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Original Article

Efficacy of Intralesional Steroid Injection after Excision of Keloid - Our Experience

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Abstract

Background: Keloid scarring is one of the most esthetically unattractive and frustrating clinical problems in wound healing. Recurrence rate after use of single modality of treatment is high. The aim of the study was to use combined modality of treatment in assessing the recurrence rate, which is enormous in literature, when single modality of treatment is employed.

Materials and Methods: Retrospective analysis of 50 cases was done over a period of 3 tears from July 2013 to June 2016. A total of 15 males and 35 females of age group 15-45 years were included in the study. Recurrent keloid patients who had previous surgery or had undergone any other modality of treatment were chosen after complete wound healing, intralesional triamcinolone (10-40 mg/kg) at mid-dermis level was given at 4-6 weekly intervals for 3-4 doses.

Results: All the cases responded well for combined therapy and had acceptable cosmetic results. Two patients developed menstrual irregularity and had to stop further injections but did not have any recurrence for 3-year follow-up now.

Conclusion: Multimodality methods of treatment always help in better cosmesis and lower the recurrence rate significantly.

Keywords: Hypertrophic scar, Intralesional steroid, Keloid

INTRODUCTION

Keloid forms follow dermal injury and exhibit exuberant indefinite growth of collagen causing functional and cosmetic deformity, itching, pain, and psychological stress. If present over joints can restrict joint movement and functional performance. They tend to occur in dark-skinned individuals with familial tendency. It has been ascribed to altered growth factor regulation aberrant collagen turnover, genetics immune dysfunction, sebum reaction, and altered mechanics. Numerous treatment options are available such as surgical excision, steroid injection, radiation therapy, silicon laser, and pressure therapy.

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MATERIALS AND METHODS

Retrospective analysis of 50 cases was done in this study. The study was carried over a period of 3 years from July 2013 to June 2016. A total of 15 males and 35 females of age group 15-45 years were included.

All the cases had undergone previous interventions either surgery alone or interleukin injections alone or had pressure or silicone-based therapies which had led to recurrence or no response. All the cases were primarily subjected to systemic examinations and cases selected based on inclusion and exclusion criteria as mentioned below.

Inclusion Criteria

- Recurrent keloid patients who had previous surgery or had undergone any other modality of treatment.

Exclusion Criteria

- Those who suffer from immunodeficiency disorders
- Allergies

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- Cardiac or renal disease
- Menstrual abnormalities
- Noncompliant patients
- Children.

Primary complete excision of the lesion was done. Fillet flap technique used when primary closure was difficult as shown in (Figure 1) and maintenance of contour was established. The end cosmetic results in one of our study group patient is depicted in Figure 2 as illustrated.

After complete wound healing, approximately 7-10 days postoperative day, intralesional triamcinalone (10-40 mg/kg) at mid-dermis level was given at 4-6 weekly intervals for 3-4 doses. Patients were monitored for any side effect of steroid.

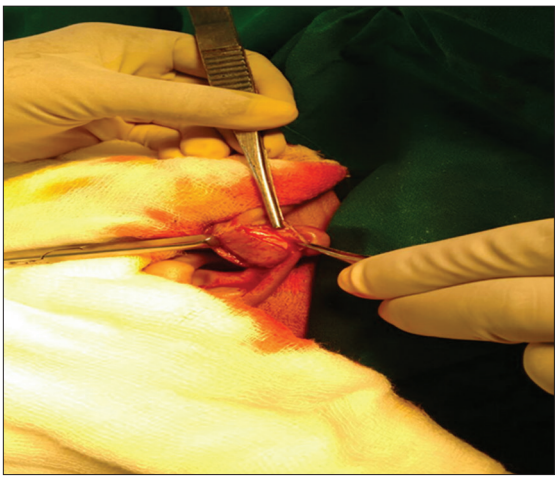

Figure 1: Surgical excision of large keloid with fillet flap technique

Figure 2: End cosmetic result after combined therapy and follow-up

RESULTS

All the cases responded well for combined therapy and had acceptable cosmetic results. Two patients developed menstrual irregularity and had to stop further injections but did not have any recurrence for 3-year follow-up now.

DISCUSSION

Corticosteroids are in use since the mid-1960s in the treatment of keloids. Most commonly agent used is triamcinolone acetonide. Depending on size of lesion and age of patient, dosages varied from 10 to 40 mg/ml[1,2] in different studies done in the past. The treatment interval also varied from 4 to 6 weeks and maximum 4 injections were usually given[1-3] as per literature available. Injections were usually carried out at the mid-dermis level.[4] It suppresses vascular endothelial growth factor, fibroblast proliferation and induces scar regression[5] and enhancement of collagen and fibroblast degeneration.[6] Triamcinolone has been found to inhibit transforming growth factor-beta 1 expression and induce apoptosis in fibroblast.[5,6] This injection is commonly used after surgical excision. It decreases the recurrence rate by average of 50%. Rate of response varies from 50% to 100%.[1,2,5,6] Previous literature has reported mean scar volume reduction from 0.73 ± 0.70/ml.[3,7] Side effects include pain during injection thinning and atrophy of skin and subcutaneous tissues, development of steroid acne, capillary dilatation, development of secondary lymphogenous and linear hypopigmentation which may be permanent.[8] Further serious side effects include local skin necrosis ulcer formation and Cushing syndromes.[9] Complications can be eliminated by dose adjustment.[10]

Surgical excision of keloid alone usually results in recurrence to the rate of 40-100%.[11-14] Simple excision is believed to stimulate additional collagen synthesis resulting in rapid regrowth and often a larger keloid.[13,15] Surgical excisions can be closed either primarily or through reconstructive technique. Sutures are removed as early as possible or intradermal subcuticular closure is preferred if possible.[16] Monofilament is better than braided suture to minimize local inflammatory reaction.[17]

CONCLUSION

Keloid and hypertrophic scars are very distressing conditions. Many treatment options have been described. Combined modality of surgery with steroid has given one good perspective on treatment.

Ethical Clearance

Ethical clearance was obtained from Institutional Ethics Committee.

REFERENCES

1. Manuskiatti W, Fitzpatrick RE. Treatment response of keloidal and hypertrophic sternotomy scars: Comparison among intralesional corticosteroid, 5-fluorouracil, and 585-nm flashlamp-pumped pulsed-dye laser treatments. Arch Dermatol 2002;138:1149-55.
2. Mustoe TA, Cooter RD, Gold MH, Hobbs FD, Ramelet AA, Shakespeare PG, *et al.* International clinical recommendations on scar management. Plast Reconstr Surg 2002;110:560-71.
3. Atiyeh BS. Nonsurgical management of hypertrophic scars: Evidence-based therapies, standard practices, and emerging methods. Aesthetic Plast Surg 2007;31:468-92.
4. Gupta S, Sharma VK. Standard guidelines of care: Keloids and hypertrophic scars. Indian J Dermatol Venereol Leprol 2011;77:94-100.
5. Wu WS, Wang FS, Yang KD, Huang CC, Kuo YR. Dexamethasone induction of keloid regression through effective suppression of VEGF expression and keloid fibroblast proliferation. J Invest Dermatol 2006;126:1264-71.
6. Boyadjiev C, Popchristova E, Mazgalova J. Histomorphologic changes in keloids treated with Kenacort. J Trauma 1995;38:299-302.
7. Muneuchi G, Suzuki S, Onodera M, Ito O, Hata Y, Igawa HH. Long-term outcome of intralesional injection of triamcinolone acetonide for the treatment of keloid scars in Asian patients. Scand J Plast Reconstr Surg Hand Surg 2006;40:111-6.
8. Niessen FB, Spauwen PH, Schalkwijk J, Kon M. On the nature of hypertrophic scars and keloids: A review. Plast Reconstr Surg 1999;104:1435-58.
9. Shaffer JJ, Taylor SC, Cook-Bolden F. Keloidal scars: A review with a critical look at therapeutic options. J Am Acad Dermatol 2002;46 2 Suppl: S63-97.
10. Ogawa R, Akaishi S, Izumi M. Histologic analysis of keloids and hypertrophic scars. Ann Plast Surg 2009;62:104-5.
11. Cosman B, Crikelair GF, Ju DM, Gaulin JC, Lattes R. The surgical treatment of keloids. Plast Reconstr Surg 1961;27:335.
12. Peacock EE Jr, Madden JW, Trier WC. Biologic basis for the treatment of keloids and hypertrophic scars. South Med J 1970;63:755-60.
13. Brody GS. Keloids and hypertrophic scars. Plast Reconstr Surg 1990;86:804.
14. Cosman B, Wolff M. Correlation of keloid recurrence with completeness of local excision. A negative report. Plast Reconstr Surg 1972;50:163-6.
15. Henderson DL. The effect of carbon dioxide laser surgery on the recurrence of keloids (discussion). Plast Reconstr Surg 1991;87:50.
16. Anate M. Skin closure of laparotomy wounds: Absorbable subcuticular sutures vs. Non-absorbable interrupted sutures. West Afr J Med 1991;10:150-7.
17. Niessen FB, Spauwen PH, Kon M. The role of suture material in hypertrophic scar formation: Monocryl vs. Vicryl-rapide. Ann Plast Surg 1997;39:254-60.

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