

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

Thesis

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List of Contents

Title	Page
♦ List of figures	II
♦ List of Tables	VII
♦ Introduction	1
♦ Aim of the Work	4
♦ Review of the Literature	
▪ Chapter (1): Acne Vulgaris.....	5
▪ Chapter (2): Acne Scarring.....	17
▪ Chapter (3): The Dermaroller	52
♦ Patients and Methods	66
♦ Results	81
♦ Discussion	120
♦ Conclusion	133
♦ Recommendation.....	134
♦ Summary	135
♦ References	138
♦ Arabic Summary	—

List of Figures

Fig. No.	Title	Page No.
1	Representation of hair anatomy.	7
2	How acne develops.	11
3	Lesion progression in acne.	12
4	Pathogenesis of acne lesions.	18
5	Acne scar types.	23
6	A novel classification system: 3 basic scar types—icepick, rolling, and boxcar (superficial and deep).	24
7	Icepick scars scattered on the cheek.	25
8	Numerous rolling scars along the chin and cheeks.	25
9	Arrows highlight small, shallow boxcar scars on the cheek.	26
10	Superficial macular scars.	28
11	Multi-channeled sinus tracts with paperclip under bridging scar/	28
12	Ice pick scars in a field of multichannelled scars on the cheek.	29
13	Fat atrophy superimposed on old acne scarring	30
14	Keloidal acne scars.	30
15	Hypertrophic scars.	32
16	Keloidal scars.	32
17	Papular scars.	33
18	Bridge.	33

19	Dystrophic scars.	34
20	Distensible retractions scars.	34
21	Distensible undulations scars.	35
22	Nondistensible superficial scars.	35
23	Nondistensible medium scars.	36
24	Nondistensible deep scars.	36
25	Tunnel scars.	36
26	Keloidal scar: (A) before intralesional fluorouracil; (B) after intralesional fluorouracil	41
27	Punch techniques: (A) punch excision; (B) punch elevation.	42
28	Schematic depicting subcision. Fibrous bands extend from underside of the dermis (depicted in red) to the superficial musculoaponeurotic system.	43
29	Acne scars a) before b) after dermabrasion.	44
30	Action of microneedling (1).	59
31	Action of microneedling (2).	60
32	Action of microneedling (3).	61
33	Action of microneedling (4).	62
34	Ideal perforation of the crater-like acne scar.	63
35	Migration of new capillaries and collagen fibers into the previous scar bed to form new tissue.	64
36	Neoangiogenesis effect of the dermaroller.	65
37	The dermaroller device (MT15).	69
38	Application of the dermaroller.	70
39	Uniform bleeding points following the dermaroller session.	71

40	Application of 1%Fucidic acid ointment after treatment.	71
41	Sex distribution of the patients included in the study.	81
42	Flizpatrick skin phototypes of the patients included in the study.	82
43	A:Icepick scars. B:Icepick, rolling and boxcar scars. C:Rolling and boxcar scars.	85
44	a: before treatment b: after 8 weeks of treatment.	87
45	Grades of post acne scar before treatment.	88
46	Grades of post acne scars after treatment.	89
47	Assessment of grades of acne scars before and after treatment for each patient.	92
48	Assessment of the response after treatment with the dermaroller.	92
49	Acne scars before and after treatment with the dermaroller.	100-101
50a	Untreated post acne scar. Note the narrow epidermis, the dermis shows increased interfibrillary spaces and random deposition of collagen (H & E x 200).	105
50b	Post acne scar after treatment with the dermaroller .The dermis shows markedly increased number and density of collagen fibers. Interfibrillary spaces are greatly diminished with linear orientation of collagen fibers (H&E x 200).	105
51	Higher power of the previous case (H & E x 400).	103

52a	Untreated post acne scar showing thinning of the epidermis, increased interfibrillary spaces and random deposition of collagen. Note the mild perivascular inflammatory infiltrate in the dermis (H&E x 200).	107
52b	Post acne scar after treatment with the dermaroller showing scattered spindle shaped fibroblasts in the papillary dermis and increased number of collagen fibers (H&E x 200).	107
53	Higher power of the previous case (H & E x 200).	108
54a	Untreated post acne scar showing dermal collagen randomly deposited (M.T x 200).	110
54b	Post acne scar treated with the dermaroller showing increased hyalinization of dermal collagen (M.T x 200).	110
55	Higher power of the previous case (M.T. x 400).	111
56a	Untreated post acne scar showing dermal collagen randomly deposited with decreased number and density of collagen fibers (M.T x 200).	112
56b	Post acne scar after treatment with the dermaroller showing markedly increased number and density of collagen fibers. Interfibrillary spaces are greatly diminished with linear orientation of collagen fibers (M.T x 200).	112
57	Higher power of the previous case (M.T. x 400).	113
58a	Untreated post acne scar showing decreased number of elastin fibers (silver x 200).	115

58b	Post acne scar after treatment with the dermaroller showing markedly increased number and density of elastin fibers with linear orientation of fibers (silver x200).	115
59	Higher power of the previous case (silver x 400).	116
60a	Untreated post acne scar showing decreased number of elastin fibers with random deposition of fibers (silver x 200).	117
60b	Post acne scar after treatment with the dermaroller showing increased number and density of elastin fibers (silver x 200).	117
61	Post treatment erythema and swelling.	119

List of Tables

Table No.	Title	Page No.
1	Treatment of acne scars.	31
2	Treatment of acne scars.	39
3	Scar types and their preferred laser choice	46
4	Qualitative scarring grading system.	74
5	Demographic data of the studied patients.	83
6	Post acne scar types of the patients included in the study.	84
7	Clinical findings of the patients skin photo type, site and type of acne scars.	86
8	The clinical improvement of the patients at the end of the study.	90
9	Comparison between grade of acne scars before and after treatment.	91
10	Patients' response record at the end of the treatment.	93
11	Correlating the improvement with the morphological type of scarring present.	94

12	Comparison between cases with and without ice picks scars as regards the improvement after treatment.	95
13	Comparison between sites of the lesions as regards the improvement after treatment.	96
14	Comparison between age as regards the improvement after treatment.	97
15	Comparison between gender as regards the improvement after treatment	98
16	Comparison between skin photo type as regards the clinical improvement after treatment.	99
17	Epidermal thickness before and after treatment.	103
18	Comparison between collagen content before and after treatment.	109
19	Comparison between elastin content before and after treatment.	114



Arabic Summary



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Hanan Yehia Mahmoud El Shamy



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قالوا

سبحانك لا علم لنا
إلا ما علمتنا إنك أنت
العليم العظيم

صدق الله العظيم

سورة البقرة الآية: ٣٢

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.