

Dermatology Times

Lasers Improve Vascular Lesion Treatment

By Cheryl Guttman
Contributing Editor

New York — Laser treatment for vascular lesions has come a long way in a short time, Kenneth A. Arndt, M.D., said at Academy '99.

"The technology is now readily available, is getting less expensive, and has advanced to the point where most vascular lesions can be treated with minimal risk to the patient and nearly always with a good result," said the professor of dermatology, Harvard Medical School, Boston.

Currently on the Market

Among the most recent additions to the laser surgeon's therapeutic armamentarium has been a series of green light lasers emitting at 532 nm with pulse durations of 1 to 50 milliseconds, including the DioLite 532 diode-pumped frequency doubled solid-state laser.

Their current applications include treatment of superficial vascular lesions, including telangiectasia and cherry and spider angiomas. In addition, they can be used with a scanner to treat portwine stains in adults.

Dr. Arndt said the green light beam of these lasers is well absorbed by the target hemoglobin, and with their relatively long pulse durations, they produce slower, but greater and more uniform heating of larger vessels.

As a result, vessel walls do not rupture, and vascular lesions can be treated without producing the long-lasting purpura associated with pulsed dye laser treatment. With the green light lasers, patients may develop mild transient redness and swelling at the treatment site. This swelling may be particularly marked after treatment of the face or a large area. However, this will dissipate significantly within six to 12 hours.

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*Kenneth A. Arndt, M.D.
Professor of Dermatology, Harvard Medical School*

"Now patients can come in for treatment in the morning and go out socially later that day or return to work the next without concern about their cosmetic appearance. This is a significant advantage, and for this reason, I believe these lasers represent the standard of care for the treatment of many small and large vascular lesions," said Dr. Arndt, chief, department of dermatology, Beth Israel Deaconess Medical Center.

The frequency-doubled Nd:YAG lasers are usually used in a tracing technique over the vessels with a thin beam of light, measuring about 1-mm in diameter. Alternatively, for larger areas, they can be used with a computerized software handpiece that will paint a grid allowing treatment in a uniform fashion. It is important that overlapping be avoided to minimize the risk of scarring.

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Drawbacks of the green light lasers include relatively superficial penetration and good absorption by melanin. Due to the latter feature, these devices carry an increased risk of epidermal damage and pigmentary alterations, particularly when they are used to treat darker-skinned patients. However, hypopigmentation is typically transient and resolves within three to six months, Dr. Arndt said.

Up and Coming Products

On the horizon are a new generation of long pulsed Nd:YAG lasers. Several devices have already reached the market and others will be introduced soon. These devices emit beams with a 1064-nm wavelength in pulses ranging from 1 to 100 milliseconds.

"There is not much information yet in the literature about these lasers, but it seems they might be useful for treating larger, deeper vessels and in darker skin types," Dr. Arndt said.

He explained that with their longer wavelength, they offer greater penetration than the green light lasers and thus the potential to treat deeper vessels, such as leg veins that so far have been relatively refractory to eradication with lasers.

In addition, the 1064 nm wavelength is poorly absorbed by melanin. Therefore, vascular lesions in patients with darker skin types may be treated more safely.

The Patient's Role

Development of realistic patient expectations is an important preoperative consideration and a primary determinant of a successful outcome.

"Patients should be aware that while the lesion may appear to be completely cleared initially, the effect may be transient. A single treatment

may produce 60 to 70 percent clearing, and patients must realize that multiple treatments are usually necessary for an optimum result. In addition, they should also recognize that some lesions are unresponsive," said Dr. Arndt.

He added that to optimize efficacy and safety whenever treating vascular

lesions, meticulous technique is critical. Laser surgeons should also aim to use the lowest energy possible.

"Use of excessive energy increases the risk of scarring, and surgeons should know that the suggested guidelines for treatment parameters are often more aggressive than what is truly needed," Dr. Arndt said. DT

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