

Effective Treatment of an Aggressive Chest Wall Keloid in a Woman Using Deprodone Propionate Plaster without Surgery, Radiotherapy, or Injection

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Summary: Treatment with steroid tape is the standard of care for keloid and hypertrophic scars in Japan. In this article, we present a woman with an aggressive and progressive keloid of the anterior chest wall. At the time of presentation, the keloid had been present for 40 years, and was continuing to worsen and expand. Initially, it was believed that a multidisciplinary approach, including surgery and radiation, would be necessary to achieve an acceptable scar outcome. However, we successfully treated her keloid using only steroid tape (deprodone propionate plaster), and no other treatment modality. The case therefore supports the effectiveness of deprodone propionate plaster, and emphasizes its potential for wider future use. With the paucity of experience reported in the literature on steroid tape for scars, more reports are useful to inform plastic surgeons and dermatologists worldwide about this therapeutic option. (*Plast Reconstr Surg Glob Open* 2024; 12:e6117; doi: 10.1097/GOX.0000000000006117; Published online 3 September 2024.)

In Japan, where the prevalence of pathologic scars is particularly high, guidelines have been defined for treating such challenging scars.¹ Within these standards, steroid tapes constitute first-line therapy. Steroid tape is so prevalent in Japan, it is prescribed by primary physicians from the early stages of keloid development, and it is uncommon for the scars to become severe.

Originally, three steroid tapes were available in Japan: betamethasone 17-valerate tape (Tokuderm Tape),² fludrocortide tape (Dorenison Tape),³ and deprodone propionate plaster (Eclar Plaster).⁴ However, the former two have been discontinued, and only Eclar Plaster is widely available currently. The first author of this article has held a specialized outpatient scar clinic treatment since 2006 and has over 15 years of experience with the tapes.⁵ For massive keloids, surgery followed by postoperative radiotherapy is the first choice of treatment. However, for small keloids, conservative treatment with deprodone propionate plaster is preferable.

Here, we present a woman with a 40-year history of an aggressive keloid of the chest. Although the initial plan was a multidisciplinary approach, she attained an acceptable outcome using only deprodone propionate plaster. Although a simple strategy, given the rare use of steroid tapes globally, reports such as these are beneficial to inform others of this therapeutic option.

CASE

A 63-year-old woman presented to our specialist scar clinic with an anterior chest wall keloid from acne/folliculitis that first began in her twenties. The patient recalled that the keloid significantly enlarged with her two pregnancies. Initially centered on the chest, it expanded laterally over time, and the increasing pain prompted her to seek care. Upon examination, there was noticeable erythema and infiltration of the surrounding healthy skin, indicating active inflammation (Fig. 1). Although surgery followed by postoperative radiotherapy was considered, the keloid's involvement of the skin overlying the breast led us to decide against radiotherapy to avoid the risk of secondary carcinogenesis.⁶ As our practice necessitates radiation after surgical excision for keloid scars, surgery alone was not an option. Consequently, we began treatment with deprodone propionate plaster. We demonstrated how to cut the plaster to slightly larger than the keloid, and instructed the patient to wear it as much as possible (24 hours a day), only removing it for bathing and applying a new tape subsequently.

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Fig. 1. A 62-year-old woman presented to the outpatient clinic with a 40-year history of a chest keloid from acne/folliculitis. A, Before the initiation of therapy, inflammation was severe and had spread to involve the surrounding healthy skin. B, Three years after steroid tape monotherapy, the keloid had significantly softened, and the overall height was reduced. As the central portion and the lateral aspects were still thick, steroid tape was continued in this area. C, Six years after steroid tape monotherapy, the color was largely improved with resolution of erythema and inflammation. D, After 7 years, the scar was significantly improved and had matured, with soft and supple skin and no signs of active inflammation.

Within 3 months of treatment, there was a significant reduction in pain, encouraging us to continue therapy. Over time, the keloid gradually softened, beginning at the surface and progressing to the deeper tissue. After 3 years, all areas except the central part, which originally was 1 cm thick, had become nearly flat. At this point, we instructed the patient to only tape the central and most lateral aspects of the keloid. After an additional 2 years, there was overall improvement in the coloration, and we further stepped down the treatment, using the plaster approximately 3 days a week and applying nonsteroid antiinflammatory drug (NSAID) cream on the other days. After 6 months, with no capillary dilation and no signs of keloid recurrence, the plaster was discontinued, and only daily nonsteroid antiinflammatory drug cream was recommended. One year after complete discontinuation of treatment, there was no keloid recurrence, and the outcome was acceptable.

DISCUSSION

Worldwide, steroid tapes, including those containing betamethasone (Betasil), flurandrenolide (Cordran tape), and fludrocortide (Haelan tape), are available. Although we have experience with these different tapes, deprodone propionate appears to be the most effective and has the fewest side effects. This could relate to the fact that deprodone propionate is a nonhalogenated steroid, which is suggested to be associated with reduced side effects that are also milder compared with halogenated steroids.⁷ The most used steroid, injected triamcinolone acetonide, is in contrast a halogenated steroid, and its side effects, such as capillary dilation, can be problematic.

Thus, although the effect of deprodone propionate can be comparatively slower, its reduced side effect profile allows it to be used over an extended period without complication. Indeed, despite using deprodone propionate plaster in over 1500 patients annually, we have not encountered any abnormalities in blood tests because of its use. In terms of local side effects, contact dermatitis is the most common with tape-based therapies, and an incidence of 0.7% has been reported.⁴ With allergic contact dermatitis, it is necessary to switch from steroid tape treatment to ointments or injections. However, with irritant contact dermatitis, it may be more effectively managed by reducing the frequency of tape replacement.

Recent studies suggest that keloids are more prevalent in women, potentially in part due to estrogen's vasodilatory effects.^{8,9} As inflammation associated with keloids can worsen due to tension, chest keloids in women can be particularly prone to exacerbation.¹⁰ Furthermore, as radiation therapy should be minimized in the chest region of women to reduce the risk of radiation-induced breast cancer, treatment options are limited in such cases even if electron beam (β -ray) is safer than γ -ray or x-ray.^{1,5,6} Thus, for women with keloids of the chest, we have primarily used deprodone propionate plaster as the first choice treatment. At present, it is considered difficult to achieve a low recurrence rate similar to radiation therapy by using this tape as a postoperative adjuvant therapy. However, in the authors' limited experience, small keloids can be treated with surgery and postoperative steroid tape with satisfactory outcomes. Upon initial consultation here, the pronounced and progressive inflammation indicated that conservative treatment alone might not be sufficient for an acceptable outcome. Although one option

was complete excision with postoperative radiation only for areas not directly overlying breast tissue, we decided to first evaluate the response to conservative therapy. As we typically avoid triamcinolone acetonide injections due to their side effects, and 5-fluorouracil is not considered effective in Japan and is not covered by health insurance, we proceeded with steroid tape. In this case, though symptom resolution was gradual, it far exceeded initial expectations. Incremental yet progressive improvement over 6 years was also encouraging, even if somewhat prolonged. Ultimately, although the scar shape is unchanged, the resolution of inflammation, and lack of recurrence is an acceptable outcome with a fully mature scar.

This case highlights a few novel points. Firstly, nonhalogenated steroids can be used long-term without side effects, indicating that they might also be effective in topical preparations other than tapes/plasters, such as ointments or creams. However, in such forms, these might need to be applied four to six times a day to achieve equivalent effects. Secondly, even if the inflammation is resolved, scars will remain. Therefore, to achieve the most optimal aesthetic outcome, it might be necessary to consider surgery, radiotherapy, or vascular lasers. In any case, deprodone propionate plaster is highly beneficial as a first-choice treatment for keloids, and should be considered as a viable option where available. Further discussion with pharmaceutical companies and manufacturers would, however, be necessary to increase availability of this product worldwide.

CONCLUSIONS

A 62-year-old woman presented with a 40-year history of an aggressive anterior chest keloid from acne/folliculitis which was increasingly painful. Despite an initial consideration to perform complete surgical excision with postoperative radiation, she achieved an acceptable outcome with steroid tape monotherapy. Although the treatment course took 6 years, the case emphasizes the efficacy of the plaster, as well as its ability to be used long-term with minimal side effects. The therapeutic strategy should be considered elsewhere, particularly in keloids overlying the female breast.

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DISCLOSURE

The authors have no financial interest to declare in relation to the content of this article.

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