Chapter

Introductory Chapter: Scars

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1. Overview

Scar is the result of the process of wound healing that, finally, modifies the normal skin morphology. Wound healing process is very complex and incomplete elucidated, but it is based on four major processes: coagulation, inflammation, proliferation, and remodeling [1].

Dermal injury, especially reticular dermis damage, induces permanent scars [2].

In daily practice one can admit that every person can have their particular scarring process, provoking an important negative impact on quality of life, due to cosmetic, physical, physiological, and, sometimes, disfiguring effects.

If the inflammatory process is too intense, it can initiate abnormal fibroblast proliferation and excessive collagen, resulting keloids or hypertrophic scars. If collagen degradation is more intense than collagen synthesis, the result is an atrophic scar [3]. Keloid is different from hypertrophic by its margins which extend beyond the limits of the initial wound, whatever the type.

Different types of scars can develop after variable type of skin wounds, caused by a large variety of factors, ranging from simple trauma to surgery, from therapeutic methods (laser) to inflammatory skin disorders (acne). "Spontaneous" keloids can be diagnosed, in the absence of any sign of skin injury, especially in young adults, more often located on the upper back.

On the other hand, the type of skin scar is influenced by many factors: genetic predisposition, skin structure, age and gender, race, comorbidities, or/and systemic or local treatment corroborated with type, depth, and location of skin injury [4]. Anatomical area can influence the type of scarring; thorax and superior limbs are most likely to develop hypertrophic and keloid scars, while this type of scarring is never seen on the eyelids [5].

The cause of skin injury plays an important role in pathological scarring. Burns of different degrees are followed by hypertrophic scars, especially if the deep dermis is affected, in predisposed individuals and in the presence of skin infection [6]. Keloids have been reported after non-intense but chronic trauma, for example, ear piercing [6]. Scarring in acne, in adolescents, is atrophic type and difficult to manage.

Burns raise difficulties in therapy not only in acute phase but also when pathological scarring occurred. Hypertrophic scars develop 1–2 months after burns, while keloids can be observed much later, even years.

Scars can be asymptomatic or accompanied by pruritus or pain, but major concern is esthetic anxiety.

Scars are treated by an interdisciplinary team, plastic surgeon, dermatologist, family care physician, and specialized nurse. Variable guidelines are available, but treatment of a pathological scar remains, even nowadays a challenge.

Within the pages of each chapter of the book *Scar*, new insights in definition, etiology, pathogenic mechanism, and therapeutic methods are described. The book

is a guideline for medical care providers who treat patients with scars but also can open new doors for understanding and treating pathological scarring.

The introductory chapter presents clinical images of skin scars (**Figures 1–7**), in order to show the huge impact on quality of life of patients and the difficulties and limitations of physicians treating such lesions.

Figure 1.
Recent postsurgery scar.

Figure 2.
"Spontaneous" keloids.

Figure 3.
Keloids after ear piercing.

Figure 4.
Atrophic scar after electrical burn.

Figure 5.
Striae induced by prolonged use of topical potent steroids.

Figure 6.
Squamous cell carcinoma arising within the margins of an ancient caustic burn.

Figure 7.
Atrophic scar after bleomycin injected for vascular anomaly.

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