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DISCOVERY *PICO* START

The picosecond laser specially design for
acne scars and benign pigmented lesions

Quanta System
LASER IN OUR DNA

Discovery Pico Series Treats Asian Skin Types with Unparalleled Efficacy and Safety

By John Jesitus, Contributing Editor



Kei Negishi, M.D., Ph.D.
Plastic Surgeon
Tokyo, Japan



Peter Peng, M.D.
Dermatologist
Kaohsiung, Taiwan

For benign pigmented lesions, such as solar lentigines, the Discovery Pico and Pico Plus by Quanta System (Milan, Italy) facilitate gentle treatments with stable energy delivery. These factors provide predictable results while reducing the risk of post-inflammatory hyperpigmentation (PIH).

“Patients with darker skin types have a higher risk of PIH after any kind of laser treatment,” said Tokyo-based plastic surgeon Kei Negishi, M.D., Ph.D., who has been using the Discovery Pico, which includes 532 nm and 1064 nm wavelengths, since 2016.

When treating solar lentigines, Dr. Negishi uses minimal fluence to achieve slight whitening of treated skin immediately after the laser energy is delivered. Here, she said, the smooth, stable beam provided by Quanta’s Optibeam handpiece is very helpful. “If the laser profile is not smooth, it is difficult to judge the skin reaction – one area becomes very white and another does not.”

Peter Peng, M.D., a dermatologist in Kaohsiung, Taiwan has had the Discovery Pico Plus, which includes a 694 nm ruby laser, since early 2018. In his experience, the Optibeam handpiece loses minimal energy when transmitting light to the skin, and its flat-top beam profile is well-suited for pigment treatments and laser toning.

Unlike Q-switched nanosecond lasers, which work primarily through photothermal effects, ultrashort picosecond pulses create a photoacoustic effect by firing faster than the target tissue’s thermal relaxation time.

“We cannot completely avoid PIH, but we can reduce the risk of it,” Dr. Negishi said. Using less heat causes less inflammation, she explained, which, in theory, reduces the likelihood of PIH. “This is why I like to use the Discovery Pico for benign pigmented lesions.”

According to results of a study conducted by Dr. Negishi, the laser provided greater improvement in lentigines with less epidermal damage and a lower risk of complications than a Q-switched laser.

For epidermal lentigines on the face, dorsal hand and arm, Dr. Negishi often uses the 532 nm wavelength, with topical lidocaine for patient comfort. “Typically, it takes one or two treatments to achieve more than 75% clearance.”

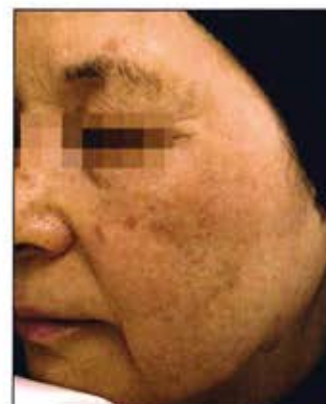
In another Discovery Pico study (unpublished), authored by Dr. Negishi, only 12% of facial lesions needed two treatments.

When Dr. Peng treats benign pigmented lesions, he typically begins with Q-switched ruby spot treatment (3 mm spot size, 3 to 4 J/cm²). He follows this immediately with fractional ruby treatment (8 mm spot, 0.44 J/cm², 3 Hz), then fractional picosecond treatment at 1064 nm (8 mm spot, 0.2 to 0.5 J/cm², 10 Hz).

“This approach first focuses on pigmented lesions, then lightening of skin color, which is a huge request from Asian patients, followed by rejuvenation and improving skin tone,” he stated.

Addressing acne scarring with the 1064 nm wavelength requires more aggressive treatment (0.8 to 1.0 J/cm²). According to Dr. Peng, the laser’s high peak power (1.8 GW at this wavelength) creates better and faster improvements.

Dermal pigmented lesions require three to six sessions, versus at least four to six for rejuvenation, including atrophic acne scars. As Dr. Peng expressed, “Whatever the treatment, the laser’s lack of consumable items allows for more flexible treatment plans and a faster return on investment.”



69-year-old female before and three months after one treatment with Discovery Pico with 532 nm wavelength
Photos courtesy of Kei Negishi, M.D., Ph.D.