

The treatment of burn scar-induced contracture with the pinhole method and collagen induction therapy: a case report

Editor

We would like to report a case of burn scar treated by a combination of the pinhole method using a carbon dioxide laser and collagen induction therapy (CIT) using a micro-needle therapy system (Dermaroller®, Horst Liebel, Germany).

A 50-year-old Korean woman presented with a burn scar on the right side of her lower chin. The burn scar was

made at the age of 1 year, and it pulled down the right side of the patient's lower lip (figs 1a and 2a). She had no specific medical diseases and no treatment history for the scar except for the emergency treatment immediately after the burn injury. The irregularly surfaced burn scar extended from her right earlobe to her chin and was approximately 3 cm × 15 cm in size. After local anaesthesia with 1% lidocaine, multiple pinholes were made at intervals of 5 mm using a carbon dioxide laser. Soon after, a Dermaroller® was rolled thrice over the entire surface of the burn scar with appropriate overlap. After five sessions of a combined treatment of the pinhole method and CIT at 4-week intervals, the lesion showed a relaxation of the contracture and an

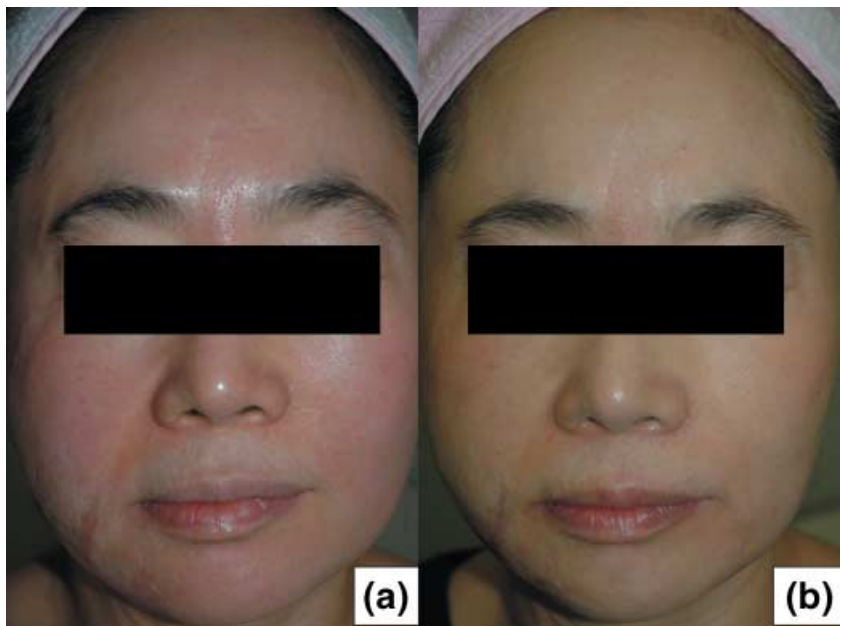


fig. 1 (a) Burn scar on the right side of lower chin pulling down the right side of the patient's lip. (b) Improvement of the distorted lip after five treatment sessions of the pinhole method combined with CIT.

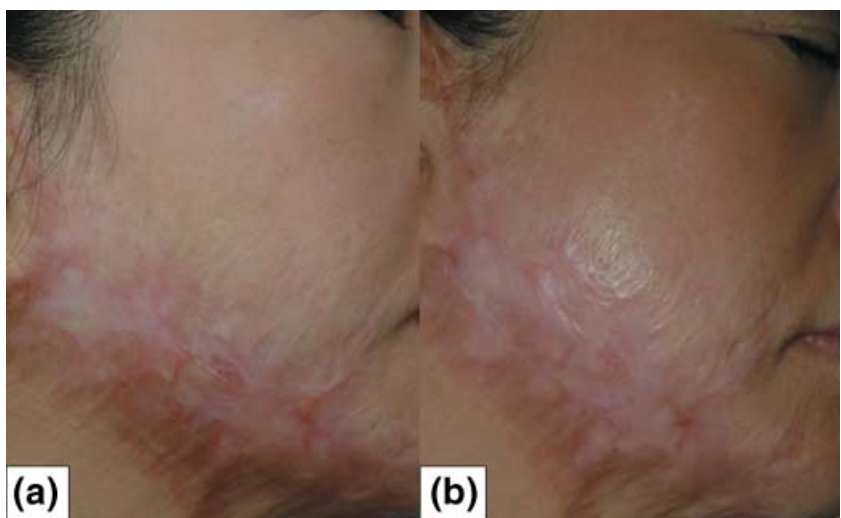


fig. 2 (a and b) Side profiles of the same patient.

improvement in texture and colour (figs 1b and 2b). The patient was satisfied with the results and reported no side-effects.

Many patients with burn injuries have various complications and emotional problems due to scarring. Although there have been many treatments for burn scars, such as excision, skin grafts, laser abrasion, and the use of silicone products, many patients have not been satisfied with the results.¹ Previous reports suggested that dermabrasion with simple sandpaper or a needle penetrating into the papillary dermis can result in healing without a scar, and the regenerated collagen bundles have a tendency toward unidirectional collagen fibre deposition parallel to the epidermal surface.^{2,3}

The pinhole method involves making multiple small holes like sweat pores that penetrate from the epidermis to the deeper dermis using a carbon dioxide laser at intervals of 2 to 5 mm. This method induces regeneration and realignment of irregular and thick collagen bundles through physical breakage and thermal damage.¹ Puncturing a scar with a carbon dioxide laser, compared with a needle, is more convenient and results in less post-treatment bleeding and oozing. With the pinhole method, a carbon dioxide laser can make deeper holes than needling, which is especially useful in the treatment of hard and thick scars.¹ However, when it is applied too closely to a thickened burn scar, it can cause some side-effects (i.e. delayed wound healing or ulceration of the treated area).

With CIT using a Dermaroller®, multiple punctures of the scar are made with a drum-shaped device that has fine protruding needles.⁴ Although this approach lacks thermal stimulation, it can produce closer holes than the pinhole method using a carbon dioxide laser. We assumed that a combination of the pinhole method and CIT could produce both appropriate thermal damage and fine puncturing of the burn scar.

In conclusion, we suggest that treatment of burn scars by the pinhole method combined with CIT is easy and inexpensive to perform and will result in a greater improvement in the scar than either method alone.

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Is sentinel lymph node biopsy useful in regressive and/or ulcerated thin cutaneous melanomas?

Editor

Sentinel lymph node biopsy (SLNB) is a minimally invasive procedure to assess staging of nodal basins at risk of occult metastases in patients with intermediate and high-risk melanoma (Breslow thickness > 1 mm).¹ Although this technique is widely accepted for such melanomas, its use remains controversial in thin melanomas (Breslow thickness ≤ 1 mm).² However, in some cases with Breslow index < 1 mm, SLNB procedure can be done in the presence of a histopathologic bad prognosis sign as ulceration and regression.^{3,4} Indeed, ulceration and regression have been associated with a metastatic potential in melanomas ≤ 1 mm in size and are recognized by some as a predictive factor for the positivity of SLN.^{3,4} Some explain it postulating that the melanoma has reached a greater thickness before excision.⁵ The aim of this work was to determine the utility of the SLNB in melanomas of Breslow thickness less than or equal to 1 mm when regression or ulceration signs are present.

Between October 1998 and February 2005, 38 patients with a cutaneous melanoma of Breslow thickness less than or equal to 1 mm and with histologic signs of regression and/or ulceration underwent SLNB. Patients were then followed on a clinical point of view and underwent complementary investigations on a regular basis (blood sample, chest X-ray, liver ultrasonography, computerized tomography). SLNs were identified and analysed as described elsewhere.⁶ Different clinical and pathologic characteristics of patients are listed in Table 1: among these 38 patients, 35 presented a melanoma with histologic signs of regression, and seven patients showed signs of ulceration. Despite the presence of such histologic characteristics, no occult metastases within SLNs were detected neither with