Facelift Surgery: An Adjunct in the Treatment of Capillary Malformations (Port Wine Stains)


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Abstract. Hemangiomas and lymphangiomas remain the most common benign tumors seen by the plastic surgeon that involve a neonate’s skin and deeper tissues. A significant number of tumors undergo spontaneous regression and require no treatment. The port wine stain (PWS) remains one of the most difficult variants of hemangiomas to treat and continues to be psychologically traumatic throughout a patient’s lifetime. Recently, advanced use of laser technology has yielded beneficial results for a significant number of these patients. This report illustrates the incorporation of facelift surgery as an adjunct in the overall management of older patients resulting in decreased use of cosmetics and great improvement in general well being.

Key words: Port wine stain—Facelift—Adjunctive treatment

It is conservatively estimated that the incidence of port wine stains in the population is 3 per 100 (3%). There are at least 172,000 people in the United Kingdom today with a port wine stain, constituting a third of the total number of hemangiomas seen in the general population.

There is no uniformity in the classification of vascular hamartomas [4] because of their great variation and overlap in clinical and histopathological appearance. Over the years, pathologists unwittingly muddied the waters of terminology with terms such as angioma cavernous, lymphangioma simplex, hamartoma, and capillary hemangioma [2]. Histopathological classifications bear little clinical correlation and are of limited help indeed in the prognosis and management of vascular birthmarks.

Mulliken and Glowacki [1] proposed a clarification based on cellular dynamics and concluded that there are two major types of vascular birthmarks: hemangiomas or those exhibiting endothelial hyperplasia, and malformations or those with normal endothelial turnover.

The term hemangioma should be used to describe those lesions that undergo growth resolution and generally require no treatment unless their size, local pressure effects, or soft tissue destruction of vital areas require management alternatives. The options are corticosteroid therapy and cryotherapy. These have varying degrees of success and are beyond the scope of this article.

Vascular malformations are those that are cellularly adynamic and are caused by embryological mishaps. They may be grouped according to vessel type, i.e., capillary, venous, arterial, and lymphatic. It is the capillary malformation (or port wine stain, nevus flammeus) that we are concerned with here, histologically representing dilated capillaries seen in the papillary and upper reticular dermis, with no actual increase in the number of blood vessels. The stain is generally distributed to one of the three trigeminal nerve sensory areas, usually flat, and sharply demarcated.

Management of Port Wine Stain

Assessment

Assessment of patients with PWS is an essential part of their management [5]. Clinical data must begin with the patient’s age, color of PWS, lesion quality,
site, skin color, and gross appearance. More detailed assessment may be done by (1) photography, (2) color system notations, (3) histological examination, (4) transcutaneous microscopy, (5) laser Doppler flowmetry, and (6) thermography.

Tattooing Procedures

Tattooing has been used in the past for camouflage and in order to modify discrepancies in color. The difficulty is the use of repetitive procedures in order to attain color match. Some of these still tend to fade with time as inorganic pigments are removed from the body.

Lasers

Since the development of the ruby laser in 1967, subsequent use of the argon laser, the Nd:YAG laser, the flash-pumped dye laser, and the CO₂ laser has allowed the surgeon to expand his armamentarium in the treatment of PWS. The laser type is chosen for treatment according to the characteristics of the patient and the PWS. Recent reports on the use...