

Optimizing the Treatment of Acne Scars

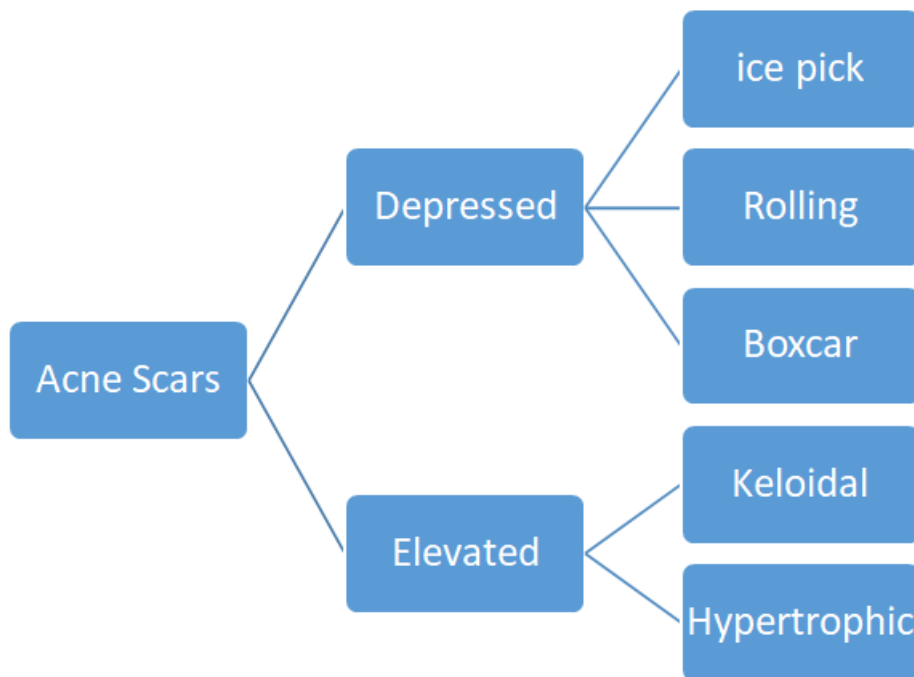
Zaid Almohsen

Unaizah College of Medicine, Qassim University
Unaizah City, Qassim Province, Saudi Arabia

Abstract: Scarring is a common consequence of acne vulgaris. Acne scars can lead to physical disfigurement and significant emotional distress. Acne scars may be atrophic, hypertrophic, or keloidal. Atrophic acne scars constitute the most common presentation of acne scars. Atrophic acne scars can be divided into ice pick, rolling, and boxcar scars based upon morphology. Presentations of acne scars are different, treatment modalities are multiple, and optimizing is a skill.

Keywords: acne vulgaris, Acne scars, Atrophic acne, hypertrophic.

1. INTRODUCTION



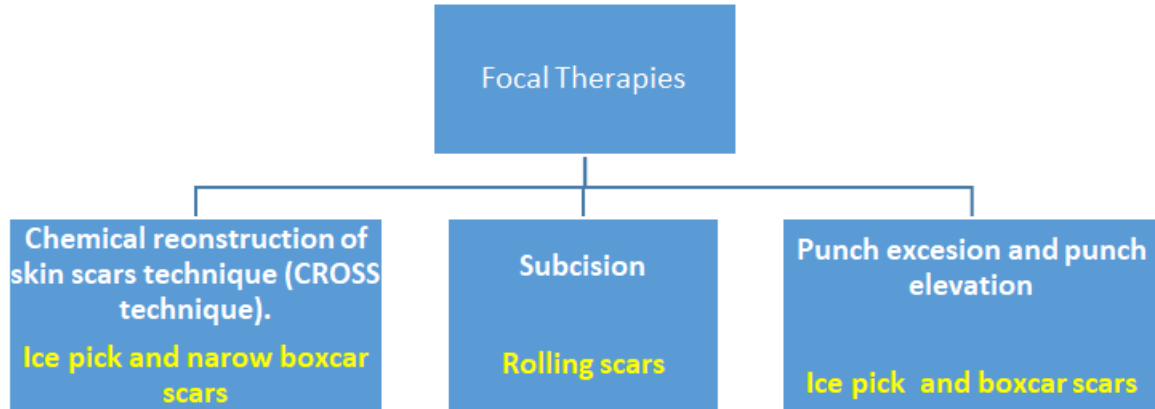
Pre-treatment assessment is critical prior to acne scar treatment. Presence of preexisting active acne necessitate to treat acne before treatment of acne scars. Important to ask about any previous successful or failed treatment, any history of poor wound healing, any history of keloid or hypertrophic scars, post inflammatory hyperpigmentation. Ethnicity and skin type might direct you to the best proper approach. Document number, size, and type of acne scars.

In addition to a medical history and physical examination, a thorough discussion with the patient is essential to ensure that the treating clinician and patient have similar treatment expectations and treatment goals. Patient tolerance for treatment side effects and recovery time strongly influences the selection of treatment.

There is a wide variety of treatment options for atrophic acne scars, including therapies designed to remove or release fibrotic tissue, therapies to induce collagen remodeling, and therapies to fill defects. In patients with generalized atrophic

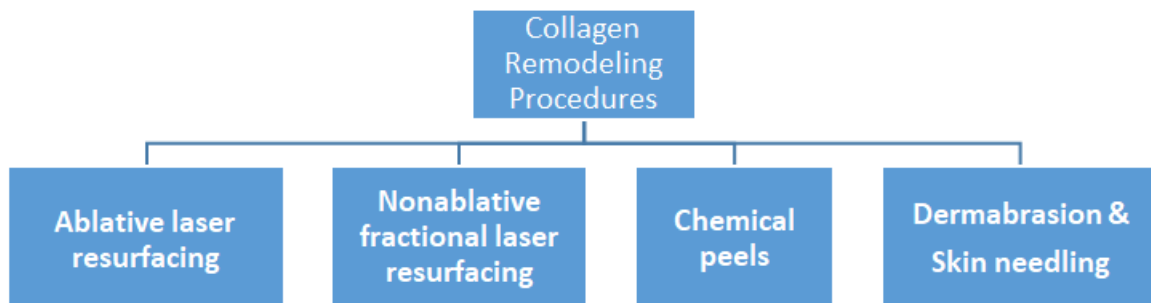
facial acne scars, the best results are usually obtained through a multi-faceted approach to treatment. Treatment modalities include medical, surgical, laser resurfacing, other procedures and tissue augmentation.

First step for the treatment of generalized atrophic facial acne scars consists of focal therapies to improve deep ice pick scars, deep boxcar scars, and other scars that are likely to be resistant to other treatments.

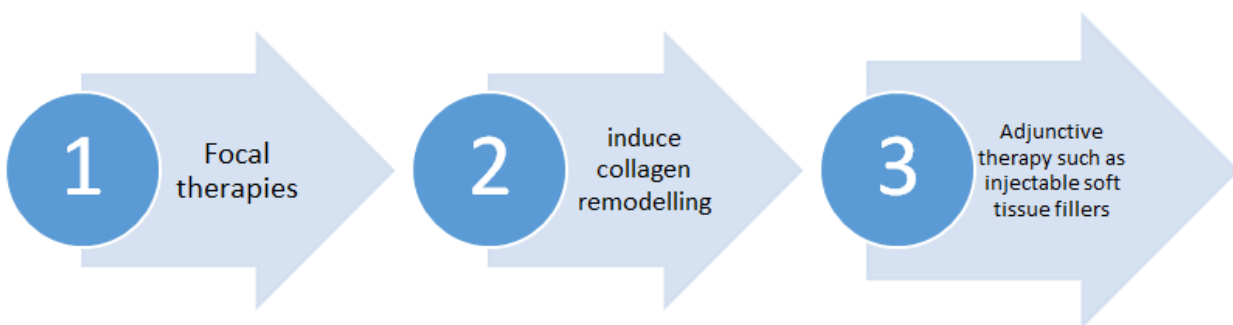


Second step for the treatment of generalized atrophic facial acne scars is a procedure designed to induce collagen remodeling in the dermis. Traditional ablative laser resurfacing is a highly effective collagen remodeling procedure. For patients who are willing to tolerate the risks, side effects, and recovery time associated with traditional ablative laser resurfacing, treatment with this therapy is recommended.

For patients who cannot tolerate traditional ablative laser resurfacing, nonablative fractional laser resurfacing is the preferred procedure. Medium-depth or deep chemical peels, dermabrasion, and skin-needling are additional examples of collagen remodeling procedures.



Third step for the treatment of atrophic facial acne scars after collagen-remodeling procedures is adjunctive injectable soft tissue fillers.



Treatment	Important Points
Chemical Peels	The best results are achieved in macular scars. Icepick and rolling scars cannot disappear completely and need sequential peelings together with skin care and topical treatment. The level of improvement expected is extremely variable. Good choice for single or few boxcar scars.
Dermabrasion/ microdermabrasion	Patients with darker skin may experience permanent skin discoloration or blotchiness. Rule out recent isotretinoin usage (risk of poor wound healing and development of hypertrophic/keloid scar).
Laser treatment (ablative and non-ablative)	Box-car scars (superficial or deep) or rolling scars are candidates for laser treatment. Pigmentation abnormalities following laser treatment is always a concern
Punch Techniques	Usually as a combined therapy, not as a monotherapy.
Dermal grafting	The usual modalities available are dermal punch grafting, excision and face lifting.
Tissue Augmenting Agents	Fillers (hyaluronic acid is the recommended material to use). Fat transfer.
Needling	Most patients require around 3 treatments approximately 4 weeks apart. Lower risk of post inflammatory hyperpigmentation than other procedures. It is contraindicated in the presence of anticoagulant therapies, active skin infections, collagen injections, and other injectable fillers in the previous six months, personal or family history of hypertrophic/keloidal scars.

Patients who desire treatment of isolated atrophic acne scars may benefit from a variety of focal procedures. The morphology of the scar dictates the appropriate procedure.

Scar type	Preferred treatment method
Ice pick scars	Punch excision or CROSS technique
Boxcar scars	CROSS, punch or elliptical excision, punch elevation, focal dermabrasion.
Rolling scars	Subcision or injectable soft tissue fillers.

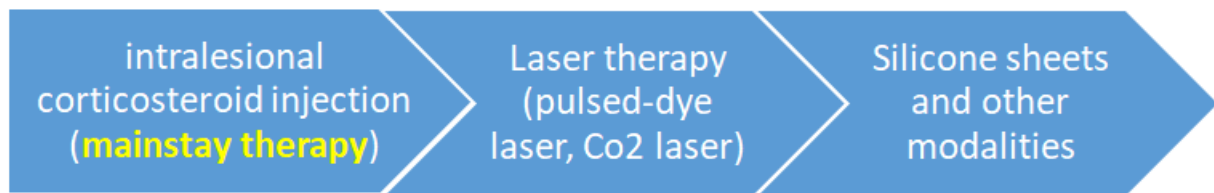
Reported Combination Therapies for atrophic acne scars

There is a new combination therapy for the treatment of acne scars
<p>1- The first therapy consists of peeling with trichloroacetic acid. 2- Then followed by subcision. 3- The fractional laser.</p> <p>- The efficacy and safety of this method was investigated for the treatment of acne scars. The duration of this therapy is 12 months.</p>
<p>Dot peeling and subcision were performed twice 2-3 months apart and fractional laser irradiation was performed every 3-4 weeks.</p> <p>There were no significant complications at the treatment sites.</p> <p>It would appear that triple combination therapy is a safe and very effective combination treatment modality for a variety of atrophic acne scars.</p>

Other reported combinations

Fractional laser plus intradermal platelet-rich plasma (PRP)
Fractional laser plus punch elevation
Microdermabrasion plus photodynamic therapy with aminolevulinic acid
Needling plus chemical peeling

The management of hypertrophic or keloidal acne scars differs from the management of atrophic acne scars. For these lesions, intralesional corticosteroid injection is the first-line treatment. Additional therapies include pulsed-dye laser therapy and silicone gel sheeting.



Treatment	Important Points
Silicone Gel	Can be used for any age and women of childbearing age. Can be used throughout the year, including summer
Intralesional Steroid Therapy	Triamcinolone acetonide (10-40 mg/ml). As monotherapy or combined. May be preceded by cryotherapy with, 10-15 minutes before injection. The most common adverse reactions are hypopigmentation, skin atrophy, telangiectasia, and infections.
Cryotherapy	It can also be used before each cycle of intralesional injections of steroids to reduce the pain. It can be taken into consideration especially for scars located on the trunk or for particularly bulky scars on the face.
Pulsed dye laser	Ideal candidates for PDL are patients with for lighter skin types (Fitzpatrick type I-III).
Surgery	Scar revision, excision, and grafting.

There is no clear guidelines about the intervals between the patient visits. It should be individualized with different approach for each patient. Regardless of the treatment modality given to the patient, check for possible side effects of treatment given and modify your treatment accordingly. Better to use objective way of assessment as photography. Proper communication with the patient and post treatment education is mandatory for optimal results.

In conclusion, best approach is prevention of acne scars development. Proper history and examination is mandatory for optimal treatment selection. Consider Combination treatment. Presentations of acne scars are different, treatment modalities are multiple, and optimizing is a skill.

Further researches are needed in order to quantify the benefits and to establish the duration of the effects, the cost-effective ratio of different treatments, and the evaluation of the psychological improvement and the quality of life of these patients.

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