Original Research Article

Efficacy of triamcinolone in the prevention of recurrence of keloids in the pinna

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Abstract

Background: Keloids in the Pinna are well known for recurrence. Many different modalities of treatment have been tried to prevent recurrence. One of the best modes for preventing recurrence is intralesional steroid injection. **Objectives:** To determine the efficacy of Triamcinolone in preventing recurrence of Keloid. **Methods:** 40 patients who underwent excision of keloid at a tertiary care centre. **Results:** Recurrence was found in 5 patients who underwent excision alone while none of the patients who received post-operative intralesional steroids had recurrence at the end of 1 year follow-up. **Conclusion:** Multi-modality treatment is better to prevent recurrence of Keloid.

Keywords: Triamcinolone, Pinna.

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INTRODUCTION

Keloids are defined as pathologically formed scars that exceed the boundary of the original wound. They are also deemed as benign dermal tumors that are unique to humans. Etiologically, keloids may occur because of minor skin injury, such as body piercing and insect bites. In addition, it is widely agreed that the incidence rate of keloid is significantly higher in populations with darker skin, such as Africans and Asians. The external ear is one of the most common sites for keloid formation. Many different treatment modalities such as surgical excision, intralesional corticosteroids, radiotherapy, and pressure earrings have been used for keloids[1]. Surgical excision alone may result in recurrence rate of 40%-100%.[2] Although it has unclear etiology, the development of keloid could be considered as a process of abnormal wound healing, during which redundant extracellular collagen fibers as well as proteoglycans are deposited. It is known that various molecular factors contribute to this process, for example, growth factors, cytokines, and related gene pathways. Some among them may be the key points that could stop or reverse this pathologic process. For example, transforming growth factor-β (TGF-β) receptor was recently reported to be a potential target in treating keloid. However, deeper understanding of the molecular mechanism of keloid formation is still required for detecting critical biological factors and for the further development of effective therapies.[1] This study was done to compare the efficacy of surgical excision alone and combined therapy of surgical excision with intralesional Triamcinolone injection.

Objective: To determine the efficacy of Triamcinolone in preventing recurrence of Keloid.

MATERIALS AND METHODS

40 patients who underwent excision of keloid in a tertiary care centre from January 2016 to December 2018 were included in this study. They were divided randomly into two groups of 20 patients each. Surgery alone was performed in 20 patients and surgery with post operative

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intra-lesional Triamcinolone injection was given weekly interval for 6 weeks in another 20 patients. Patients were followed up for 1 year at every 3 months intervals.

Inclusion criteria: Patients presenting with keloids in the Pinna aged >15 years.

Exclusion criteria: Patients with contraindications to surgery – bleeding diathesis, etc. Patients unwilling to participate in the study

RESULTS

In the age group of 11-20 years there were 16 patients. In the age group of 21-30 years there were 8 patients. In the age group of 31-40 years there were 13 patients. In the age group of above 40 years there were 3 patients (table no:1).

Table 1

Age in years	Excision	Excision with Triamcinolone injection	Total
10-20	6(30%)	10(50%)	16(40%)
21-30	5(25%)	3(15%)	8(20%)
31-40	7(35%)	6(30%)	13(32.5%)
>40	2(10%)	1(5%)	3(7.5%)
Total	**20(100%)**	**20(100%)**	**40(100%)**

There were 39 female patients and 1 male patient (Table no:2).

Table 2

Gender	Excision	Excision with Triamcinolone injection	Total
Female	20(100%)	19(95%)	39(98.5%)
Male	0(0%)	1(5%)	1(2.5%)
Total	**20(100%)**	**20(100%)**	**40(100%)**

Recurrence was present in 5 patients at the end of 1 year. P-value was 0.02 which was significant (Table no:3).

Table 3

Recurrence	Excision	Excision with Triamcinolone injection	Total
Absent	15(75%)	20(100%)	35(87.5%)
Present	5(25%)	0(0%)	5(12.5%)
Total	**20(100%)**	**20(100%)**	**40(100%)**

DISCUSSION

There is no standardized regimen for the treatment of keloids. Most therapeutic options yield high recurrence rates. For example, steroid injections incur at least a 50% recurrence, while laser therapies result in only transient improvement. Hypertrophic scars rarely recur after surgical excision, and some degenerate spontaneously. In contrast, the recurrence rate of keloid treated by surgery only is high (45-100%), making it important to differentiate keloids from hypertrophic scars in deciding treatment methods. Generally, keloids show a pattern of infiltration beyond primary scars, whereas hypertrophic scars are limited. In addition, hypertrophic scars form within 4 weeks after injury, whereas keloids form later, an average of 30.4 months after injury. Moreover, hypertrophic scars decrease in size within 1 year, whereas keloids maintain their size for longer than 1 year. Hypertrophic scars are treated by surgery only, whereas keloids are treated by surgery followed by local injection of steroids, which decreases the expression of genes encoding collagen. Due to their recurrence, long-term follow-up in patients with keloids is important.[3] Sand etal advocated Surgical excision and postoperative intralesional injection of steroid combined with silicon gel sheeting and compression therapy with an individually designed silicon pressure splint for the helical rim. The procedure combines the advantageous effects of pressure and silicon gel sheeting. Silicon has been described as effective in preventing the development of keloids. It reduces keloid scar formation by 70% when used consistently. There are several theories of the action mechanism. Although some authors propose that silicon diffuses from the surface of the silicon gel sheets and reduces keloid ground substance it is more likely that retardation of epidermal water loss and a subsequent increase of wound hydration is responsible for the keloid-inhibiting.[4] Compression therapy with dressings or devices that apply more than 24 mmHg, the capillary pressure, create a hypoxic microenvironment which results in fibroblast, and, subsequently, collagen degradation. Pressure earrings with compression plates which are available in different sizes are successfully used for ear lobe keloids. It is obvious that the helical rim with its concave anterior and convex posterior surface is not easily amenable for compression. The silicon pressure splint introduced here not only enjoys all the advantages of silicon dressings but also successfully delivers pressure on the helical rim.[4] Bashir etal advocated that Steroid injection in the residual wound rim can be used as an adjunct following excision of post-piercing ear keloids. It has a low morbidity, is cost-effective, easy to administer, and provides reliable and durable results. Steroids are believed to act by decreasing the level of collagenase inhibitors, thereby increasing collagen degeneration. Early application of steroids in the wound has anti-inflammatory effects which decreases fibroblast and collagen release. Intra-lesional steroids have been used pre-operatively, post-operatively as well as per-operatively. So, timing of steroid with surgery as well as dose frequency in the post-operative period is a matter of question[5].

CONCLUSION

In our study excision along with post operative Triamcinolone injection was more efficacious in preventing recurrence of Keloid at the end of 1 year. However 25% of patients who were treated with surgery

alone had recurrence at the end of 1 year. Thus it can be concluded that multi modality treatment would fare better in preventing recurrence. However the best dosing schedule for steroid injections with regards to the amount of intralesional steroid to be given and the dosing frequency for the best possible results need to be determined.

REFERENCES

1. Guo L, Xu K, Yan H, Feng H, Chai L, Xu G. Expression Profile of Long Noncoding RNAs in Human Earlobe Keloids: A Microarray Analysis. Biomed Res Int. 2016;1:1-4.
2. Pierce HE. Keloids: enigma of the plastic surgeon. Journal of national medical association. 1979 December;71(12):1177-80.
3. Metts J. Common complications of body piercing. West J Med. 2002 Mar;176(2):85-6.
4. Sand M, Sand D, Boorboor P, Mann B, Altmeyer P, Hoffmann K, Bechara FG. Combination of surgical excision and custom designed silicon pressure splint therapy for keloids on the helical rim. Head Face Med. 2007 Mar 12;3:14.
5. Bashir MM, Ahmad H, Yousaf N, Khan FA. Comparison of single intra operative versus an intra operative and two post operative injections of the triamcinolone after wedge excision of keloids of helix. Journal of Pakistan medical association. 2015 Jul;65(7):737-41.

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