The Evolution of Looks and Expectations of Asian Eyelid and Eye Appearance

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Semin Plast Surg 2015;29:135–144.

Abstract

Keywords

- ▶ Asian blepharoplasty
- ▶ lateral canthoplasty
- ▶ double eyelid surgery
- ▶ medial epicanthoplasty
- ▶ epicanthus
- ▶ Mongolian fold
- ▶ aegyo-sal love band

Since Mikamo developed the double blepharoplasty technique at the end of the 19th century, there has been significant developments in the idealized periorbital appearance of the Asian patient. Currently there are four potential vectors of change possible (upper, lower, medial, and lateral). South Korea is the only country that most often utilizes the change in all four vectors. There is additionally a stark contrast between Asia-based and Western-based approach to the Asian eyes. In Asia, outside of South Korea, many surgeries employ a combined vertical upward vector and a medial directional change, particularly for the young eyes. In Western-based approaches, Asian blepharoplasty remains at this time primarily an open incision, upward vector change.

The perception of beauty and attractiveness is one of varying likes and pleasures. Undoubtedly, the eyes represent a key defining factor of facial attractiveness. The quest for everlasting beauty hinges on the appearance of the eyes. Consider the renowned Joseon dynasty master painter Shin Yun-Bok's *Portrait of a Beauty* in the early 19th century (–Fig. 1).¹ The painting depicts the standard of traditional beauty in the Joseon era, a round face with a slightly ptotic eyelid without a double eyelid. Most Asians lack a double eyelid fold. Similarly, the ancient Chinese favored single-folded eyelids and almond-shaped eyes.² However, today, large rounded eyes with double eyelids are the benchmark of beauty and attractiveness.

The influence of Western culture on Asian countries has certainly altered the standard of beauty. Ironically, it is hard to believe that when Mikamo, Japan's father of cosmetic surgery of the late 19th century, performed the first double eyelid procedure, it was on a patient who had never been to the West.³ Japan had remained in a 250-year period of isolation under Tokugawa sovereign rule that prohibited any exchange of people or ideas between Japan and the outside world. It

was only when U.S. Commodore Matthew Perry breached Japanese borders in 1853 that Japan became exposed to Western culture.⁴

Mikamo, then trained in Western medicine, noted that the patient had only one natural eyelid. He went on to create the first known supratarsal crease in the upper eyelid in 1886.³ Although he is attributed as the father of “Westernizing” surgery, Mikamo argued that his intentions were to emulate the common unique Japanese aesthetic characterized by the double eyelid or *futae mubuta*.⁵ The use of the term “double eyelid” surgery is misleading because creation of a supratarsal crease does not actually yield another eyelid; it is simply a translation of the Korean term “ssang-cupul” (쌍꺼풀双眼皮), from the Chinese character “ssang 双” which means “double” and the Korean character “cupul 闭” which means “cover.”⁶

In his first publication on Asian blepharoplasty, Mikamo thoroughly detailed how three sutures were passed through the full thickness of the eyelid to include the tarsus. Each suture was placed approximately 3 mm apart, 6 to 8 mm superior to the lid margin, and removed after 4 to 6 days.⁷ Since Mikamo's pioneering procedure, double eyelid surgery, or Asian blepharoplasty, has undergone significant evolution. It is now considered one of the most popular procedures of

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Fig. 1 Shin Yun-bok's 18th-century painting "Portrait of a Beauty."¹

ethnic facial plastic surgery in Asia.⁸ At this time, the suture, nonincisional technique is used to keep the crease fold low, around the level of the tarsus.

It was not until Khoo Boo-Chai, a cosmetic surgeon from Singapore, that the modern type of Asian blepharoplasty was refined into its incisional technique.⁹ Ironically, it was the incisional approach that also allowed for a much higher placement of the crease. When the patient and/or surgeon elected to place the crease height at 10 to 12 mm, it often became problematic for Asian patients who then had incongruous Caucasian eyes. Today, eyelid blepharoplasty procedures are broadly categorized into two main procedures: external incisional techniques and nonincisional (suture ligation) techniques.⁷ Approximately, one-half of the Asian pop-

ulation is born without an upper eyelid crease; therefore, double eyelid surgery is now popular among the Chinese, Korean, Vietnamese, and Singapore population, as well as Asian Americans in the United States.¹⁰

Before discussing the various techniques employed in eyelid surgery, it is imperative to establish the basic anatomy of the Asian eyelid. A detailed description is provided in the chapter "Asian Eyelid: Relevant Anatomy" by Kiranantawat et al in this issue. The Asian eyelid often has excess fatty tissue, a narrow palpebral fissure, downward pointing eyelashes without a cutaneous insertion to the levator muscle, and the superior palpebral fold is absent (►Figs. 2 and 3). Epicanthal folds are present in about half the Asian population.¹¹ These distinctive features sometimes project an impression of tiredness, maliciousness, or anger, which is another reason many patients seek enhancement.¹²

The Asian eye is defined by its eyelid. The eyes can be of any shape including round, narrow, almond, triangular, slant, prominent, or deep-set. The eyes can be a single eyelid, low/incomplete eyelid crease, and double eyelid.¹² On average, the Asian adult palpebral fissure is 27.2 ± 1.2 mm wide and 8.5 ± 0.9 mm in height. The lateral canthus is positioned around 10 degrees higher than the medial canthus. In frontal view, Asians tend to have a taller, more-circular shaped orbit, whereas Caucasians tend to have a square-shaped orbit. In lateral view, Caucasians possess a more prominent superior rim and deeper lateral rim.^{10,13,14}

In the 1980s, an oval face featuring big eyes with distinct parallel double eyelids (►Fig. 3) became the paradigm of beauty. A Korean actress, Shinhye Hwang (►Fig. 2A) is a typical example of that period. With the growth in the standard of living and culture, Asian people have since

Fig. 2 (A) Korean actress, Shinhye Hwang—1987 photograph. (B) Idealized Asian eye shape and features.

Fig. 3 (A) Current concept of a bigger, brighter, more beautiful Asian eye. (B) Contemporary idealized Asian eye with medially tapered crease.

Fig. 4 Undesirable look, with a dull, sleepy, small appearance.

changed their concept of the beautiful eye to include not just Westernized double eyelids, but big and bright eyes with 1 to 2 mm of natural-looking tapered types of double fold (► Fig. 3).¹⁵

Unfortunately, at times, certain features have left patients with an unpleasant or sleepy look (► Fig. 4). This in turn paved the way for double eyelid surgery, where a fold on an upper eyelid was more aesthetically appealing with a bright eyeball. Over the past 50 years, there have been drastic improvements in Mikamo's index procedure. The external incision technique was first described by Maruo, who made an incision across the eyelid, 7 mm from the ciliary margin, and closed the incision from the conjunctiva to the superior tarsal border of the anterior skin edge to the tarsal plate.¹⁶ It is a technique with a longer-lasting outcome and is suitable for many single-eyelid patients; however, the longer recovery time, a possible unnatural appearance lasting for months, and visible scar formation are serious concerns.

Despite the vast technical advancements, the principles and goals of enhancement surgery remain the same: a functional, natural-appearing eyelid fold that brings out the beauty of the Asian eye. Recent advances in the treatment of the medial canthus and subclinical ptosis have also improved functional and aesthetic outcomes of Asian blepharoplasty (► Fig. 5).⁸

In an effort to obtain and maintain modern beauty, various techniques have emerged that include, but are not limited to vertical upper vector lengthening, vertical lower vector lengthening, medial lengthening, and lateral lengthening.

Asian Eyelid Surgical Techniques

Vertical Upper Vector Lengthening

Upper eyelid ptosis is a drooping of the upper eyelid margin in relation to the superior limbus. This problem can have significant functional and aesthetic implications. Ptosis is defined as an abnormal low-lying upper eyelid margin with the eye in primary gaze.¹⁷ The normal adult upper lid lies 1.5 mm below the superior corneal limbus and is highest just nasal to the pupil. A variety of procedures have been developed to correct ptosis. Raising the upper eyelid margin is not without its functional and cosmetic implications. Functionally, elevating the eyelid margin above the pupillary axis improves the superior visual field. From a cosmetic

Fig. 5 Medial epicanthoplasty and subclinical ptosis correction through an Asian blepharoplasty.

Fig. 6 Sagittal-section schema of the lowering the lower eyelid procedure. (A) Subciliary skin (anterior lamella) is removed. (B) Posterior lamella shortening is performed by suturing the lower eyelid retractors to the inferior edge of the tarsal plate. (C) The lower eyelid margin is inferiorly repositioned by shortening the anterior and posterior lamella.¹³

standpoint, it achieves a smooth curvature of the eyelid margin, offers symmetry in eyelid margin height, and symmetry in the soft tissues of the eyelid and eyebrow—particularly the amount of tarsal platform showing.¹⁸

Stretching or dehiscence of the levator aponeurosis is the principle etiology behind acquired ptosis. When levator function is adequate, ptosis surgery is designed to shorten the elongated levator aponeurosis, restoring normal length relative to the levator muscle and the tarsus.¹⁹ Anterior approaches to the levator using a blepharoplasty-type incision allow resection of a portion of the levator aponeurosis and tightening. Novel improvements have yielded adjustable suture plication techniques used solely or in conjunction with aesthetic blepharoplasty.²⁰ A standard upper blepharoplasty

incision with conservative skin excision is used to obtain exposure; however, a limited incision (<1 cm) technique can also be employed with exceptional results.

Vertical Lower Vector Lengthening

Despite double-eyelid plasty, levator aponeurotic surgery, eyebrow lifting, epicanthoplasty, and lateral canthoplasty, some East Asian patients are often dissatisfied with their outcomes and request further surgery; they desire less of a small, slanted look and a more refreshed, open, larger vertical palpebral aperture, particularly in the lateral half.²¹ Often, this dissatisfaction is caused by lower eyelid descent with aging or as an unwanted complication after blepharoplasty—an increased scleral show and widened palpebral fissure

Fig. 7 Step-by-step anterior views of the lowering the lower eyelid procedure. (A) Preoperative design for skin removal. (B) The anterior lamella (eyelid skin) was removed. (C) The palpebral conjunctiva was incised and dissected inferiorly. (D) A 5-0 polydioxanone suture was passed through the lower eyelid retractor. (E) The polydioxanone suture was then passed through the inferior edge of the tarsus as well. (F) The posterior lamella was shortened by tying the suture. (G) Three tucking stitches were placed. (H) The subciliary skin defect was finally closed with 7-0 black nylon.¹³

revealing more of the roundedness of the eye. In an effort to mimic this effect, vertical lower vector lengthening is now an accepted modality of treatment of the Asian eye, allowing a vertical increase of the palpebral aperture. This is usually accompanied with the favorable migration of the lateral canthus medially, making the palpebral fissure rounder.¹³

The up-slanting appearance of the palpebral aperture in Asians is frequently derived not from the anatomically positive canthal tilt, but from combined effects of the epicanthus and the up-slanting lateral half of the lower eyelid margin. Lower eyelid surgery aims to correct palpebral asymmetry and can easily be accomplished with the described procedures.¹³

It is imperative to assess lower eyelid tone and for protrusion of the eyeballs ahead of lowering the eyelid to avoid postoperative complications such as inferior scleral show or ectropion. The procedure is indicated mainly for a vertically narrow palpebral aperture or an up-slanting appearance.¹³

The lower-eyelid lowering procedure is routinely performed concurrently through both the transcutaneous and transconjunctival approaches under local anesthesia (1% lidocaine with 1:100,000 epinephrine). A step-by-step sagittal-section schema and anterior view photographs of the lowering the lower eyelid procedure are shown in ►Figs. 6 to 8.¹³

Preoperative designing of the skin excision is performed while the patient is recumbent with eyes open and the lower eyelid skin under downward tension. A subciliary incision is made 2 mm inferior to the ciliary margin, and the skin excision is planned according to each patient's condition and preference; the excised skin is usually 4 to 6 mm in vertical maximum width at approximately half the distance between the lateral limbus of the cornea and lateral canthus.

The incision is made according to each patient's condition (e.g., medially from a point at approximately half the distance between the medial canthus and medial limbus of the cornea, and laterally to the lateral canthus. The skin incision is made with preservation of the orbicularis oculi muscle intact. Hemostasis is then sought.

A protective contact lens is then applied to protect the cornea and eyeball, and the lower eyelid is everted by pulling a traction suture placed at the eyelid margin. After a conjunctival incision is made just below the inferior border of the tarsal plate, dissection is extended inferiorly by approximately 8 mm. The posterior lamella is shortened; the degree of shortening is usually decided as the excised margins of the anterior lamella are just overlapped. The lower eyelid retractor is sutured to the inferior edge of the tarsal plate with three stitches using a 5-0 polydioxanone suture.¹³

Then, the skin is closed with a 7-0 black nylon suture and the patient is sat recumbent once again for checking the positional appearance. If asymmetry, overcorrection, undercorrection, or entropion is noted, it is corrected immediately by adjusting the posterior lamella shortening through the transconjunctival approach. Too much ectropion or entropion induced by too tight or too loose a fixation must be properly controlled during the surgery. The lower edge of the cornea should contact the ciliary margin. In addition, a love bulge can be acquired due to the shortening effect of the posterior lamella (►Figs. 7 and 8).¹³

Medial Lengthening

Anatomically, the medial epicanthal fold is a semilunar fold of skin that runs downward from the upper eyelid at the side of the nose with its concavity directed to the inner canthus. These epicanthal folds result in a round-looking inner eye and make the palpebral fissure narrower.²² This unique medial epicanthal fold leads many Asians to seek cosmetic improvement by epicanthoplasty, which can be performed in conjunction with the blepharoplasty or separately. Multiple variations exist on the tension-relieving techniques using Z- or W-plasty techniques. Recently, minimal scar techniques have come to the forefront, including the skin redraping technique.²³ A detailed description and discussion of medial epicanthoplasty is provided in this issue by Dr. Kwon in the article "Reconstruction of the Epicanthus: Evolution of the Eyelid and the Developmental Concept of Asian Blepharoplasty."

Case 1

Case 2

Fig. 8 Before and after of lower eyelid lowering procedure. The white arrows indicate area of lowering. Note the larger vertical dimension of the postoperative palpebral fissure.

During dissection, there are two important points to be considered. First, for the dissection plane of the skin flap, intramuscular dissection is safer than raising a subdermal flap, which can cause postoperative contracture and pigmentation. Second, procedures manipulating the preseptal muscles should be just myotomy of medial raphe, not removal. The excessive area of skin flap is trimmed and the subciliary incision is closed. The dog-ear on the supratarsal fold line is also removed and sutured. There are three points to be mindful of during this process. First, the key suture should be placed at the exact point of the new medial epicanthus with #6–0 nylon sutures. Second, excessive skin removal should be minimized. Third, skin closure has to be undergone without tension, and additional sutures for repairing the inner layer are not needed.²⁴

When an epicanthoplasty is excessively performed, there can be multiple unwanted results: eyes can look closer together, the inner mucosa and lacrimal lake can be exposed, facial expression can be aggressive, eyes can look sunken, or there can be added scars on the medial epicanthal area. In such patients, surgery to restore the exposed part is required, but no clear restoration surgery has yet been reported. The reverse skin redraping technique is now being used to aid in correction.²⁵

Lateral Lengthening

Asian lateral canthoplasty is one of the plastic surgeries performed in young Asian women who desire their eyes to appear larger and more revealing. In a select few patients, a medial epicanthoplasty falls short of obtaining a bigger, wider look. The lateral canthoplasty is quickly becoming a popularized option to obtain a wider interpallpebral fissure (►Fig. 9). The procedure is often used in elderly patients to reconstruct

weakened lateral canthal tendon now lacking support due to gravitational or other mechanical factors. It is also used in cases of horizontal eyelid laxity, entropion, ectropion, lateral canthal dystopia, and aesthetic rejuvenation. The procedure can be combined with double-fold blepharoplasty and epicanthoplasty to widen the fissure.^{26,27}

The procedure is ideally suited for patients with narrow interpallpebral fissures, patients who do not achieve improvement after epicanthoplasty. It is also ideal for patients with a narrow intercanthal distance who are poor candidates for epicanthoplasty. In addition, it is being advertised for patients with fierce, feline-like eyes or those who appear to be cross-eyed due to less scleral show (►Fig. 10).²⁶

A lateral canthoplasty of the Asian eyelid involves a 5-mm-sized horizontal incision at the lateral canthus and upper eyelid crus flap formation. The proximal part of the flap contains the upper eyelid margin and the palpebral conjunctiva without the upper eyelashes, whereas the tip of the flap contains the upper eyelid skin only. The upper crus flap is 2 to 3 mm in length, and the posterior deepening of the palpebral conjunctiva is performed by transverse back-cutting (►Fig. 9). The upper crus flap is transposed with sliding laterally, and the tip of the flap is transposed to the new lateral canthus, which is located 5 mm away from the original lateral canthus.²⁷

In the majority of Asian patients, a medial epicanthoplasty suffices in making the eyes look softer without giving away the operated look, thereby avoiding a strong sharp impression and widening the interpallpebral fissure (►Fig. 10). In these patients, an Asian lateral canthoplasty is considered less effective and may result in inadvertent effects. Certain patients who undergo a lateral canthoplasty may suffer from misalignment of the mucocutaneous junction at the lateral

Fig. 9 Schema of lateral canthoplasty procedure.²⁶

Fig. 10 (A, B) Patients with lateral canthoplasty. (Left) Preoperative. (Right) Postoperative.

canthus, asymmetry, displeasing contours, and conjunctival exposure. In addition, recent reports of lacrimal gland fistulas have emerged.^{26–28}

It should be noted that the lateral canthal lengthening procedure and the lower vertical vector enlargement are procedures that at this point are often applied almost exclusively in South Korea. In other parts of Asia and with other Asian patients on other continents, these are rather rare procedures, often with complications of canthal dehiscence and ectropion. They should be approached with caution, and an awareness of the relevant anatomy and function, as well the potential proportional change resulting from the procedures with the rest of the facial proportions.

Aegyo-sal: Lower Eyelid Love Band

In South Korea, and to follow in Taiwan, there has been a rising trend lately of surgically enhancing the lower eyelid just below the lash line mimicking the conventional occidental

orbicularis roll and yielding a fuller eyelid when smiling. In Korea, this term is known as “aegyo-sal” beautiful/cute/winsome skin or flesh in keeping with a newborn’s lower eyelid fullness. It is imperative to differentiate aegyo-sal from conventional eye bags that denote weariness and fatigue.²⁹

These “love bands” lie directly under the eyelashes, whereas eye bags are limited to the tear troughs and lie beneath the eyelids. It is thought that aegyo-sal adds a more angelic appeal to the eyes by adding to their apparent innocence (►Fig. 11).

There are various ways to create potential aegyo-sal: temporary versus permanent. In the former, a dermal filler or autologous fat transfer can be employed. These can be done alone or in combination with blepharoplasty. The filler can be injected medially, centrally, and laterally; then fine touches are made using a cotton-tip applicator to even the injection and enhance projection.

The most popular hyaluronic acid dermal fillers used include Restylane (Galderma, Lausanne, Switzerland) or

Fig. 11 Lower eyelid love band (aegyo-sal), in this case accentuated with acellular dermal matrix.

Juvéderm (Allergan, Parsippany, NJ). A longer lasting alternative to dermal fillers includes autologous fat transfer. Both procedures warrant potential revisits for added enhancement. With fat transfer, some patients complain of uneven lumpiness if not done expertly or often a lack of enough desired projection.

When considering a love band procedure, many Asian patients favor a more permanent and consistent technique. Banked acellular dermal matrix (ADM) was originally approved and marketed in 1994 for burn victims, periodontal surgery, and reconstructive surgery. Since that time, ADM has

been employed in a wide array of uses from nasal reconstruction, gingival grafts, hernia repairs, and more recently lip augmentation. When seeking a more permanent love band procedure, a 0.5-cm flat strip of ADM is inserted and secured into place via a small incision of 2 to 3 mm in the area below the eyes. The ADM acts as a scaffold or matrix for native cell growth promoting a youthful fullness (→ **Fig. 12**).²⁹

Conclusion

Currently in Western nations, particularly in the United States, there is still a perception of Asian blepharoplasty as primarily an upward vertical vector procedure only, with the creation of a double crease, as if this double crease formation would automatically enlarge the eye appearance in reality. There is still some discussion of how high to fix the crease: Is it a magical 6 mm, 7 mm, 8 mm, or an even higher millimeter that would create that nice, perfect “Asian” eyelid look? This is the wrong variable on which to focus, as this approach would turn the double crease formation into a “platform” for makeup application. The appearance without makeup is often unnatural, or at least, older. This approach forces some patients into a daily life of makeup application, particularly

Fig. 12 (A, B) Patients who underwent a lower eyelid accentuation procedure, aegyo-sal. (Left) Preoperative. (Right) Postoperative.

darker color makeup, to (1) give the illusion and not the reality of larger eyes, and (2) trap the surgeon into thinking that the higher the crease the better. Additionally, there are at times too aggressive a debulking of the underlying upper eyelid tissues in the older age group who have had an Asian blepharoplasty, with the mistaken intention of creating a high double crease that is actually the excavated upper orbital rim, and not a real crease by definition. This rather high crease in effect alters and deteriorates the palpebral aperture–eyelid–brow relationship, and even further, the horizontal mid-third and lower-third relationships that have some impact on gender appearance. A last component in the double crease formation in Western countries is the overwhelming selection of the open incision to create the crease, regardless of the patient age range. It is only through this approach that a high, and sometimes excessively high crease can be created.

In Western countries, there is some concern about performing a medial epicanthoplasty, as this is claimed to “de-ethnicize” the Asian look. This is understandable in light of the concern for political correctness, and the past social/political history of some other ethnicities (e.g., African American) with the mainstream majority Anglo-Saxon population. Additionally, there is concern about the scar appearance of the epicanthoplasty. These are the two reasons touted as why an epicanthoplasty should not be done most of the time, if at all for Asians. One problem with this line of reasoning is that the techniques have been borrowed more from the legacy concept of pediatric Caucasian epicanthoplasty, and the epicanthal fold correction has been too aggressive in continuing or creating the medial parallel crease. In these cases, there tends to be a worse scar appearance. Interestingly enough, there has been little if no emphasis or focus on changing one or more of the four vectors of Asian blepharoplasty as a way to better harmonize the proportions of the eyes in both the vertical and horizontal directions with the rest of the facial proportions.

For plastic surgeons in most Asian countries, contemporary Asian blepharoplasty consists of (1) an upward vertical vector change (i.e., a modest double crease with an intentional increase in the vertical palpebral aperture performed through the incision or nonincision method), and (2) a medial vector modification (i.e., medial epicanthoplasty) to soften the appearance of the epicanthal fold. These two procedures are often performed concurrently. This powerful combination in the past 8 to 10 years has advanced Asian double eyelid surgery to result in a much more refined and natural look. The lower height of upper eyelid crease appearance has been preferred by patients in the more modernized Asian countries, particularly among the younger generation. The focus is more on enlarging the actual palpebral aperture, and less on making the crease much higher. The younger generation prefers the nonincisional approach to the double eyelid crease. This approach cannot force the crease to a point much higher than the native tarsal level. Less commonly, the lateral canthal lengthening and vertical downward change are used, primarily in South Korea, and much less so, if at all elsewhere. The lower eyelid pretarsal volume accentuation has been a primary focus in Korea with recent

signs of adoption and exploration in Taiwan. It is currently thought that the aegyo-sal love bands would add to the overall appearance of youthfulness and innocence and to the illusion of a larger eye aperture. This is a 180-degree change from the 1970 to 1990s when Korean patients sought out procedures to debulk the pretarsal fullness of the lower eyelid. Time will tell if the trend of lateral canthal lengthening, vertical downward change, and aegyo-sal love bands will be more widely adopted or if this is a more transient trend.

The changes resulting from these maneuvers are significant for the following reasons:

1. Asian eyelid surgery is now focused on natural Asian appearance enhancement, not Caucasian imitation. In the past, it can be argued that the Caucasian look, and even technical approach, has been adopted with some rather disastrous incongruous facial results and with variable de-ethnicization of the Asian appearance.
2. Asian eyelid surgery now, along with Asian rhinoplasty, often take into account the potential changes to improve the harmony of the facial proportions.

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