

Assessment of the Response and Improving Outcomes of Nevus of Ota with Q-switched Nd : YAG Laser

Nevus of Ota, a condition characterised by dermal melanocytosis, responds very well to a Q-switched Nd: YAG laser (QSL).^[1] The number of sessions required for complete clearance and the interval between sessions has not been clearly defined. The current literature suggests that multiple sessions are generally necessary (ranging from 6 to 10 or more) and the present data supports that the interval between sessions should be at least two to three months. A recent study has reported that the number of treatments required varies significantly according to the lesional colour and site: Grey lesions and those on the forehead/temple are most resistant.^[2]

Treatment is conducted with the handpiece held perpendicular to the surface and a single pass is given, with minimal overlap. Multiple passes should be avoided as they increase the chances of cumulative thermal damage, with increased risk of dyschromias (particularly guttate hypopigmentation/mottled hypopigmentation) and blistering/scarring.^[3]

Another concept gaining ground is combining ablative and non-ablative fractional lasers with QSL for the treatment of pigmented lesions and tattoos.^[4-6]

In very dark patients, skin types V and VI, conservative settings are recommended to minimise the adverse effects and it has been shown that QSL treatment in these darker patients yields good results.^[7]

The rationale behind the combination therapy is that the micro-thermal zones (MTZ) and micro-ablative zones (MAZ) created by these fractional lasers allow

transepidermal clearance of the pigment along with the micro-epidermal necrotic debris (MEND), and also the use of these devices in combination with QSL allows the release of gases that build up during QSL therapy, due to rapid thermal expansion. Creating micro-ablative columns allows these gases to be released, thus reducing the chances of blistering. Evidence is available for the use of this concept in tattoo removal and can be utilised in the management of nevus of Ota.^[8]

In the author's experience, this dual combination has improved the rate of clearance without increasing the risk of adverse effects.

Another development is the use of low fluence QSL for the treatment of nevus of Ota, where multiple sessions are performed using low fluencies (2.5 j/cm² to 5 J/cm²) repeated at two-week intervals.^[9]

The response to treatment is usually documented based of digital photography and the physician's global assessment, either by the treating physician or a blinded observer. This works most of the time as serial photography can visualise the change adequately. To achieve satisfactory photos before and after the procedure, the shooting conditions need to be standardised with similar lighting, distance to the patient, and camera settings during each shoot. Measurement of the melanin index with the help of a mexameter is another way of measuring the response and helps in standardisation and may improve the reproducibility of the results. The limitations include availability, cost of the instrument, and variability in accuracy of $\pm 5\%$. The site of measurement with the mexameter needs to be marked accurately and reassessment should be from the same points. Skin biopsy is another way of assessing the response, but due to its invasive nature and need for repeat biopsies, it may not be acceptable to the patients.

Laser treatment of nevus of Ota produces predictable results, provided the right technique and correct

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parameters are used. The risk of hyper- and hypopigmentation is minimal if proper protocol is followed. Newer modalities such as combining lasers and use of low fluences may allow better and faster clearance and minimise the risk of side effects.

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