Brief communication

Treatment of multiple warts in a renal transplant recipient with decreased laser doses after application of a light absorbing dye

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Background/Purpose: Multiple warts are a tremendous problem in immunosuppressed patients. Standard treatment has low efficacy and is often painful. We examined a new treatment combination of gentian violet and dye-laser.

Methods: A 55-year-old male renal transplant recipient was treated with dye-laser at 585 nm after application of gentian violet 0.5%.

Results: One laser pulse made the stain explode and evaporate and resulted in a considerable reduction in warts size with minimal pain and tissue damage.

Conclusion: Application of gentian violet before dye-laser treatment may be effective in the battle against warts in immunocompromised patients.

Key words: dye-laser; gentian violet; immunosuppression; warts.

Case report

In order to prevent allograft rejection after organ transplantation, systemic immunosuppressive treatment is needed lifelong. However, the impaired immune system makes the patients susceptible to opportunistic pathogens. Warts induced by human papillomavirus (HPV) are a common complication of immunosuppression. Up to 92% of renal transplant recipients are reported to have warts after 5 years (1). Current therapies depend mainly on destruction of affected skin areas but are usually painful (2). Since the warts tend to recur, repetitive treatment is needed and may be frustrating to the patient.

We describe a new method that is able to control warts in immunocompromised patients with very little discomfort and practically without side effects.

A 55-year-old male with a history of nephropathia, kidney transplantation and iatrogen immunosuppression was referred to the Department of Dermatology with numerous widespread warty lesions. On physical examination, several hundred keratotic lesions similar to common and flat warts were found. A biopsy showed histological findings corresponding to verrucae vulgaris. Treatment was initiated with photodynamic therapy using topical 5-aminolevulinic acid (Sigma Chemical Company, St. Louis, MO, USA) followed by irradiation with red light (590–700 nm; Waldman PDT 1200, Waldman-Medizin-tecknik, Villigen-Schwenningen, Germany). The total dose was 70 J/cm² and the fluence rate was approximately 35 mW/cm². Photodynamic therapy was conducted every 6 weeks for a total of seven times but the treatment was painful and resulted only in a temporary reduction in size of some of the warts. Subsequently, treatment with dye-laser (585 nm; SPTL-1b, Candela Corporation, Wayland, MA, USA) with a total dose of 7.5 J/cm² using a 5 mm spot size had a very good suppressive effect on the hyperkeratosis of the warts. However, the treatment heavily affected the skin and resulted in reddish areas with increased vulnerability. Therefore, less damaging treatment was sought. Virus is found superficial in the warts and we tried to keep the laser energy in the upper layers of epidermis. We achieved this by application of gentian violet (methylrosaniline) 0.5% aqueous solution with a cotton swab before the use of the dye-laser. The stain absorbs the laser energy (Fig. 1). The gentian violet exploded and disappeared by one shot of laser with a total dose of 6.5 J/cm² (Fig. 2). The pain and skin damage was negligible compared with dye-laser alone. The combination of gentian violet and dye-laser was used to treat hundreds of warts at the arms, legs and in the face. No keratolysis before the treatment was attempted. The treatment was employed with success for 6 years with 1–3 months between the visits. The size of the warts was reduced.
considerably during this period. People drew less attention to the warts and the warts no longer stuck to the clothes of the patient resulting in marked improvement of quality of life. The patient has now been withdrawn from his immunosuppressive treatment and the warts have disappeared.

Numerous and widespread warts in immunocompromised patients affect quality of life heavily. Usually, physical destruction is the first treatment choice such as laser therapy, cryotherapy, curretage, photodynamic therapy or electrocoagulation. These modalities are often associated with pain and discomfort to the patients. Other ways of treatment depend on chemicals, virustatics, and immunomodulation (2). Unfortunately, the warts are often recalcitrant to these therapeutic options. This case report suggests that gentian violet (methylrosaniline) may be beneficial combined with dye-laser in the treatment of warts in immunosuppressed patients. Gentian violet is a triphenylmethane dye and has been used for many decades in dermatology for its antimicrobial activity. Only a few cases of contact dermatitis have been reported (3). Gentian violet is both inexpensive and simple to apply but the purple coloration of the skin may be a problem. In this case, however, the subsequent laser treatment made the stain explode and evaporate. Remaining stain could be washed off by water and soap. Gentian violet was chosen as it has high absorption at the used laser wavelength at 585 nm (Fig. 1) and is bound to the stratum corneum. Hence, the laser beam is prevented from reaching deeper layers of the skin. The pain and skin injury associated with the laser treatment is reduced, as the damage is located mainly to the superficial part of the epidermis and thus the keratosis of the warts. The combination of dye-laser and gentian violet may therefore be a new, gentle and effective treatment in the battle against warts in immunosuppressed patients.

References

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