

Pearls in Dermatology

How I improve a dermatological scar

MK Tung 董文光

Management of a dermatological scar is an art. It begins with history taking and physical examination, where rapport with the patient is built. An initial period of post-insult hypertrophic scar changes is expected and the scar usually matures in six to nine months. The patient should avoid ultraviolet light exposure, smoking, and snake head fish. Scar massage will help. Keloid may be managed with pressure garment, intralesional triamcinolone injection and, in the most difficult case, excision plus postoperative radiotherapy. Various surgical interventions can be considered for a disfiguring mature scar. Ultimately if the patient is happy with the scar, it is a good scar.

Keywords: Massage, smoking, snake head fish, ultraviolet light

Introduction

A dermatological scar is the result of an insult to the skin, whether due to surgery or injury. The final outlook of a scar depends on the interaction of many factors, known or to be known. A sensible and realistic manipulation of the known factors will create the best possible result of a scar associated with that particular patient.

Quality of a scar

The interpretation of the quality of a scar depends on the following factors:-

1. Psychological makeup of the patient;

2. Patient's education background and medical knowledge;
3. Doctor-patient rapport;
4. Doctor's own expectation on the outcome of the scar;
5. Symptoms like itching, pain, tightness, and disturbed function.

The doctor can only alter factors 3 and 4 and sometimes help factor 5. At the end of the day, if the patient is happy with the scar, it is a good scar. The comments of a third party or the peers are irrelevant.

History and physical examination

These are the occasions where we can establish good rapport with our patient. The time and conditions that lead to the formation of the scar must be established. The patient's past health and the management after the skin was insulted are also important. It is essential to ask whether the patient is a smoker.

Plastic Surgery Division, Department of Surgery, Princess Margaret Hospital, Hong Kong

MK Tung, FRCS, FHKAM (Surgery), Specialist in Plastic Surgery

Correspondence to: Dr. MK Tung

Plastic Surgery Division, Department of Surgery, Princess Margaret Hospital, Lai Chi Kok, Kowloon, Hong Kong

During physical examination, find out:

1. Whether the lesion is a hypertrophic scar or keloid?
2. Is the scar located along the relaxed skin tension line (RSTL) or skin crease?
3. Any foreign bodies?
4. Any contracture?
5. Pigmentation?
6. Residual pathology or recurrence?
7. Related medical problems?

Clinical photographs

Having good quality pretreatment clinical photographs in the record is essential. They may be useful to prevent medico-legal litigation in the future.

Investigations

1. X-ray with markers to locate and/or look out for other foreign bodies.
2. Check the pathology report especially on the resection margins.
3. Blood investigations if medical problems related to wound healing are detected.

Actually blood investigations and medical treatment can be left to your physician partner as long as there is an efficient referral and communication system.

Non-surgical scar treatments

The essence of treatment is patience, and time is very often the best remedy both physically and psychologically. It is important to decide whether the scar is a keloid, a hypertrophic scar, or a mature scar. A keloid is a scar which extends beyond the wound boundary whereas a hypertrophic scar is a raised scar confined within the wound boundary. A mature scar is a flat scar with colour similar to surrounding skin.

It is common for all scars to go through a period of hypertrophic changes though the degree is not the same for different persons. For Chinese patients, the scar will usually mature in six to nine months. Sun (ultraviolet light) exposure and smoking will prolong the period. On the contrary, firm pressure massage using finger tip without actually rubbing the skin surface will hasten the recovery. The patient is instructed to perform scar massage for two minutes for each finger-tip area of the scar three times a day. It is my team's experience that the use of a topical gel containing Cepae extract, allantoin and heparin sodium (Contractubex gel) during scar massage can further enhance the recovery speed. If foreign body is detected, it is wise to refer to institutions where exploration under general anaesthesia is available. Exploration under local anaesthesia can be very tricky. It can end up as 'a bridge too far'!

Keloid occurs more commonly in people with pigmented skin. It is still impossible to predict who will develop a keloidal scar though some have a family history. All patients should be advised to avoid smoking, ultraviolet light and food made from snake head fish (生魚) as these will make the situation worse. The pressure garment carefully made by an occupational therapist can in most instances reduce the discomfort caused by a keloid. The size of a keloid may decrease and colour improves, but it is unlikely that it will completely resolve.

For more resistant cases, intralesional triamcinolone acetonide injection will be useful though it is painful and the effect is not permanent. It is often given every four to six weeks. Be sure to check the family planning status of a female patient before starting the intralesional injection, and to warn her that the menstrual pattern may be altered. For the most resistant or most troublesome cases, the treatment is excision plus radiotherapy soon after the surgery. In the public service, our arrangement is to book the excision session two to three months ahead and refer the

patient to the radiotherapy clinic, telling them the exact date of operation. At present, radiotherapy is given on day 3 or day 4 post-operatively, but this schedule may evolve with experience. Even with this more radical treatment, the recurrence rate is still as high as 15 to 25%.

Surgical interventions of a disfiguring mature scar

A mature scar can still cause disfigurement to the patient. Surgical intervention only exchanges the present disfiguring scar for a more presentable one. Most of the surgeries can be performed under local anaesthesia for mature patients. Good

preoperative planning and book work will enable one to complete the operation within the time constraint of local anaesthesia.

A prominent narrow mature scar nearly parallel to the RSTL or skin crease can be improved by excising all the scar tissue. The wound should be closed in layers and the skin edges approximated with fine stitches (Figure 1).¹

A prominent narrow mature scar at an oblique angle to the RSTL or skin crease can be improved by excising all the scar tissue plus a W-plasty (Figure 2).¹ The sutured wound should be arranged so that parts of it are parallel to the RSTL or skin crease.

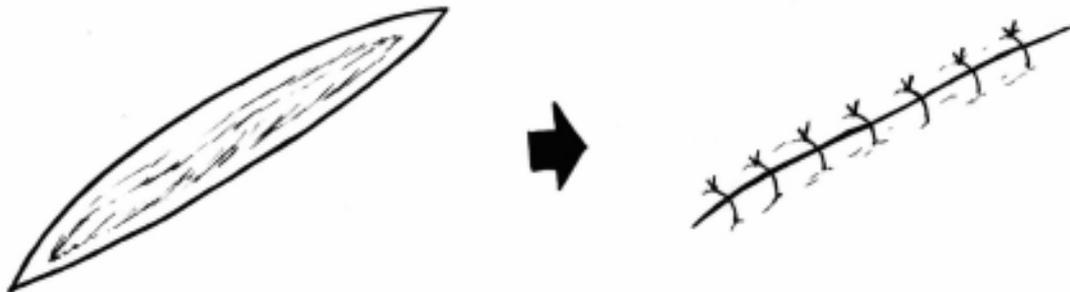


Figure 1. Excision of a prominent narrow mature scar nearly parallel to the RSTL or skin crease.¹

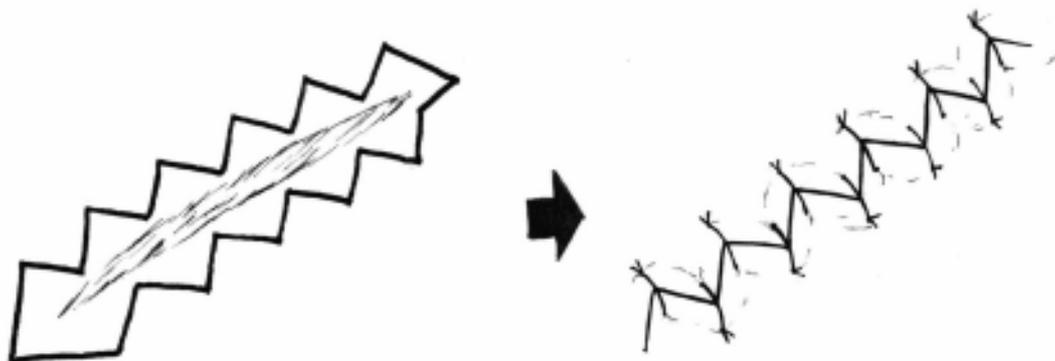


Figure 2. Excision and W-plasty of a prominent narrow mature scar at an oblique angle to the RSTL or skin crease.¹

A prominent narrow mature scar causing contracture can be resolved by excising the scar plus Z-plasty/ies (Figure 3).² The principle is to use the tissue lateral to the contracture to gain the length required for the release procedure.

A prominent wide mature scar is difficult to manage. The edges can be made less prominent by multiple Z or W-plasty/ies. On the other hand, the whole scar can be excised and the raw surface covered with a local flap. Full thickness skin graft is also an option but it is unlikely to have correct colour and texture matching.

All patients must be warned that the resulting new scar will go through a period of hypertrophy and redness. They must be warned to avoid smoking, ultraviolet light & food made from snake head fish (生魚) as these will aggravate the situation. They should be taught how to massage the scar with or without the use of Contractubex gel.

Comments

Scar management is an art. We have to wait patiently till the right time comes and then we can only make it less prominent. Never suggest to the patient that his scar is ugly because we cannot make beauty returns. Paying due respect to local anatomy and skin crease, plus gentle handling of tissue and well tried surgical technique, scar revision can be a very job satisfactory exercise.

References

1. Morris AM. Complications of scars. In: AM Morris, Stevenson JH, Watson ACH. Complications of plastic surgery. London: Bailliere Tindall; 1989, 116-46.
2. Grabb WC. Basic techniques of plastic surgery. In: Grabb WC, Smith JW, editors. Plastic surgery. 3rd ed. Boston: Little Brown; 1979, 3-74.

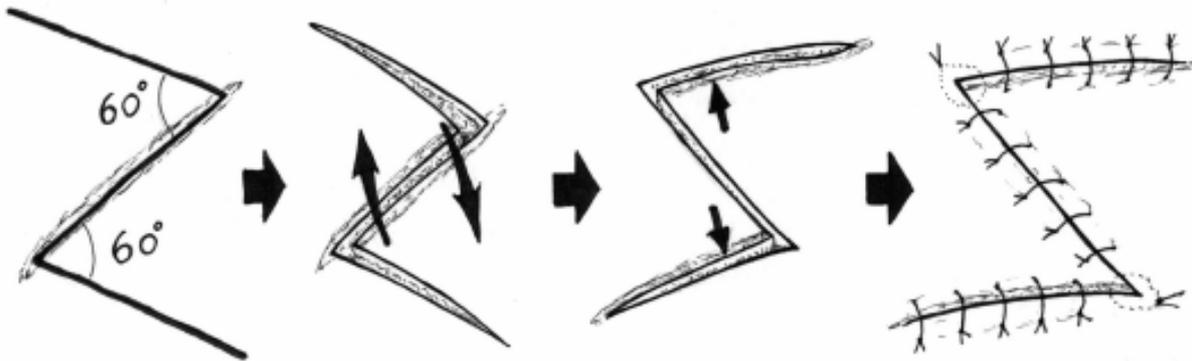


Figure 3. Excision and Z-plasty of a prominent narrow mature scar causing contracture.²