

# Pulsed Dye Laser Mostly Safe as Hemangioma Tx

BY SHERRY BOSCHERT  
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SCOTTSDALE, ARIZ. — The introduction of dynamic cooling devices has made pulsed dye laser therapy of infantile hemangiomas safer and less painful, but rare complications do occur, Dr. Brandie J. Metz said at a dermatology conference sponsored by Skin Disease Education Foundation.

Pulsed dye laser is a common treatment for superficial cutaneous vascular lesions. The 585-nm pulsed dye laser reaches a depth of about 1.2 mm, and the newer 595-nm pulsed dye laser penetrates slightly deeper without losing vascular specificity. Typical treatment for infantile hemangiomas uses short pulses (0.45-1.5 milliseconds) in spot sizes of 7 or 10 mm, noted Dr. Metz, chief of pediatric dermatology at the University of California, Irvine.

Dynamic cooling devices allow higher fluences, make the procedure less painful, and reduce the risk of dyspigmentation or scarring from pulsed dye laser therapy, a recent study found (*Lasers Surg. Med.* 2006; 38:112-5).

Selection of the laser parameters still plays a key role, howev-

er, in the risk for complications, she said. Because hemangiomas are dynamic lesions with a higher risk for ulceration than are lesions like port-wine stains, pulsed dye laser treatment for hemangiomas generally uses lower energy levels.

A separate study characterized 12 cases of complications culled from multiple reports of pulsed dye laser therapy for superficial infantile hemangiomas. Eleven were infants treated with 585-nm pulsed dye laser without a dy-



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DR. METZ

amic cooling device, using fluences of 4.7-7 J/cm<sup>2</sup>. The worst complications, however, occurred in the 12th infant who received 595-nm pulsed dye laser therapy using fluences of 7-12 J/cm<sup>2</sup> with a dynamic cooling device (*Lasers Surg. Med.* 2006;38:116-23).

All patients were treated early in life (between 5 days and 4 months of age), and all had hemangiomas on the face. Half had segmental hemangiomas, which are more prone to ulceration

than localized hemangiomas.

Four patients developed permanent atrophic scarring without ulceration. Eight infants developed severe ulceration with subsequent pain and scarring, including the infant treated with higher fluences using the dynamic cooling device. The latter infant also developed a life-threatening hemorrhage.

Even though the risk of complications like scarring and ulceration from pulsed dye laser is very low, "It's important to choose your parameters carefully, identify the risk, and counsel parents" about the risk before treatment, she said.

The infant treated with the 595-nm pulsed dye laser and dynamic cooling device had done well after receiving three test spots of 6.5 J/cm<sup>2</sup>, 7.5 J/cm<sup>2</sup>, and 8.5 J/cm<sup>2</sup> at 5 days of age. Treatment at 11 days of age with 53 pulses of 9 J/cm<sup>2</sup> also went well. The problems arose after treatment at 21 days of age with 80 pulses of 12 J/cm<sup>2</sup>.

Pulsed dye laser more commonly helps manage hemangioma ulcerations than causes them, Dr. Metz noted.

Several recent studies showed that one to three treatments at 2- to 4-week intervals can help heal hemangioma ulcerations, and help alleviate pain from the ulceration within 1-2 days of the first treatment.



**Inappropriate laser therapy can cause infantile hemangiomas to ulcerate, but the devices can help heal some ulcerated hemangiomas.**

The first step in managing hemangioma ulceration is local wound care using barrier creams and ointments and occlusive dressing. These alone often are sufficient for smaller ulcerations and should be employed even when combined with other management strategies.

Use topical or systemic antibiotics to manage infection of ulcerated infantile hemangiomas, and use topical anesthetics or oral analgesia to manage pain. Oral acetaminophen

plus codeine can be helpful, especially when changing dressings, she noted. Specific therapies for hemangiomas like systemic or intralesional corticosteroids aim to decrease proliferation and can help decrease the ulceration, she added.

Dr. Metz has no financial associations with the companies that make pulsed dye lasers. Skin Disease Education Foundation and this news organization are wholly owned subsidiaries of Elsevier. ■

## Combined Laser Can Enhance Tx Of Hypertrophic Port Wine Stains

BY TIMOTHY F. KIRN  
Sacramento Bureau

PALM DESERT, CALIF. — The one-two punch of a combination pulsed dye/Nd:YAG laser system can enhance the treatment of hypertrophic port wine stains, Dr. Elizabeth Tanzi said at the annual meeting of the American Society for Dermatologic Surgery.

Dr. Tanzi presented data on 25 patients with recalcitrant and hypertrophic port wine stains that she treated using the Cynergy laser workstation. All of the patients had at least 10 previous treatments that had not yielded a satisfactory result.

With the combined laser system, which was introduced in the United States last year by Cynosure Inc., all of the patients had "continued" improvement with four to six treatments, as judged by two independent reviewers 3 months after the last treatment, said Dr. Tanzi, a dermatologist in practice in Washington.

"This is a double whammy, so to speak. We really get a double hit on the vasculature," she said.

Pulsed dye laser treatment works well for many port wine stains, but not those that are thick and hypertrophic. The combination system

appears to be better because treatment first with the pulsed dye laser heats hemoglobin and damages the vasculature but also creates a new chromophore susceptible to the Nd:YAG treatment that follows, she said.

One patient who had improvement with the Cynergy laser had received 16 previous treatments.

The Cynergy system allows the operator to fire both lasers through the same handpiece, so there is no need to change between treatments, which allows for quick firing between lasers, Dr. Tanzi said.

The patients were each treated at 6-month intervals. The spot size was 1 mm. The fluence used for the pulsed dye laser (595 nm) was 77.5 J with a pulse duration of 100 milliseconds; the fluence for the Nd:YAG laser was 30-50 J, with a pulse duration of 15 milliseconds. The delay between the two lasers' pulses was 0.5-1 millisecond.

Patients had some edema afterward that lasted for 1-4 days, but there was no vesicle formation, no dyspigmentation, and no scarring, she reported.

Dr. Tanzi said that the Cynergy workstation was provided to her clinic for the investigation by Cynosure. ■

## Alexandrite Laser Treatment Shown to Improve Lentigines

PALM DESERT, CALIF. — The 755-nm alexandrite laser was highly effective in improving lentigines in 18 volunteers treated at Naval Hospital Camp Pendleton, Lt. Cmdr. John Paul Trafeli, USN, said at the annual meeting of the American Society for Dermatologic Surgery.

Independent reviewers judged that the patients had a 60% average improvement in their lentigines after a single treatment with one or two passes of the alexandrite laser, which is more commonly used for hair removal.

Dr. Trafeli said that 18 patients were also treated for facial telangiectasis in the same study, but the results were not quite as good. Those patients had a 30% average improvement.

"For telangiectasis, the alexandrite laser is a ground ball, but for lentigo, it is a definite home run," he said.

After experimenting with several parameters on test areas, the investigators generally settled on a

3-millisecond pulse duration at 34 J/cm<sup>2</sup> using a 10-mm spot size, but they also found that, without using cryogen cooling of the skin surface, they could get the same results at lower fluences.

Increasing the pulse duration improved the background epidermal tolerance and did not work as well.

The 755-nm alexandrite laser is an "interesting" wavelength because it appears to be optimal for absorption in areas of dyspigmentation, Dr. Trafeli said.

It has a high absorption by melanin relative to hemoglobin, compared with the 532-nm and 595-nm lasers, and it has three times the melanin absorption of the 1064-nm laser.

"The nicest thing about this alexandrite is that it is very fast and simple," he added.

"I liken it to a lawn mower. You don't need much skill. You just kind of go over the whole face."

—Timothy F. Kirn