



Freckle Removal and Enhanced Skin Rejuvenation by Plasmage

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Abstract

Background: Freckles are typical pigmentation disorders presenting by hyperpigmentation dark – brown or light – circular brown spots on face, especially on the cheeks. Freckles should be distinguished from lentiginous. The **objectives** of study uses Plasmage as an option to remove freckles and enhance skin texture. **Method:** Clinical trial study for 7 female patients. We have many patients with freckles treated with Plasmage, but we chose one patient for this paper. Seven females, 28 years old and married, with Fitzpatrick skin type III. She has had widespread brown spots on her face since childhood, and they are increasing over time despite regular use of sun block. Her skin has lost its shine over time. She is an engineer and works most of the time in sunny places. She is neither pregnant nor nursing. She received three sessions of Plasmage eight weeks apart. Lentigo parameter was selected. **Results:** there is significant difference between the results appear on face of patients, so the freckles become better after 6 months after Plasmage intervention than 2 months and 4 months after Plasmage intervention. However, no difference between 2 months and 4 months after Plasmage intervention. **Conclusion:** Plasmage can give promising and satisfactory results in treating benign freckles for cosmetic reason after thorough evaluation by a dermatologist.

Keywords: Freckle removal, skin rejuvenation, Plasmage

1. Introduction

Freckles are pigmentation complaints diagnosed by increase pigmentation black to brown or bright to circular brown spots located on face, particularly on the cheeks [1]. Freckles differ from lentiginous, Lentiginous are defined as small, brown spots, which seem on both sun unprotected and protected parts [2, 3]. Freckles can seem on entirely kinds of skin manners [2,4]. Numerous drugs excellently reduce

the presence of freckles. example of these managements include skin-lightening creams like hydroquinone, drugs having retinoid, chemical peels that are revealed to recover pigmentation abnormalities, Intense pulsed light (IPL) therapy [5] and others pigment lasers [6,7,8]. There is limited information in the literature about the incidence of freckles, but in general they are very common, and some reports in

the United States estimated that around 90% of Caucasian people have freckles by age 60 [9]. There are two types: ephelides and lentigines. Ephelis is an autosomal dominant trait and appears as small red to light brown lesions on the face, arm and back. Ephelides are prompted by sun exposure and fade during the winter, while lentigo usually appears during adulthood as dark brown spots and persists all the time [10]. There is a risk of skin cancer in specific types, which are lentigo malignana and lentigo malignana melanoma [11]. Histopathology of benign freckles revealed hyperplasia of epidermis with increased melanin pigment in the basal layer. There is no need for any intervention unless for cosmetic reasons. The classic treatment was to use retinoic acids with regular use of sunblock [12]. A new modality of treatment is to use the Plasmage device. The Plasmage sublimates skin by delivering plasma energy to the tissue, and this energy is generated by ionization of gas in the air. The plasma targets the melanin pigment and sublimates skin, which leads to the disappearance of the freckles. Furthermore, the plasma enhances collagen and elastin production, which eventually leads to improvement in the skin texture and more rejuvenation. Plasmage can be used as a new modality to treat benign freckles with satisfying cosmetic results [13]. The aim of study uses Plasmage as an option to remove freckles and enhance skin texture.

2. Method

Clinical trial study for 7 female patients done in albasrah city in private dermatological clinic from June 2020 to December 2020. We have many patients with freckles treated with Plasmage, but we chose one patient for this paper. Seven females, 28 years old and married, with Fitzpatrick skin type III. She has had widespread brown spots on her face since childhood, and they are increasing over time despite regular use of sun block. Her

skin has lost its shine over time. She is an engineer and works most of the time in sunny places. She is neither pregnant nor nursing. She received three sessions of Plasmage eight weeks apart. Lentigo parameter was selected. Statistical analysis done by SPSS 22, frequency and percentage for categorical variables and mean \pm SD for continuous variables. Fischer exact test for show association of categorical variables and t-test for difference of means of continues variables. P-value less than 0.05 considered significant.

3. Results

Seven female patients with skin type (III) have freckles in their face, mean age are (28 ± 6) years. Distribution of Von luschan scale of skin type before treatment as the following; (42.9%) of patients with scale (14), (28.6%) with scale (15) and just (14.2%) with scale 17 and 18 respectively. As show in fig (1).

According to table 1 (A); there is no significant association between age of patients and satisfaction after Plasmage intervention. Also table 1 (B); there is no significant association between results after 6 months after Plasmage intervention and satisfaction of patients.

According to table (2); there is significant difference between the results appear on face of patients, so the freckles become better after 6 months after Plasmage intervention than 2 months and 4 months after Plasmage intervention. However, no difference between 2 months and 4 months after Plasmage intervention.

4. Discussion

Plasmage is a new, exciting device for medical aesthetic treatments. Using Plasma Energy technology, Plasmage treats a variety of difficult areas with minimal downtime and pain. For patients, the device offers an alternative to the

daunting prospect of surgery. Plasmage uses patented Fractional Plasma to sublimate delicate tissue areas with minimal side effects. Plasma sublimation is a revolutionary treatment that requires no cutting of the skin, and often no injectable anaesthetics. Freckles are usually in skin kinds I - IV as small, unwell marginated, pale brown macules on unprotected skin parts. They are not risky for the health, but they cause mostly cosmetic difficult [14]. In current, we used von luschan scale of skin type before treatment as the following; (42.9%) of patients with scale [14] this before Plasmage intervention and then used Plasmage intervention, there is significant difference between appearances of Freckles after Plasmage intervention after 6 months most of Freckles disappear and improve than before or after 2 months and 4 months after Plasmage intervention, this is similar to other study stated that there is difference between 1 and 2 session and also 1 and 3 session [14, 15, 16]. In current study, post-inflammatory hyperpigmentation was temporary, recovering within one month, with no complications.

5. Conclusion

There is significant difference between the results appear on face of patients, so the freckles become better after 6 months after treatment than 2 months and 4 months after treatment. Plasmage can give promising and satisfactory results in treating benign freckles for cosmetic reason after thorough evaluation by a dermatologist.

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7. References

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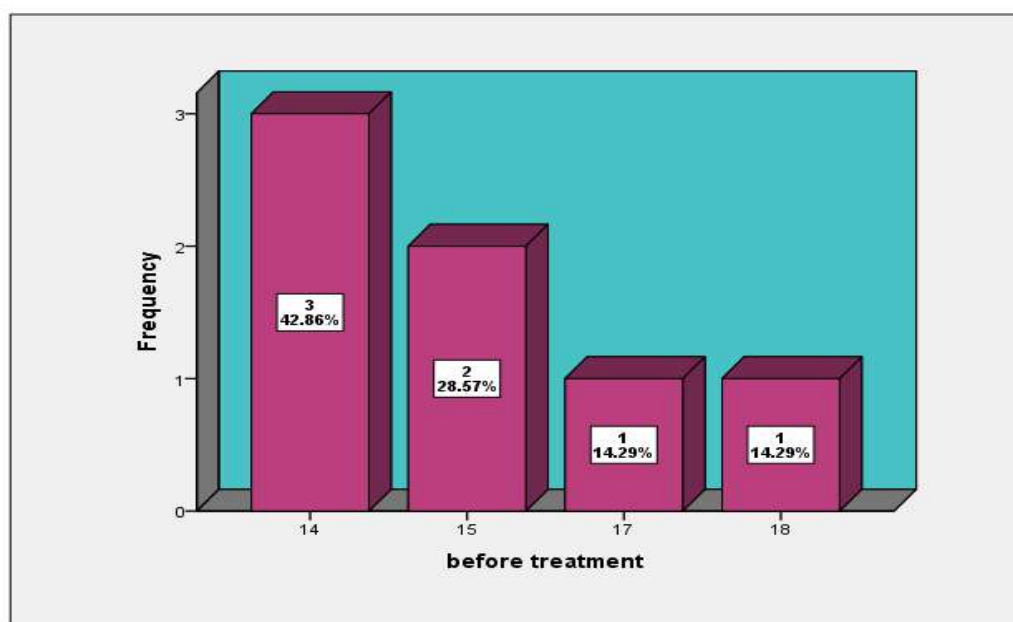


Figure 1: distribution of von luschan scale of skin type before treatment.

Table (1) A, B: association between age and results after 6 months of Plasmage intervention with patient's satisfaction.

			patient satisfaction		Total	p-value
			satisfy	very satisfy		
AGE	25 years and below	Count	2	1	3	
		%	66.7%	25.0%	42.9%	
	more than 25 years	Count	1	3	4	0.37
		%	33.3%	75.0%	57.1%	
Total		Count	3	4	7	
		%	100.0%	100.0%	100.0%	

(A)

			patient satisfaction		Total	P-value
			satisfy	very satisfy		
treatment after 6 months	moderate	Count	1	0	1	
		%	33.3%	0.0%	14.3%	
	complete removal	Count	2	4	6	0.43
		%	66.7%	100.0%	85.7%	
Total		Count	3	4	7	
		%	100.0%	100.0%	100.0%	

(B)

P-value ≤ 0.05 (significant)

Table (2): difference between mean of score after Plasmage intervention (2 months, 4months and 6 months).

		Mean	N	Std. Deviation	P-value
Pair 1	after2months	2.00	7	.577	0.172
	after4months	2.29	7	.488	
Pair 2	after2months	2.00	7	.577	0.017
	after6months	2.86	7	.378	
Pair 3	after4months	2.29	7	.488	0.03
	after6months	2.86	7	.378	

P-value ≤ 0.05 (significant)



Figure 2. Before and after Plasmage use.