

HILL RAG

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Laser Treatment For Birthmarks

New to the Hill, This Procedure Would Make the Gorbachev Visage Less Distinctive

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I REMEMBER CONSULTING on my first patient with a disfiguring birthmark. It was during my second year of post-graduate residency training at Yale and I was confronted with a woman, 44, who had endured a lifetime of ridicule because of a dark red mark over half of her face. The mark was present at birth and involved her ear, cheek, chin and neck. Over the years, it had progressed in color from a pale pink to a bright red to a peculiar shade of purple.

She had been seen by many doctors prior to consulting me and had always been told the same thing—nothing could be done to improve the appearance of her birthmark or "portwine stain" without significant scarring.



In the above series is a patient before treatments (top); after two sessions or at the one-quarter point (middle); and finally at the half-way point in the treatment after four sessions (bottom).

She began to cry as she related to me the pain of having to live with her mark; of the many cruel statements made in reference to it by children during her school-age years and, later of the unabashed stares and discrimination she received in the work force. The discoloration of her birthmark was difficult to camouflage, even with the heaviest of make up.

She was referred to me due to my interest in cosmetic dermatology. Unfortunately, I could not provide her any additional information regarding effective treatment of her birthmark, but promised her that I would investigate the issue. I spoke with several of my colleagues about her condition, but none knew of a method of treatment which could rid her of her mark without scarring.

It was not until I came across a paper written by a researcher in Boston, that I became aware of the use of lasers to erase vascular lesions such as portwine stains.

The more I read, the more interested I became and shortly thereafter, was accepted for a one-year clinical and research program in laser surgery in Boston. Of course, my Yale colleagues ribbed me about my fantasies of "Star Wars" medicine, but the evidence of a cure for these devastating lesions was high and I chose to head north. I was not disappointed.

*And the blots of Nature's hand
Shall not in their issue stand,
Never mole, hare-lip, nor scar,
Nor mark prodigious, such as are
Despised in nativity,
Shall upon their children be.*

Shakespeare, A Midsummer Night's Dream (Act V, Sc.i., 406)

The world received a preliminary education about the very existence of

political cartoons of Soviet Premier Mikhail Gorbachev's portwine stain. A benign vascular lesion is one which is comprised of abnormal blood vessels (hence, vascular) and will not turn into cancer (therefore, benign).

The portwine stain is caused by a cluster of abnormally large blood vessels close to the surface of the skin. It occurs in about three out of 1,000 births, can be pale pink to a dark purple depending on the density of the blood vessels, is present on the face and/or neck in approximately 90 percent of cases (though can be found anywhere on the body), and never disappears spontaneously or on its own.

Other benign vascular lesions include "strawberry" hemangiomas and telangiectasias (commonly referred to as "spider veins"). In contrast to portwine stains, hemangiomas are not routinely present at birth, but arise within the first years of life. In most cases, they involute or disappear on their own.

The portwine stain is among many birthmarks that can be psychologically damaging, affecting self-esteem, and thus, how they relate to others and fit in at work or school. While these lesions do not present a serious health threat in most patients, in the case of extensive facial lesions, bones and the surrounding soft tissue on the involved side may grow more rapidly than normal and in perhaps five percent of the patients, there are associated seizures, mental retardation and glaucoma (this condition is called Sturge-Weber syndrome).

Up until the advent of laser surgery, the more than one million people in the United States with portwine stains had to choose between covering their birthmarks with makeup or risk significant scarring by skin grafting,

flesh-colored tattooing or radium implants.

Although the word is now in common use, few people know that laser is an acronym for "Light Amplification by Stimulated Emission of Radiation" and, put simply, is an intense beam of light. In the case of vascular birthmarks, the laser light passes through the top layer of skin like light through glass, leaving the skin intact while destroying excess blood vessels below. The first lasers used in the treatment of vascular lesions included the argon and carbon dioxide lasers which helped lighten the red color, but also caused some scarring due to the additional effects on the normal surrounding skin.

The newest laser, the pulsed dye laser, is a more accurate laser and specifically destroys the abnormal blood vessels without damaging the surrounding skin. Thus, treated skin appears normal, tans normally (due to preservation of tanning cells or melanocytes) and feels normal (due to preservation of the nerves).

The technology that makes this laser so superior is that the flashes of yellow light (from a particular dye) with a wavelength only absorbed by hemoglobin (the substance that gives blood its red color) is used to destroy the cluster of enlarged blood vessels that stains the skin.

Rather than continuous, this laser pulses which avoids the heat buildup and burning that were common complaints with the argon laser. Lightening of the birthmark is achieved because the yellow laser's heat is just enough to cause the blood cells to clot, making the blood vessels die and disappear. Patients report that the feeling of discomfort is similar to the feeling of a rubber band snapped next to the skin.

These treatments are all done on an outpatient basis without need for general anesthesia. In fact, except for very young children, the laser pulses are tolerated without local anesthesia. Children are best treated before entering school since the lesions are lighter and, therefore, easier to treat, not to mention allowing for the avoidance of psychological trauma once the teasing begins at school.

Several weeks after treatment patients see results, but most will require more than one treatment. For total disappearance of a portwine stain, for example, one needs an average of seven to eight laser treatments to the entire area, while telangiectasias or "spider veins" requires only one to two treatments.

Understandably, parents with blemished children and adults who have lived through the trauma of having an unsightly birthmark put enormous pressures on the medical community to provide accurate diagnoses, prognoses and treatment methods. That is not to say that treatment is necessary or promoted for everyone.

But it was because of the distress and persistence of the young woman in New Haven and my subsequent desire to find a "space age" remedy in order to help her which propelled me into my current specialty. She did subsequently receive laser surgery treatment by me, and currently leads a happy life and no trace of her birthmark remains. Now, how about you, Mr. Gorbachev? ■