Discussion

Of all the available treatments for HS, surgery seems to be the only one with an effect on its natural history.[3] However, it usually requires hospitalization, general anesthesia, and limitations during postoperative recovery.[4] Considering this scenario, lasers are a promising treatment option, advantages include; good hemostasis, excellent operative field visualization and reduced risk of postoperative scar contractures, infection, and recurrence.[3] CLS can also be performed in-office without antibiotics, offering rapid recovery, and reduced patient costs.[4]

In conclusion, CLS is an effective therapy for the management of HS Hurley III and a welcome addition to the limited number of available effective treatment options.

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Successful Treatment of Argyria Using the Picosecond Alexandrite Laser

Argyria is a blue–gray dyschromia of the skin and mucous membranes, usually a result of ingestion of colloidal silver as part of homeopathic or alternative health regimens.[1] Treatment options have been limited until successful treatment with quality-switched (Q-switched) lasers was recently reported.[1,2] The authors discuss the first reported case of generalized argyria successfully treated with the picosecond alexandrite laser (Picosure, Cynosure).

A man in his 50s presented for treatment of argyria after a 6-year history of ingestion of colloidal silver compounds as a health benefit. On physical examination, the patient had generalized blue–gray hyperpigmentation of skin. Previous treatments were unsuccessful and included Q-switched 1064-nm neodymium:yttrium aluminum garnet (Nd:YAG) laser, 2940-nm short-pulsed erbium:YAG laser, long-pulsed 755-nm alexandrite laser, fractionated carbon dioxide laser, sandpaper dermabrasion, nitric acid, and chemical peels (Figure 1).

The picosecond 755-nm alexandrite laser was evaluated as an alternative treatment option. On initial visit, 2 test spots were performed on the left and right medial upper arms using a spot size of 3.5 and 4 mm in diameter with fluences of 2.08 J/cm^2 and 1.59 J/cm^2. The 4-mm diameter spot size provided excellent clearing with minimal adverse sequelae at 3 weeks postoperative (Figure 2). The 3.5-mm spot size produced excellent clearing but resulting in some blistering and postoperative scabbing. The clinical end point was clearance of pigmentation visualized by a return to normal skin pigmentation immediately after application of laser energy. This is in contrast to immediate whitening evident with tattoo treatment. Pleased with results at follow-up, the patient requested treatment of full face, neck, ears, and hands.

The patient was prepped with topical 4% chlorhexidine gluconate, and a topical anesthetic agent consisting of 7% lidocaine and 7% tetracaine was applied to the

Figure 1. Right arm at initial patient evaluation before treatment showing blue–gray hyperpigmentation consistent with argyria. Hypopigmented patches are areas previously treated with other modalities.

treatment areas for 1 hour. Local nerve blocks with 1% lidocaine and 1:1,000 epinephrine were administered to the supraorbital, supratrochlear, infraorbital, and submental areas. The patient was treated with the picosecond alexandrite laser on the full face, ears, neck, and dorsal hands using a spot size of 4 mm and a fluence of 1.59 J/cm^2 at 10 Hz for a total of 25,082 pulses. The patient was given 24 mg of midazolam and 600 mg of fentanyl intravenously in divided doses distributed over the duration of the 1 hour treatment for pain control under the care of a board-certified anesthesiologist with continuous monitoring of oxygen, heart rate, and blood pressure. Significant correction of skin pigmentation was evident immediately after treatment and continued to improve at 1 week postoperative with nearly 100% return to normal pigmentation (Figure 3). The postoperative course was unremarkable except for extensive edema, which resolved within 3 to 4 days with no blistering or scabbing.

Discussion

Argyria is an uncommon dermatologic condition that results in blue hyperpigmentation of the skin and

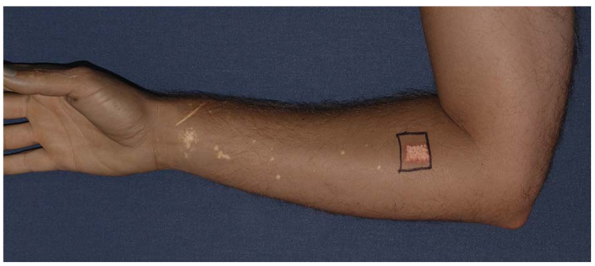

Figure 2. Right arm at 3 weeks postprocedure test spot with the picosecond alexandrite laser using 4-mm diameter spot size with a fluence of 1.59 J/cm^2 demonstrating excellent clearing of hyperpigmentation with minimal epidermal change.

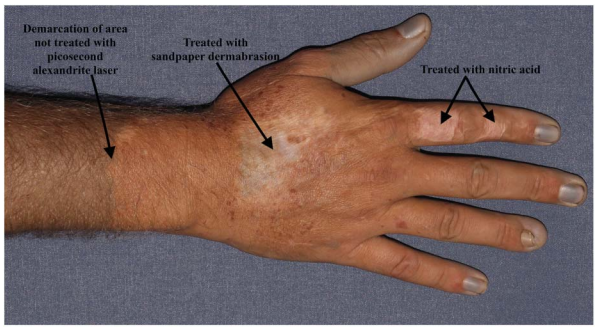

Figure 3. Right dorsal hand 1 week postprocedure with the picosecond alexandrite laser using 4-mm diameter spot size with a fluence of 1.59 J/cm^2 demonstrating complete clearance of blue hyperpigmentation. Hypopigmented patches are areas treated by the patient with nitric acid and sandpaper dermabrasion (arrows).

mucous membranes secondary to ingestion of colloidal silver. The silver granules are deposited primarily in the eccrine glands but can also be found in the dermal connective tissue.[1] Blue hyperpigmentation is generalized to the skin but appears most prominent in sun-exposed areas. The exact pathophysiology for this prominence has yet to be elucidated. One theory suggests that silver and sulfur undergo a reduction reaction when exposed to ultraviolet light causing the increased hyperpigmentation.[1] Nonetheless, the psychosocial effects of this condition may cause distress in patients and treatment options have been limited until recently. Previous reports have shown successful treatment of argyria with Q-switched ruby, Q-switched 1064-nm Nd:YAG, and Q-switched alexandrite lasers.[1,2] The picosecond alexandrite laser, similar to the picosecond Nd:YAG laser, has been shown to be more effective in the treatment of unwanted tattoos when compared with Q-switched nanosecond lasers.[3–5] Both the Q-switched nanosecond laser and picosecond laser technologies are based on the theory of selective photothermolysis. The exact mechanism of action of elimination of blue pigmentation in argyria patients with laser therapy has yet to be determined. However, it is likely due to absorption of light by pigment granules or melanin deposits resulting in destruction. The particle size of these granules or melanin deposits is comparable with the 0.1-μm particle size of tattoo ink particles and thus has a comparable thermal relaxation time of under 10 ns. For optimal selective photothermolysis of the target to occur, the pulse duration should be less than or equal to the thermal relaxation

time. This would support the picosecond pulse width to have a more selective and more effective clearance of pigment due to a pulse width closer to the thermal relaxation time of the particles.[3-5] The shorter duration of the picosecond pulse width allows for delivery of more power at a lower fluence, which provides more effective treatment with fewer adverse reactions.[3]

This is the first reported case of successful treatment of the blue–gray hyperpigmentation of argyria using the picosecond alexandrite laser. The authors suggest treatment of argyria with a picosecond alexandrite laser is at least equivalent to other laser modalities and should be considered as an option for this patient population. Further studies need to be performed to evaluate the longevity of the response.

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Use of Ethyl Chloride in Dermatology Minor Surgery

Patients attend dermatology for minor surgical procedures including shave biopsies, shave excisions, curettage, and punch biopsies. It is common practice among dermatologists to use epinephrine as a local anesthetic for many of these procedures, which can cause significant discomfort for the patient.

We propose the use of ethyl chloride spray as a viable alternative local analgesic for minor surgical procedures. Ethyl chloride spray is fast acting and provides topical local analgesia. The analgesic effect is almost instant because of the quick evaporation of the ethyl, which provides a cooling effect on the skin. This can be demonstrated by the "snowball" effect, which develops when spraying directly onto the skin (Figure 1). The analgesic effect lasts up to 30 seconds. This technique is frequently used by our colleagues in general practice and other specialties for minor procedures.[1,2]

Within our department, we have used ethyl chloride spray as a local anesthetic for minor procedures including curettes, shave biopsies, and shave excisions. The selected lesions have primarily been intradermal nevi and seborrheic keratoses on the trunk and limbs. Patients have tolerated this well, with some reporting mild to moderate discomfort. Because ethyl chloride being highly flammable, it cannot be used in combination with electrocautery. Cautery is usually achieved by a chemical cauterizing agent like silver nitrate or aluminum chloride. One must be cautious when using it on facial lesions as the vapor can enter the