Considerations on port-wine stains and their laser treatment
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Port-wine stains (PWS) occur mostly as a solitary capillary malformation. However, they can also be seen in the skin overlying a venous, arterio-venous or lymphatic malformation, and thus be part of a combined malformation. Response to treatment is supposed to be less favorable when the PWS is part of such a complex vascular anomaly. However, incomplete information on factors influencing treatment outcome is currently available. For example, we don't know anything on flow characteristics in capillary malformations. Does flow influence the reaction on treatment?

Distended capillaries in facial skin, in the eye and cerebrum at the same side in one person, as seen in the Sturge-Weber syndrome suggest failure of formation in the embryonal period, may be facilitated by a genetic predisposition.

Genetic research showed normal endothelium in certain congenital vascular malformations, but the muscular wall and matrix surrounding the endothelium was deficient. Is something similar responsible for the development of PWS?

By the end of the study on 100 consecutive facial PWS patients no one had finished treatment. In seven patients laser therapy was discontinued because there was no further lightning in the last three treatments. These results show that some degree of clearance can be achieved. Although our data are less favorable than results mentioned by others (1), it is uncertain how much lightening we could have reached for the whole group and in how many sessions if we had extended treatment.

In the correspondence to the editor Kauvar mentioned the high percentage of hypertrophy of PWS in our study (2). It is interesting to know whether this subgroup of our PWS patients reacts differently on flash-lamp-pumped pulsed-dye laser treatment. Biopsies taken from patients who sustained a lip reduction because of hypertrophy show abnormal vessels into the subcutaneous fat and the musculature. This finding suggests that in some PWS patients, not only skin but also deeper tissue layers be affected by a capillary malformation.

Psychological impact of having a PWS is confirmed in our study, as described in chapter 5. In a future study it has to be shown whether treatment can prevent the psychosocial problems to occur.

Treatment of PWS has always been part of the activities of the plastic surgeon as well as of the dermatologist. When the new option of flash-lamp-pumped pulsed-dye laser treatment became available for PWS, once again basic questions were asked on source and development of these birthmarks. This thesis is a reflection of research on basic questions regarding PWS, performed in collaboration between plastic surgeons and various specialisms. With departments of laser medicine, epidemiology, dermatology, ophthalmology, neurology, psychology, genetics and radiology mutual questions were formulated and worked out.