

SCARS

Dr Raghunatha Reddy R

WHAT IS A SCAR?

Scar is an end result of the local response of the skin (wound healing) to any traumatic, surgical or inflammatory injury. It may be atrophic or hypertrophic. If the scar is hyper pigmented it adds to the unsightliness and makes it more unacceptable. Scars that are wide, raised, depressed, red, pigmented with poor cosmetic results

What is an ideal scar?

The Ideal scar is a nearly imperceptible fine line that is level with the skin and blends with the relaxed skin tension lines (RSTLS). Scar appearance can vary greatly due to surgical technique, final orientation of the scar, shape of the scar and its location on the body Scars can be cosmetically, psychologically and socially disturbing particularly the scars over the face and other exposed parts

Can the scars be treated or removed completely

No scar can ever be made to vanish completely, but can only be modified to make it cosmetically and aesthetically more acceptable by using various treatments / procedures. This important aspect should be understood by the patient, and a proper informed and written consent must be obtained from the patient before undertaking any treatment for the scars particularly the surgical or laser treatments

What are the objectives of scar revision surgery?

The objective of scar revision is never to completely remove the scar, but only to make it less prominent by following techniques:

Improve the scar direction in relation to RSTL and cosmetic units and place along the cosmetic unit junction if possible

Redirect tension to eliminate distortion of anatomical landmarks.

Eliminate elevations and depressions

Improve its appearance and acceptability by lengthening or narrowing the scar and by changing its shape and direction to break the monotony of the scar.

Various therapeutic options for scar revision treatment of traumatic and post surgical scars are as following

1. Medications - ILS, topical steroids, retinoic acid, colchicines etc for elevated scars.
2. Dermal augmentation with fillers like collagen, fibrins, silicone, silipose, fat, etc. For pitted or depressed scars.
3. Manual massage - circular compressive movements for hypertrophic scars.
4. Pressure garments /dressings, compression for hypertrophic or keloidal scars.
5. Liquid Nitrogen Cryotherapy for hypertrophic or keloidal scars.
6. Phenolization (50 to 90%), for Acne & depressed scars

What are the common surgical treatments for scars ?

Fusiform (elliptical) scar revision:

This is the common scar revision technique it is simple and effective technique for revising scars whose long axes lies within or parallel to local RSTL. Not indicated for wide scars and those with long axes more than 30 degree with RSTL

If the scar is wider and not possible to excise and close the wound in a single sitting, serial partial excision may be done in multiple sittings at an interval of 6 to 8 weeks interval.

Z – plasty

Is the oldest and still the commonly performed procedure, the principle is to make scar irregular and less visible. Z – plasty alters the direction of the prominent scar placed perpendicular to the RSTL into parallel to RST. Z Plasty is usually done for the scars which are perpendicular and longer than 2 cc in length.

Two zigzagging triangular flaps that are transposed into the shape of a Z

Z - plasty is done to brake the scars, and so break the monotony associated with scar and provide better cosmesis, strength and prevent widening

In scars which are larger or longer multiple Z - Pasties may be done. It is usually preferred for contracture over the flexures and neck etc.

W – Plasty:

Is a technique used for treating straight or curved scar, anti tension lines, and linear scar

This procedure is done to make the scar irregular and so, less visible

Indicated in scar more than 2 cm length, angle >35 degrees to RSTL

Scars in the region of forehead, eyebrows, cheek and chin are the common indications for w-plasty.

Geometric broken line closure

Is a scar excision technique which is an extension of W – plasty is based on the concept of scar irregularizations and camouflage is used.

Incision is made in the form of various geometric shapes, and a mirror image of the same on the opposite side

For longer scars the W - plasty makes it more uniform and monotonous, so geometric broken line is better

V-Y Plasty

This technique is used for scar lengthening around eyelids, lips and such anatomical sites to prevent distortion of the structure and for functional aspect

Ectropion and tenting type deformity is produced due to scar contraction with conventional excision

In this procedure a V - shaped incision is given with deformity enclosed in base of V, V flap is undermined and widely mobilized, Deformity gets corrected as v shifts proximally and the Wound is then closed in a Y manner, so the term v-y plasty.

Scars over the hair bearing areas like mustache and scalp,

If the scar over these areas is visible and unsightly, such scars may be treated with surgical excision and further combined with follicular unit hair transplantation.

Hypertrophic scars

Hypertrophic scars are elevated scars formed over a wound due to excess formation of collagen, but does not grow beyond the borders of the original wound. It is formed as a result of abnormal wound healing, local irritation, infection etc.

They do not cause symptoms like keloids and tend to flatten over a time period with or without treatment.

What are the treatment options for hypertrophic scars?

Physical modalities like Massage, electrical stimulation,

Pressure garments, silicone gel sheets, etc.

Medical therapeutic modalities like Topical steroids, Intralesional steroids

Liquid nitrogen Cryo-therapy.

Laser ablation / Excision by CO₂ Laser or Pulse dye laser

Radiofrequency surgery by paring and excision of the hypertrophic component

Advanced excision technique with skin grafting (split or full thickness),
Rotational or advancement flap surgery

Dermabrasion

What is the role of LASERS in treating Scars ?

Laser ablation now becoming popular, but it is best suited for red hypertrophic scars and keloids. Pulse Dye Laser is the gold standard laser red scars.

Newer fractional ablative and non ablative lasers) with wave length (532 nm, 1064 nm, and 1450 nm) are also being used, with variable degrees of efficacy.

SUMMARY

- Scar revision is indicated for cosmetic and or functional reasons.
- Anatomical knowledge of the region is very important before attempting the surgery important
- Thorough scar evaluation, selection of suitable scar revision technique, proper execution after good planning gives good results
- Scar cannot be made to disappear completely, can only be improved esthetically and or functionally

