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EVALUATION OF EFFECTIVENESS OF MESOTHERAPY AND FACTORS ASSOCIATED WITH DOUBLE CHIN IN ONE OF THE TERTIARY CARE CENTRE OF GUJARAT

Dermatology

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ABSTRACT

Introduction: Cellulite is an accumulation of fat, fluid, and toxins trapped in a hardened network of connective tissue fibers that hold down the skin causing the "dimpling" effect. The fat cells inflate, causing a rippling and puckering of the skin, commonly referred to as orange peel skin. Cellulite is caused by poor blood circulation, weakening of connective tissue and lymphatic congestion. Thus it is believed to occur due to abnormality in the venolymphatic system.

Aim & Objectives: Evaluation of effectiveness of mesotherapy for double chin with associated factors in one of the tertiary care centre of Gujarat.

Material & Methods: This prospective controlled study was conducted in the department of Dermatology, Venerology and leprology, B J Medical College, Ahmedabad for two year. Total twenty five patients were selected for the study after informed consent.

Results & Observations: Most of the patients with double chin were young adult females in the 2nd and 3rd decade. Only few patients were in the older age group. More than half of all the patients had some degree of alopecia.7 of all the patients were found to be hypothyroid after examination and investigations and were treated accordingly. Mesotherapy using mesogun showed the maximum response (grade IV) in more than half the patients after an average of 10 sittings.It proved to be more efficacious than insulin syringe as the mode of therapy owing to its automaticity, accurate depth, and lesser pain.

Conclusions: Mesotherapy using mesogun showed the maximum response (grade IV) in more than half the patients after an average of 10 sittings.It proved to be more efficacious than insulin syringe as the mode of therapy owing to its automaticity, accurate depth, and lesser pain.

KEYWORDS

Mesotherapy, Cellulite, Mesogun, Global assessment

INTRODUCTION:

Clinical and cosmetic applications of the mesotherapy are known since many decades. Now a days it is widely used in many clinical conditions and cosmetic purposes due to its tolerability, low cost and relative safety. France is the origin place for the mesotherapy where In 1952, Dr. Michel Pistor, a generalist practicing in rural France, administered 10 mL of procaine intravenously in an attempt to abort an acute asthma attack in a patient though the attempt was unsuccessful.[1]Mesotherapy or local intradermopathy is a Greek term which describes the type of treatment involving the local delivery of a specific dosage of a drug in the mesoderm layer using microneedles to treat a medical condition or for cosmetic purposes. [2]

The idea is to create a new technique which is useful to deliever required agent directly to the site of complaint locally. Mesotherapy is based on the principle that local intradermal therapy(LIT) produces a “micro deposit” of the drug in the dermis which is then slowly released into the surrounding tissue. One of the main advantages of LIT is the rapid rate of onset, due to the short time necessary to reach the site of action, as well as a prolonged local action. Used correctly, mesotherapy is effective in the treatment of painful musculoskeletal conditions, chronic venous lymphatic insufficiency (CVLI), oedematous fibrosclerotic panniculopathy (OFP, more commonly known as cellulite), intradermal vaccination, and in the management of facial skin aging. [3]

Besides the traditional needle-syringe combination, more sophisticated and more expensive instruments may be used, such as the mesotherapy gun. These guns electronically inject multiple points and allow a controlled amount and depth of application. Initially, mesotherapy research addressed the treatment of painful illnesses. Therefore, research indicates the use of intradermotherapy with benefits in the treatment of tendonitis, cervicobraquialgia, muscular-skeletal illnesses, and oral and periodontal pain. [4]

Cellulite is a topographic and localized skin condition that is most commonly found on the posterolateral thighs, buttocks, and abdomen. It is often identified by a dimpled or orange-peel appearance of the skin's surface. [5]While not a pathologic condition, it remains an issue of cosmetic concern to a great number of individuals. The four leading hypotheses that purport toexplain the physiology of cellulite include: sexually dimorphic skin architecture, altered connective tissue septae, vascular changes and inflammatory factors. The term 'cellulite' has its origins in the French medical literature of more than 150 years ago.4 Synonyms include: adiposis edematosa, dermopanniculosis deformans, status protrusus cutis, and gynoid lipodystrophy [6][7]

Diagnosis is mainly clinical although magnetic resonance imaging, laser Doppler flowmetry, thermography, and ultrasound can be used for research purposes. A series of treatments can treat or improve the appearance of cellulite, such as topical products, oral supplements, devices (mechanical massage, lasers, light sources, radiofrequency, and other technologies), and surgical procedures. [8] So far many studies have conducted and shown promising results so we have conducted the present study to know the effect of mesotherapy on mesolipo or double chin and subsequent patient satisfaction.

MATERIAL & METHODS:

This prospective controlled study was carried out in the department of Dermatology, Venerology and leprology , B J Medical College, Ahmedabad for two year. Twenty five patients with double chin were enrolled for the study after informed consent and proper explanation of modality, mesotherapy treatment, duration, sittings, possible outcomes were explained. Patients with inflammatory skin conditions, allergy, bleeding abnormalities, infectious diseases etc. were excluded from the study.

25 patients with double chin (evidently visible and disturbing for the patient) were enrolled for the study and randomly divided into 3groups: G (A)-10: treated with meso LL lipolytic solution using a mesogun.G (B)-10: treated with meso LL lipolytic solution injected manually through insulin syringe. G (C)-5: control group with no mesotherapy treatment and advised to do exercises daily concentrating mainly on chin and neck The patients were treated weekly for 4weeks, then every 15days for 2months, then monthly for 4 months and then twice or thrice monthly for a year. All the patients were counselled about lifestyle management, a balanced diet, reducing fat intake and regular exercising. They were followed up at every sitting for one and a half years. On first visit, after a detailed history regarding the patient's occupation, lifestyle, diet, drug intake, addictions, they were examined for any other associated complaints and investigated accordingly.

RESULTS & OBSERVATION:

Most of the patients with double chin were young adult females in the 2nd and 3rd decade out of 16 female 11 were of age group from 15-35 years (44%) . Only few patients were in the older age group (2 male & 5 female).

Positive history or examination	Males-9	Females-16	Total-25
Family H/O of obesity	5 (55.56%)	10 (62.5%)	15 (60%)
Family H/O diabetes and/or hypertension	3 (33.33%)	5 (31.25%)	8 (32%)
H/O stress/ depression/ psychological distress	4 (44.44%)	**13 (81.25%)**	17 (68%)
H/O alcohol or smoking	6 (66.67%)	6 (37.5%)	12 (48%)
Generalized obesity	6 (66.67%)	10 (62.5%)	16 (64%)
Improper diet/ sedentary lifestyle	5 (55.55%)	15 (93.75%)	**20 (80%)**
Acne/ hirsutism	2 (22.22%)	8 (50%)	10 (40%)
Acanthosis nigricans	5 (55.56%)	4(25%)	9 (36%)
Alopecia	4 (44.44%)	11 (68.75%)	15 (60%)
Hypothyroidism	2 (22.22%)	5 (31.25%)	**7 (28%)**

Table:1 Associated factors with double chin.

Grade	G (A)-10 Mesogun	G (B)-10 Insulin syringe	G (C)-5 Exercise
I (upto 25%)	-	-	4 (80%)
II (25-50%)	1 (10%)	-	1 (20%)
III (50-75%)	3 (30%)	6 (60%)	-
IV(>75%)	6 (60%)	4 (40%)	-
Average duration	8months (10 sittings)	10months (12 sittings)	20months

Table-2: Physician's Global Assessment of double chin By The Quartile Grading Scale

Groups	Group (A)	Group (B)	Group (C)
Patient satisfaction (VAS: 0→10)	**Upto 8**	Upto 5	Upto 2
Improvement in QOL scale (7→1)	**Upto 1**	Upto 3	Upto 5
Average duration	9months	10.5months	24months

Table-3: Patient Global Assessment Of double chin

DISCUSSION:

Mesotherapy, is a non-surgical cosmetic medicine treatment. This technique uses very small doses of compounded medications that are administered in specific areas, depending on the condition being treated.[9] The dermis is a common denominator of three units i.e. circulatory, neuro-vegetative and immunological functions. It has been proposed that by the action at each of these units, mesotherapy corrects the functional disorder that causes the suspected pathology. Mesotherapy utilizes both chemical and physical (mechanical) stimulation of the circulatory unit, immune competence unit, nervous competence unit and fundamental competence unit within the dermis and subcutaneous tissue, which promotes the lymphatic, immune and circulatory system of the body to create a biological response and reverse abnormal physiology. [10]

In our study we have found that obesity, diabetes and hypertension were associated conditions in females as compared to male along with psychological stress and sedentary lifestyle.Seven of all the patients were found to be having hypothyroidism after examination and investigations and were treated accordingly. More than half of all the patients had some degree of alopecia.

Mesotherapy using mesogun showed the maximum response (grade IV) in more than half the patients after an average of 10 sittings. It proved to be more efficacious than insulin syringe as the mode of therapy owing to its automaticity, accurate depth, and lesser pain. Patients treated with mesogun turned out to be highly satisfied and showed greatest improvement in their QOL, including an improved lifestyle and dietary habit, with significantly decreased levels of psychological stress and increased self confidence especially in public appearances. A study conducted by Kim S et al [11] however showed that local intradermal injectors showed better results as compared to commercial mesogun. The patients appeared less satisfied when mesoinjections were given using insulin syringe owing to greater pain at the injection site and time taken for the response to come. Thus, in the treatment of double chin too, the patient's and the doctor's assessment correlated well with each other.

It has been suggested that the skin acts as a natural time-release system when drugs are injected by mesotherapy. Other advantages claimed for mesotherapy include inexpensive equipments, relatively minimal training needed for providers, prompt and undiluted reach of drugs to the target area, much reduced dosage need of the drugs, quicker accomplishment of benefits, minimal invasiveness hence attendant pain and no necessity for hospitalization.[12]

Our study have some limitations also as the sample size was very less so further study can be done including larger number of patients with double chin. We have evaluated the associated factors which are found on history, examination and investigations but we have not evaluated the fact that how these conditions are associated with double chin and how these conditions can affect the treatment option i.e. mesotherapy. Sustainability of treatment for longer period wasn't evaluated. This could be the subject of future studies.

CONCLUSIONS:

In our study we have concluded that females are more commonly affected than males by double chin. History of stress, depression, diabetes, hypertension and hypothyroidism were commonly observed associated with female patients. Similarly improper diet, sedentary life style and alopecia were noted more in female patients. Mesotherapy using mesogun showed the maximum response (grade IV) in more than half the patients after an average of 10 sittings.

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