

## Original Research Article

# Use of Triamcinolone in keloid

Shwetha B., Sathyaki D. C.\*

Department of ENT, Kodagu Institute of Medical Sciences, Madikeri, Karnataka, India

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**\*Correspondence:**

Dr. Sathyaki D. C.,

E-mail: [sathyakidc@yahoo.co.in](mailto:sathyakidc@yahoo.co.in)

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### ABSTRACT

**Background:** 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%. Many different modalities of treatment have been tried to prevent recurrence. Aims and objectives of the study was to evaluate the efficacy of Triamcinolone in preventing recurrence of Keloid.

**Methods:** 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

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

**Conclusions:** Multi modality treatment is better to prevent recurrence of Keloid.

**Keywords:** Keloid, excision, Triamcinolone

### 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.<sup>1</sup> Surgical excision alone may result in recurrence rate of 40%-100%.<sup>2</sup> 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- $\beta$  (TGF- $\beta$ ) 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.<sup>1</sup>

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

#### *Aims and objectives*

To evaluate the efficacy of Triamcinolone in preventing recurrence of keloid.

## METHODS

40 patients who underwent excision of keloid in a tertiary care centre from January 2014 to December 2014 were included in this study. They were divided into two groups of 20 patients each. Every alternate patient was given post operative Triamcinolone. It was an analytical and a comparative study. Random sampling was done. 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. Chi-square test was used to calculate the results.

### Inclusion criteria

Age above 15 years.

### Exclusion criteria

Patients with bleeding diathesis. Post traumatic patients.

## RESULTS

### Age distribution

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 1).

**Table 1: Age distribution.**

Age in years	Excision	Excision with Triamcinolone injection	Total
	N (%)	N (%)	N (%)
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)
<b>Total</b>	20 (100)	20 (100)	40 (100)

**Table 2: Sex distribution.**

Gender	Excision	Excision with Triamcinolone injection	Total
	N (%)	N (%)	N (%)
Female	20 (100)	19 (95)	39 (98.5)
Male	0 (0)	1 (5)	1 (2.5)
<b>Total</b>	20 (100)	20 (100)	40 (100)

### Sex distribution

There were 39 female patients and 1 male patient (Table 2).

### Recurrence

Recurrence was present in 5 patients at the end of 2 years. P-value was 0.02 which was significant (Table 3).

**Table 3: Recurrence.**

Recurrence	Excision	Excision with Triamcinolone injection	Total
	N (%)	N (%)	N (%)
Absent	15 (75)	20 (100)	35 (87.5)
Present	5 (25)	0 (0)	5 (12.5)
<b>Total</b>	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.<sup>3</sup>

Sand et al 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.<sup>4</sup>

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.<sup>4</sup>

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 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.<sup>5</sup>

As the prevalence of keloid in this district was low, so was our sample size. To analyse various modalities of treatment we need a larger sample size. We could only analyse the use of steroids and surgery in this study. Radiotherapy could not be analysed as it was not available in our institution. We could not analyse other modes like pressure earrings, 5-fluorouracil and silicone gel as our sample size was small. These were the limitations of our study.

## CONCLUSION

In our study excision along with post operative Triamcinolone injection was more efficacious in preventing recurrence of Keloid. We concluded that multi modality treatment would fare better in preventing recurrence. In Indian scenario women are more affected due to multiple ear peircings.

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