REVIEW ARTICLE

BODY SCULPTING (AKA AESTHETIC SURGERY) - AN OVERVIEW.

Pandurangan T

Faculty of Medicine, University Kuala Lumpur Royal College of Medicine Perak

Corresponding Author
Dr. Pandurangan T
UniKL RCMP, No. 3, Jalan Greentown, 30450 Ipoh, Malaysia.
Email: thunga@unikl.edu.my

Abstract

"Beauty is in the eyes of the beholder" Plato – Greek Philosopher (427–347 BCE)

"Love of beauty is taste; Creation of beauty is an Art" – Ralph Waldo Emerson (1803–1882)

From time immemorial people want to appear more beautiful and attractive. This has two objectives, viz. to attract the opposite sex and second to boost their self-esteem amongst the same sex. This article reviews customs used by people of ancient civilization to beautify themselves along with the modern techniques like Rhinoplasty, Mammoplasty, liposuction, etc., to make oneself more beautiful and attractive.

History

Cleopatra was considered to have a perfect nose and the 17th-century philosopher Pascal famously wrote, “Cleopatra's nose, had it been shorter, the whole face of the world would have been changed”. The same is also said about “Helen of Troy” whose beautiful face launched a thousand ships. Her legs were most beautiful legs ever described and mouth, the cutest.

People have always been concerned about their outer appearance since the beginning of civilization. Egyptians used a mixture of water & natron (a form of baking soda) to form a cream. They also used rosemary oil & almond oil. Greek women used olive oil & honey. Ancient Indians used sandalwood paste with turmeric. In fact, Indians were the first to use face masks (made of sandalwood & rosewater) to treat acne[1].

Cosmetic surgery procedures have been in existence for long. The types of plastic surgery and augmentation procedures we see today were already used by surgeons even back in the 18th century AD[2]. The first recorded documents on rhinoplasty was by an ancient Indian surgeon Sushruta[2], way back in 6th century BCE. In 16th century AD an Italian surgeon Gasparo Tagliacozzi[2] described his technique of rhinoplasty using skin flap from the patient’s arm. He is also credited with writing the first complete textbook on Plastic surgery[3].

Timeline of Cosmetic Surgery:

1895 – First breast augmentation (using patient’s lipoma)
1899 – First breast implant (using beeswax and vegetable oil)
1923 – First modern rhinoplasty performed
1924 – First formal training in Plastic surgery established by Dr.John Davis in USA
1931 – First face-lift performed
1937 – American Board of Plastic Surgeons formed
1962 – First silicone breast implant introduced by Dr Thomas Cronin
1970 – 1979 – Advances in craniofacial surgery helps cosmetic facial surgeries
1974 – 1978 – Liposuction introduced first by Italian Gynaecologists Arpad and Georgio Fischer and later improved by French surgeons Yves-Gerard Illouz and Pierre Fournier
1985 – American Academy of Cosmetic Surgery founded[2]

Figure 1. Sushrutha

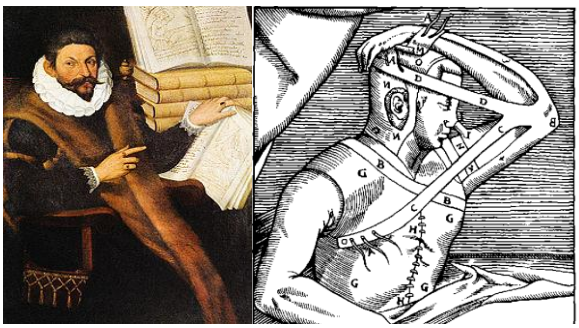

Figure 2. Tagliacozzi

The two world wars saw rapid progress in the field of Plastic surgery.

Not long afterwards, western world realised the potential of cosmetic surgery and the first rhinoplasty was performed in 1923 in USA[2]. In 1931 the first face-lift was performed. The first breast reconstruction was done by a German surgeon Vincenz Czerny in 1893 (published in 1895). He resected a large fibroadenoma and the space thus created was filled with patient’s own lipoma, which was present in the patient’s hip area[4].

In 1903, Charles Miller introduced the breast augmentation surgery in the USA. He used silk, celluloid and many other foreign materials as breast implants. However, the results were not satisfying[2].

Aesthetic surgical procedures

The various commonly performed aesthetic procedures are reviewed below.

Hair Transplant

This procedure is usually done to treat male pattern of baldness. Here hair follicles from the occipital region (known as harvesting) and transplanted in the fronto-temporal region of the scalp. One method is Follicular Unit Extraction (FUE) (Figure 3).[5]

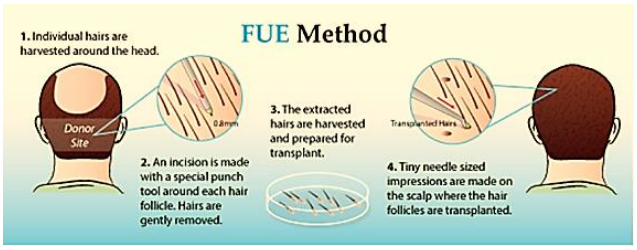

Figure3. Hair transplant by FUE method

Aesthetic Rhinoplasty *(ῥίς rhis, nose + πλάσσειν plassein, to shape)* **(aka Nose job)**

John Roe, an American ENT surgeon was the first to describe endonasal rhinoplasty in 1887[6]. He corrected a deformity known as "Pug nose".

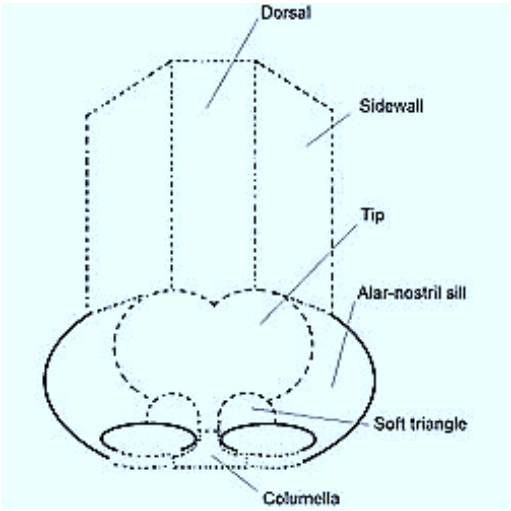

Figure 4. The surgical nose has six aesthetic nasal sub-units or segments:

Six aesthetic nasal segments are:

i. Dorsal
ii. Lateral nasal-wall
iii. Hemi-lobule or tip
iv. Soft triangle
v. Alar *and*
vi. Columellar

The structure of the nasal subunits—the dorsum, the sidewalls, the lobule, the soft triangles, the alae, and the columella, are configured differently according to the race and the ethnic group of the patient: African - platyrrhine (flat, wide nose); Asiatic - subplatyrrhine (low, wide nose); Caucasian - leptorrhine (narrow nose); and Hispanic - paraleptorrhine (narrow-sided nose).[7]

Aesthetically, the nose, from the nasion (the midpoint of the naso-frontal junction) to the columella-labial junction should ideally occupy one-third of the vertical dimension of the person's face; and, from ala to ala, it ideally should occupy one-fifth of the horizontal dimension of the person's face[8].

The angle between the frontal bone and the nasion usually is 120 degrees and it is called naso-frontal angle; it is more acute in the male face than in the female face. The slope of the nose relative to the plane of the face and the slope between the columella and the philtrum varies in men and woman. When seen from below (worm's-eye view), the alar base forms an isosceles triangle with the tip of the nose.

The Goode Method determines the extension of the nose from the facial surface by measuring the distance from the alar groove to the tip of the nose, and then comparing that measurement (of nasal-tip projection) to the length of the nasal dorsum[9].

The nose consists of skin and soft tissues which is separated from the underlying bony-cartilaginous framework during corrective rhinoplasty.

Basically, cosmetic rhinoplasty involves two types of procedures, viz. reduction rhinoplasty and augmentation rhinoplasty. These can be done by open or closed method.

Removal of nasal hump, narrowing of alar base/wide nostril, correction of saddle-nose deformity and nasal tip correction are some of the aesthetic rhinoplasty procedures.

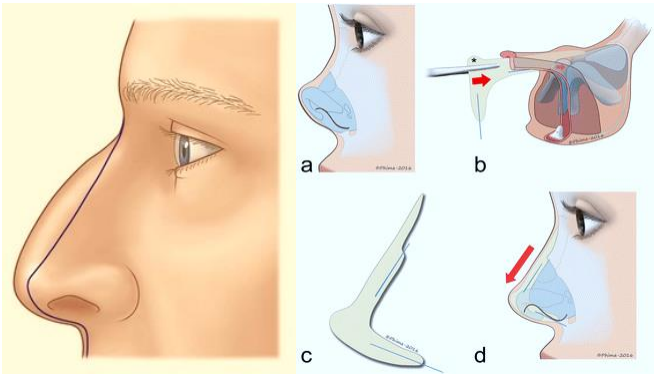

Figure 5. Reduction rhinoplasty / Augmentation rhinoplasty

Blepharoplasty (for Baggy eyes)
(Greek: *blepharon*, "eyelid" + *plassein*,"to form")
It is the surgical procedure for correction of baggy eyes caused by excess skin &/or excess adipose tissue in the upper and lower eyelids.

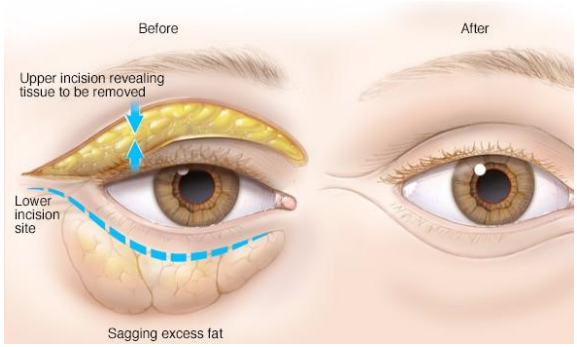

Figure 6. Blepharoplasty

Double-eyelid procedure is commonly done in Asian countries, especially South Korea[10]. In this procedure an extra fold is created in the upper eyelid.

Figure 7. Double eyelid surgery

Ptosis of upper eyelid can be congenital or can occur in myasthenia gravis. It can be corrected by shortening levator palpebrae superioris or frontalis sling[11] procedure.

Rhytidectomy (Face-lift)
Rhytidectomy (from Ancient Greek ῥυτίς (rhytis) "wrinkle" + ἐκτομή (ektome) "excision").
The first facelift was reportedly performed by Eugen Holländer in 1901 in Berlin[12].

There are eight types of "face-lift" techniques:

1. SMAS lift
2. Deep-plane facelift
3. Composite facelift
4. Mid face-lift
5. Mini-facelift
6. Subperiosteal facelift
7. Skin-only facelift
8. MACS facelift

Figure 9. Face-lift incision

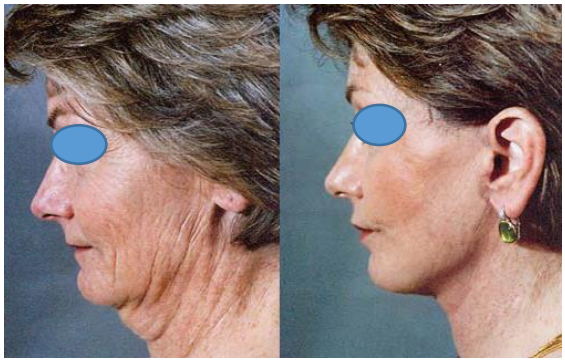

Figure 10. Face-lift Before & After

The aim of face-lift surgery is to smoothen the facial wrinkles to give a youthful look. SMAS and MACS are commonly done techniques. Laser and

collagen fills are also done to smoothen the wrinkles.

Otoplasty (for Bat-ears)

The pinna is prominent in some people. This can be corrected by excising an ellipse of skin posteriorly and scoring the cartilage.

Figure11. Bat ear repair Before & After

Mammoplasty (Augmentation/Reduction)

Augmentation mammoplasty is commonly performed to increase the size of the breasts and for sagging breasts (breast lift). This involves implanting breast implants which may contain silicone or saline fillers.

Reduction mammoplasty is commonly performed to reduce the size, change the shape, and/or alter the texture of the breasts. This involves the removal of excess skin and breast tissue.

Requirements of an ideal breast reduction have been put forth by Biesenberger[13] and have stood the test of time. They are as follows,

- The breast should be lifted to a youthful and natural form.
- The two breasts should be symmetrical.
- The nipple and areola should be translocated to an appropriate location.
- The blood supply to nipple and areola should be preserved.
- The scars should not be visible through normal clothing or be above the areola.
- The procedure should be a one stage operation

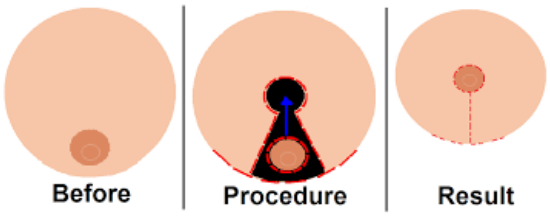

Figure 12. Reduction Mammoplasty for large & pendulous breasts

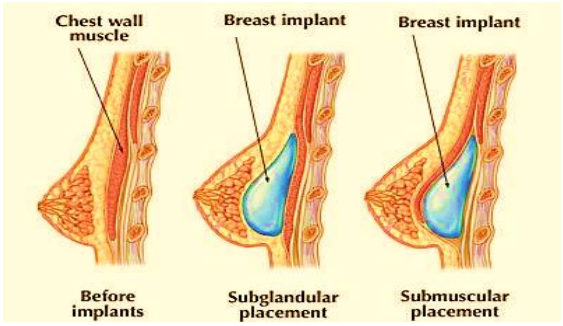

Figure13. Augmentation Mammoplasty

The implants can be placed deep to breast tissue or deep to pectoralis major. Incision can be made in the axilla or sub-areolar region.

Figure 14. Silicone and saline breast implants

Abdominoplasty or Apronectomy (Tummy tuck)

The surgery involves the removal of excess skin and fat from the middle and lower abdomen in order to tighten the muscle and fascia of the abdominal wall.

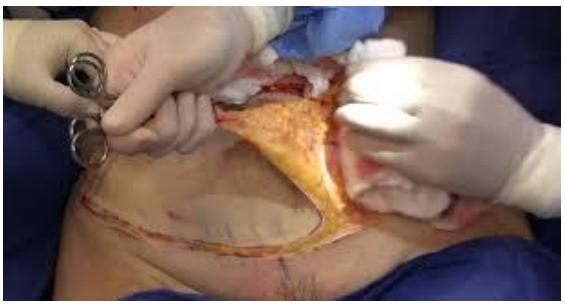

Figure 15. Abdominoplasty

Abdominoplasty is now replaced by liposuction in many instances. In conditions where there is excess skin and skin which has lost its elasticity, the patient would still require this procedure[14].

Liposuction

It is the most commonly performed cosmetic surgery.

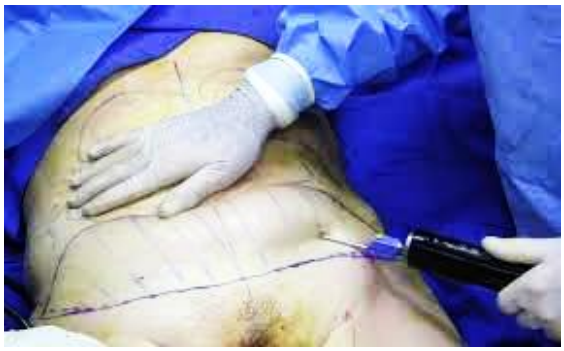

Figure 16. Liposuction in progress

The procedure may be performed under general, regional, or local anaesthesia. A cannula is inserted deep to the skin in the sub-cutaneous layer of the body and negative pressure is applied to suck out fat. It is believed to work best on people with a normal weight and good skin elasticity[15].

While the suctioned fat cells are permanently gone, after a few months overall body fat generally returns to the same level as before treatment, because the remaining fat cells tend to hypertrophy. This is despite maintaining the previous diet and exercise regimen[16]. As such liposuction should not be advised as an alternative to bariatric surgery.

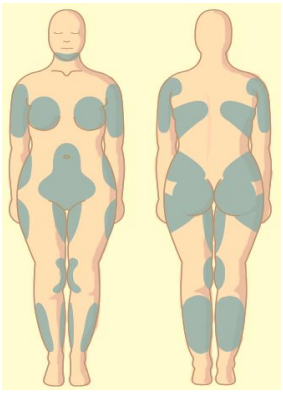

Figure 17. Areas that can be treated with liposuction

Primarily it is indicated to remove excess fat from unwanted areas of the body, viz. lower abdomen, gluteal region, thighs, triceps region and sub-mandibular region. Some even indicate for breast reduction mammoplasty[17].

Complications of liposuction varies from minor to major. They are skin bruising, paraesthesia/anaesthesia, deformities[18], fat embolism and rarely death.

Techniques of liposuction include tumescence, ultrasound assisted (pulsed delivery with third generation devices), laser assisted and cryo-assisted.

Psychological assessment[19] (of patients seeking aesthetic surgery)

Patients who seek aesthetic surgery are in their middle age and should ideally be seen by a psychologist to assess their characteristics, as they may have unrealistic goals or expectations, external motivations, identity concerns, negative self-image and other psychosocial issues such as body dysmorphic disorder.

The potential adverse outcomes the surgeon can face are as follows:

- Dissatisfaction with the outcome of the procedure
- Social isolation
- Relationship strain
- Requests for additional and unnecessary procedures
- Anger towards the service provider and staff
- Worsening of pre-existing mental health issues
- Risk of self-harm

Conclusion

A short review has been done regarding the history of aesthetic and plastic surgery. Also, an overview of the various techniques to modify the shape of various body regions have also been discussed.

It is also important to psychologically assess each patient's requirements and expectations pre-operatively and discuss the scope of surgery and its end result, with all possible complications.

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