

## A technique to reverse aging facelift: A review

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### Abstract

The advancement has dentistry has expanded its boundaries way beyond just oral health care. Addition of esthetic and cosmetic has become an evolving part of the field. This article reflects on 'face lift' and the threads used in the procedure. Pros and cons of the method practiced and various materials used are mentioned in the article.

**Keywords:** Facelift, Suture, Gold threads, PDO, Facelift bungee.

### Introduction

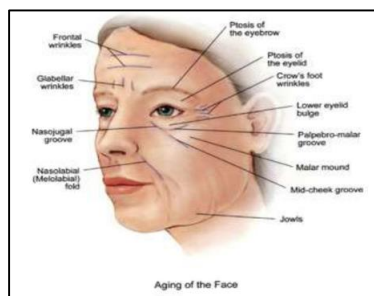
The advancement on dentistry has expanded its boundaries into the esthetic and cosmetic zones. Cosmetic dentistry is a running trend and very popular among people across the globe. The role of dentistry has become beneficial in restoring youthful appearance. From a cosmetic point of view the appearance of teeth has taken on great importance in increasing priority on a healthy and attractive smile.



### Physical Signs of Aging<sup>1</sup>

When compared to youthful looking dentition, aging dentition effects specific esthetic changes that have occurred over time.

1. Wearing of teeth and effects of erosion, attrition, abrasion and abfraction.
2. Variation in size and position of teeth in relation to each other and surrounding soft tissues,
3. Change in color and texture.
4. Chemical and histological transformation of supporting bone and soft tissue undergo metamorphosis with loss in vertical dimension.
5. Muscle tension cause soft tissue changes in facial features.



### Techniques

Various techniques have now evolved to restore the youthful appearance. Use of restorative, orthodontic, periodontic or surgical form of dental treatment that in some way counteracts or migrates any of the esthetic attributes of an aged dentition are practiced and give remarkable results. We will discuss about one of such procedures in this article 'FACE LIFT'.

### Primary Concern- Skin Type

Patient with thick skin are prone to sagging over time, whereas thin skin forms wrinkles or loses volume more. Asian skin is usually thicker than westerners and thus Asians have a main concern for sagging. Asian skin has large and thick skin which results in more weight and hence heavier tissues.<sup>2</sup>

### Wrinkles

Majority of people wrinkle in late 20s, in areas where skin is thinnest eg. Periorbital area.

### Wrinkle category

**Superficial Wrinkle:** caused due to pathological changes due to aging which is atrophy of all components of skin.

In demis ratio of type 1 to type 3 collagen is 6:1. With aging type 1 decreases and type 3 increases in relative amount and thus skin droops. With age skin and subcutaneous fat gets thinner due to chronic exposure to U.V light. The collagen and elastic fibres in dermis decrease and lose elasticity to create superficial wrinkles.

**Mimetic Wrinkles:** Repetitive contraction of 17 pair of facial expression muscles over long time causes glabella frown lines, forehead wrinkles and crow's feet.

**Folds:** caused due to differences in anatomic change due to aging in individual tissue component.

### Facelift

Hollander was the first to introduce facelift. Drooping is mostly caused by gravity and facelift is a procedure to pull the tissues back upwards. Facelift can be divided into three sections:

- a. Forehead
- b. Midface
- c. Lower or neck

### Facelift with threads



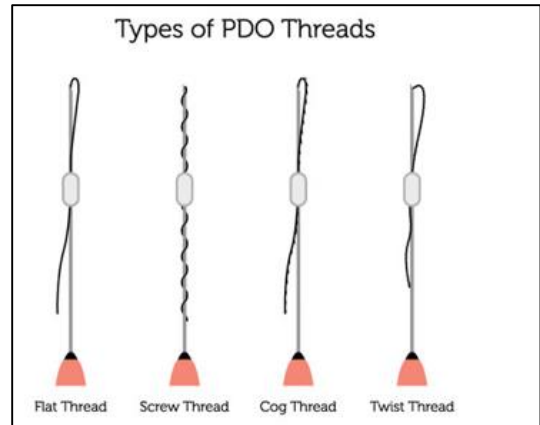
Recent methods in facelift involves use of various threads. The method is non invasive, minimally invasive and have specific pros and cons.

### Thread lift sutures:<sup>3</sup>

Use of thread-lift sutures has gradually spread among many cosmetic medical specialists (such as plastic surgeons and maxillofacial surgeons) and cosmetic doctors (medical doctors and dentists specialized in noninvasive aesthetic treatments such as botulinum toxin type A and filler injections), with the main indication of lifting sagged tissues by means of a minimally invasive closed procedure.

### Types of sutures

1. Aptos Threads and Woffles Threads: Made of 2-0 polypropylene line with dents provided during the manufacturing process, thus creating slant edges with sharp ends.
2. Woffles threads
3. Contour Threads (Nonresorbable): They consist of a 25-cm length of 2-0 polypropylene suture with a central 10-cm segment of 50 unidirectional helicoidally configured barbs.
4. Multiachor Suspension Suture (Resorbable): formed from 2-0 absorbable monofilament material, with five to nine equally spaced knots through which are secured 7- to 9-mm bits of similar suture material.
5. Silhouette Soft: Poly-L-lactic acid, the principal component of Silhouette Soft used for many years in a large number of biomedical and pharmaceutical applications.
6. Polydioxanone Threads (Resorbable): resorbable knotless polydioxanone threads. Cog polydioxanone threads have barbs, which stick to tissues when inserted and result in lifting. Depending on the direction of the spikes, cog polydioxanone threads are categorized as unidirectional, bidirectional, or multidirectional.



### PDO fillers advantage:<sup>4</sup>

1. Polydioxanone (PDO) suture threads are used in neuro, cardiac, dental and other general surgeries with acceptable safety and efficacy profile.
2. PDO threads are collagen builders and add volume to the face for up to two years. Lifting threads can give a physical lift to the mid-face, which supports the upper lip showing more teeth and creating esthetic lip/smile lines.
3. These can also create a defined jaw line and add support to the lateral aspects of the oral commissures allowing a patient to smile more broadly.
4. Smooth PDO threads are used to create perfect vermillion lip borders as well as build collagen in the same areas as dermal fillers.



### Adverse effects and complications of barbed sutures:

1. Swelling and bruising
2. Skin dimpling and contour irregularities.
3. Intractable pain, paresthesia, and foreign body reaction)
4. Infection.
5. Temporary feeling of tightness<sup>5</sup>
6. Damage to the parotid duct.
7. Thread migration, and extrusion<sup>6</sup>
8. Mild facial asymmetry.

### Contraindication

Relative contraindications to treatment with PDO threads include: Patients who are immunosuppressed or on any immune suppressing medication as any potential blood vessel damage could lead to extensive bleeding in these patients, and reduced immunity will impair their ability to counteract infection.

### Antibiotic consideration

Although PDO in monofilament is less likely to contain bacteria, the use of prophylactic antibiotics should be considered given the multiple puncture wounds performed and tissue tracts created during thread lifting. However, evidence is limited to show the benefit of antibiotic use following PDO thread treatment, so medication should only be prescribed to patients on a case-by-case basis.

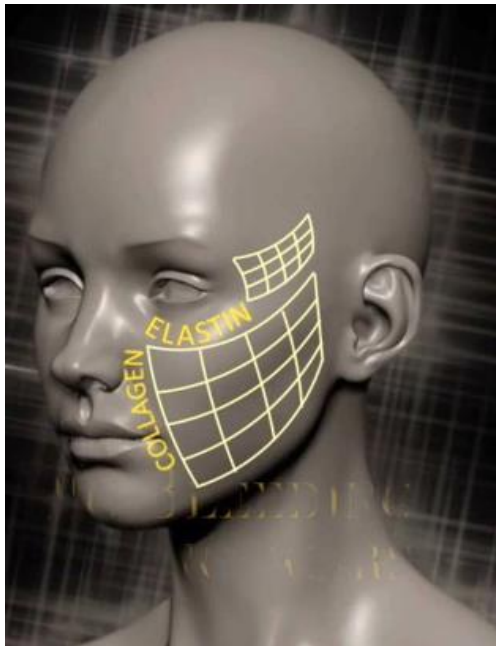
#### **Duration of result:<sup>7</sup>**

Due to PDO threads being a relatively recent innovation in medical aesthetics there is a lack of long term clinical studies in relation to duration of treatment outcomes. However the results obtained from PDO threads were maintained for nearly 6 months on the whole with a little loss of elasticity from facial tissues. This was so concluded under the studies covered over time. Patient satisfaction has been obtained for around 12-18 months.

#### **Derma fillers v/s threads:<sup>8</sup>**

Although dermal fillers correct facial structure and restore lost volume, reducing facial sagging and minimising the appearance of wrinkles, they do not specifically target issues related to the quality of the overlying skin. Whereas lifting of facial tissues with threads provide more targeted treatment of the skin and superficial tissues.

#### **Gold threads:<sup>9</sup>**



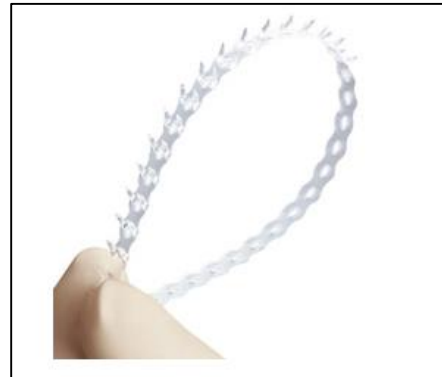
First introduced in dermatology by Dr. Caux in France approximately 30 years ago. Method used relied on the noninvasive suspension of the facial tissues by insertion of gold threads to reduce the laxity of the tissue via induction of myofibroblast contraction. Gold wires or threads consist of a surgical suture made from 24-carat gold which when inserted into the skin with a needle, in a mesh or fan-like pattern, allows new collagen to form around it and tighten the

surrounding area. Closer the threads are placed in the “mesh” or “fan” the tighter the achievable lift. Gold thread implantation promotes angiogenesis, as the immediate area surrounding the capsule is rich in blood vessels compared with other regions, and the number of mast cells around gold thread increases over time.

#### **Drawback**

1. The gold threads usually migrate and get fragmented over a period of time.
2. Gold threads may complicate radiographic assessment as they may overlap important anatomical structures. Sometimes the fragments may lead to artifact which may also be observed on radiographs, making it difficult to obtain a good interpretation of the image. This could well lead to misinterpretation, with all its consequences.

#### **Endotine ribbon:<sup>10</sup>**



Endotine ribbon is a resorbable fixation device which was mainly designed for brow and midface lift. Face lift procedure with the Endotine Ribbon is used for correction of the soft-tissue facial asymmetry.

#### **Advantages**

1. It can be performed simultaneously with bimaxillary orthognathic surgery within 30 minutes and achieve correction of soft-tissue asymmetry with good satisfaction to the patients and surgeons.
2. It can provide a firm and flexible soft-tissue fixation platform and reduce issue of visibility due to thin thickness (0.25 mm); (3) because it has multiple points of contact (34 times),
3. It can provide greater holding strength than other face lift procedures
4. It can eliminate suture problems of thread lift such as pull-through, tissue stretch, or nerve entrapment.
5. compared with the subcutaneous face lift, it seems to be better because it can pull the deep SMAS layer
6. As contrasted with the conventional SMAS face lift it can save procedure time and cause less complications.



### Facelift bungee:<sup>11</sup>



Facelift bungee is a non-invasive hair accessory product that inserts into the user's hair to instantly, and uniformly lift a person's facial skin. It is painless and affordable with unlimited use. This product is made of two plastic combs and a piece of cotton webbed elastic which runs through the combs and is sewn like a belt using thread.

### Conclusion

Dentistry in general is focusing more on cosmetic procedures. Dental patients are looking for ways to make their teeth and gums attractive and not just efficient. Besides providing oral health care, dentistry has evolved in providing cosmetic and esthetic treatments. The different materials and techniques in cosmetic dentistry have improved dramatically over the years. Facelift is a procedure though not have a history of many years but has shown satisfactory results and is under the shade of further advancement.

### Source of Funding

None.

### Conflict of Interest

None.

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**How to cite:** Gupta J, Sharma R. A technique to reverse aging facelift: A review. *IP Int J Aesthet Health Rejuvenation* 2020;3(2):41-4.