HEMATOPORPHYRIN-DERIVATIVE AND PHOTOTHERAPY IN EXTENSIVE BASAL-CELL CARCINOMA OF THE DORSAL SKIN


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SUMMARY

A 75 year old male patient was diagnosed of multiple basal cell carcinoma in a surface area of 18 x 21 cm² of the dorsal skin. Contraindications for surgery and radiation therapy made the patient eligible for phototherapy. After hematoporphyrin-derivative (HpD) administration at the dose of 3 mg/kg, body weight, the entire area of lesions was treated 2 times and in 12 fractionated areas, by using Argon or Dye lasers and different exposure times. Five of the 12 fractions were treated with Argon-ion laser at 100 mW/cm² average irradiance for 20 min, whereas 7 fractions were treated at the same irradiance with Dye laser for 10 min in one, 15 min in 3 and 20 min for the remaining 3. Energy dose of 60 J/cm² with Dye laser irradiation and 120 J/cm² with Argon-ion laser irradiation resulted in similar effectiveness from clinical and histologic standpoints for the studied surface epitheliomas.

INTRODUCTION

In the framework of an Oriented National Research Project, the "Biomedical Applications of Lasers" phototherapeutic procedures with HpD and visible light have been developed at the National Cancer Institute of Milan, both for intracavitary and surface neoplastic lesions. Crucial problems in that method of treatment were recognized to be light dosimetry. For a given wavelength, penetration depth in tissue and total energy density delivered are the most critical parameters to evaluate the therapeutic effectiveness and to avoid adverse effects. Thus, in a pilot study, extensive neoplastic lesions at the surface level were treated after photosensitization, by using Argon or Dye laser at different energies,
and the clinical and histologic effects were evaluated on the treated areas.

PATIENT AND METHODS

A 75 year old male patient was diagnosed of multiple basal cell carcinoma in a surface area of 18 by 21 square centimeters of the dorsal skin. The tumors had arisen 17 years after local radiation therapy for spondylitis ankylosans. (Fig. 1). The maximum depth of tumor infiltration was 1.7 mm, measured on several biopsy sites. Since the patient was considered as a poor candidate for surgery as a consequence of his general conditions and age, moreover being questionable the success of plastic reconstructive surgery because of the extension of the lesion area and of the previous radiation treatment, the phototherapy was the treatment of choice. Because of

Fig. 1. Extensive dorsal skin epitheliomas in a 75 year old patient.