Scar treatment

Is the treatment we use for problem scars enough? They are a challenging issue not only as an entity to treat; but the patient suffers with clinical, functional and psychosocial issues that need addressing for management.

INTRODUCTION

Scars and their complicated forms have been described over 1,000 years ago. Nevertheless we still have poor understanding of the patho-physiological and microbiological causes of why certain wounds scar differently than others. There have been predictive factors established throughout the literature – such as site of wound, tension of wound closure, race of the patient, etc – but these are not absolute and great variations exist.

When we refer to managing scars we always talk about hypertrophic scars and keloids. Their practical distinction is difficult and many clinicians are still struggling. However, there are clear distinctive signs in their definitions and what should follow is the understanding of its management. Hypertrophic scars are raised scars that grow within the border of the wound margin, whilst keloid scars grow beyond the wound margin.¹ Their cause is from stress to the skin that breaks the skin continuity – this can range from an inflammation (chicken-pox lesions), to a clear surgical cut. Understand that a hypertrophic scar will regress as the scar matures, while a keloid has a great probability of never reaching maturity and will continue its growth beyond all margins of the initial wound (see Figure 1).

Once a diagnosis of the type of scar is made it is important to take a moment and consider that we are not treating a scar but a patient baring a scar who needs to be managed appropriately. Assessment of the scar is not enough. The patient needs to be assessed before, during and after treatment so all aspects are met. Use assessments where they are actively involved, such as Patient and Observer Scar Assessment Scale (POSAS). Acknowledge the impact it might have on their quality of life by completing the Dermatology Life Quality Index (DLQI) questionnaire and act on it if deemed necessary by incorporating a clinical psychologist in your team.² The clinical symptoms of pain and itchiness should be addressed from the beginning and not left on the sidelines until the scar has settled.

Once the patient has been assessed, there is a large cohort of treatments that we can use. We will discuss them in detail as they range from topical non-invasive measures to more complex surgical approaches with chemotherapy and radiotherapy aids. They have all been validated and proven to work with different degrees of success, but as no two scars are the same, treatment...
success varies from patient to patient – especially in the less aggressive treatments. Even more importantly, as with all diseases, prevention is of immense importance. Make sure that a newly forming, normal-looking scar has taken the path to maturation. This must be attended and managed to prevent, if possible, the complicated states of scarring.

**TREATING ‘NORMAL SCARS’**

Massaging and the application of a moisturiser
This technique of preventing aberrant scarring is thought to break collagen fibrous tissue, which will help flatten the scar. It should be done in a circular motion and not too deep that it will cause discomfort. Using a moisturiser helps in hydrating the scars and prevents friction whilst massaging.

**TREATING ‘ABNORMAL SCARS’**

Hypertrophic scars and keloids also benefit from hydration and massaging, as the constant stress of clothing rubbing on the wound is avoided while at the same time the lesion can become more pliable and less symptomatic. On the other hand, more aggressive lesions need further and more intense treatment. We have divided these into the invasive and non-invasive types, and discuss how we can further help our patients after the treatment has finished and has been successful.

**NON-INVASIVE TREATMENTS**

**Pressure garment**
This is a useful tool in suitable areas of the body and should be applied once the wound has healed or the stitches have just been removed. It is imperative to explain to the patient that this is worn at least 23 hours a day whilst the scar is maturing. The pressures exerted on the scar counter-act the stress at the edges of the wound and at the same time limit its extension beyond its margins. Using the pressure garments in hot or humid conditions has brought the opposite results, so its use is limited to your area in the world and the time of the year.

**Silicone gel/sheet**
Topical silicone gel and sheeting is a well-established treatment for the management of scars. Its therapeutic effects on predominantly hypertrophic scars have been well documented with great success. The gel and sheets are known to help hydrate and soften the scar. Patients’ concordance, however, cannot be emphasised enough, as they will have to use this type of treatment for at least three to four months immediately after the wound has closed. The gel form of silicone is advisable to use in exposed areas of the body – especially the face and neck – as constant rubbing by the clothes will wipe it away, while the silicon sheets can be used in cloth-bearing areas.
INVASIVE TREATMENT

Intralosomal injections of steroid therapy
This kind of treatment applies to scars that cause complications due to being wider and stretched, cause contractures, or are hypertrophic or keloidal. This treatment option is commonly used when initial management, as discussed above, is not effective or the scar has matured. This treatment, if used in the early stages of scar healing, will cause atrophy. It is essential that the patients be committed to this treatment as it entails a course of six sessions of treatment per cycle. Failure to do so will reduce the efficacy of the treatment.8 One cycle is usually sufficient to treat a small keloid. It is important to start with a low dose of triamcinolone at 10mg/ml for the first two sessions and follow with a stronger dose at 40mg/ml, as it has been shown to decrease the recurrence rate considerably. 7

Scar revision
This type of surgery will help in minimising the scar so that it is more consistent with the surrounding skin tone and texture.8 Although this technique provides a better aesthetic result, the scar will not completely disappear but can be fashioned to improve the deformity it can cause. It is vital to note that scar revision is not an option for everyone, especially when the patient has a history of abnormal scarring or difficulty in wound healing. In addition, a follow-up after surgery is necessary to monitor and apply preventative measures whilst the wound is healing.

Intralosomal excision with steroid injection
This, in essence, is a debulking procedure used in keloids. The rational is that no normal skin is injured and the remaining keloidal borders are only left to follow on with treatment of usually intralosomal steroid injections. The intralosomal injections are as a rule started in 4-6 weeks following the surgery when the new scar is closed. It is important to note that failure to follow the excision with further therapy will result in the keloid recurring.

Extralosomal excision and radiotherapy
This complete excision of the keloid to normal skin tissue is reserved for refractive and difficult-to-treat keloids. The excision is followed by radiotherapy with a delivery of 10Gy to the area of the new scar only. This needs the involvement of a radiotherapist and the informed consent of the patient as there is a risk of cancer to the area of 1-2% at 30 years, especially if the area treated is the female breast or the thyroid to the neck. The delivery of radiotherapy can be in one visit or in multiple visits, depending on the protocols at different units. The literature shows better results and less recurrence, with multiple radiotherapy sessions giving up to 10Gy in total.8

5-Fluorouracil injections
This 50-year-old chemotherapy agent has been used in scar management in ophthalmology for over a decade and now is showing great results in treating skin-deforming scarring. It is
reserved for keloids as an intralesional injection only to small keloids (<1cm³) or in larger keloids following extralocal excision. The similarities of keloid behaviour to cancer lesions has made this kind of treatment popular, and the recurrence rates appear to be much lower than even radiotherapy treatment. The systemic complications of chemotherapy are avoided by the small amount given intralesionally. However, small local complications exist as with all treatments and expert opinion should be consulted before this treatment.

Other available treatments
There are many more treatments that are used around the world today for different scars such as cryotherapy, laser, chemical peeling, etc. They have seen success but are not without complications. We have not included them here as their success is still not well documented and access to them, especially within the NHS, is still very limited.

CONCEALING A SCAR
Regardless of how successful our scar treatment has been, the fact remains that once the skin has been injured it will leave a scar, which will be different in colour and texture to the surrounding skin. This is why once we have successfully treated a scar we must follow it up with methods to camouflage it.

Skin camouflage (medical ‘make-up’)
Using medical make-up – which is hypoallergenic, waterproof and odourless – under the guidance of a specialist nurse will not only make sure the camouflage needed is of the ideal consistency and colour to mask it and make it appear the same as the surrounding skin, but will also teach the patients to use it throughout their life (see Figure 2).

Micro-pigmentation
In a similar manner as with make-up, the specialist will match the colour of the surrounding skin and ‘tattoo’ the scar to appear the same as the surrounding skin. This is a permanent camouflage with great advantages, especially on hair-baring areas as micro-pigmentation can imitate a shaved area on a male’s face or eyebrows where hair does not grow on the scar.
CONCLUSION
Injured skin heals by forming a scar. Whether a scar will have a linear, uncomplicated pattern or a hypertrophic keloidal pattern it has to be managed appropriately to offer the best results to our patients. The aesthetics of a scar take second place to the deformity, the functionality and, importantly, the psychosocial issues that accompany them. It is more cost-effective to prevent or even treat a problem scar than to allow it to ‘take over a patient’s life’. Ignoring a large scar because clothes cover it does not minimise its effects on the patient’s quality of life – we have found precisely the opposite. Hidden scars impact patients’ lives more than exposed ones.

Whichever techniques you use in your practice are welcome, as long as they are successful, with only small complications and recurrence rates. However, we cannot stress enough the need for a guiding protocol to fall back on for difficult, resistant-to-treatment scars. Use a multidisciplinary approach with specialist nurses, plastic surgeons, radiotherapists, clinical psychologists and occupational therapists. And last but not least, treat the patient and not the scar – this will be more rewarding for both parties.

REFERENCES

Authors: Flordeyln Selim BSN RN
Pambos Lemonas MD, MRCS
Simon Myers MBBS, PhD, FRCSpast
The Royal London, Whitechapel