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Hereditary haemorrhagic teleangiectasia: Unsuccessful treatment with the flashlamp-pulsed dye laser

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SUMMARY

In seven patients with hereditary haemorrhagic teleangiectasia (HHT) only one patient had lasting benefit from treatment with the flash/amp-pulsed dye laser. In seven other patients who had received other treatment before, none had any observable effect of this laser. The flashlamp-pulsed dye laser therefore does not seem to be effective in the treatment of nasal teleangiectasias.

INTRODUCTION

Lasers are today accepted as the primary choice in the treatment of nasal hereditary haemorrhagic teleangiectasias (HHT). So far, CO_2, argon, KTP and Nd-Yag lasers have been used (Parkin et al., 1985; Kluger et al., 1987; Illum et al., 1988; Levin et al., 1989; Haye et al., 1991). The treatment has resulted in significant reduction in bleeding, albeit in severe cases only temporarily. In dermatology, a new laser has been introduced: The flashlamp-pulsed tunable dye laser can be adjusted to the maximum absorption spectrum of oxyhaemoglobin. It is now the preferred laser for capillary haemangiomas, particularly in children, as it does not cause scarring (Tan et al., 1989; Reyes et al., 1990). We would like to report on our experiences with this laser in nasal HHT.

MATERIAL AND METHODS

During 1990 and the first 2 months of 1991, 14 patients with HHT have been treated at the ENT- and Dermatology Departments of the Rikshospitalet in Oslo, with the Candela SPTL-1 pulsed dye laser. The laser wavelength was set at 585 nm, the energy density at 7 J/cm^2, while the laser spot-size was 5 mm. The pulse duration was 450 ms and the pulse frequency 1 per 5 s. Two or three pulses were given to each haemangioma on both sides of the septum. No anaesthesia

was needed. Each patient was treated twice at 3-rnonth intervals. The observation period has been at least 3 months.

RESULTS

The flashlamp-pulsed dye laser completely blanched superficial haemangiomas, but had very little effect on larger and deeper situated haernangiomas - usually, these vessel ruptureq. Of seven patients untreated with laser before, two had a reduction of bleeding; one, however, only temporarily. In the others there were no observable effects, and they all had to be given supplementary argon laser treatment, which they responded to. In two patients with bleeding from the periphery of dermoplasts, no effect was obtained. Five patients who had received argon laser treatment before, did not obtain any benefit from the pulsed dye laser.

DISCUSSION

The flashlamp-pulsed dye laser may have its wave length changed. With an absorption spectrum of 577 nm it matches one of the oxyhaemoglobin spectral peaks perfectly. This gives a total absorption to the red pigment without destruction of the surrounding tissue. Our laser is set at 585 nm which may penetrate deeper (Tan et al. 1989), still without creating thermal scarring. This laser type gives a total thermal relaxation of the tissue between each pulse, as the pulses last 450 ms and the intervals are 5 s. Thus, the tissue outside the capillary is minimally affected. This has clinically reduced scarring seen after argon laser so that dermal superficial haemangiomas are now treatable in children. The power of penetration of this laser, however, is limited. In our opinion, this laser type might have been ideal for nasal haemangiomas, leaving the mucosa undamaged. We, however, found that only the few superficial teleangiectasias were emendable for treatment. In larger and deeper haemangiornas the vessels were mostly ruptured. At later controls these haemangiomas appeared unchanged. In the case of bleeding an attempt to apply vasoconstrictors makes the vessels disappear so the laser cannot be applied. We have therefore abandoned the use of flashlamp-pulsed dye laser in nasal teleangiectasias.

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