Assessment of Cryotherapy for the Treatment of Verrucous Epidermal Naevi

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Epidermal naevi are hamartomas that are characterized by hyperplasia of the epidermis and adnexal structures and may be associated with serious disfigurement. Management of epidermal naevi is challenging. We present here our experience with cryosurgery in the treatment of verrucous epidermal naevi. The aim of this study was to determine the efficacy and safety of cryosurgery for the treatment of epidermal naevi. Nine patients with verrucous epidermal naevi and two with extensive unilateral epidermal naevus were treated with cryosurgery. Two cycles of open spray technique were used, 10–15 sec each, depending on the size and extent of the naevus. Ten patients had their naevi treated successfully in 2–5 sessions with two cycles of therapy, and the cosmetic result was excellent with no scarring. One patient showed a relapse within 8 months after the treatment. One patient with phototype IV developed hypochromic scarring, but repigmentation occurred after 6 months. Postoperative healing time was 10–20 days. Cryosurgery is an extremely effective therapeutic modality for the treatment of epidermal naevi. The low cost, the simplicity of the technique and the good cosmetic result makes cryosurgery an excellent therapeutic modality for the treatment of epidermal naevus. Key words: verrucous epidermal nevi; ILVEN; cryosurgery.

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Routinely, after injection of local anaesthetic, the entire lesion and a 1-mm margin was treated. Postoperative care included oral analgesics if needed, soaking with sodium chloride 0.9% solution twice daily, topical antibiotics and corticosteroids in occlusive bandages for the first 7 days after treatment.

**RESULTS**

The patients’ gender, naevus location, treatment modality and years of follow-up are shown in Table I. The mean time for complete healing after the procedure was 15 days. In all patients the area healed without incident (Fig. 1). Patients were followed-up for a mean of 33 months. No recurrence was noted, apart from a minimal recurrence in the thumb region in patient number 6, 8 months after the last treatment. This area was treated with a single session. One patient developed hypochromic scarring, but repigmentation occurred with time, with a cosmetically excellent result. No other adverse effects, including scarring, were observed.

**DISCUSSION**

Epidermal naevi may involve any part of the body surface and may be associated with serious disfigurement. Patients with epidermal naevi usually seek treatment from dermatologists for cosmetic reasons only, as these lesions rarely become malignant (5).

Topical treatments, such as intralresional and topical steroids, topical 5-fluorouracil (5-FU) and podophyllin are usually temporary and ineffective (3). Successful management of epidermal naevi using combination therapy with topical tretinoin 0.1% and 5-FU has been described, but discontinuation of treatment resulted in recurrence (5–6). Topical calcipotriol has also been reported in treating ILVEN (8). However, there are only anecdotal reports of treatment with this anti-psoriatic agent and no long-lasting effects can be expected.

Surgical excision is most effective, but is complicated by scarring in the treated areas and is thus reserved for the smallest lesions. Meanwhile, surgical excision of widespread areas may not be feasible.

There are recent reports on laser treatment of verrucous epidermal naevi. Various studies report good clinical effect when using CO₂ laser for the treatment of epidermal naevi (9, 10). A reduced risk of lesional recurrence due to the creation of a limited and protective amount of dermal fibrosis that occurs as a result of laser skin resurfacing has also been reported (11). The short-pulsed nature of the newest systems permits precise tissue ablation, but unfavourable scarring remains a potential complication of CO₂ laser treatment. Erbium: YAG lasers provide similar precision in tissue removal, but difficulty in achieving haemostasis with these devices can make treatment impractical and scar formation can occur (12). The pulsed ruby laser effectively treats...
the dark-coloured epidermal naevi, but its efficacy has not been shown in unpigmented naevi (13).

Cryosurgery of benign lesions of the skin is not new. However, there are not many reports in the literature on cryosurgical excision of verrucous epidermal naevi. In 1983 Fox & Lapins (3) tried various approaches to treating epidermal naevi on one patient who had extensive, disfiguring epidermal naevus lesions. They used intraleional steroids, topical steroids with and without occlusion, topical tretinoin under occlusion, podophyllin ointment under occlusion, 5-FU under occlusion, dermabrasion and cryosurgery. They concluded that cryosurgery using liquid nitrogen was the most successful therapy.

All of our patients were treated successfully with cryosurgery. Small, single lesions responded extremely well to treatment, with minor side-effects such as oedema and blistering in the first week after treatment. Hypopigmentation developed in one patient with type IV phototype, but repigmentation occurred after 2 months without any intervention. Major side-effects or complications did not develop.

The relative ease of use and the well-accepted cosmetic results make cryosurgery a very challenging therapeutic modality for the treatment of benign lesions such as epidermal naevi. The treatment is well tolerated and patients are usually pleased with the progress. Moreover, the low cost, both for the patient and the doctor, and the relatively simple equipment needed for treatment, which can be used by any trained dermatologist, gives an advantage over newer techniques with laser devices. Contraindications include those of cryosurgery, such as cold intolerance, cold urticaria, cryoglobulinaemia and Raynaud’s disease.

However, although the patients treated have not had any major recurrence to date, recurrences can occur months or years after removal of epidermal naevi and patients should be properly informed before starting a cryosurgical procedure.

Moreover, extensive lesions covering large parts of the body are difficult to treat and many sessions are needed. Patients with well-circumscribed, small epidermal naevi are ideal candidates for cryosurgery. These lesions clear with no scarring and minimal pigment change.

In conclusion, our experience suggests that cryosurgery with liquid nitrogen is an efficacious method for the treatment of epidermal naevi. The efficacy of cryosurgery is comparable to that of mostly currently used methods, with advantages such as low social and economic cost.

REFERENCES