

A Logical Approach in the Treatment of Aging Asian Face

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Abstract

This article illustrates the differences of etiology of wrinkles and special characteristics of aging skin between Asian and Caucasian populations. Various treatment modalities should be taken into consideration when formulating a facial rejuvenation plan for Asian skin, which should not be adopted similarly for Caucasians.

Plumping up the facial volume (filling of lines) with dermal filler injections should not be considered as the first choice of treatment, particularly in Asians with significant amount of fat accumulation and sagging. Soft tissue augmentation may result in more sagging, thus hindering good aesthetic treatment results.

Using aesthetic devices to tighten and lift the skin is one of the non-invasive and effective approaches available.

Alternatively, micro-liposuction and subcision are other logical approaches to be considered. Micro-liposuction is effective in removing excess fat from submental regions therefore reducing the weight of skin and reduces sagging. Micro Liposuction can also be combined with face lifting with threads to achieve a better result in treating face sagging.

Key words: wrinkles, Asian skin, neuromodulator, fillers, facial rejuvenation, skin tightening, micro-liposuction, subcision, thread lifting

1. Introduction

Dermal filler injection is one of the most common aesthetic procedures in America and Europe. It is effective in replenishing volume loss of soft skin tissue or augmentation of soft tissue. There are tremendous ongoing marketing activities in dermal filler injections thus it has become a standard treatment of static wrinkles, from fine to deep wrinkles, nasolabial folds, smile lines, oral commissures, scars, lip augmentation and facial contouring. Injectable fillers can be permanent or temporary. Common filler material includes hyaluronic acid, collagen, poly-L-lactic acid, calcium hydroxyapatite, silicone, fat etc.¹

Dermal filler injections have become popular in Asian countries too as it is fast and simple to administer with a low occurrence of side effects and complications.

However we should not jump to the conclusion that static wrinkles should be treated by dermal fillers whereas dynamic wrinkles should be managed by neuromodulators. There are a lot more options. Additionally, we should be aware of the differences in aging characteristics between Asian and Caucasian skin. It is also important to understand the etiology of aging facial skin. We should formulate our facial rejuvenation procedures for Asian skin with respect to these characteristics:

1.1 Skin Thickness

A wide variation in skin texture and thickness exists amongst Asians and Caucasians. Asian skin which is lightly pigmented tends to demonstrate greater density than that of pale-skinned Caucasians. This greater collagen density is manifested in the tendency

towards a more vigorous fibroplastic response during wound healing, which may result in prolonged hyperemia during scar maturation and an increase in incidence of hypertrophy scarring as well as occasional keloid formation.^{2,3}

Increase in dermal thickness may account for a substantially lower incidence of fine wrinkles in both darker and more lightly pigmented Asians than comparably pigmented Caucasians. That means melanin or pigmentation alone cannot account for the differences in response to solar damage manifestations.

This may account for the myth that the Asian face ages relatively slower than the Caucasian face.

1.2 Skin Pigmentation

Aging skin amongst Asians is associated with substantially greater incidence of pigmented dermatosis (lentiginos, actinic keratoses, seborrheic keratoses, etc) as compared with Caucasians. In general, skin malignancies of all types are considerably less common in Asians than in Caucasians.²⁻⁶ Thick dermis with skin pigmentation causes Asian skin to be less prone to solar damage.

1.3 Subcutaneous Fat

In the case of Asians, accumulation and/or ptosis of fat particular in the jowls, nasolabial folds, buccal areas, and submental regions, appears to be more marked than noted in Caucasians of comparable age.^{1,2} Therefore, soft tissue volume loss is less prominent in the Asian face. Nevertheless, atrophy of fat in the buccal region and temporal fossa do occur in some Asians. Caucasians are more likely to have volume loss (atrophy of skin, muscle and fat), which creates a skeleton-like hollow defect.

1.4 Muscles

The platysmal muscle is generally thicker in Asians as compared to Caucasians. Therefore there is a pulling effect by gravity due to the heaviness of the platysmal muscle, resulting in more visible sagging in Asian skin than in Caucasian skin. Masseter Hypertrophy is common in Asian skin and has a downward and forward pulling effect of facial skin.³

Depressor Anguli Oris hyperactivity leads to traction of skin at mouth corners, relatively shortening the chin and causing sagging of the lower face. Mentalis Hyperactivity commonly occurs in Asians.

1.5 Bone

The most significant anatomic difference between the Asian and Caucasian face is related to the skeletal structure. The Asian face is characterized by prominent malar eminences associated with relative deficiency of the premaxillary region. Wide, prominent mandibular angles are often present, contributing to a square, flattened face. Microgenia may be somewhat more common than in Caucasians.²⁻⁴

To summarize, Asians structurally tend to have less fine wrinkles, more pigmented lesions, less soft tissue volume loss, more accumulation and sagging of fat than Caucasians of comparable age.

We should pay special attention to these differences when recommending treatments to patients.

1.6 What Causes Wrinkles?

- **Gravitational Force** - It exerts an on-going effect on skin, soft tissue, muscle, bone structure
- **Photo-aging** - It accounts for 80% of the causes for skin aging.
- **Facial Muscle Bulk and Emotional Facial Expressions**
- **Sleep Posture** - Our sleep posture can cause our face to become creased
- **Bone Resorption and Remodeling**
- **Loss of Teeth with Inadequate Masticating**
- **Intrinsic Aging** - Oxidative stress and free radicals development during oxidative metabolism
- **Smoking** - Tobacco diminishes the cutaneous blood supply and oxygenation
- **Excess Consumption of Alcohol**
- **Malnutrition**
- **Hormonal Deficiency**
- **Inadequate Skin Care Leading to the Absence of Hydration and Nutrition of the Skin**
- **Environmental Dryness which Dehydrates the Skin**

Having understood the differences of etiology of wrinkles and special characteristics of aging skin in Asian populations, we should modify our facial rejuvenation approach for Asian skin, which should not be adopted similarly for Caucasian populations. Instead of classifying wrinkles into dynamic and static, we should also include those of gravitational and structural (Table 1). The management of these causes is different.

Category	Causes
Dynamic wrinkles	Facial expression
Static wrinkles	Soft tissue volume loss
Gravitational wrinkles	Downward pull on weight of skin and subcutaneous tissues
Structural wrinkles	Malalignment or loss of teeth , facial bone deficiency , resorption and/or remodeling, Platysmal muscle pulling, mentalis and Depressor anguli oris hyperactivity, Masseter hypertrophy, etc

Table 1. Classification of wrinkles.

2. Treatment Approaches

In treating gravitational wrinkles, anti-gravity treatment should be used instead of filling up the fold. Plumping up the facial volume (filling of lines) should not be the first line treatment for Asians, especially when there is more accumulation and sagging of fat in Asian face. Soft tissue augmentation may lead to more sagging and thus may hinder the production of a good aesthetic appearance.

A young face should be full with a smooth contour and prominent jaw lines. For example: the following photos show young Asian man face with prominent moderate nasojugal fold, nasolabial fold, marionette lines and also excess skin in submandibular region (Figure 1).



Figure 1: Chronological changes in facial features: examples of skin loosening, fat accumulation and mid-face sagging with aging.

Unless we manage these indications altogether, we will not be able to produce a smooth contour of a young face. By plumping the nasolabial fold with filler injections to achieve a younger mid face, the face is taken out of perspective. Additionally dermal filler injection only leads to increasing face volume. This may result in enlarging the relatively large face commonly present in Asians.

The following treatment modalities should be taken into consideration when formulating a facial rejuvenation plan:

- **Daily skin care and sun protection** - Improvement in lifestyle such as: avoiding smoking and excess alcohol consumption, regular exercise, healthy diet, adequate sleep etc
- **Non-invasive Skin Tightening and Lifting by Radio-Frequency (RF) energy** , multiple bipolar RF frequencies and vacuum therapy, ultrasound energy etc
- **Microdermabrasion**
- **Chemical Peels**
- **Mesotherapy/DermaRoller for facial rejuvenation**
- **Neuromodulator** (Botulinum Toxin A)
- **Photo-rejuvenation** (Intense Pulse light, Lasers)
- **Fractional laser or radio-frequency resurfacing (additional advantage in treatment of solar pigmented lesion)**
- **Microliposuction and Subcision** (Treatment of excess fat accumulation)
- **Non-Surgical Face Lifting with Threads**
- **Filler injection if there is significant volume loss**
- **Dental aesthetics** (e.g. veneers, crowns, dental implants, denture etc)
- **Plastic Surgery**
- **Hair restoration**

Filler injection is listed at the bottom because it should not be considered as the first line of treatment, particularly in Asians with significant amount of fat accumulation and sagging. As Dr Chelso G. Cueteaux, Plastic Surgeon, from Mexico said: *“I think that this practice creates a face that isn’t harmonious which doesn’t seem to go together and the final result is the client looks ‘filled’ or ‘done’.* For these reasons, it is important to find a system that can cater to the particularities of Asian skin.

2.1 Non-Surgical Skin Tightening and Lifting procedures

Non-surgical skin tightening and lifting procedures should in fact be considered as the first line of approach in treating together all folds and skin sagging found in the submandibular region of the neck. In addition, this technique can also maintain the size of the face in comparison to filler augmentation.^{1,2; 7-9}

Nowadays, non-surgical methods such as non-invasive skin tightening, fractional laser resurfacing or fractional radio-frequency rejuvenation by aesthetic machines are effective treatments (Figure 2 and 3).^{1,2,6,7}

Corrective and maintenance therapy with these aesthetic treatments can delay the use of more invasive surgical aesthetic procedures which may be associated with more post-treatment downtime, side effects and complications. For example, multi-frequency RF CORE technology¹⁰ can be easily adapted for the special characteristics of Asian skin due to its ability to provide accurate control of RF depth penetration. Moreover, the combination of multi-frequency RF with vacuum massage can be effectively implemented for simultaneous skin tightening and reduction of local fat accumulation, common in people of Asian descent (Figure 3).

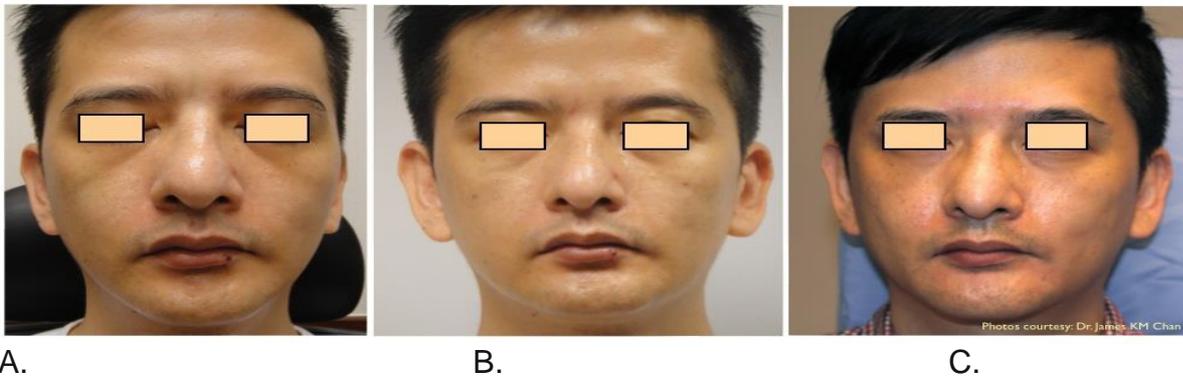


Figure 2: A 49-year old male

- A) With tired look and prominent tear trough
- B) Glabellar lines and tear trough were partially filled with hyaluronic acid filler and two sessions of fractional laser resurfacing (6-month interval) were given
- C) After two years, filler injection is no longer required

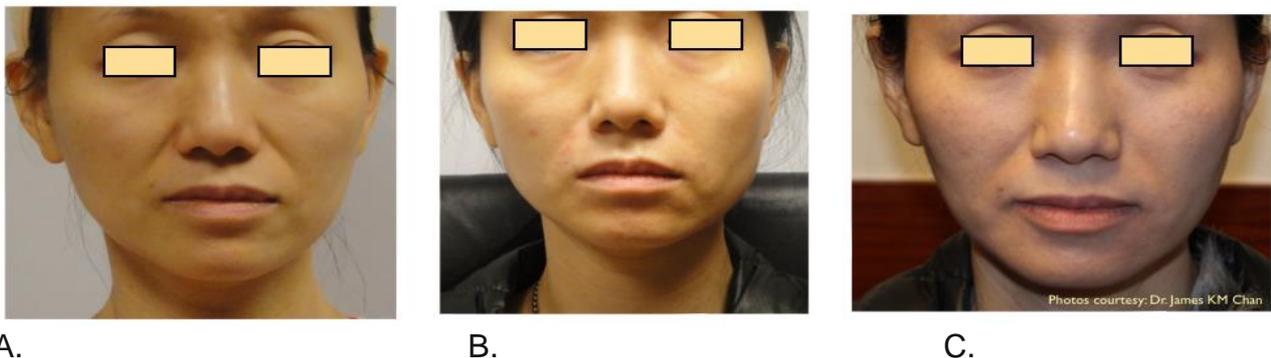


Figure 3: A 44-year old female

- A) With tired looks and deep nasolabial fold
- B) Nasolabial folds were filled with hyaluronic acid filler once. Mentalis hyperactivity and Masseter hypertrophy was treated with Botulinum Toxin A injection. Skin tightening treatment using radio-frequency energy and fractional laser resurfacing were given
- C) After two years, filler injection is no longer required

2.2 Micro-Liposuction and Subcision

Alternatively, we could also adopt micro-liposuction and subcision procedures to remove the fat, hence reducing the weight of skin which improves sagging. Considerable improvement in the jowls region can be achieved by executing a spot micro-liposuction of fat via a stab incision in the labiomental fold using a 16-gauge needle cannula and syringe (Figure 4). Micro-liposuction is also effective in the removal of fat in submental regions.² Meanwhile, minimally invasive face lifting procedures, for example, face lifting with threads can work against gravitational effect (Figure 4).^{1,2}



A.

B.

C.

Figure 4: A 41 year old female

A) Before

B) and C) After micro-liposuction at jowls and non-surgical face lifting with threads at mid-face. The results are disappearance of double chin and a more prominent jaw line.

3. Conclusions

My approach in treating Asian patients is to start with conservative treatments and use a combination of these modalities. Multi-frequency RF technology combined with vacuum allows the treatment of both mandibular fat and tightening at the same time.

I may add a conservative amount of temporary filler to relieve the appearance of folds while waiting for skin tightening and lifting to take effect from these aesthetic procedures. If the result of conservative treatment is suboptimal, I will rely on other minimally invasive face lifting procedures or plastic surgery to achieve the aesthetic results.

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