Non-Surgical Periocular Wound Modulation with Intralesional 5 Fluorouracil (5-FU) – A Case Series

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The periocular skin is a thin, highly vascular structure, which allows optimal healing and less prominent scars than elsewhere in the body. Scar formation is a highly regulated tissue response following skin or tissue injury and is anticipated after surgical manipulation. Visible scars are formed due to an exaggerated healing process and are considered abnormal when the amount of fibrosis is excessive resulting in a hypertrophic, keloidal or atrophic scar. Fibroblasts proliferate at the site of the injury, leading to the overproduction of collagen, followed by cross-linking and the loss of unidirectional alignment, giving the scar its ridge like character. These scars can be aesthetically disfiguring and functionally debilitating.

The common scars seen in the periocular area are Hypertrophic scars, Keloids and contracture scars. Race, age, sex, genetics, infection and type of injury influence the type of scar formation. Hypertrophic scars remain confined to the border of the original wound, whereas keloids extend beyond the margins of the original wound. Keloids continue to grow over time and don’t regress spontaneously. Contracture scars impair the ability to move due to the tightening of skin.

Various therapeutic modalities are present for the prevention and formation of scars. The modulation of scar formation in the postoperative setting is a vital component of aesthetic eyelid and facial surgery. There are various surgical modalities to revise scars, however non-surgical treatment which target the underlying biologic process are safe and effective. These include anti-inflammatory, antimetabolites agents and tissue volume expanders.

Antimetabolites interfere with fibroblast proliferation and the production of collagen. Fluorouracil (5FU) act by inhibiting cell proliferation through the disruption of DNA synthesis and inhibiting collagen production. Intralesional 5FU is an effective treatment in the management of dermal scars. This is however an off label use for 5FU and the patient is explained the risks and benefits prior to treatment.

Purpose of our study

To demonstrate the use of intralesional 5 Fluorouracil (5-FU), an antimetabolite for modulation of periocular scar formation and wound contracture.
MATERIALS AND METHODS

• Single centre retrospective, interventional case series
• Study Period: 2010 to 2013
• Study Location: P. D. Hinduja National Hospital and Medical Research Centre, Mumbai

A meticulous preoperative evaluation was done along with a critical assessment of the scar (location, extent skin type, prior treatments). An intradermal injection of approximately 0.2-0.4 ml was given into the scar at an interval of 6 weeks. The injection was repeated 2-3 times. Transient pain at the site of injection is the common complaint.

RESULTS

8 cases of periocular scar formation were reviewed. There were 5 male and 3 female patients. 2 patients had a lower eyelid cicatricial entropion, 1 had a hypertrophic DCR scar, 1 had lower eyelid post tumour excision scar, 1 had a skin graft keloid, 2 had post traumatic periocular scars and 1 had a post surgical keloid. All patients were given intrallesional injection of approximately 0.2-0.5ml (50mg/ml) of 5-FU at 6 weekly intervals for a course of two to three injections. Softening of the scars, significant improvement in appearance and release of wound contracture was seen in all patients after the injection. There were no cases of any hypopigmentation, fat atrophy or white precipitates at the site of injection, side effects or complications.

Conclusion

Intrallesional injections of 5 FU are well tolerated with rare side effects. 5-FU intrallesional injection is a cheap, effective non-surgical tool for periocular wound modulation with no complications.

REFERENCES