 28. doi: 10.1111/jocd.13837.



- sun >> TV > computer screen > laptop ≥ cellphones

Coats JG, Maktabi B, Abou-Dahech MS, Baki G. J Cosmet Dermatol. 2020 Nov 28. doi: 10.1111/jocd.13837.

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Lasers for the prevention and treatment of hypertrophic scars: a review of the literature

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ABSTRACT

Despite the increasing knowledge about wound healing mechanisms and the advancements made in laser technology, hypertrophic scars remain difficult to manage. This review intends to discuss the laser devices studied in the prevention and treatment of HS, arising from trauma, surgery, and burns, detail their mechanisms of action, and emphasize those devices with the most promising effects. Most of the suggested mechanisms and explanations for the use of lasers in treating hypertrophic scars are based on selective photothermolysis, in which the light energy emitted from a laser is absorbed by its intended target, thereby disrupting existing collagen and altering the cycle of neocollagenesis. Through our literature review, we have determined that combination therapies, utilizing more than one laser target demonstrate enhanced clinical efficacy. Further, early use of laser devices has been shown to enhance the cosmetic result of sutured wounds and may play a role in preventing the development of hypertrophic scars.

ARTICLE HISTORY
Received 25 March 2019
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KEYWORDS
Hypertrophic scars; lasers and light sources; treatment; prevention; wound healing

Table 1. Summary of lasers used in the management of hypertrophic scars.

Study	Intervention	Study design	Number of treatments/ duration of study	Presence/Absence of untreated control	Parameters measured	Results
Chan, 2004 (18)	585 nm PDL beginning at: 1. <1 month 2. >6 months	Prospective, comparative study (n = 56 patients with mixed maturity scars (n = 27 scars >6 months and n = 29 scars <6 months)	3–6 treatments every 8 weeks for a maximum period of 12 months	Split scar study with half of the scar treated and the other half serving as untreated control	Subjective patient questionnaire, ultrasonography for thickness, and cutometer for viscoelasticity	No difference. However, erythema lightened more in mature scars
Manuskiatti, 2001 (19)	585 nm PDL at variable fluencies: 1. 3 J/cm^2 2. 5 J/cm^2 3. 7 J/cm^2	Prospective study (n = 10 patients with mature hypertrophic or keloidal sternotomy scars)	1 treatment every 4 weeks for a total of 6 treatments. Evaluated every 8 weeks for a total of 32 weeks.	Each scar was divided into four segments with one segment serving as untreated control	Clinical improvement including scar height, erythema, and pliability, as well as patient self-assessment	No difference. However, there was a trend toward greater efficacy with lower fluencies
Alster, 1998 (20)	1. Non-fractionated CO2 2. CO2 + 585 nm PDL	Prospective, single-blinded, comparative study (n = 20 patients with mature hypertrophic scars)	1 treatment with follow up at 1, 2, 6, and 12 weeks.	No untreated control	Global assessment scores of scar appearance, as well as erythema spectrometry measurements	Greater effect with combination therapy
Asilian, 2006 (21)	1. Intralesional triamcinolone acetonide (TAC) 2. TAC + 5-Fluorouracil (5-FU) injections 3. TAC + 5-FU + 585 nm PDL	Prospective, single-blinded, clinical trial (n = 69 patients with mature, hypertrophic scars)	1 injection every week for 8 weeks in groups 1 and 2. 3 treatments of PDL at 1st, 4th, and 8th weeks in addition to 8 weekly injections.	No untreated control	Erythema, pruritus, pliability, height, length, and width.	Combination treatment with all 3 modalities is superior
Manuskiatti, 2002 (4)	1. 585 nm PDL 2. PDL + TAC 3. PDL + 5-FU 4. PDL + TAC + 5-FU 5. Control	Prospective, paired-comparison, randomized, controlled trial (n = 10 patients with mature hypertrophic or keloidal sternotomy scars)	(1) laser irradiation with a 585-nm PDL for 6 treatment sessions at 4-week (2) intralesional TAC every 4 weeks for a total of 6 treatments (3) intralesional 5-FU for a total of 10 treatments (every 2 weeks for the first 8 treatments and every 4 weeks for the last 2 treatments) (4) intralesional TAC mixed with 5-FU for a total of 10 treatments (every 2 weeks for the first 8 treatments and every 4 weeks for the last 2 treatments).	5 segment scar with one segment serving as untreated control	Scar height, erythema, and pliability, as well as patient reported outcomes	No difference
Wittenberg, 1999 (22)	1. 585 nm PDL 2. Silicone gel sheets	Prospective, single-blind, internally controlled trial (n = 20 patients with mature hypertrophic scars secondary to surgical wounds)	One section treated with SGS for 12 h a day for 24 weeks One section with 4 PDL treatments at 8 week intervals	Scar divided into 3 equal sections with one section serving as untreated control	Blood flow, elasticity, volume, and patient-reported symptoms	No difference

Table 1. (Continued).

Study	Intervention	Study design	Number of treatments/ duration of study	Presence/Absence of untreated control	Parameters measured	Results
Kono, 2005 (23)	1. 585 nm PDL	Prospective, internally controlled, comparative study (n = 15 patients with pigmented, mature hypertrophic scars)	2 treatments of PDL at 4 week intervals	5 patients accepted half-side test and had an untreated control	Volume, height, erythema, and pliability, as well as patient reported symptoms	Significant improvement
Nouri, 2009 (24)	1. 585 nm PDL 595 nm PDL	Prospective, non-randomized, double-blind, controlled, clinical trial (n = 15 patients with new surgical scars)	3 laser sessions at 4 week intervals	Scar divided into 3 segments with middle segment serving as untreated control	Pigmentation, vascularity, pliability and height (VSS), as well as histological examination	No difference in scar appearance was noted, but 585 nm significantly improved scar height compared to the 595 nm
Manuskiatti, 2007 (15)	595 nm PDL with a pulse duration of: 1. 0.45 ms 40 mn	Prospective, single-blind, randomized, trial with paired comparisons (n = 19 patients with mature, hypertrophic or keloidal, sternotomy scars)	3 treatments every 4 weeks	No untreated control	Volume, height, erythema, and pliability	Shorter pulse duration yielded significantly greater improvement
Ouyang, 2018 (25)	1. 595 nm PDL 595 nm PDL with fractional CO2	Randomized, controlled study (n = 56 patients with immature scars)	Control: 2 treatments at 1 month intervals Treatment: 2 treatments at 3 month intervals	No untreated control	Pigmentation, vascularity, pliability and height (VSS)	Combination treatment was superior
Bowes, 2002 (26)	1. Q-switched 532 nm Nd:YAG laser 2. Variable mode 532 nm Nd:YAG laser 3. 585 nm PDL	Prospective, internally controlled, comparative study (n = 6 patients with pigmented hypertrophic, mixed maturity scars)	Average of 3.3 treatments at 4–6 week intervals	One segment serving as untreated control	Pigmentation, vascularity, pliability and height (VSS), as well as patient satisfaction	No difference; however, patients preferred the q-switched 532 nm laser
Lin, 2018 (27)	Dual wavelength 585 nm PDL/ 1064 nm Nd:YAG	Prospective study (n = 25 patients with hypertrophic scars)	One treatment	No untreated control	Pigmentation, vascularity, pliability and height (VSS), as well as patient report symptoms	Significant improvement
Vas, 2014 (28)	1. Combined 585 nm PDL/1064 nm Nd:YAG	Prospective, controlled study (n = 25 patients with surgical scars)	3 treatments at 1 month intervals	Half of scar served as untreated control	Pigmentation, vascularity pliability and height (VSS)	Significant improvement
Gaida, 2004 (35)	1. LLLT at 670 nm	Prospective, internally controlled, comparative study (n = 19 patients with mixed immature and mature, hypertrophic burn scars	2 times a week for 8 weeks	Untreated control area	Pigmentation, vascularity, pliability and height (VSS), as well as patient report symptoms (VAS)	Positive, but limited, effect, with greater effect seen on younger scars
Erol, 2008 (36)	IPL	Prospective study (n = 109 patients with hypertrophic or keloidal scars)	Average of 8 treatments at 2–4 week intervals	No untreated control	Overall clinical appearance, height, erythema, hardness	Majority had good to excellent improvement
Poetschke, 2017 (39)	1. Fractional CO2 2. No treatment	Prospective, comparative, internally controlled study (n = 10 patients with hypertrophic, burn scars)	One treatment with follow-up over 6 months	No untreated control	Pigmentation, vascularity, pliability and height (VSS), as well as patient reported outcomes (POSAS), DLQI	Significant improvement
Makboul, 2014 (38)	Fractional CO2	Prospective study (n = 40 patients with hypertrophic scars)	4 treatments with 1 month intervals	No untreated control	Pigmentation, vascularity, pliability and height (VSS), as well as histological and immunohistochemical findings	Significant improvement with a decrease of expression of TGF-B1
El-Hoshy, 2017 (40)	1. Fractional CO2 No treatment	Uncontrolled, open-label clinical trial (n = 20 patients with mature burn scars)	3 treatments 4–8 weeks apart	No untreated control	Pigmentation, vascularity, Pliability, height (VSS), relief, and thickness, as well as histological findings, POSAS	Significant improvement with improvement in pattern of collagen fibers

Table 1. (Continued).

Study	Intervention	Study design	Number of treatments/ duration of study	Presence/Absence of untreated control	Parameters measured	Results
Waibel, 2013 (41)	1. Fractional CO2 with topical TAC	Prospective, single-blinded, case series (n = 15 mature, hypertrophic scars)	3–5 treatments at 2–3 month intervals	No untreated control	Dyschromia, hypertrophy, texture, and overall improvement	Safe and effective potential combination therapy
Behrangi, 2018 (42)	1. Fractional CO2 with topical TAC 2. Intralesional TAC	Prospective, comparative study (n = 33 patients with mixed maturity, hypertrophic scars)	3–5 treatments at 4 week intervals	No untreated control	General appearance of the scars, dyschromia, hypertrophy, and texture	Combination treatment better for dyschromia and texture. Injection treatment alone better for general appearance and hypertrophy.
Majid, 2018 (43)	1. Fractional CO2 with topical TAC	Prospective case series (n = 10 children with hypertrophic burn scars)	3–5 treatments at 1 month intervals	No untreated control	Pigmentation, vascularity, pliability and height (VSS)	Significant improvement
Lei, 2017 (45)	1. Manual Fractional Technology combined with fractional CO2	Prospective study (n = 158 patients with mature, hypertrophic scars)	3 treatments at 3 month intervals	No untreated control	Pigmentation, vascularity, pliability and height (VSS), as well as patient report symptoms	Significant improvement
Connell, 2000 (44)	1. 585 nm PDL with intralesional methylprednisolone acetate	Prospective study (n = 10 patients with recalcitrant keloid scars	2–10 treatments at 6 week intervals	No untreated control	Pigmentation, vascularity, pliability and height, as well as patient report symptoms	Majority benefited
Li, 2018 (47)	1. 585 nm PDL 2. Fractional CO2	Prospective, comparative study (n = 221 hypertrophic burn scars)	PDL once every 3–4 weeks for 12 month UFCL once every 6–12 weeks	No untreated control	Pigmentation, vascularity, pliability and height, as well as patient report symptoms and blood flow	No difference. However, PDL was more effective at reducing blood flow at 12-months.
Hultman, 2014 (48)	1. 595 nm PDL with fractional CO2	Prospective, before-after cohort study (n = 147 patients with hypertrophic burn scars)	1 treatment	No untreated control	Pigmentation, vascularity, pliability and height (VSS), as well as patient reported symptoms	Significant improvement, with greatest benefit occurs from laser sessions <18 months post-injury
Zuccaro, 2017 (49)	1. 595 nm PDL 2. Fractional CO2 3. CO2 + PDL	Retrospective, comparative study (n = 125 pediatric patients with hypertrophic burn scars)	Majority received 2–3 treatments	No untreated control	Pigmentation, vascularity, pliability and height (VSS)	Difficult to compare treatments; however, all treatments demonstrated efficacy
Choi, 2014 (50)	1. Fractional Er:YAG 2,940 nm laser 2. Fractional CO2	Prospective, comparative study (n = 23 patients with mixed maturity, hypertrophic scars)	2–7 treatments at 3–4 week intervals 1–9 treatments at 4–8 week intervals	No untreated control	Pigmentation, vascularity, pliability and height (VSS), as well as patient satisfaction	CO2 was superior to Erbium
Ghalambor, 2006 (46)	CO2 on patients with scars 1. <6 months 2. 7–12 months 3. >12 months	Prospective, internally controlled, comparative study (n = 320 patients with hypertrophic scars <6 months (n = 120), 7–12 months (n = 100), and >12 months (n = 100))	1 treatment every week for 10 weeks	No untreated control	Pigmentation, vascularity, pliability and height (VSS), as well as patient reported symptoms	Treatment more effective on younger scars. No effect seen on scars >12 months.
Asfour, 2017 (53)	1. Ablative Er:YAG 2,940 nm laser 2. Nonablative Er:YAG 2,940 nm laser	Prospective, comparative study (n = 50 patients with mature, hypertrophic, burn scars)	One treatment for each modality	No untreated control	Pigmentation, vascularity, pliability and height (VSS), as well as histological findings	Ablative erbium is superior
Omranifard, 2007 (54)	1. 585 nm PDL 2. Fractional Er:YAG 2,940 nm laser 3. Intralesional TAC	Randomized, single-blind, clinical trial (n = 120 patients with mature hypertrophic scars)	4 week intervals for max 12 months	No untreated control	Pigmentation, vascularity, pliability and height	Intralesional TAC was superior

Table 2. Summary of the use of lasers during the inflammatory phase to improve the cosmetic appearance of surgical scars.

Study	Intervention	Study design	Parameters measured	Results
MGraw, 1999 (55)	Epidermal sutures followed by: (1) 585 nm PDL	Prospective study (n = 106 patients with traumatic or surgical excisions	Erythema, contour, stiffness	Substantial improvement in quality of scarring
Capon, 2008 (56)	Immediately following epidermal sutures: (1) High-dose 810 nm diode laser (2) Low-dose 810 nm diode laser (3) No treatment	Prospective study (n = 106 patients with traumatic or surgical excisions	Erythema, contour, stiffness	Substantial improvement in quality of scarring
Capon, 2010 (57)	Immediately following epidermal sutures: (1) High-dose 810 nm diode laser (2) Low-dose 810 nm diode laser (3) No treatment	Prospective, internally controlled, split-scar design, clinical study (n = 30 patients with surgical scars, immediately following surgery)	Overall appearance, comparative scar scale and profilometry for scar height	Immediate lasering, especially with high doses, enhances cosmetic results
Ozog & Moy, 2011 (58)	Immediately following subcutaneous sutures: (1) Fractional CO2 laser (2) No treatment	Randomized, controlled clinical study (n = 10 patients at the time of suturing of Mohs defect)	Cosmetic appearance, erythema, elevation, discoloration	CO2 at the time of suturing was superior
Du, 2018 (59)	1. Scar revision with fractional CO2 after subcutaneous sutures and before epidermal sutures	Case series (n = 10 Asian patients with traumatic scars)	Apparent esthetic scar improvement	Enhanced cosmetic results
Rohrer, 2002 (60)	Immediately following subcutaneous sutures: (1) Ablative Er:YAG 2940 nm laser (2) No treatment	Prospective, comparative, split-scar design, clinical study (n = 20 patients with postoperative linear wound following Mohs surgery)	Erythema, textural misalignment or tissue mismatch, and overall esthetic appearance	Trend toward improved texture and cosmetic appearance in the lasered scars, but did not reach statistical significance

Table 3. Summary of the use of lasers during the proliferative phase to improve the cosmetic appearance of surgical scars.

Study	Intervention	Study design	Parameters measured	Results
Nouri, 2003 (63)	Initiating treatment at time of suture removal: (1) 585 nm PDL (2) No treatment	Prospective, split-scar study (n = 11 patients with post-operative linear scars)	Scar height, erythema, and pliability, and overall cosmetic appearance	PDL provided significant improvement
Connologue, 2006 (64)	Initiating treatment at time of suture removal: (1) 595 nm PDL (2) No treatment	Prospective, split-scar study (n = 16 patients with postoperative linear scars)	Pigmentation, vascularity, pliability, and height, as well as cosmetic appearance	PDL provided significant Improvement
Alam, 2006 (65)	Initiating treatment at time of suture removal: (1) 595 nm PDL (2) No treatment	Randomized, controlled clinical trial (n = 20 patients with postoperative linear scars)	Visibility of incision, erythema, hypopigmentation, hyperpigmentation, induration, atrophy	No difference
Choe, 2009 (66)	Initiating treatment 2–3 weeks following surgery: (1) Non-ablative fractional Er:Glass 1550 nm Laser (2) No treatment	Prospective, clinical trial (n = 27 South Korean patients post thyroidectomy)	Pigmentation, vascularity, pliability, and height, as well as global physician assessment	Er:Glass provided significant improvement
Yun, 2011 (67)	Initiating treatment 2–3 months following surgery: (1) 532 nm potassium titanyl phosphate laser (2) No treatment	Prospective case control study (n = 20 patients with postoperative linear scars)	Pigmentation, vascularity, pliability, and height, as well as global physician assessment and patient satisfaction	532 nm laser provided significant improvement
Jung, 2011 (68)	Initiating treatment 2–3 weeks after surgery: (1) Fractional CO2 laser	Prospective cohort study (n = 23 patients with postoperative linear scars)	Pigmentation, vascularity, pliability, height, erythema, and melanin index, as well as global physician assessment and patient satisfaction	CO2 improved Pigmentation, vascularity, pliability, and height
Kim, 2011 (69)	Initiating treatment at time of suture removal: (1) First with 595 nm PDL (2) Followed by, fractional Er:Yag 2,940 nm	Prospective case series (n = 12 patients with postoperative linear scars	Pigmentation, vascularity, pliability, and height, as well as global physician assessment and patient satisfaction	Overall improvement with combination treatment

Kim, 2012 (70)	Initiating treatment 2–3 weeks following surgery: (1) NFL 1550 nm Er:Glass (2) Fractional Er:Yag 2940 nm	Prospective, split-scar study (n = 7 patients with postoperative, thyroidectomy scars)	Blinded physicians and subjects rating their own scar appearance	Er:Yag improved scars better than Er:Glass
Davari, 2012 (71)	Either initiating treatment at suture removal vs. 9 weeks post suture removal: (1) 595 nm PDL (2) No treatment	Prospective, split-scar study (n = 10 patients with postoperative scars on abdomen)	Pigmentation and erythema reflection, as well as elasticity cutometer	Overall improvement with PDL, with no difference between late and early onset
Gladsjo, 2014 (72)	Treatment initiated at the time of suture removal: (1) 595 nm PDL with non-purpuric settings vs. 595 nm PDL with purpuric settings (2) No treatment	Prospective, split-scar study (n = 26 patients with postoperative scars)	Pigmentation, vascularity, pliability, and height, as well as global physician assessment	Non-purpuric settings provided superior improvement
Kim, 2014 (73)	Initiating treatment 2 weeks after surgery: (1) 595 nm PDL (2) Fractional CO2	Prospective, split-scar study (n = 14 patients with postoperative, Mohs scars)	Pigmentation, vascularity, pliability, and height	Both lasers provided significant improvement with no difference between the treatments
Ha, 2014 (74)	Initiating treatment 2 weeks after surgery: (1) 595 nm PDL (2) NFL 1550 nm Er:Glass laser	Prospective, split-scar study (n = 30 patients with postoperative, thyroidectomy scars)	Pigmentation, vascularity, pliability, and height	Both lasers provided significant improvement with no difference between the treatments
Sobanko, 2015 (75)	Initiating treatment at time of suture removal: (1) 595 nm PDL (2) No treatment	Prospective, split-scar study (n = 14 patients with postoperative, Mohs scars)	Pigmentation, vascularity, pliability, and height	No data comparing treated and control outcomes
Vazquez-Martinez, 2015 (76)	Treatment initiated at the time of suture removal: (1) 595 nm PDL or simulated laser treatment (2) No treatment	Prospective, comparative, split-scar study (n = 30 patients with dermatologic excisions)	Pigmentation, vascularity, pliability, and height, as well as histological analysis	PDL provided significant improvement

Table 4. Summary of the use of lasers during the resolution phase to improve the cosmetic appearance of surgical scars.

Study	Intervention	Study design	Parameters measured	Results
Liew, 2002 (14)	2–3 weeks following surgery: (1) 585 nm PDL (2) No treatment	Prospective, split-scar, clinical study (n = 5 patients with burn scars, prior to the formation of hypertrophic burn scars)	Clinical appearance	Significant improvement at 6 weeks and 3 months post burn
Shin, 2014 (77)	2–3 months following surgery: (1) Ablative fractional (AFL) CO2 laser (2) NFL 1550 nm Er:Glass laser	Prospective, split-scar study (n = 20 patients with post-thyroidectomy scarring)	Erythema, melanin indices, skin hardness, clinician grading, and patient satisfaction	NFL was superior in improving erythema and pigmentation. AFL was superior in improving skin hardness
Tierney, 2009 (78)	Minimum 2 months following surgery: (1) NFL 1550 nm Er:Glass laser (2) 595 nm PDL	Prospective, single-blind, split-scar study (n = 12 patients with post-operative linear scars following Mohs surgery)	Dyspigmentation, thickness, texture, overall cosmetic scar appearance	NFL improved significantly more than PDL treated halves.

Data adapted from table found in Karmisholt et al. (61).

7

Chemical reconstruction of skin scars (CROSS) method for atrophic scars: A comprehensive review

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Abstract

Background: Chemical reconstruction of skin scars (CROSS) applies a high strength acid focally to treat atrophic scars. Although this method has gained popularity over the past two decades, no standardized treatment guideline exists for CROSS method in the treatment of atrophic scars.

Aims: The purpose of this comprehensive review was to evaluate the indications, detailed techniques, efficacy, and safety of CROSS method.

Materials and Methods: An extensive literature review was conducted to identify articles relating to CROSS method for atrophic scars from 2002 to 2018.

Results: The literature search yielded 19 articles meeting criteria. CROSS method has been used for the treatment of acne scars, varicella scars, enlarged pores, and depressed surgical scars. In studies using the quantile grading scale for acne scars, 60%-100% of patients showed >25% improvement. In two studies for varicella scars, 83%-100% of patients showed >25% improvement. CROSS method seems to be effective specifically for ice-pick scars. It is well tolerated and safe in Fitzpatrick skin phototypes I-V. Most reported complications are temporary and include postinflammatory dyspigmentation, erythema, pain, pruritus, infection, and widening of scars.

Chung HJ, Al Janahi S, Cho SB, Chang YC. J Cosmet Dermatol. 2021 Jan;20(1):18-27

	First author	Patients	Age range	FST	Indication	Chemical agent
1	Lee (2002, Korea)[9]	Total: 65 55 F 10 M 33 (65% TCA) 32 (100% TCA)	25-45	IV-V	Atrophic acne scars	65% TCA vs 100% TCA
2	Yug (2006, USA)[10]	Total: 3 2 F 1 M	27-32	III	Ice-pick acne scars	95% TCA
3	Whang (2007, Korea)[21]	N/A	N/A	N/A	Acne scars, enlarged pores	100% TCA
4	Fabbrocini (2008, Italy)[20]	Total: 5 3 F 2 M	30-40	III	Atrophic acne or varicella scars	50% TCA
5	Kim (2009, Korea)[13]	Total: 20 6 F 14 M 2 dropped out	22-37	IV-V	Mild to moderate rolling and ice-pick acne scars	100% TCA vs 1550 nm fractional laser (split face)
6	Kang (2009, Korea)[24]	Total: 35 25 dropped out 8 F 2 M	22-37	IV-V	Atrophic acne scars	100% TCA and subcision 2 wk after fractional laser
7	Cho (2009, Korea)[23]	N/A	N/A	N/A	N/A	N/A
8	Bhardwaj (2010, India)[26]	Total: 12 10 F 2 M 2 dropped out	14-42	IV-V	Predominantly ice-pick acne scars	100% TCA
9	Khunger (2011, India)[25]	Total: 30 20 F 10 M	17-42	IV-V	Predominantly ice-pick acne scars	100% TCA
10	Leheta (2011, (Egypt)[14]	Total: 30 14 F 16 M Each group: 15 3 dropped out	19-36	II-IV	Atrophic acne scars	100% TCA vs PCI

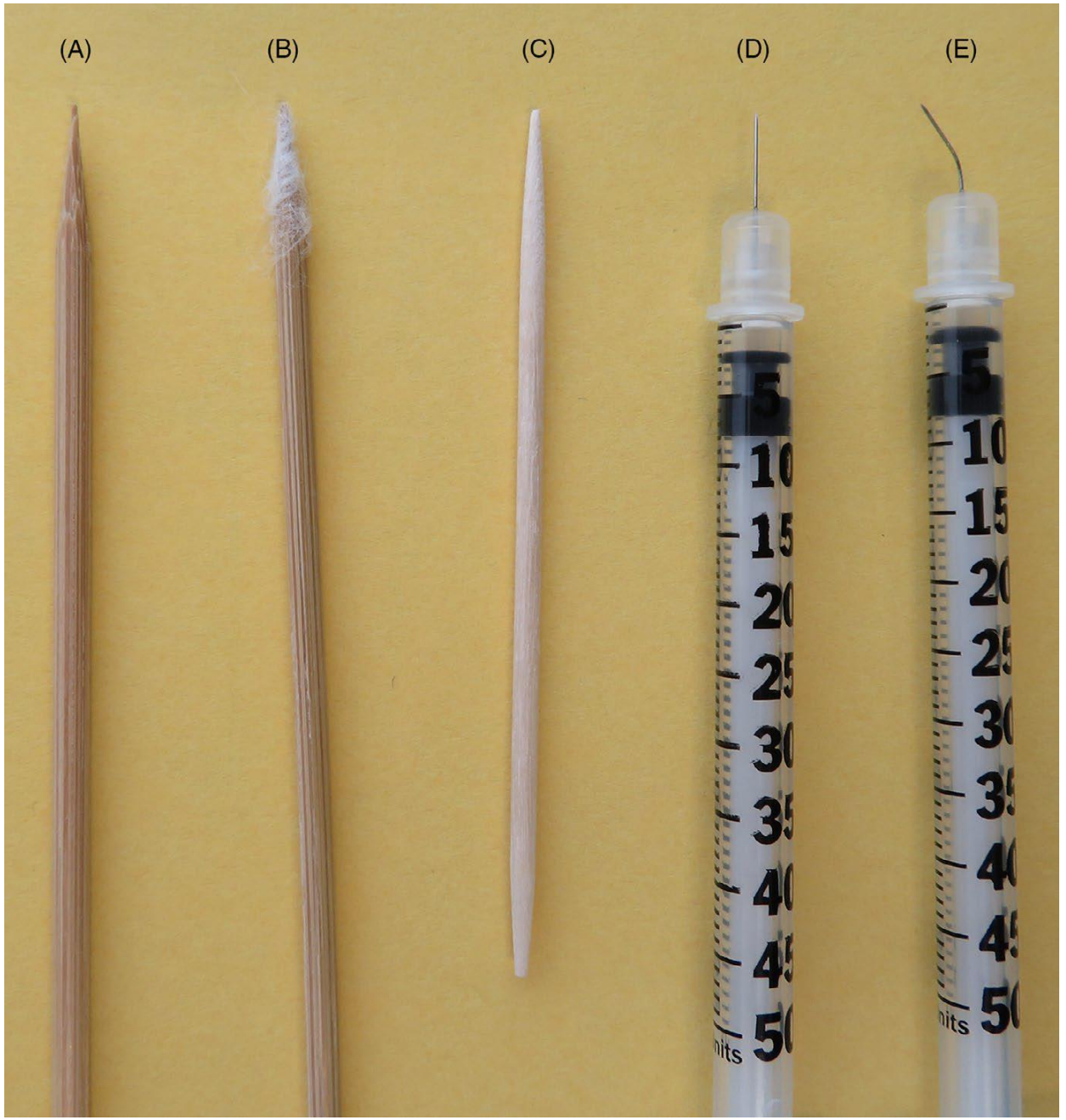
Chung HJ, Al Janahi S, Cho SB, Chang YC. J Cosmet Dermatol. 2021 Jan;20(1):18-27

11	Ramadan (2011, Egypt)[29]	Total: 20 14 F 6 M	20-52	III-IV	Rolling acne scars	100% TCA vs subcision
12	Weber (2011, Brazil)[30]	Total: 1 1 F	28	White	Ice-pick and boxcar scars	80% TCA
13	Barikbin (2012, Iran)[17]	Total: 100 86 F 14 M	9-45	II-IV	Atrophic facial varicella scars	70% TCA
14	Agarwal (2013, India)[19]	Total: 16 3 dropped out 8 F 5 M	10-45	III-V	Atrophic facial varicella scars	100% TCA
15	Nofal (2014, Egypt)[22]	Total: 45 15 in each group 10 F 5 M	19-40	III-V	Atrophic acne scars	100% TCA vs intradermal PRP vs microneedling with topical PRP
16	Ahmed (2014, Egypt)[18]	Total: 28 20 F 8 M Each group: 14	19-36	II-V	Ice-pick acne scars	100% TCA vs pinpoint irradiation with CO_2 laser
17	Kaur (2014, India)[27]	Total: 10 10 F 0 M	20-35	IV-V	Atrophic acne scars	50% TCA after subcision
18	Agarwal (2015, India)[15]	Total: 62 9 dropped out 20 F 33 M	16-29	IV-V	Atrophic acne scars	70% TCA
19	Dalpizzol (2016, Brazil)[16]	Total: 15 12 F 3 M	18-52	I-IV	Ice-pick and boxcar acne scars	90% TCA vs 88% phenol (split face)

Abbreviations: BID, twice a day; FST, Fitzpatrick skin type; N/A, not available; PCI, percutaneous collagen induction; PIH, postinflammatory hyperpigmentation; PRP, platelet-rich plasma; pts, patients; TCA, trichloroacetic acid.

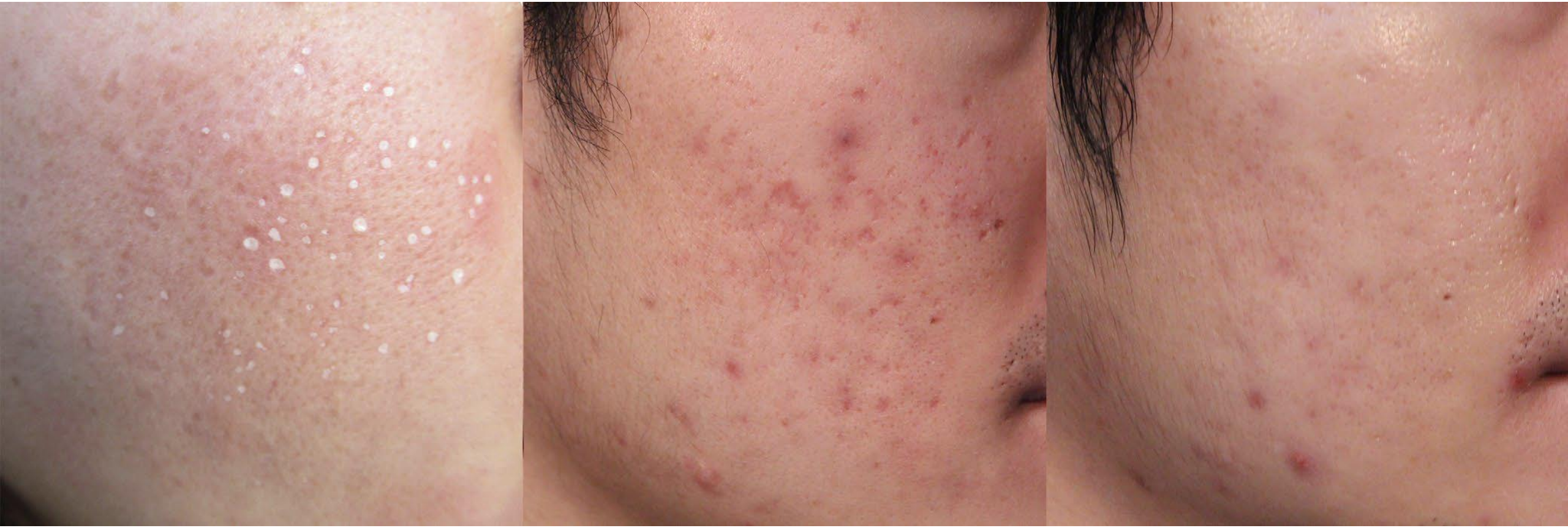
Various applicators used for CROSS method:

- A: a sharpened wooden applicator
- B: a cotton-wrapped sharpened wooden applicator
- C: a toothpick
- D: a straight insulin syringe
- E: a curved insulin syringe



Chung HJ, Al Janahi S, Cho SB, Chang YC. J Cosmet Dermatol. 2021 Jan;20(1):18-27

A, Clinical endpoint of CROSS method with frosted white appearance. B, Before CROSS method, C, After 3 sessions of CROSS method with 100% TCA



Chung HJ, Al Janahi S, Cho SB, Chang YC. J Cosmet Dermatol. 2021 Jan;20(1):18-27

8

The use of botulinum toxin A in upper lip augmentation

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Abstract

Background: Full lips are beauty standards. Botulinum toxin A (BTA) paralyzes the orbicularis oris muscle to achieve the eversion of the lip, and thus makes the lip look plump.

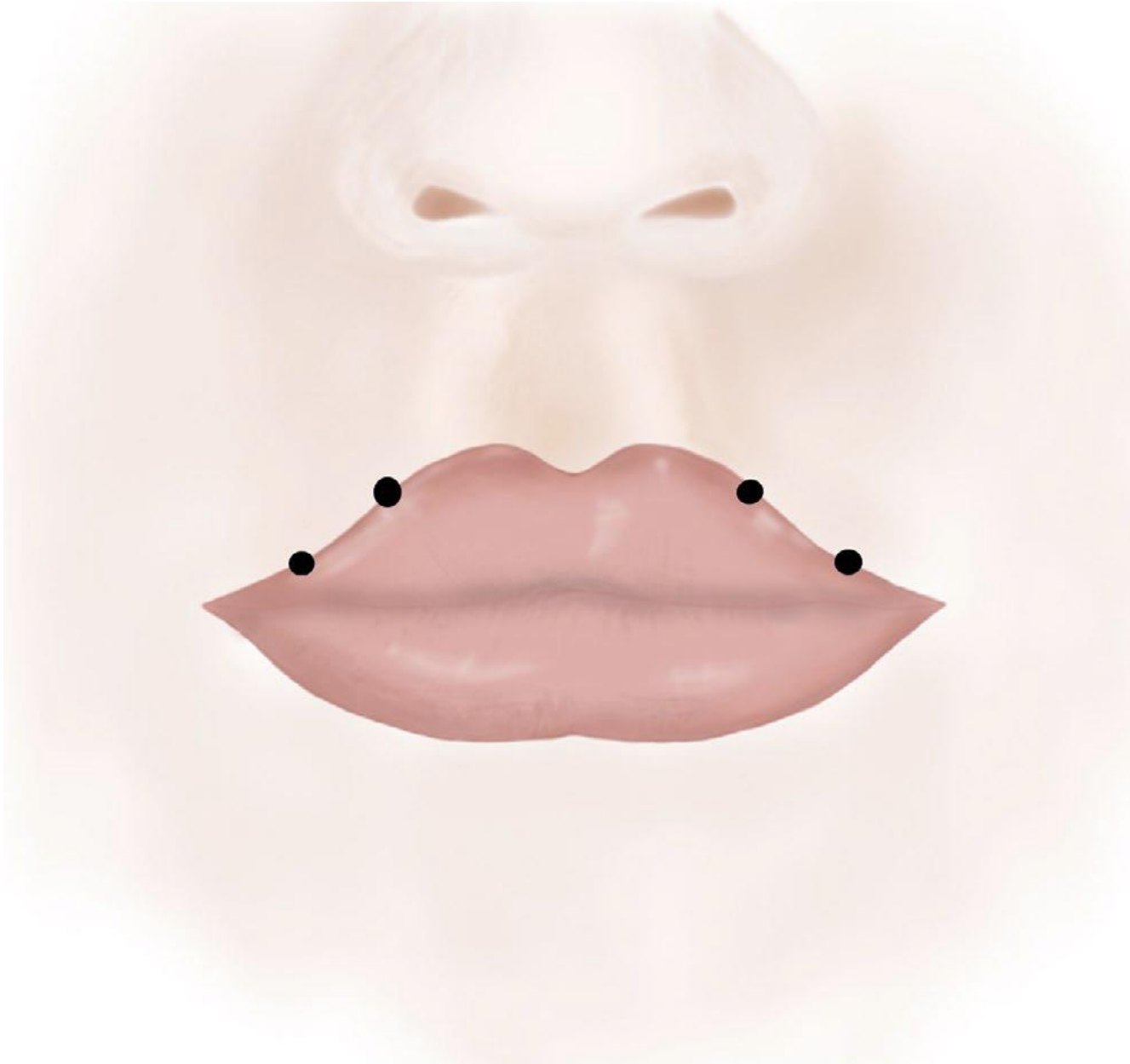
Aims: This study presents three cases of BTA injection to the lip and evaluates the possible changes in the labial morphology and the lip surface area.

Methods: Three patients received a total of 4U BTA injection at the vermilion border of the upper lip. Vectra® H1 3D imaging system was used to capture 3D photographs of the lips before injection and two weeks after injection. Eight linear distances and the upper lip surface area were measured. Anthropometric measurements before and after injection were compared.

Results: Patients displayed a larger upper vermillion height ($P = .038$) and a smaller cutaneous upper lip height ($P = .024$). There was a trend for a larger upper lip surface area, but not statistically significant ($P = .109$). Symptoms of slight perioral muscular palsy and mouth incompetence lasted about one month in three patients.

Conclusion: BTA helps to enlarge the upper lip and shorten the philtrum. The BTA injection can be an option for lip enhancement with caution.

Li Y, Chong Y, Yu N, Dong R, Long X. J Cosmet Dermatol. 2021;20:71–74



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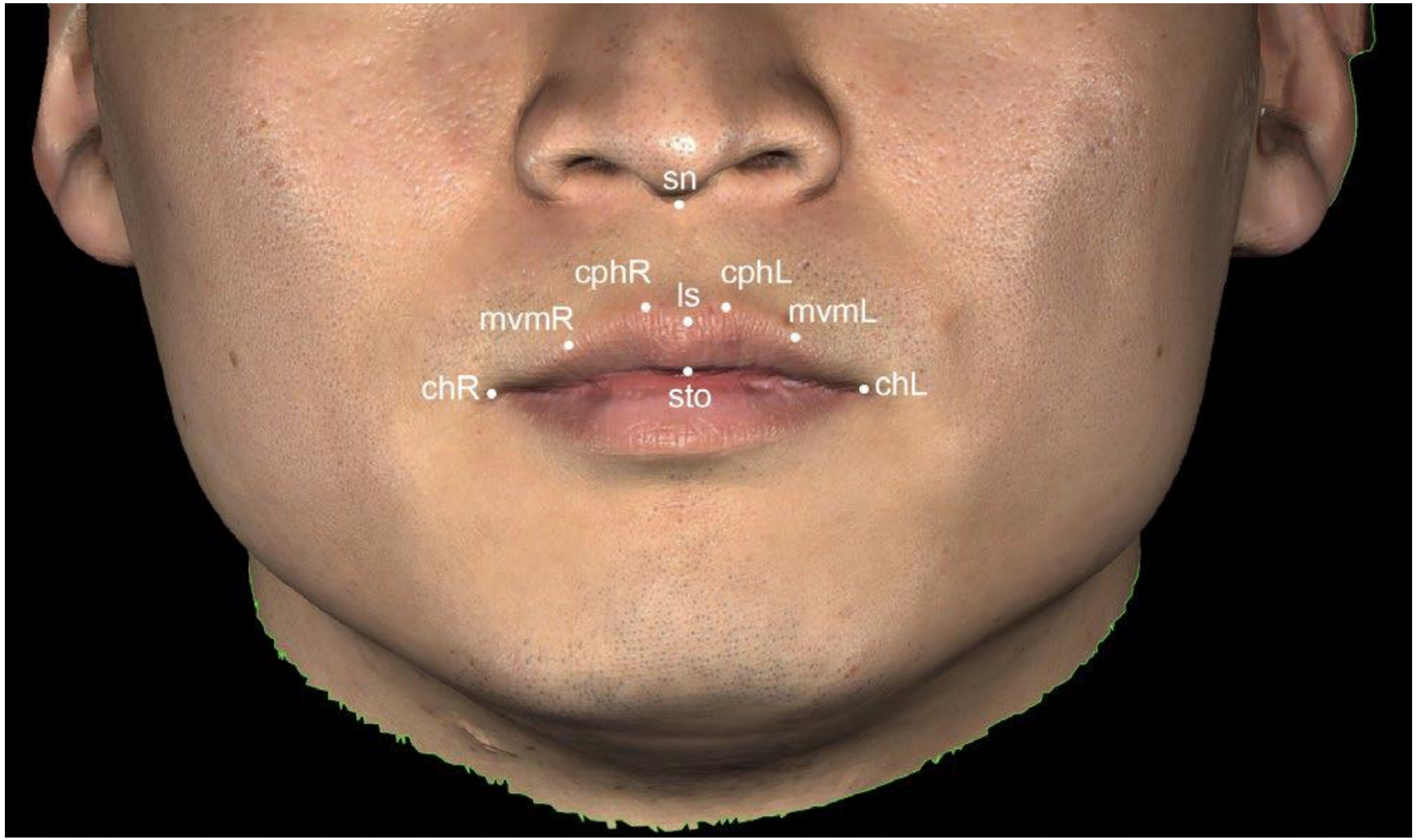

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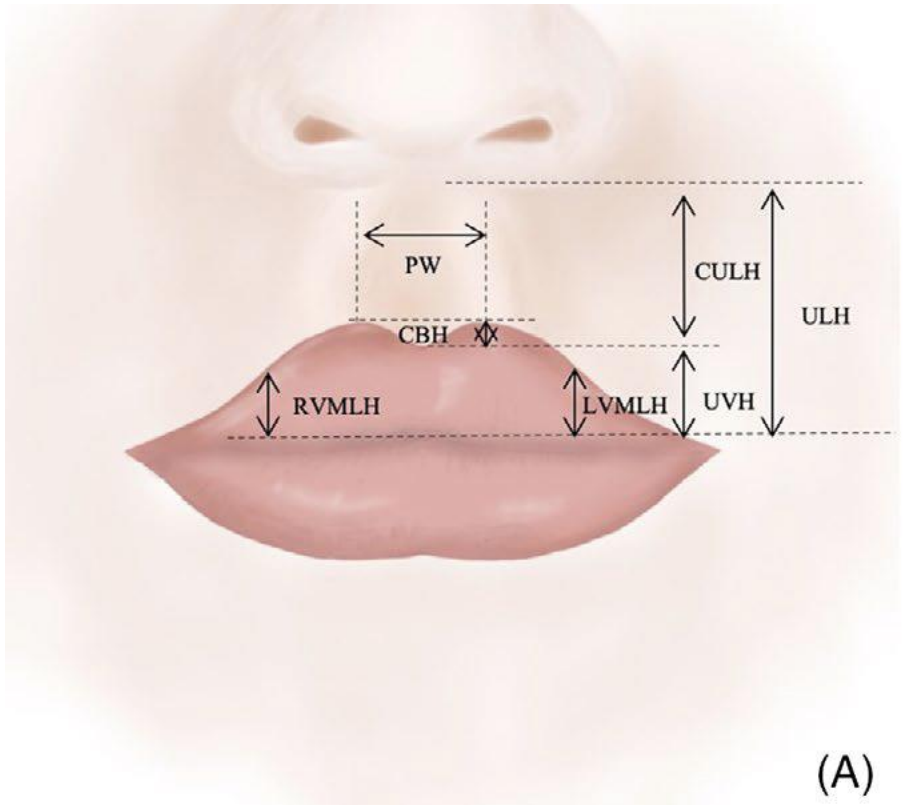

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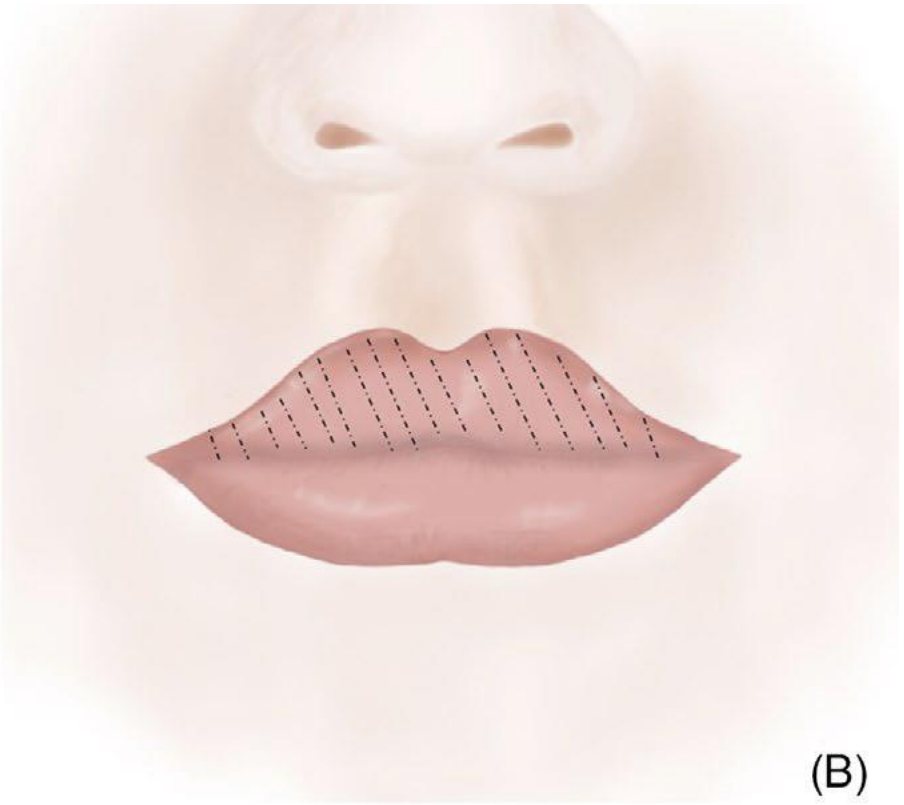

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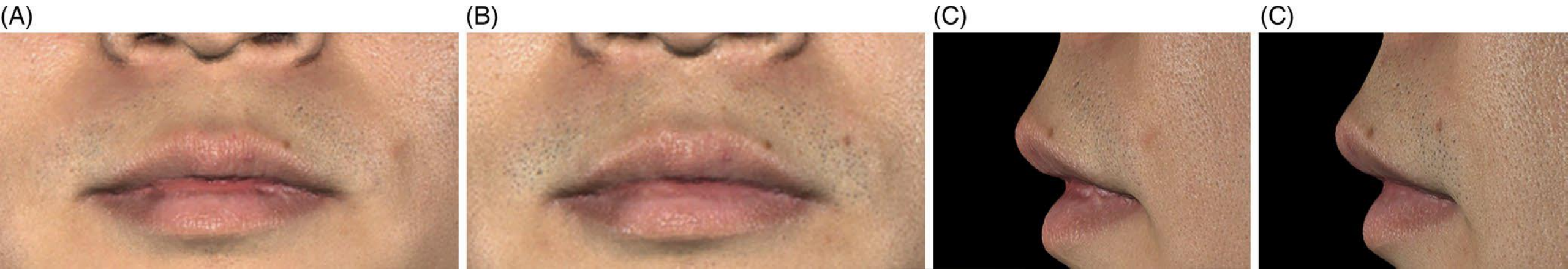

Li Y, Chong Y, Yu N, Dong R, Long X. J Cosmet Dermatol. 2021;20:71–74

9

Interdigital injection of botulinum toxin for patients with Raynaud phenomenon

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Key words: botulinum toxin; Raynaud phenomenon.

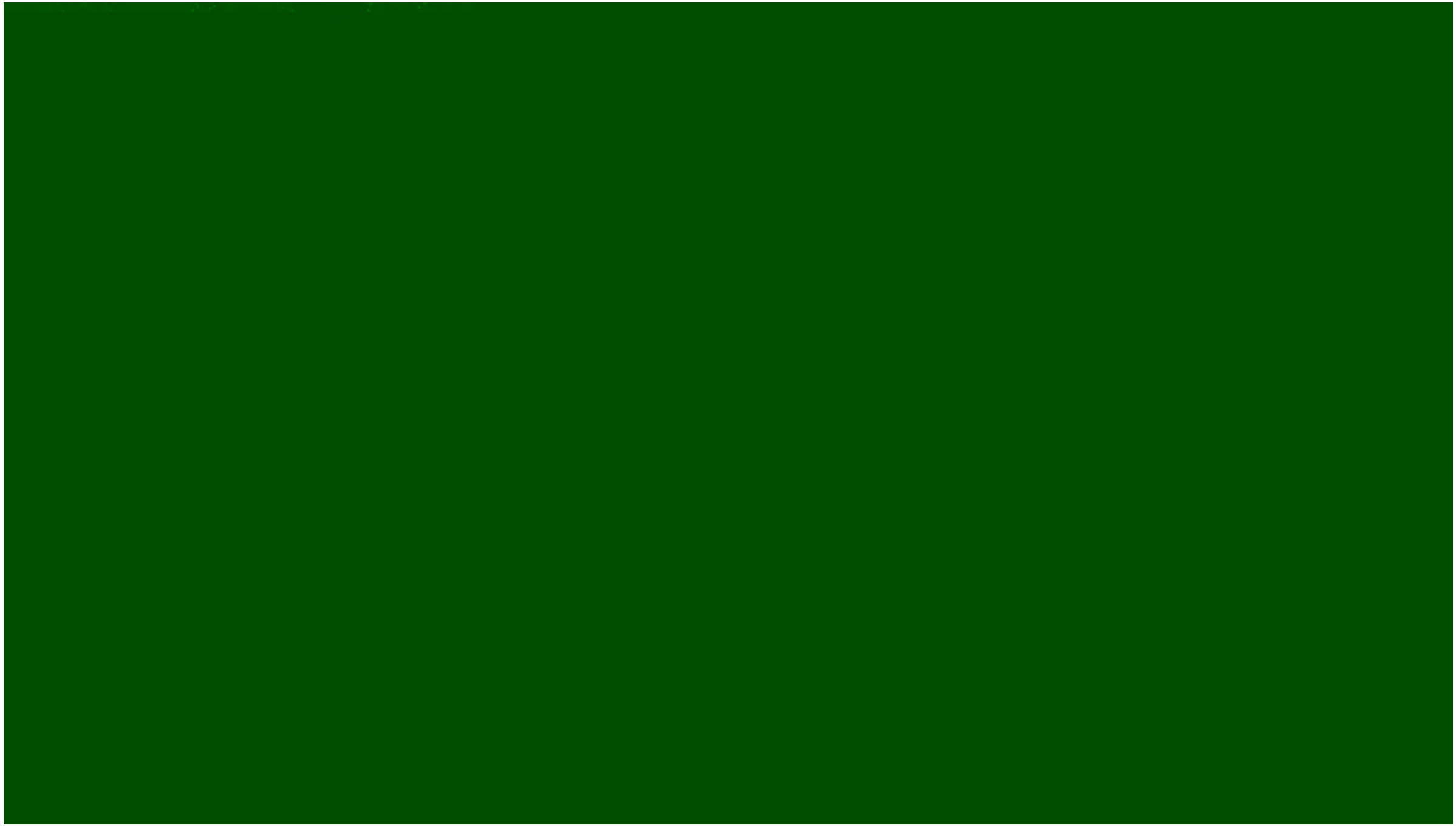
SURGICAL CHALLENGE

Botulinum toxin injection has demonstrated to be a simple and cost-effective option in pain reduction, promoting healing of digital ulcers, and decreasing the frequency of vasospastic attacks in patients with Raynaud phenomenon.[1,2] A universal injection technique and optimal dose to achieve adequate symptom control are lacking. Some of the reported procedures, such as proximal and distal palmar injection techniques, are painful and often require sedation or anesthetic blockade.

THE SOLUTION

The interdigital technique is an alternative approach, well tolerated, that can be performed in the outpatient setting without any type of anesthetic management (Video 1, available at http://www.jaad.org). Botulinum toxin is diluted in 2.5 mL of sterile normal saline solution, and injections are performed using a 30-gauge needle. A total of 36 IU of botulinum toxin are injected into each hand as follows: 8 IU into each finger web space, sparing the thumb web space, and 4 IU into each side of the thumb and the cubital aspect of the fifth finger metacarpophalangeal joint. Our personal experience has taught us that by sparing the thumb web space, we can minimize the loss of strength in the pincer grasp without losing efficacy. The effect of botulinum toxin is long-standing, with a mean period of 10 to 12 months between subsequent injections. This allows an optimal symptom control with only 1 or 2 injections per year.

Quintana-Castanedo L et al. J Am Acad Dermatol 2020;83:e399



10

Single-handed vampire facial: Combining microneedling with platelet-rich plasma for single-hand use

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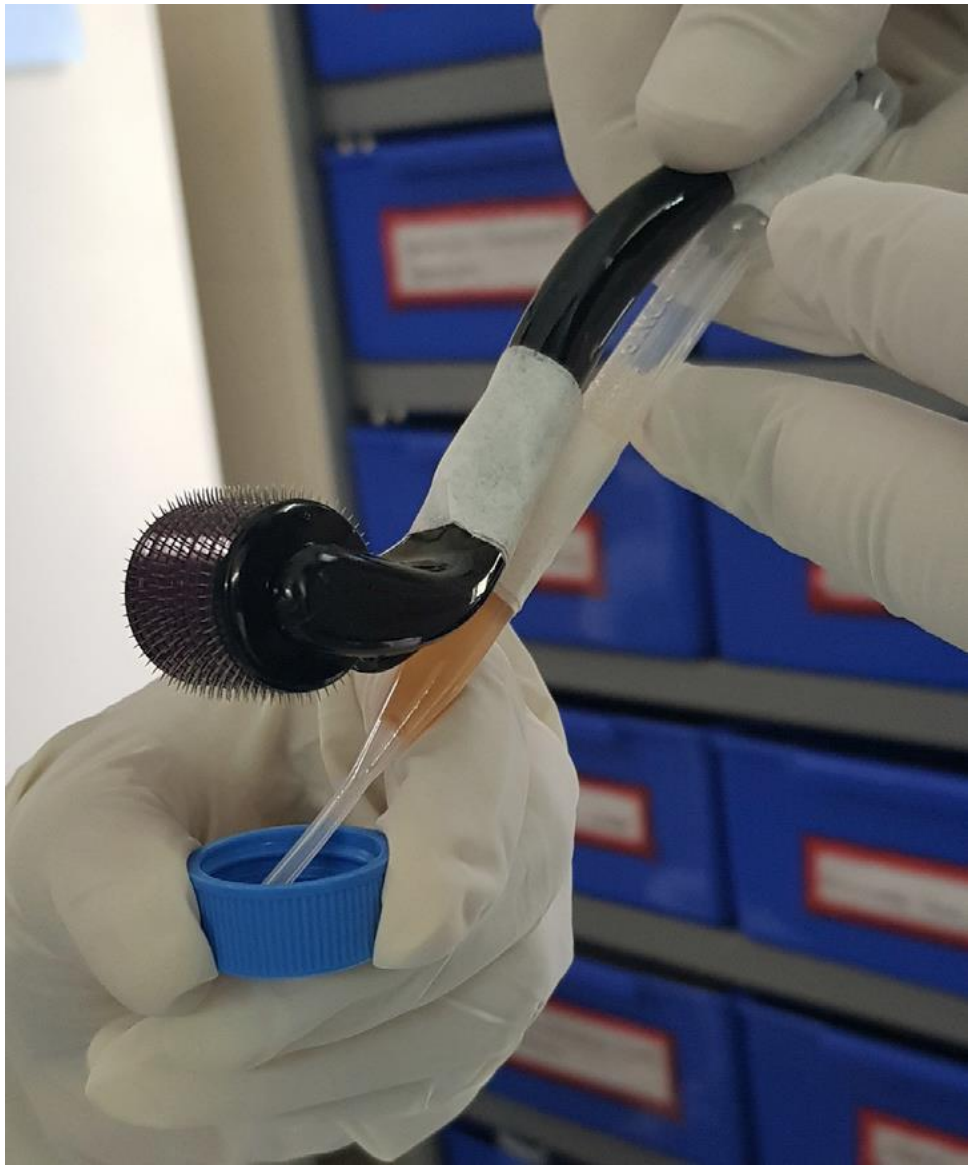
Key words: acne scars; derma roller; innovation; melasma; microneedling; platelet-rich plasma.

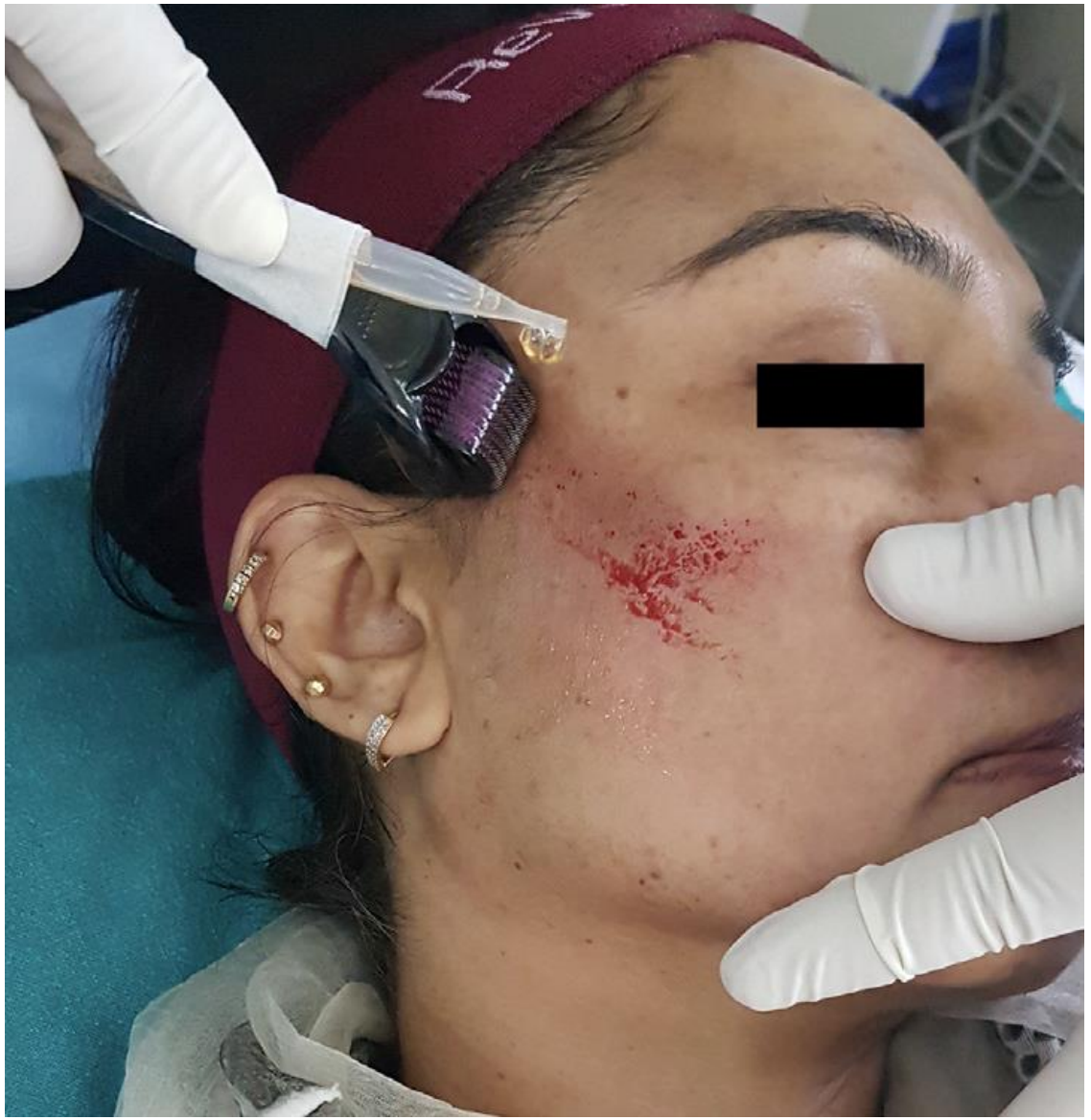
Abbreviation used:

PRP: platelet-rich plasma

CLINICAL CHALLENGE

Microneedling, or collagen induction therapy, is an extremely effective and minimally invasive modality with an ever-growing list of indications, including skin rejuvenation, acne scars, androgenetic alopecia, axillary hyperhidrosis, melasma, periorbital melanosis, and striae distensae, to name a few.[1] Many of these indications have found favor in combination with platelet-rich plasma (PRP). PRP has been used both in the form of intradermal injections into the acne scars followed by microneedling and as a topical application before or after microneedling.[2] A more popular and minimally invasive method for combination therapy is the simultaneous application of PRP while microneedling is being performed. However, this often requires an assistant or an additional hand to apply PRP while the operating surgeon carries out the microneedling.





Pathania V et al. J Am Acad Dermatol 2021;84:e77-8

11

Adhesive window technique for interventions on lip mucosa

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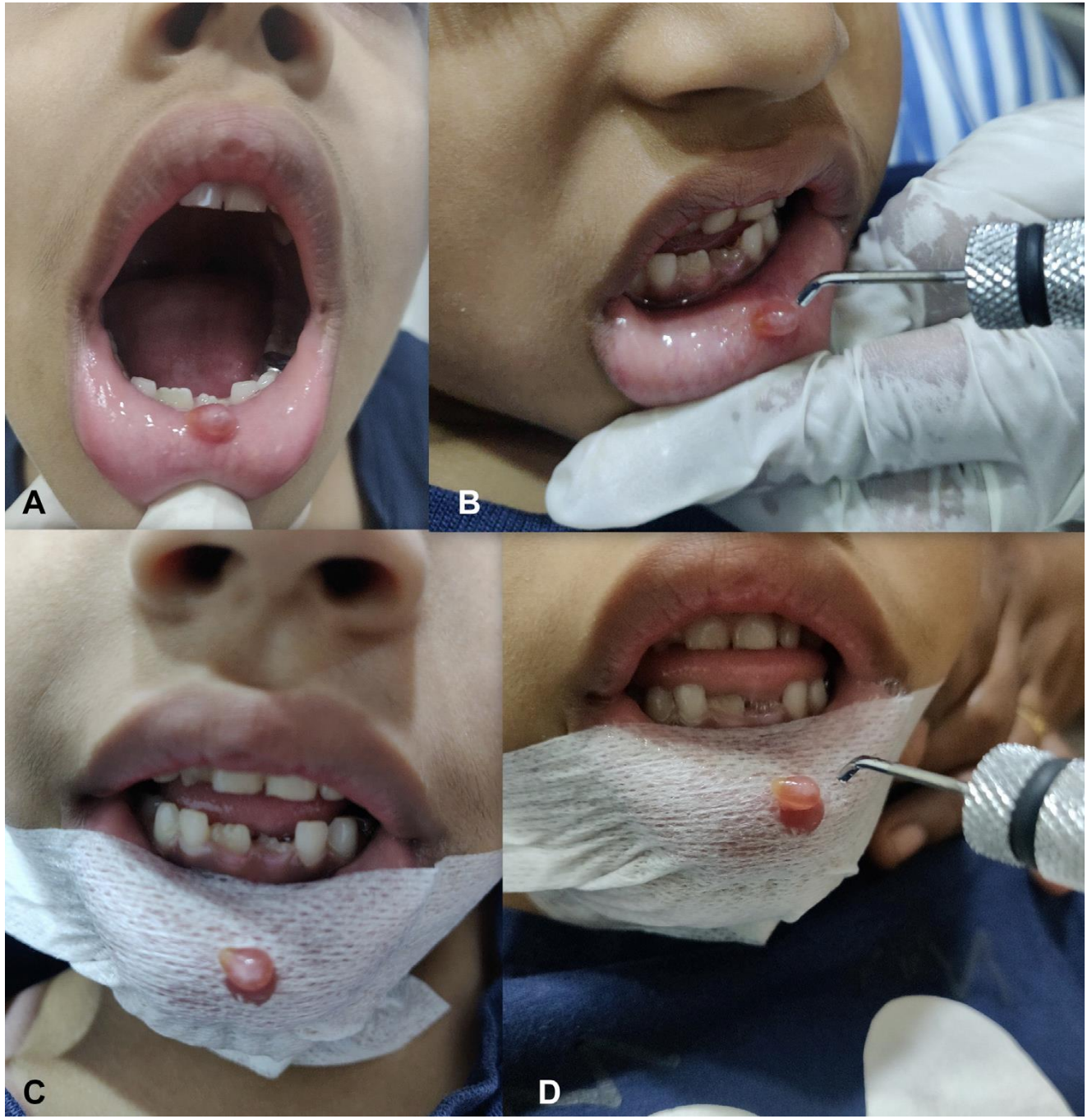
Key words: cryosurgery; labial melanotic macule; lips; mucocele; mucosal intervention; wart.

CLINICAL CHALLENGE

Performing ablative procedures and mucoscopy of the lips can be difficult, especially in children, for a number of reasons. A limited operating field, maintaining lip eversion, and risk of injury to adjoining tissues are some of the major challenges facing the operator.



Jayasree P et al. J Am Acad Dermatol 2020;83:e387-9

Summary

1. Hand hygiene during COVID-19: Recommendations from the American Contact Dermatitis Society
2. Guidance Regarding SARS-CoV-2 mRNA Vaccine Side Effects in Dermal Filler Patients
3. Dietary habits in Japanese patients with chronic spontaneous urticaria
4. Intradermal injections with 0.5% minoxidil for the treatment of female androgenetic alopecia
5. Effects of blue light on the skin
6. Lasers for the prevention and treatment of hypertrophic scars: a review of the literature
7. Chemical reconstruction of skin scars (CROSS) method for atrophic scars: A comprehensive review
8. The use of botulinum toxin A in upper lip augmentation
9. Interdigital injection of botulinum toxin for patients with Raynaud phenomenon
10. Single-handed vampire facial: Combining microneedling with platelet-rich plasma for single-hand use
11. Adhesive window technique for interventions on lip mucosa