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Original Article

Management of Post- operative Scar Pain by use of Triamcinolone Acetonide Injection

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***ABSTRACT*:**
Background: Scars result from the biological process of wound repair in the skin, as well as in other organs and tissues of the body. Triamcinolone acetonide (TAC) is a synthetic corticosteroid used topically to treat various skin conditions and post- operative scar pain.. The present study was conducted to assess efficacy of traimcinolone acetonide in management of scar pain. **Materials & Methods:** The present study was conducted on 60 patients of both genders. For 1 inch scar, 1ml of 40 mg kenacort (triamcinolone acetonide) mixed with 1 ml of 2% of xylocaine was used. Pain was evaluated by VAS score criteria where score 0 indicated no pain and 10 indicated severe pain. **Results:** Out of 60 patients, males were 30 and females were 30. The mean age of males was 48.5 years and 44.2 years. VAS score in males and females was 10 pre-operatively. After injecting 1ml of 40 mg kenacort (triamcinolone acetonide) mixed with 1 ml of 2% of xylocaine, there was gradual decrease in score on day 1 (males- 8, females- 9), day 3 ((males- 4, females- 5) and day 7 (males- 1, females- 2). **Conclusion:** Single stat intralesional injection of kenacort is good and efficient treatment for post- operative scar pain irrespective of surgery.
Key words: Intralesional, Scar, Triamcinolone acetonide.

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INTRODUCTION

A scar is an area of fibrous tissue that replaces normal skin after an injury. Scars result from the biological process of wound repair in the skin, as well as in other organs and tissues of the body. Thus, scarring is a natural part of the healing process. With the exception of very minor lesions, every wound (e.g., after accident, disease, or surgery) results in some degree of scarring.[1]

Scar tissue is composed of the same protein (collagen) as the tissue that it replaces, but the fiber composition of the protein is different; instead of a random basketweave formation of the collagen fibers found in normal tissue, in fibrosis the collagen cross-links and forms a pronounced alignment in a single direction. This collagen scar tissue alignment is usually of inferior functional quality to the normal collagen randomised alignment. For example, scars in the skin are less resistant to ultraviolet radiation, and sweat glands and hair follicles do not grow back within scar tissues.[2]

Historically, a variety of treatment approaches for keloids and hypertrophic scars have been extensively described in the literature. The methods are ranging from surgical to non-surgical methods. Evidence supports occlusive dressings, compression therapy, silicone sheeting, intralesional corticosteroid injections, cryotherapy, surgical removal, pulsed dye laser, radiation, imiquimod cream, intralesional verapamil, 5-fluorouracil, bleomycin, and interferon alfa-2b injections. In some cases, when surgical approaches are inadvisable, intralesional injection treatments play an important role in the treatment of keloids.[3]

Despite the large number of described techniques, scar therapy is still challenging and controversial with a high recurrence rate regardless of therapy (especially for keloids). Through the literature retrieval, we have found most of the literature that is available about the intralesional injection treatment of hypertrophic scars and keloids.[4]

Triamcinolone acetonide (TAC) is a synthetic corticosteroid used topically to treat various skin conditions, to relieve the discomfort of mouth sores and intra-articularly by proceduralists to treat various joint conditions. In nasal spray form, it is used to treat allergic rhinitis. It is a more

potent derivative of triamcinolone, and is about eight times as potent as prednisone.[5]
It is also known under the brand names Kenalog (topical) and Volon A as an injection, to treat allergies, arthritis, eye diseases, intestinal problems, and skin diseases. Recently its use in management of postoperative scar pain has been established. There are possible risks from an injection. It has been known to cause fat and muscle loss at an injection site, leaving a large divot bone deep.[6] The present study was conducted to assess efficacy of traimcinolone acetonide in management of scar pain.

MATERIALS & METHODS

The present study was conducted on 60 patients of both genders. Inclusion criteria was presence of post- operative scar pain in patients underwent surgery of any kind. All were informed regarding the study and written consent was obtained. Ethical clearance was taken from institutional ethical committee.
General information such as name, age, gender, etc. was noted on case history performa. Depending upon the size of scar, we injected kenacort intralesionally on scar. For 1 inch scar, 1ml of 40 mg kenacort (triamcinolone acetonide) mixed with 1 ml of 2% of xylocaine was used. Pain was evaluated by VAS score criteria where score 0 indicated no pain and 10 indicated severe pain. In all patients, pain was relieved after single injection except 3 patients who required one additional dose. They also got relieved after second dose.
Results were tabulated and subjected to statistical analysis using chi- square test. P value < 0.05 was considered significant.

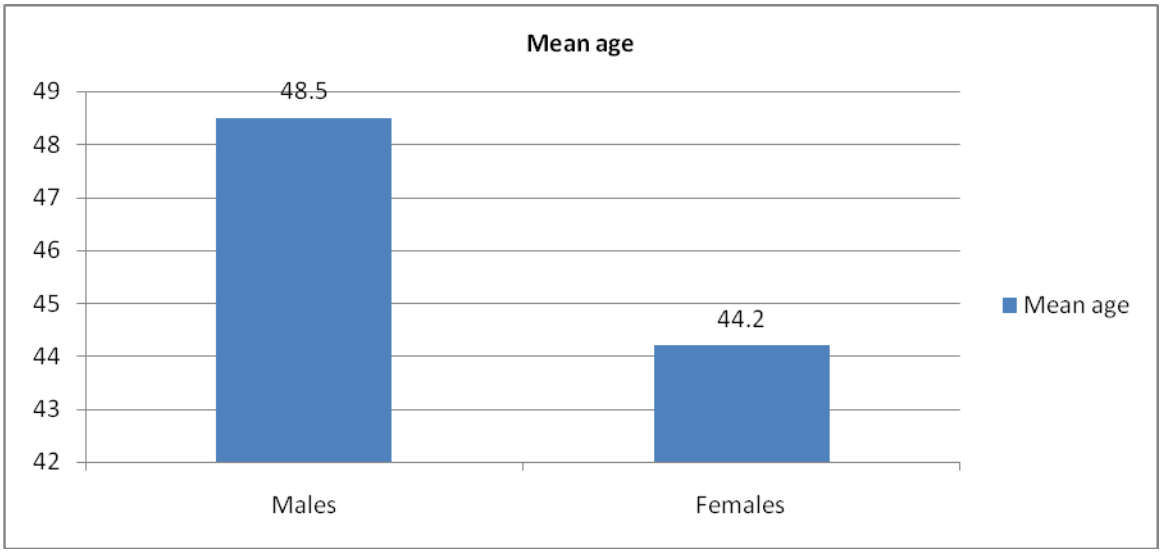
RESULTS

Table I Distribution of patients

Total – 60		P value
Male	Female	
30	30	1

Table I shows that out of 60 patients, males were 30 and females were 30. The difference was significant (P- 1).

Graph I Mean age of patients



Graph I shows that mean age of males were 48.5 years and 44.2 years. The difference was non- significant (P> 0.05).

Table II VAS score in patients

VAS Score	Males	Females	P value
Pre-operatively	10	10	
Day 1 post- operative	8	9	0.5
Day 3 post- operative	4	5	
Day 7 post- operative	1	2	

Table II shows that VAS score in males and females was 10 pre-operatively. After injecting 1ml of 40 mg kenacort (triamcinolone acetonide) mixed with 1 ml of 2% of xylocaine, there was gradual decrease in score on day 1 (males- 8, females- 9), day 3 ((males- 4, females- 5) and day 7 (males- 1, females- 2). The difference was non-significant (P- 0.5).

DISCUSSION

All scarring is composed of the same collagen as the tissue it has replaced, but the composition of the scar tissue, compared to the normal tissue, is different. Scar tissue also lacks elasticity unlike normal tissue which distributes fiber elasticity. Scars differ in the amounts of collagen over expressed. Labels have been applied to the differences in over expression. Two of the most common types are hypertrophic and keloid scarring, both of which experience excessive stiff collagen bundled growth overextending the tissue, blocking off regeneration of tissues. Another form is atrophic scarring (sunken scarring), which also has an over expression of collagen blocking regeneration. This scar type is sunken, because the collagen bundles do not overextend the tissue. Stretch marks (striae) are regarded as scars by some.[7] The present study was conducted to assess efficacy of traimcinolone acetonide in management of scar pain.

In this study, out of 60 patients, males were 30 and females were 30. The mean age of males was 48.5 years and 44.2 years. VAS score in males and females was 10 pre-operatively. After injecting 1ml of 40 mg kenacort (triamcinolone acetonide) mixed with 1 ml of 2% of xylocaine, there was gradual decrease in score on day 1, day 3 and day 7. This is in agreement with Muneuchi et al.[8] Hollander[9] first reported the use and efficacy of intralesional TAC injections in keloid treatment in 1961. Later, Griffith[10] and Vallis[11] reported curative results and improvement in appearance after TAC injections. These trials showed symptom relief in up to 80% of the cases. In our study, the overall remission rate (65%) was somewhat lower than in previous studies.

Any injury does not become a scar until the wound has completely healed. To begin to patch the damage, a clot is created; the clot is the beginning process that results in a provisional matrix. In the process, the first layer is a provisional matrix and is not scar. Over time, the wounded body tissue then overexpresses collagen inside the provisional matrix to create a collagen matrix. This collagen overexpression continues and crosslinks the fiber arrangement inside the collagen matrix, making the collagen dense. This densely packed collagen, morphing into an inelastic whitish collagen scar wall, blocks off cell communication and regeneration; as a result, the new tissue generated will have a different texture and quality than the surrounding unwounded tissue. This prolonged collagen-producing process results in a fortuna scar. The scarring is created by fibroblast proliferation, a process that begins with a reaction to the clot.[12]

TAC injections affect keloid growth in several ways. They inhibit the proliferation of fibroblasts and encourage scar regression. They also inhibit collagen synthesis and reduce excessive scarring. Corticosteroids, used intralesionally, decrease inflammation and increase vasoconstriction in the scar tissue.

CONCLUSION

Single stat intralesional injection of kenacort is good and efficient treatment for post- operative scar pain irrespective of surgery.

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