

GHARSHANA KARMA FOR THE MANAGEMENT OF VYANGA

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Published online: January 2020

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ABSTRACT

Appearance places a high value in human society. A healthy skin is source of pleasure, not only to its owner but also to one who looks at it. Human skin is biological marvel and the largest organ in the body both by weight and surface area. Ayurveda classics mention various skin diseases under the heading *kustha* and *kshudraroga*. *Vyanga*, one among them, though considered *kshudraroga* (minor ailments) is the major cosmetic problem. It affects beauty as well as personality. *Gharshana karma* has been described by *acharya sushruta* in the context of *vyangachikitsa*. In the modern medical science this technique closely resembles microdermabrasion, which is the resurfacing technique. It ablates the most superficial aspects of skin using a high-pressure flow of crystals.

Keywords: *Kshudraroga*, *Vyanga*, *Gharshana karma*, Microdermabrasion

INTRODUCTION

Beauty is a subject of socio-medical importance. Since creation of the universe, beauty has been admired in all culture, races and ages. Beauty of a person is assessed by the complexion and texture of skin. Melasma is a common acquired and symmetrical hypermelanosis seen mainly in women and occurs exclusively on the sun-exposed skin of the face¹. It characterized by dark brownish macule, with irregular contour but clear limits on photo exposed areas, especially on face². This condition can be classified according to the pattern of facial involvement which includes:

centrofacial (forehead, cheek, chin and upper lips); malar; and mandibular. Less frequently the neck and forearms may be affected³. It affects millions of people worldwide and is found most prevalent in individuals with Fitzpatrick skin types III and above. The pathogenesis of melasma is not fully understood; however, hormonal factors, pregnancy and use of contraceptives, genetic predisposition, drugs containing phototoxic agents and stress, UV radiation are common precipitants⁴. In the context of pregnancy melasma is regarded as a normal physiological change, along with

darkening of the nipples and linea nigra. It is not uncommon at any time during the years of reproductive activity and has been attributed, without acceptable proof, to a variety of ovarian disorders. The rarity of melasma in post-menopausal women on oestrogen-containing hormone replacement therapy and the fact that men are occasionally affected suggests that oestrogen alone is not the causative agent. Thus, an endocrine mechanism is postulated but its nature is unknown⁵. In Ayurveda *vyanga* has been considered as one of *kshudraroga* (minor ailments). Though considered as *kshudraroga* it has got a major importance as a cosmetic problem in the society. It is characterized by the presence of *niruja* (painless), *tanu* (thin) and *shavavarnamandalas*⁶ (bluish-black patches) on face, and occurs due to vitiation of *vata*, *pitta* followed by *raktadosha*⁷. *Vyanga* is the painless condition for body but painful condition for mind as the person may suffer from inferiority complex, anxiety, and isolation etc.

Treatment: Melasma is often difficult to treat due to recalcitrant and recurrent nature of the condition, and the risk of post-inflammatory hyperpigmentation associated with some treatments. Depigmenting agents are most frequently used by dermatologists in the treatment of melasma. Treating this disease has turned out to be challenge in present era. Many scientists have undertaken researches to find out effective remedy, but the disease remained unanswered. Because many potent drugs, which have untoward side effects and high cost of surgical therapy are refrained from their liberal use. Most of the medical treatment, though cheaper and easily available are not useful for complete cure. In Ayurveda, *varnya*, *raktaprasadana*, *twachya* are few terms specifying skin lightening with respect to its modern counterpart i.e. Tyrosinase inhibition, the most reported method of skin lightening. Ayurveda mentions a good number of internal and external medicines along with *pancha karma* and *rak-tamokshana*. Acharya Sushruta has mentioned about *Gharshana karma* in the context of *vyangarogachikishsha*⁸. According to Acharya Dalhan's commentary on *sushruta samhita chikitsashsthana*⁹ before the application of *lepa* individual should rub or abrade the super-

ficial skin with some mechanical material such as *samudrafen*, rock stone etc. By removing the superficial dead skin, the penetration of the drugs is increased and the *lepa* or cream will affect more quickly and effectively. According to *Yuga-anurupa Sandharbha*¹⁰ *Gharshana karma* can be compared with microdermabrasion at present day. *Gharshana karma* (Microdermabrasion) is one of the most useful procedures for *vyanga* treatment.

Microdermabrasion: Microdermabrasion (MDA) is the resurfacing technique consisting of mechanical abrasion of the skin with pressurized stream of Al₂O₃ crystals to achieve superficial skin wounding.¹¹

Mechanism of Action: MDA produces epidermal and dermal changes through superficial wounding. Part of the superficial epidermis including stratum corneum, surface debris, oil and dirt are removed immediately on direct impact of Al₂O₃ crystals on the skin surface. Resultant superficial wound is then allowed to heal by secondary intention with partial re-epithelialization and remodeling of dermal collagen. Following mechanisms in combination are responsible for ultimate results.

- Mechanical disruption of stratum corneum
- Partial epithelialization and stimulation of epidermal cell turnover (production of new cells).
- Vasodilation of dermal blood vessels and dermal edema.
- Stimulation and remodeling of dermal collagen.

Microdermabrasion System:

MDA unit consists of two system- projection and suction. Projection system has a compressor generator (power line) responsible for the controlled projection of sterile Al₂O₃ crystals. Suction system on the other hand create vacuum and aspirates epidermal debris, grime and used Al₂O₃ crystals. There are two designated independent glass/ plastic containers along with their flexible tubing for each of these systems. The connecting tubes of both these systems open into the unit's handpiece near its and is the only connecting link between the two system. When the tip is placed on the surface of the skin and the system is activated, the handpiece gently pulls the skin in. The powerline projects the aluminium oxide crystals on to the skin

surface through one opening. These abrade the skin surface and the used crystals along with the epidermal debris and grime are collected by the tubings of the suction system through another opening housed in the tip of the same handpiece; thus establishing a close circuit loop of continuous flow and collection simultaneously.

The Al₂O₃ crystals used are inert, nontoxic and insoluble in water and organic solvents. They are non-carcinogenic and not known to cause any adverse skin contact reactions. They are 100 microns in size with a melting point of 2000 degree Celsius making it difficult for molecular breakdown. The particle size is larger than 50 microns which are not likely to be inhaled and reach alveoli thus ensuring prevention of respiratory hazards. Other crystals instead of aluminium oxide can be used for microdermabrasion and these include sodium chloride crystals, sodium bicarbonate crystals and magnesium oxide crystals. These are cheaper, although a bit less effective. These alternative media are not as abrasive as aluminum oxide.

Indications:

Microdermabrasion has a good response (through mainly epidermal action) on:

1. Facial rejuvenation: rough texture, dyschromia, actinic damage, superficial rhytids
2. Comedonal acne- non inflammatory

It has moderate or fair response on superficial scars (acne, chickenpox, traumatic), hyperpigmentation, enlarged pores, striae, superficial to medium depth rhytids.

Contraindications: It is contraindicated in case of inflammatory acne, active bacterial and viral infection, keloidal tendency, history of use of isotretinoin within last one-year, facial surgery within the past 2 months and radiation therapy to the head.

Histopathological Changes:

1. Normalization (thinning) of stratum corneum.
2. Increased thickness of epidermis.
3. Even the regular distribution of melanosomes.
4. Remodeling of collagen, elastic tissue and dermal oedema
5. Vascular ectasia with perivascular mononuclear cellular infiltrate.

Schedule: For epidermal lesions, total of 6 sittings of MDA, at an interval of 1-2 weeks should be done. In case of dermal lesions 15-20 sittings at an interval of 2-3 weeks should be done. Total number of sittings also depends on the type of lesion, its location and response of the individual.

Side Effects And Complications: Erythema, oedema, increased skin sensitivity, petechiae, purpura, drying, transient hyperpigmentation, infection, acute urticarial reaction, foreign body reaction to aluminium oxide crystals, eye irritation, ophthalmic-conjunctival congestion and cross contamination can occur if proper sterilization technique are not followed.

Advantages: MDA therapy is safe during pregnancy lactation. MDA include fast results, no anesthetic requirement, easy to perform, safety and rapid recovery time. Equipment costs and training requirements are modest. It is thus likely to earn an important place in the skin resurfacing techniques.

DISCUSSION

Vyanga is a very common problem and can be source of significant psychological distress for patients. Melasma is one of the common causes of facial hypermelanosis which is characterized by symmetrical hyperpigmented macules, which may be blotchy, irregular, arcuate or polycyclic and rarely have a linear or a starburst distribution. *Gharshan karma* has been mentioned in ayurvedic classic along with application of *lepa* for management of *vyanga*. *Gharshana karma* has close resemblance with Microdermabrasion in present era. Microdermabrasion appears to have good effects in decreasing pigmentation in melasma. Microdermabrasion has gained widespread acceptance in recent years in the treatment of melasma, signs of aging and other surface irregularities caused by sun exposure and scarring. An alternative to other treatment modalities such as dermabrasion, chemical peels; it results in less morbidity and fewer complications.

CONCLUSION

Gharshana karma (MDA) along with other treatment modalities mentioned in Ayurveda text stands out to be best for treatment of *vyanga*. In different studies

conducted it is seen that microdermabrasion had a statistically significant improvement in MASI score.¹² Microdermabrasion along with topical preparations like different lepas mentioned in Ayurveda classics appears to have good effects in decreasing pigmentation in melasma.

In the future, microdermabrasion may play a role in enhancing skin permeability for the purpose of the transdermal delivery of small hydrophilic molecules, insulin, vaccines and other therapeutic molecules.

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Source Of Support: Nil

Conflict Of Interest: None Declared

How to cite this URL: Samichha Neupane et al: Gharshana Karma For The Management Of Vyanga. International Ayurvedic Medical Journal {online publication - 2020 {cited January- 2020} Available from: http://www.iamj.in/posts/images/upload/2154_2157.pdf