

Addressing the Need for an Innovative Treatment of Hori's Macules

The skin hyperpigmentation condition called Hori's Macules often presents patient and healthcare provider challenges; impacting the quality of life due to what the medical literature describes as disfiguring, as well as dissatisfaction with the limitations and burden of more readily available treatments. The condition requires individualized aesthetic management. Similar to Nevus of Ota, Hori's Macules is a type of dermal melanocytosis in which nevus cells (a type of melanocyte that produces the pigment called melanin) are entrapped in clusters within the dermis.¹⁻³ This results in the characteristic hyperpigmentation areas that are described as bluish-brown in early stages or even slate-colored as it progresses,³ and according to Hori et al. the condition can be observed on both sides of the forehead, temple, eyelids, malar area, alae of the nose, and root of the nose.¹ It was first described by Hori et al.¹⁻³ in 1984 when it acquired the aforementioned name. However, it can also be found in the medical literature as Acquired Bilateral Nevus of Ota-like Macules (ABNOM).¹⁻³

Some distinctions can be made between these similar conditions. For example, Hori's Macules more often presents bilaterally and occurs later in life as an acquired condition (as opposed to a unilateral congenital condition or a birth mark like Nevus of Ota).¹⁻³

As an acquired condition, the dynamics are a mix of genetic and environmental risk-factors.³⁻⁵ The condition is most often described in middle-age Asian and Eurasian female populations.³ In one population study, many patients report family members with the condition.³ However, environmental influences cannot be ruled out because it is not limited to aging and family history⁴ (also presenting as an expression of or following skin inflammation).⁵

NEEDS WITHIN THE HORI'S MACULES POPULATION

Unique presentations of skin conditions are ever-evolving on a case-by case basis. While Hori's Macules typically do not involve other tissues such as the eyes and mucosa (unlike Nevus of Ota), there are exceptions published in the literature.⁶ Interestingly, the medical literature also describes a patient

born with Nevus of Ota who later developed Hori's Macules older in life.⁷ As a result, there is a strong need for individualized care and having the most versatile technology allows the healthcare provider to address the vast array of skin care needs that present in real life.

TREATING HORI'S MACULES IN FAST, SAFE, INNOVATIVE WAYS

Fortunately, technology development is evolving in exciting ways to provide safe, effective, individualized care.⁸ While laser treatment is often considered the most cost-effective cosmetic treatment for these kinds of hyperpigmentation conditions, clinicians have reported that standard lasers like the Q-switch laser therapy require longer treatment courses than picosecond laser technology.⁹ What is more, this technology continues to advance beyond its early years (providing not just individualized care but simultaneously addressing multiple conditions through expanded, comprehensive device specifications and accessories).⁸

NOVEL PICOSECOND LASER LEADS HORI'S MACULES TREATMENT

As the first and only picosecond laser granted FDA-clearance for the treatment of Nevus of Ota, Cynosure's (Westford, Ma) novel picosecond laser device, PicoSure Pro, is leading the way. Previously cleared as a laser surgical instrument for use in general and plastic surgery and in dermatology in the United States, the U.S. Food and Drug Administration (FDA) recently granted additional clearance specifically to market for treatment of Nevus of Ota, melasma pigment and Hori's Macules pigment disorders. With proven clinical validation, there are over 83 publications in the medical literature¹² (and over 50 abstracts) to date that characterize or feature the PicoSure technology in various models.

The PicoSure Pro operates by creating an intense photothermal impact in trillionths of a second through an ultra-quick

picosecond pulse duration of light that spares the skin of high thermal damage (unlike other lasers and similar technology).⁸⁻¹² By primarily targeting the melanin chromophore, instead of water, the PicoSure Pro spares damage to surrounding tissues (and reduces side-effects)⁸⁻¹² In this larger process that researchers characterize as Laser-Induced Optical Breakdown (LIOB), epidermal repair mechanisms are stimulated and produce positive clinical findings.⁹⁻¹²

This photomechanical reaction stimulates the body's natural healing processes, including key components of youthful skin (with production of new collagen and elastin).⁸⁻¹² The picosecond pulse duration's photo acoustic mechanisms also lighten (disperse) unwanted pigment.⁹⁻¹² As a result, PicoSure Pro treats a range of pigmentary conditions with better clearance in fewer treatments.⁸⁻¹²

The PicoSure Pro laser offers versatility with three treatment wavelengths (532 nm, 755 nm, and 1064 nm), broad customizable pulse durations, spot sizes, fluency, and repetition rate. Treatments are customizable with 2-6 mm, 5 mm, 6mm 8 mm, and 10 mm spot sizes. The flat optic can address discrete targeted pigmented lesions in all skin types. The photomechanical actions of the PicoSure Pro can even be enhanced.⁹⁻¹² The Platinum Focus™ Lens provides full-face treatments that improve texture and tone.



PUBLICATIONS ON USE OF PICOSURE TECHNOLOGY DEMONSTRATE SEVERAL YEARS OF SAFE AND EFFECTIVE TREATMENT FOR HORI'S MACULES

Evaluation of the medical literature revealed 7 publications that characterized the PicoSure technology for the treatment of various Nevi, which included Becker's Nevus; Congenital Nevus; Nevus of Ito; Nevus Spilus, Epidermal Nevus; Congenital Melanocytic Nevus; and most commonly Hori's Nevus (ABNOM).¹³⁻²⁰ A total of 305 subjects underwent treatment utilizing the 755nm wavelength for various Nevi.¹³⁻²⁰ Specifications and regimens found within the literature included:

- Most common pulse duration at 750 ps
- Number of treatments ranged from 1-6
- Treatment intervals up to 6 months, though not often reported due to individuality
- Fluences ranged from 0.7-6.37 J/cm²
- Spot sizes ranged from 2.5-6 mm
- Frequency set between 2.5-10 Hz

PICOSURE TECHNOLOGY ESTABLISHES SAFETY

As with all PicoSure treatments, no serious adverse events were found in any of the publications.¹⁰⁻¹⁶ Also exciting, side-effects reported in the studies were primarily transient and mild (to include mild erythema; edema; pain/tenderness; crusting; dyspigmentation; hyperpigmentation; bullae formation; hypopigmentation; petechiae; pustules; blistering; and acneiform miliaris)¹³⁻²⁰

PICOSURE PRO SUCCESSFULLY TREATS HORI'S MACULES

The most common Nevi treated in the publications was Hori's Nevus (ABNOM). Ding et al. demonstrated that **after only two treatments, the majority of participants achieved at least 60% clearance, with a third treatment leading to a majority of participants experiencing more than 90% clearance in their pigment.**¹⁹ Yu et al. discovered an extremely high satisfaction rating amongst patients, with **93.4% of participants reporting they were very satisfied or satisfied 6 months after their final treatment.**²⁰ This data also indicated that PicoSure was able to outperform the Q-Switched Alexandrite Laser in all efficacy and safety benchmarks.²⁰ With noteworthy versatility, both Chan¹⁴ and Levin¹⁵ demonstrated in separate publications that the PicoSure device successfully treated Becker's Nevus; Congenital Nevus; Nevus of Ito; Nevus Spilus; Epidermal Nevus; and Congenital Melanocytic Nevus.

CONCLUSION

The medical literature supports the treatment of Hori's Macules with the novel PicoSure Pro device. As the first and only picosecond laser with FDA clearances for pigment disorders like Hori's Macules, Nevus of Ota, and melasma pigment, practitioners and patients alike can feel confident in the versatility, safety, and efficacy of the novel PicoSure Pro device.

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