Evaluation of the role of the dermaroller in treatment of the post acne scars

Thesis

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مقدمة من

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الأستاذة الدكتورة/ هدى منيب

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Introduction

Acne vulgaris is a chronic inflammatory condition of the pilosebaceous unit of the skin. It is one of the most frequent chronic skin diseases and the commonest dermatologic disorder of adolescents ***(Uslu et al., 2008)***. It is so prevalent in this age group that it has been viewed as a normal physiological reaction accompanying the process of puberty. However, the inflammatory changes of acne represent a true disease that may be socially disabling ***(Leyden, 2003)***.

The pathogenesis of acne has currently been attributed to multiple factors such as increased sebum production, alteration of the quality of sebum lipids, regulation of cutaneous steroidogenesis, androgen activity, interaction with neuropeptides, exhibition of proinflammatory and anti inflammatory properties, follicular hyperkeratinization and the action of *Propionibacterium acnes* (*P. acnes*) within the follicle ***(Zouboulis, 2005 and Zouboulis et al., 2005)***.

Clinically, acne vulgaris is characterized by the formation of comedones, erythematous papules and pustules, less frequently nodules, deep pustules, or pseudocysts, and in some cases is accompanied by scarring. Although not a serious condition, acne can have severe psychological consequences leading to poor self-esteem, social isolation and depression **(*Simpson and Cunliffe, 2004)***.

Despite appropriate and effective treatment of acne, scarring occurs in some degree in 95% of patients irrespective of the severity of acne. The scarring causes long-term morbidity ***(Jemec and Jemec, 2004*)**. Acne scars may be atrophic or hypertrophic. The former type is usually classified as icepick, boxcar, or rolling scars ***(Alam and Dover, 2006)***.

Facial scarring has always been a challenge to treat and there are different treatment options for the management of these scars. However, the majority of these treatment options suffer from the limitation of either being marginally effective or else having considerable morbidity. Treatment options like laser resurfacing or dermabrasion that offer significant improvement in facial scars are invariably associated with considerable morbidity and downtime interference with the daily activities of the patient in the post-treatment period ***(Alster, 1999 and Alster et al., 2001)***. On the other hand, treatments like microdermabrasion and non ablative resurfacing with lasers that are associated with a minimal or no downtime, do not show the same level of efficacy as the traditional, ablative resurfacing techniques ***(Shim et al., 2001 and Ang et al., 2002).*** New treatments and techniques are being added over the last few years to overcome these limitations.

One such device is dermaroller. Treatment with these hand-held devices is known by many names like microneedling therapy, collagen induction therapy or dermaroller therapy.