Main Article

Efficacy of Triamcinolone in Treatment of Keloid

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ABSTRACT

Introduction

Keloids are well known for recurrence. There is no standardized regimen for the treatment of keloids. Many different treatment modalities such as surgical excision, intralesional corticosteroids, radiotherapy, and pressure earrings have been used for keloids. Surgical excision alone may result in recurrence rate of 40%-100%. This study was conducted to evaluate the efficacy of triamcinolone in preventing recurrence of Keloid.

Materials And Methods

Of the 40 patients who underwent excision of keloid at a tertiary care centre, surgery alone was performed in 20 patients and surgery with post operative intra-lesional triamcinolone injection was given weekly interval for 6 weeks in another 20 patients. Patients were followed up for the period of 2 years.

Result

Recurrence was found in 5 patients who underwent excision alone and there was no recurrence among patients who received post operative intra-lesional triamcinolone.

Conclusion

Multi-modality treatment is better to prevent recurrence of Keloid..

Keywords

Keloid; Excision; Triamcinolone; Injections, Intralesional; Recurrence

Keloids are defined as pathologically formed scars that exceed the boundary of the original wound.[1] 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 aetiology, the development of keloid could be considered as a process of abnormal wound healing, during which redundant extracellular collagen fibres 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]

Intralesional injection of triamcinolone is one of the first-line treatment modalities for keloid treatment. Corticosteroid had higher tolerance among patients with a keloid. Corticosteroid was able to diminish the

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Table I: Age distribution

AGE IN YEARS	EXCISION	EXCISION WITH TRIAMCINOLONE INJECTION	TOTAL
10-20	5(25%)	10(50%)	15(37.5%)
21-30	5(25%)	4(20%)	9(22.5%)
31-40	6(30%)	5(25%)	11(27.5%)
>40	4(10%)	1(5%)	5(12.5%)
Total	20(100%)	20(100%)	40(100%)

exuberant collagen synthesis and inhibit the rapid growth of keloid fibroblasts. In addition, corticosteroid could promote vasoconstriction in the keloid scar and control local inflammation. However, they could notice the response rate of triamcinolone treatment which highly varied with the recurrence rate. Triamcinolone monotherapy could induce hypopigmentation, mixed pigmentation, fat atrophy, telangiectasias, necrosis, ulcerations, and cushingoid habitus.[3]

This study was done to compare the efficacy of surgical excision alone and combined therapy of surgical excision with intralesional triamcinolone injection.

Materials and Methods

40 patients who had keloid of size less than 2.5x2.5cms and underwent excision in a tertiary care centre from January 2019 to December 2019 were included in this study. They were divided into two groups of 20 patients each. Every alternate patient was given post-operative triamcinolone. 5 patients presented with impacted foreign body and multiple recurrences. It was an analytical and a comparative study. Sample size was calculated based on the prevalence of keloid in external ear. Approval was taken from the ethical committee of the institution. Surgery alone was performed in 20 patients and surgery with post-operative intra-lesional triamcinolone injection was given weekly interval for 6 weeks in another 20 patients. Patients were followed up for 2 years.

Results

Age distribution:

In the age group of 11-20 years there were 15 patients. In the age group of 21-30 years there were 9 patients. In the age group of 31-40 years there were 11 patients. In the age group of above 40 years there were 5 patients (Table I).

Sex distribution:

There were 38 female patients and 2 male patients (Table II).

Table II: Sex distribution

GENDER	EXCISION	EXCISION WITH TRIAMCINOLONE INJECTION	TOTAL
Female	19(95%)	19(95%)	38(95%)
Male	1(5%)	1(5%)	2(5%)
Total	20(100%)	20(100%)	40(100%)

Table III: Recurrence after treatment

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%)

Recurrence:

Recurrence was present in 5 patients at the end of 2 years. (Table III).

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 important4.

Sand et al advocated surgical excision and postoperative intralesional injection of steroid combined with silicone gel sheeting and compression therapy with an individually designed silicone pressure splint for the helical rim. The procedure had combined advantageous effects of pressure and silicone gel sheeting. Silicone had been described effective in preventing the development of keloids. It reduced keloid scar formation by 70% when used consistently. There are several theories of the action mechanism. Although some authors propose that silicone diffuses from the surface of the silicone 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.[5]

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 can be 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.[5]

Bashir et al advocated that Steroid injection in the residual wound rim can be used as an adjunct following excision of post-piercing ear keloids. It had a low morbidity, was cost-effective, easy to administer, and provided 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.[6]

Wong et al in their experience stated that functional mechanism was less clear in comparison with other treatment modalities examined in their study. Triamcinolone treatment would lead to substantial

side effects, selection between it and other treatment options should be evidence based and the discernible benefits that should be clarified. In their observation, triamcinolone was more effective in improving keloid in comparison with silicone gel sheet, verapamil, and cryotherapy was recommended for keloid treatment. In light of that Triamcinolone in combination with 5-Fluoro uracil has reduced complications in comparison with Triamcinolone monotherapy, Triamcinolone along with 5-Fluoro uracil was recommended for keloid treatment.[3]

In our study there were 5 patients who had history of impacted foreign body in the ear lobule, who reported multiple recurrences. In these patients, excision along with removal of foreign body prevented recurrence. Corticosteroids were not necessary. As we could not find any study which was published regarding this issue, we could not show any citation.

Conclusion

In our study excision along with post operative triamcinolone injection was more efficacious in preventing recurrence of Keloid than surgery alone. We concluded that multi-modality treatment like excision followed by intralesional steroid injection would fare better in preventing recurrence. In patients with impacted foreign body, removal of foreign body along with excision is sufficient to prevent recurrence. These may not need multimodality treatment. This has not been found in previous studies. In Indian scenario women are more affected due to multiple ear piercings.

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