Analysis of portwine stain disfigurement and pulsed dye laser treatment results
Koster, P.H.L.

Citation for published version (APA):

General rights
It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations
If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: http://uba.uva.nl/en/contact, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.
Outline of this thesis

In Chapter 1 the treatment results based on objective color measurements are reported. Besides color, several other portwine stain characteristics can be discerned that may contribute to a portwine stain's disfiguring effect, and that each may be affected by treatment in a different way. Therefore we developed a questionnaire which was used to assess treatment results by rating 7 portwine stain characteristics, again after 5 treatments of the entire portwine stain (Chapter 2).

In Chapter 3 an independent panel-assessment of overall portwine stain disfigurement is compared with the ratings for the individual portwine stain characteristics. Thus, the contribution of these factors to disfigurement can be established.

In flashlamp pumped pulsed dye laser treatment of portwine stains no consensus exists on how to place the pulses: in an overlapping or non-overlapping way. The advantage of overlapping pulses is homogeneous lightening of the portwine stain, the risk is redundant tissue damage.

Chapter 4 describes the histopathological effects of overlapping laser pulses on normal human skin as a model for portwine stain skin.

It is generally believed that portwine stains darken with age. This, and the nodularity developing with age, is hypothesized to occur according to a process of increasing dermal blood content, predominantly caused by increased size of vessels of the dermal plexus. In Chapter 5 the hypothesis of portwine-stain darkening with age is investigated using the color measurements that were taken of all portwine stains prior to treatment. After 3 years, only 11 out of 100 patients finished treatment, after an average of 7 treatments of the entire portwine stain. In all 11 cases no further clearance of the portwine stain had been achieved in the last three treatments. In none of the patients color difference between portwine stain and normal skin was reduced to zero (although 6 patients were satisfied with the result when they quit treatment). In order to predict treatment outcome, a simple model for clearance as a function of number of treatments was developed, based on color measurements taken during the course of treatment. This model, which enables patient and clinician to make a realistic treatment planning, is described in Chapter 6.