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Orginal Research Article

Auricular Keloids: When Should We Start Corticosteroid Therapy?

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Abstract: Auricular keloids are common skin disease among the Negro race which complicates ear piercing, trauma and post burns injury. Injection corticosteroid (triamcinolone) is a simple modality of treatment that is being used we aim at finding out the more appropriate time to start triamcinolone injection after surgery of fresh or recurrent keloids. We prospectively recruited 43 patients with 59 keloids who had new and recurrent keloids from Jan, 2014 to Dec. 2015. The patients had one to three keloids per each auricle or bilaterally. The patients were randomized into two groups, viz: group 1 were 21 patients who were injected intra-operatively while group 2 were 22 patients who were first injected on the seventh day post-surgery. We administered 10-40mg of triamcinolone into the wounds every 3weeks with a total of 3-4 doses. The follow-up period was between 6months and 2 years. Recurrence was seen in 1 (4.8%) in the intra-operative triamcinolone injected patients while the postoperatively healed wounds before commencement of injection showed 5(22.8%) recurrence rate. Cosmetic acceptance was equally better in the intra-operative commencement than in the post-operative ones. The administration of cortico-steroids therapy for the prevention of keloids in post-surgical patients should be commenced at surgery because of its reduced recurrent rate, good cosmetic appearance as well as no exposure to radiotherapy.

Keywords: Auricular keloids, corticosteroid, Surgery, Patient, Therapy, Trauma

INTRODUCTION

The skin provides protection to the body, thus when injured it quickly repairs itself in order to maintain its external defense system. Wound healing is the process whereby the body tries to restore or repair the disruption in the integrity of the tissue. The result of wound healing is the formation of a scar at the site of the injury. The rate and quality of scar formation vary among the individuals due to their genetic make- up, racial differences and type of injury. The alteration in the process of wound healing may result in a chronic wound or an abnormal scar. Keloids are hypertrophic scars that continue to evolve over time without a quiescent or regressive phase in the process of wound healing [1]. Keloids infiltrate into the surrounding normal tissue and rarely regress so that they continue to evolve over time [2]. The head and neck region is conspicuous parts of the body, the patients often present with cosmetic concerns. The earlobes and helix of the auricle are common sites for keloid formation usually after trauma, ear piercing, post burns wounds and tattoos. The incidence of auricular keloids has been reported to be as high as 20% [3]. The treatment options are still challenging despite the several modalities of treatment. Cortico-steroid has been used as a single modality of treatment or in combination with other methods of treatment, especially surgery.

The controversy of its commencement after surgery has been the point of debate, thus posing the question, when should we start cortico-steroid injection after surgery or trauma in keloid prone patients. The thinking that cortico-steroid impedes wound healing such that, the steroid injection into a wound should commence after complete wound healing has been steadfastly upheld. The current thinking is that since wound healing could occur with reduction of collagen formation leading to better and acceptable scars has made researchers to administer steroid injection intra-operatively. We aim at highlighting our experience in the administration of cortico-steroid (triamcinolone) at surgery and after wound healing to prevent recurrence of keloids.

METHODOLOGY

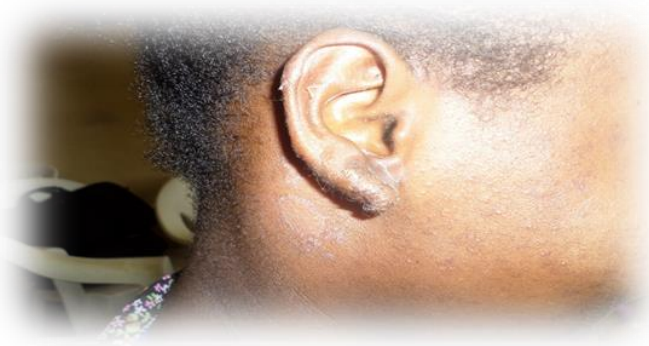
We prospectively recruited 43 patients with 59 keloids who had new and recurrent keloids from January, 2014 to December, 2015. The patients had one to three keloids per each auricle or bilaterally. The patients were randomized into two groups, viz: group 1 were 21 patients who were injected intra-operatively while group 2 were 22 patients who were first injected on the seventh day post-surgery. We administered 10-40mg of triamcinolone into the wounds every 3weeks with a total of 3-6 doses. Their age range between 22-46 years (mean 26 +/_5years).

Using 0.5 -1% lignocaine as local anesthetic, core excisions were made but marginal excisions were not made during the study. The fibrotic tissues were completely excised and the wounds closed with vicyl 3/0 or 4/0 which were removed on six postoperative day .After surgery 10-40mg of triamcinolone acetonide was injected through the incision into the wounds and a light dressing applied .The dressings were removed on the 3rd day post op and stitches were removed on day 5 or 7 post-operative days. The patient treatment was followed up with 3 weekly injections of 3-6 doses.

RESULTS

The follow-up period was between 6 months and 2 years, mean was 13months. Recurrence was seen in one patient (4.8%) in the intra-operative triamcinolone injected patients while the postoperatively healed wounds before commencement of injection showed 5(22.8%) recurrence rate. All the patient wounds healed satisfactorily, except the first patient whose wound gap on removal of stitches on day 5 which informed us to remove our their stitches on day 7 while the group 2 patients who had first dose of triamcinolone injection after removal of stitches had their stitches removed on day 5 post-operative day. Cosmetic acceptance was equally better in the intra-operatively commenced patients than in the post-operative patients. There was hypo-pigmentation in 4(9.3%) in the study population.

Picture 1: Before surgery and triamcinolone therapy



Picture 2: Four (4) months after surgery and triamcinolone therapy

DISCUSSION

Surgical excision, in combination with one or more modalities of treatment, is commonly used. Sometimes simple total excision of a keloid stimulates an additional collagen synthesis, thus promoting quick recurrence of keloid even larger than the initial one [4]. Surgical excision of a keloid alone is associated with a high recurrence rate [5]. and therefore it should be combined with adjuvant therapy such as pressure, corticosteroid and radiotherapy [6]. Intralesional corticosteroid injections have become the mainstay in the treatment of keloids alone or in combination with surgery [7]. Corticosteroid injection can be used to treat keloids in three ways as adjuvant therapy combined with surgery , as monotherapy and as well as a combination of multimodal therapy for the treatment of symptoms . The commonly used corticosteroid is triamcinolone acetonide.

Corticosteroid decreases fibroblast proliferation, collagen synthesis and glycosaminoglycan synthesis, and suppresses pro-inflammatory mediators [8]. It can be used as first line option or combined with the surgery as post-operative adjuvant therapy. Some researchers have demonstrated that surgical excision combined with a steroid into the wound bed causes

down –regulation of type 1 collagen gene expression without compromising wound healing. Post-surgical wounds following keloid excision immediately with triamcinolone have shown decrease pro – alpha 1 collagen transcripts, which are normally associated with keloid dermis[9]. The intra-operative dose is thus shown to be the most critical dose which arrests the initiation of hypertrophic scars and keloids development [10].

Contraction and epithelization are two phenomenon of wound healing retarded by corticosteroids [11]. It is unclear how these agents affect collagen synthesis and wound remodeling. The methods used by several authors to conclude that steroids inhibit collagen synthesis are questioned. Therefore, collagen synthesis was measured in cultured steroid treated chick embryo calvarias, 5 days open wounds in treated rats and intra-lesionally injected human keloids. Collagen synthesis was suppressed only by long term administration of corticosteroids [12]. Large intermittent doses of corticosteroid (triamcinolone) reduce collagen synthesis . Because human keloids become softer and smaller following intralesional administration of triamcinolone, we hypothesize that corticosteroids enhance collagen degradation as well as depress collagen synthesis.

In our institution, combined injection of triamcinolone intraoperatively has been performed for the auricular keloid and has shown relatively low recurrence rate of 1(4.8%) while the post operatively healed wounds before commencement is 5(22.8%).The long-term use of triamcinolone is of essence before effective outcome is achieved. The side effect of steroid noticed was hypo-pigmentation which disappeared after 6 months as well as the initial wound which gap after removal of sutures.

CONCLUSION

The administration of cortico-steroids therapy for the prevention of keloids in post-surgical patients should commence at surgery because of its reduced recurrence rate, good cosmetic appearance as well as no exposure to radiotherapy.

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