Eur J Plast Surg (2000) 23:150–151

ORIGINAL

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Triple keloid therapy: a combination of steroids, surgery and silicone gel strip/sheet for keloid treatment

Received: 10 August 1999 / Accepted: 4 December 1999

Abstract Keloid management continues to pose clinical problems. This is because the lesion has a high rate of recurrence after almost any type of treatment. To improve results, a triple therapy comprising the use of steroid injections and cream (triamcinolone acetonide), surgery and silicone gel strip/sheet pressure application was instituted. The results of 120 patients treated within that period of January 1994 to December 1997 at the Komfo Anokye Teaching Hospital (KATH) were analyzed. The follow-up time ranged from 2 to 4 years. The recurrence rate was 12.5% after 13 months with no increase over time.

Key words Keloids · Triple therapy · Steroids · Surgery · Silicone application

Introduction

Normally, wound healing proceeds uneventfully but occasionally wounds heal with excessive deposition of collagen resulting in keloid formation. Ideally, treatment to reduce collagen formation should interrupt this process. Keloid formation in some individuals can be very disfiguring. Patients are treated by a variety of methods, none of which is universally reliable [1–5].

Materials and methods

One hundred and twenty patients treated for keloids between 1994 and 1997 were evaluated. Of this number, 60% (72) were female, and 40% (48) male. The age range was 5–60 years.

In 70% of patients, the keloid was in the head and neck region and in the rest, on the chest wall and trunk, including the breast, sternum, suprapubic area and perineum. Initially, there were 180 patients but 60 discontinued follow-up before the final assessment at 13 months. The treatment protocol is outlined in Table 1. The intrakeloidal (IK) steroid injections were given using a dermo-jet.

Table 1 Treatment protocol for triple keloid therapy (TKT) (*IK* intrakeloidal, *TA* triamcinolone acetonide, *WE* wound edges, *STSG* split-thickness skin graft). If the result is „poor“, repeat stages V and VI systematically. Second assessment on day 300 (10 months) and third assessment on day 390 (13 months)

Day 0	IK injection of TA 40–80 mg (Stage I)
Day 30	IK injection of TA 40–80 mg (stage II)
Day 60	IK injection of TA 40–80 mg (stage III)
Day 90	Surgery • Total keloid removal • STSG • TA injection of wound edges (WE) 40 mg (stage IV)
Day 104	• WE injection of TA 40 mg • WE massage with TA cream • Silicone gel strip/sheet pressure application (stage V)
Day 106	Massage with TA cream. Reapply silicone gel strip/sheet (Stage VI)
Day 108	Repeat Stage VI and on days 110,112,114....132
Day 108	Repeat Stage VI and on days 110,112,114....132
Day 134	Repeat Stage V
Day 136	Repeat Stage VI and on days 138,142,144....162
Day 164	Repeat Stage V
Day 166	Repeat Stage VI and on days 168,170,172....192
Day 194	Repeat Stage V
Day 196	Repeat Stage VI and on days 198,200,202....208
Day 210	Assessment of results: Good=no recurrence Poor=recurrence

Results

All areas grafted healed primarily. Initial assessment was done at 7 months. At this time, 50% of the patients showed no sign of recurrence. The remaining 60 patients

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Fig. 1 **A** Before treatment. **B** The result of the triple therapy for 7 months. Further conservative treatment was necessary: triamcinolone acetonide injections, cream massage, and silicone pressure application.

Fig. 2 **A** This „mold“ of earlobe keloid before triple therapy. **B** Result after 13 months

were assessed after 3 months of further treatment. After 10 months, 30 of them still needed continued treatment. At the end of 13 months, 15 patients (12.5%) still have evidence of keloid formation (recurrence). Any recurrence was rated as „poor“ while the term „good“ referred to resolution of the keloid (Table 1). At the end of 13 months, the success rate was 87.5%. Representative cases are shown in Figs. 1 and 2.

Discussion

This triple therapy method using steroids, surgery and silicone is tedious and time consuming (Table 1). In the initial series there were 180 patients but only 120 came for review and further treatment by the end of the first year. The absent 60 were excluded from the series.

Many authors report various success rates using different methods of treatment [3–8]. The problem of keloid recurrence after these methods of treatment still persists, thus the search for still better modes of treatment continues. A successful method should not be tedious and time consuming for both patient and physician.

Conclusion

This triple keloid therapy involves a combination of the following:

- Steroids (triamcinolone acetonide intrakeloid injections and cream massage)
- Surgery (total keloid removal and STSG)
- Long pressure applications of silicone gel strip/sheets

The success rate was 87.5% at the end of 13 months of treatment. However, this is a tedious and time intensive procedure for both physician and patient. A quicker and more readily available method should be sought.

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