Argon Laser Treatment of Cutaneous Vascular Lesions in Connective Tissue Diseases

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Two patients with juvenile dermatomyositis, 5 with chronic discoid lupus erythematosus, and one with Rothmund-Thomson's Syndrome were treated for their teleangiectasias of the face with argon laser. The results were highly satisfactory with an almost normal appearance of treated skin in 4 patients. Two patients showed satisfactory results with 60–70% blanching, while 2 patients showed some improvement, but not a completely cosmetically satisfactory result. The most impressive results were in the patients with juvenile dermatomyositis and Rothmund-Thomson's Syndrome. The only side effects observed were a slight scarring and an insignificant pigmentation. No patient displayed any signs of disease activation. *Key words: Juvenile dermatomyositis; Chronic discoid lupus erythematosus; Rothmund-Thomson's Syndrome; Teleangiectasias.* (Received September 1, 1987.)

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Disfiguring vascular lesions with teleangiectasias are common in lupus erythematosus (LE), as well as in dermatomyositis (DM) and scleroderma. Any cutaneous area of the body may become affected, but the most frequent involvement is of the face, the exposed surfaces of the chest, and the dorsal aspects of hands and fingers. The cosmetic problem is the main problem in chronic discoid lupus erythematosus (CDLE) and is also often a severe extra burden for the patient with DM. The disfigurement may in some patients be so pronounced that it is almost impossible to conceal it with cosmetics and difficult to camouflage.

In cutaneous surgery the argon laser has proved useful in a variety of vascular lesions (1). Following our quite encouraging results with argon laser treatment of port-wine stains and other superficial vascular lesions (2) we decided to treat some vascular lesions in patients with connective tissue diseases.

PATIENTS AND METHODS

Two patients with juvenile DM, 5 patients with CDLE, and one young girl with Rothmund-Thomson's Syndrome (RTS), the latter suffering from severe teleangiectasia and poikiloderma since birth, were treated with argon laser from a Lexel Aurora model 150 using 1–1.7 W 0.2 sec pulse therapy.

The sex and age of the patients together with the duration of their disease and other therapies used are shown in Table I. In all cases a small test area of less than 1 cm was treated first, and observing no adverse reactions, full treatment was given from 2 to several months later. For the test treatment and in patients with CDLE, full treatment was given under local anaesthesia with 1–2% lidocaine. In DM and RTS the entire face was treated under general anaesthesia. Postoperative wound care consisted of application of a cream containing 1% chlorhexidine.

RESULTS

Postoperatively there was only minimal pain and the treatment resulted in significant immediate blanching with varying degrees of permanent blanching 4–6 months after treatment. The results are shown in Table I. +++ reaction is a reaction judged as highly satisfactory with an almost normal appearance of the treated skin. Fig. 1 shows laser treated skin of the forehead of patient no. 1, a 17-year-old young man with DM, and also the contrast with an

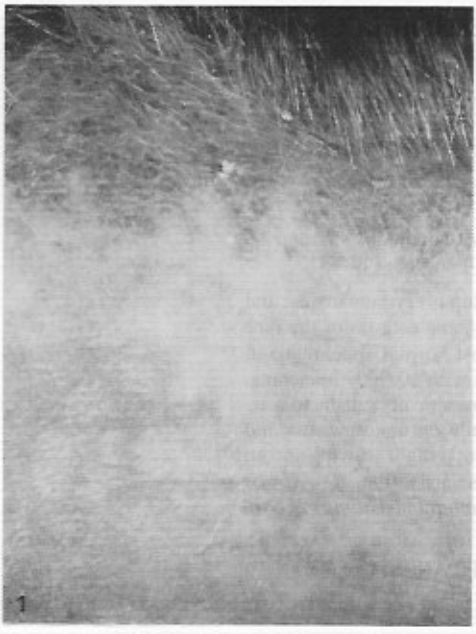

Fig. 1. Laser treated skin of forehead of a patient with juvenile dermatomyositis. Note the contrast with the untreated area close to the hairline.

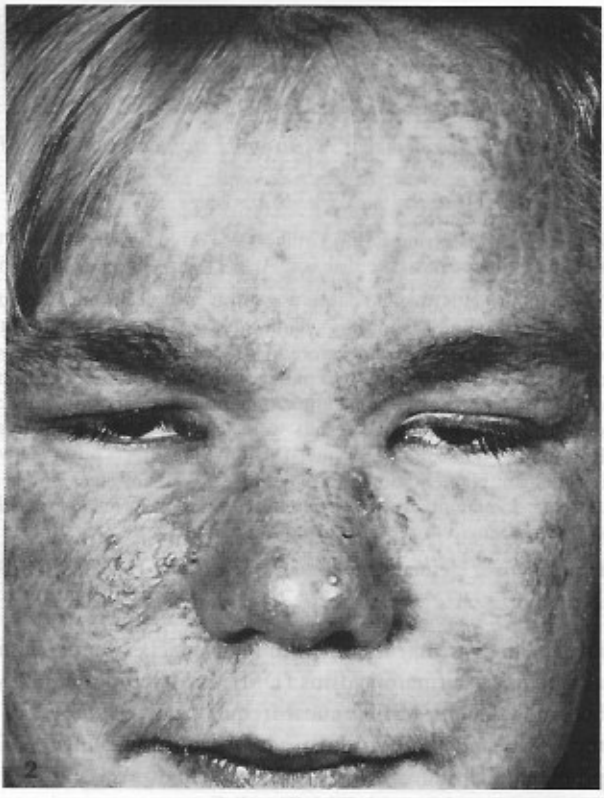

Fig. 2. Face of same patient as in Fig. 1 prior to treatment.

untreated area close to the hairline. Fig. 2 shows the face of the same patient before treatment. Similar results were found in DM and RTS after two full treatments under general anaesthesia.

A ++ reaction describes a cosmetically satisfactory result with 60–70% permanent blanching associated with some degree of flattening of the treatment site. This was a result typical for CDLE.

+ describes some improvement, but not a completely cosmetically satisfactory finding.

Table I. *Results of argon laser treatment in connective tissue disease*

Pat. no.	Sex/age	Diagnosis	Disease duration (years)	Previous[a] and other therapy	Results
1	M/17	DM	8	S.S.	+++
2	F/15	DM	3	S.S.	+++
3	M/33	C.D.L.E.	2	A.M.+T.S.	+++
4	F/53	C.D.L.E.	10	T.S.	+
5	F/39	C.D.L.E.	14	A.M.+T.S.	++
6	F/36	C.D.L.E.	16	A.M.+T.S.	++
7	F/44	C.D.L.E.	9	T.S.	+
8	F/16	RTS	16	–	+++

[a] S.S. = systemic steroids, T.S. = topical steroids, A.M = antimalarials.

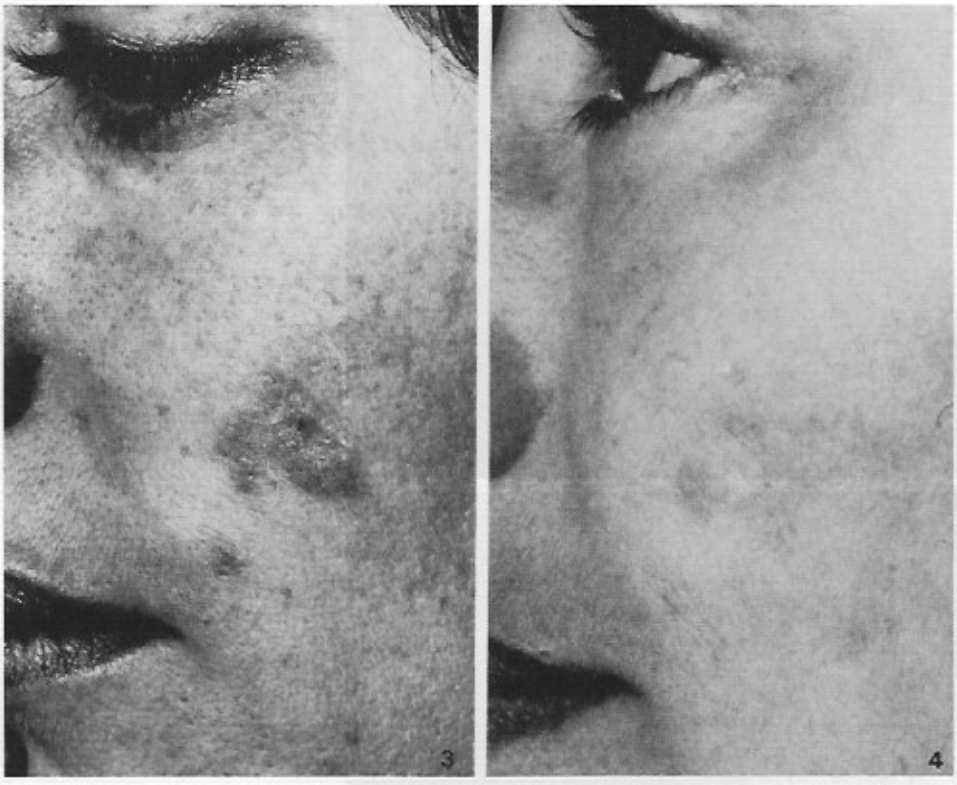

Fig. 3. Lesions of discoid LE in a 39-year-old female prior to argon laser treatment.

Fig. 4. The same area as in Fig. 3 after treatment with argon laser.

Fig. 3 shows the lesions of CDLE of patient no. 5 before treatment and Fig. 4 the same lesions after treatment. Fig. 5 demonstrates the cheek of the patient with RTS before treatment and Fig. 6 the same cheek after treatment. The only side effects observed were a very slight scarring and an insignificant pigmentation. No patient displayed any signs of disease activation.

DISCUSSION

In DM, the obvious disfiguring teleangiectasias of the face were dramatically improved, though the disease was not eliminated. Both patients continued to receive systemic steroid therapy in unchanged dosages, but laser treatment did not appear to have had any activating effect of their disease.

Light energy in the ultraviolet spectrum usually causes clinical changes in the cellular physiology altering the immune system and activating the disease in LE. The argon laser emits an intense blue-green light with two peak emission bands of wavelengths of 488 and 514.5 nm (3). Two chromophores of the skin, haemoglobin and melanin, have significant absorption within the emission range of the argon laser and selectively absorb argon laser energy. Evidently this did not lead to disease activation in our patients with LE and all patients obtained at least some benefit from the treatment.

Increased light sensitivity is also a conspicuous factor in RTS. Our patient, however, tol-

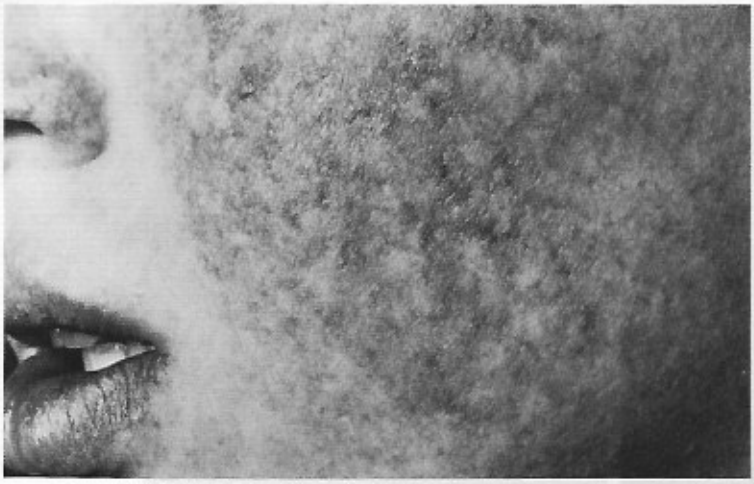

Fig. 5. Cheek of a patient suffering from Rothmund-Thomson's Syndrome before argon laser treatment.

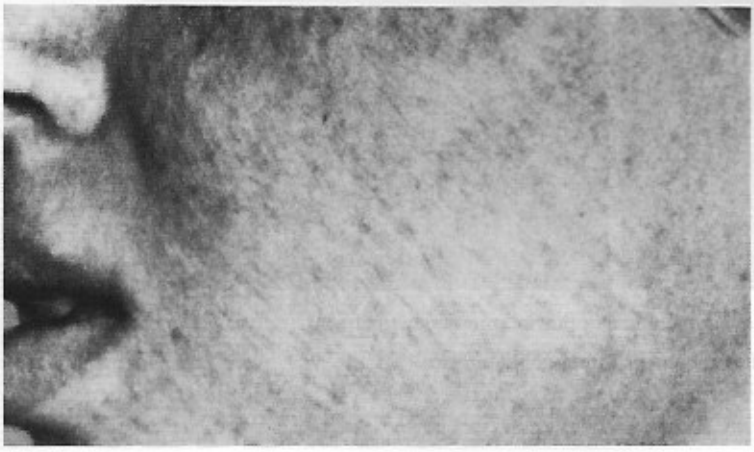

Fig. 6. Cheek of the same patient as in Fig. 5 after argon laser treatment.

erated her argon laser treatment extremely well, and the irregular teleangiectasias almost disappeared without significant pigmentation.

The results of our study suggest that argon laser treatment may be recommended for disfiguring vascular lesions in DM and CDLE. Patients with the rare syndrome of RTS are also candidates for this treatment. It is likely that patients with scleroderma with teleangiectasias also may benefit from argon laser treatment.

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