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ORIGINAL ARTICLE
Cosmetic

Concept of Double-eyelid Segments Ratio: Practical Application in Asian Blepharoplasty

William P. D. Chen, MD

Background: There have been few articles on the vertical dimension of the Asian upper eyelid, the eyelid crease segment, and the upper palpebral segment. The eyelid crease height manifests differently depending on whether it is closed (on extreme downgaze), open, or on upward gaze. This study will investigate a ratio practical for use in Asian blepharoplasty (external incisional method).
Methods: The central vertical dimensions of Asian upper eyelids were measured, together with the upper palpebral segment and eyelid crease height when present. These parameters were recorded preoperatively and following double-eyelid surgery, and remeasured at 1 week and 2 months postoperative with eyelids closed and with eyes open looking straight ahead. The ratios of anatomic upper/lower segments and apparent (eyes opened) upper/lower ratio were tabulated for each case.
Results: The mean vertical height of upper eyelid skin among Asian women 30 years of age and younger was 23.4 mm, and between 31 and 50 years of age was 25.4 mm. The design of Asian upper eyelid crease and determination of skin tissues that can be safely removed include designing crease height to be 7 mm or slightly less and leaving an upper eyelid segment of at least a length 2 times or more of the crease height, to yield an aesthetically desirable double-eyelid segments ratio.
Conclusions: The study confirms the practical application of the upper/lower segments ratio at surgery and at full recovery (2 mo) using such technique and shows its progression to a desirable range of double-eyelid segments ratio. It has proven effective and useful for patients seeking Asian blepharoplasty. *(Plast Reconstr Surg Glob Open 2024; 12:e5944; doi: 10.1097/GOX.0000000000005944; Published online 30 July 2024.)*

INTRODUCTION

There have been few, if any articles published on the anatomic dimensions of the upper eyelid segment in Asians, whether single eyelid or among those born with a natural eyelid crease. The Chinese terminology for "double eyelid" does not refer to two equal-sized upper eyelid segments; rather it refers to a natural crease dividing the upper eyelid into two unequal segments. The goal of this article is to outline safety criteria for design of a crease segment and upper eyelid palpebral segment based on an anatomic ratio between the upper segment relative to its crease segment and investigate anatomic measurements among Asian women relative to age, in various phases of surgery and recovery. The use of the terms "Asian" and "Asian blepharoplasty" here are confined to those ethnic groups with Han feature ancestry, namely Chinese, Japanese, Koreans, Taiwanese, and Southeast Asians; it is not inclusive of East Indians, Russians, Austral-Asians, and Pacific Islanders.

From the Department of Ophthalmology, UCLA School of Medicine, Los Angeles, Calif.

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BACKGROUND

Omana et al[1] reported that among Filipinos, the average pretarsal crease height (CH; eyelids closed) was 4.1 mm in 32 women, and 4.8 mm in 43 men; and eyebrow height from the upper eyelid margin in the range of 10.4 mm. Gladstone et al[2] presented a novel formula: [change in MFD = −0.40 + (−0.28 × change in vertical skin segment)] + (0.53 × change in MCD), where MFD is margin-to-fold distance (pretarsal show with eyes open) and MCD is margin-to-crease distance with eyes opened looking down at 45 degrees; a calculator was needed and used to input the formula for preoperative planning to determine the desired amount of pretarsal show, the latter being that article's main focus, absent any mention of palpebral upper eyelid physical dimension. Lu et al[3] reported on the relative prevalence of double eyelid among

Disclosure statements are at the end of this article, following the correspondence information.

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Malaysian and Chinese patients seen in the dental clinic at the University of Malaysia. Their report indicated 100% of Malaysian and 70% of Chinese patients had a double-eyelid crease; they also reported that among Malaysia's Chinese, the pretarsal skin height observed was 2.29 mm (eyelids open), the average CH measured only 4.9 mm (eyelids closed), and the distance from eyelid margin to eyebrow was 11.79 mm (eyes open). Among these limited studies[1–3] available on eyelid crease characteristic of Asian patients, the varied findings indicate differences in study methodology as much as different subsets of population. Patel and Malhotra[4] stated in their e-book manual that the normal distance in the unoperated adult face is 25 mm or more (among Americans), and the distance from upper eyelid margin to inferior brow border postblepharoplasty should be no less than 20 mm. They also stated as a general rule that the ratio between pretarsal platform to the crease-to-brow distance would follow the golden ratio of 1.0: 1.61. Although such a ratio (1.61) of upper (supratarsal) segment relative to the eyelid crease (pretarsal) segment may be suitable for White or non-Asian patients; the author[5–7] has seen many suboptimal cases among Asians whose looks are ruined when their upper-to-lower segments ratio is between 1.0 and1.50.

The author has published the finding of the upper tarsus being at an angle between 45 and 50 degrees among Asian and White populations when eyes are open in a forward gaze[7–9] (Fig. 1). Our preferred nomenclature for the eyelid CH includes the anatomic CH, which is measured with eyelids closed; the tilted CH is the anatomic CH's measured vertical equivalent when viewed frontally with eyes opened and without eyelid fold overhang, whereas the clinical apparent CH represents the net frontal view (vertical equivalent) of the crease without examiner interference on any eyelid fold which may be present.

Figure 1 shows that when the eyes are opened the upper tarsus has an incline angle (I) close to 45–50 degrees.

The dimension of anatomic CH (eyes closed) is greater than tilted CH (eyes open; fold lifted to reveal crease), which is apparent CH.

Figure 2 shows the anatomic CH with eyelids closed, versus the same individual's apparent CH when viewed in eyes open, frontal, and neutral (OFN) position.

Previously within the author's practice, using retrospective photographic analysis from past series of primary Asian blepharoplasty cases and revisions of suboptimal postblepharoplasty cases,[7] a range of desirable double-eyelid segments ratio values versus undesirable upper/lower (U/L) ratio yields an interesting contrast. Among 34 cases of optimal results from primary Asian blepharoplasty, the average double-eyelid segments ratio (U/L ratio) was 4.04 upon healing (ranging from 3.0 to 4.5), with variability occasionally seen among those who were naturally born with lower eyebrow position, this would lead to less of an apparent upper segment value when viewed with eyes opened. Conversely among 27 cases of patients referred with suboptimal findings after double-eyelid surgery with complaints and seeking revision, their presenting apparent U/L ratio ranged from 0.9 to 2.0, and the mean was 1.48 when measured in the OFN position.

Takeaways

Question: What is the optimal design for the eyelid crease height and the upper segment of skin to preserve in Asian upper blepharoplasty?

Findings: Among three groups of Asian women between 18 and 30, 31 and 50, and 51 years or older, their upper eyelid skin segments have an average of 23–28 mm. One can design the crease height based on anatomic size of their upper tarsal height as measured centrally and preserve at least double this distance for the upper segment skin to avoid suboptimal results.

Meaning: An anatomic (upper segment/crease) ratio of 2 or greater will produce an ideal, visually apparent double-eyelid segments ratio.

METHODS

How will these three CH (anatomic CH, tilted CH, and apparent CH) measurements of the patients evolve during their recovery following surgery? The author investigated this with the following findings.

Inclusion Criteria

From March 2021 to June 2023, we collected 44 cases of Asian women coming in for primary Asian blepharoplasty and 16 women for revisional upper blepharoplasty.

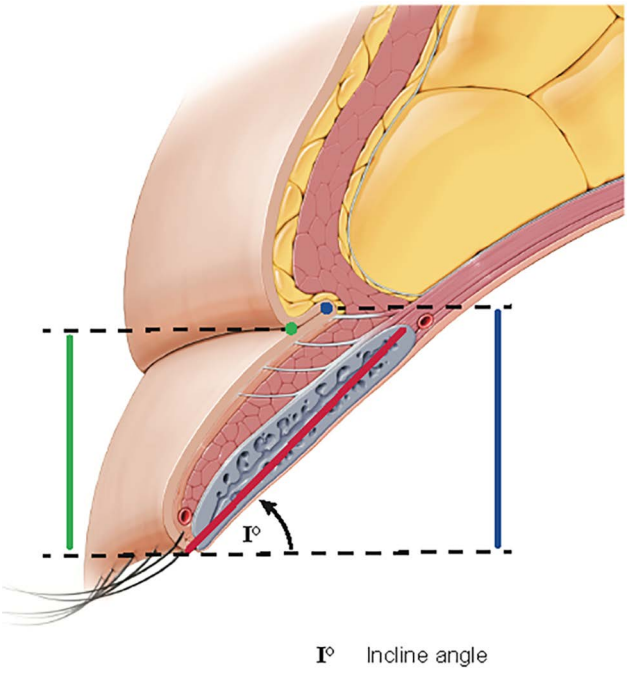

Fig. 1. Anatomic CH (red), tilted CH (blue), and apparent CH (green). The anatomic CH normally is located along the superior tarsal border and is measured with eyelids on extreme downgaze or closed; the tilted CH is the anatomic CH's measured vertical equivalent when viewed frontally with eyes opened and with eyelid fold lifted up to expose its true view, whereas the clinical apparent CH represents the net frontal view (vertical equivalent) of the crease without interference on any eyelid fold which may be present.[7]

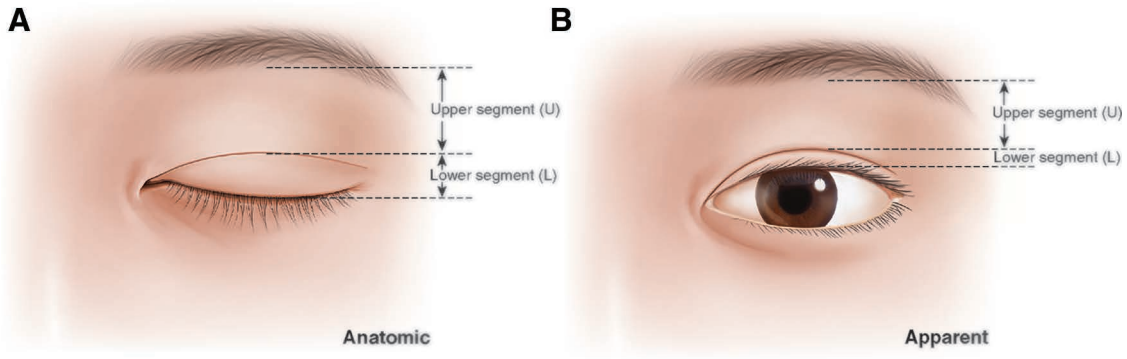

Fig. 2. Drawing of an Asian-born patient with a natural crease, showing designation of upper and lower segments of the upper eyelid with eyelids closed versus opened. The values are different for each dimension. A, Anatomic crease height and upper segment with eyelids closed. B, The same individual's apparent crease height and upper segment when viewed with eyes in OFN position. Position A produces an anatomic U/L ratio, whereas B yields an apparent U/L ratio.

The age groups were divided into those 30 years of age and younger, those 31–50 years, and those older than 50 years. Exclusion criteria includes anyone with ptosis; brow droop (unilateral or bilateral); patients with conditions that predispose to upper eyelid retraction such as thyroid eye disease; or patients with skin shortage that manifests eyelid lag, lagophthalmos, or inadequate eyelid closure.

Permissions

Within the author's clinic, all patients signed consents for photographic recording and further analysis for publishing and presentation at professional meetings. This study did not involve academic institution.

Within the author's practice, single eyelid (monoeyelid) segment often measures in the 22- to 25-mm range with upper eyelid closed among Asian women 30 years or younger. Measurements were taken based on the grid attached in Supplemental Digital Content 1 [**see table, Supplemental Digital Content 1,** which displays data on measurement of eyelid crease segments preoperatively, intraoperatively, and postoperatively at 1 week and 2 months or more, and apparent upper/lower segment ratio (double-eyelid segments ratio) with eyes open, frontal and neutral. **http://links.lww.com/PRSGO/D325**]; namely, the preoperative anatomic whole upper eyelid segment height (vertical), intraoperative anatomic CH (lower segment height), and upper segment height, and these same data points at 1 week and 2 months' postoperative visits. In addition at that same 2 months' visit, we measured the apparent ratio (with eyes opened) of the vertical dimension of the upper segment versus its lower segment. (Measurements were taken preoperatively with malleable paper ruler being used to best match the natural upper eyelid contour. CH was measured from the central upper eyelid margin to the central portion of a distinguishable upper eyelid crease. The whole upper eyelid vertical dimension was measured from mid-point of central eyelid margin pointing superiorly to where the inferior brow

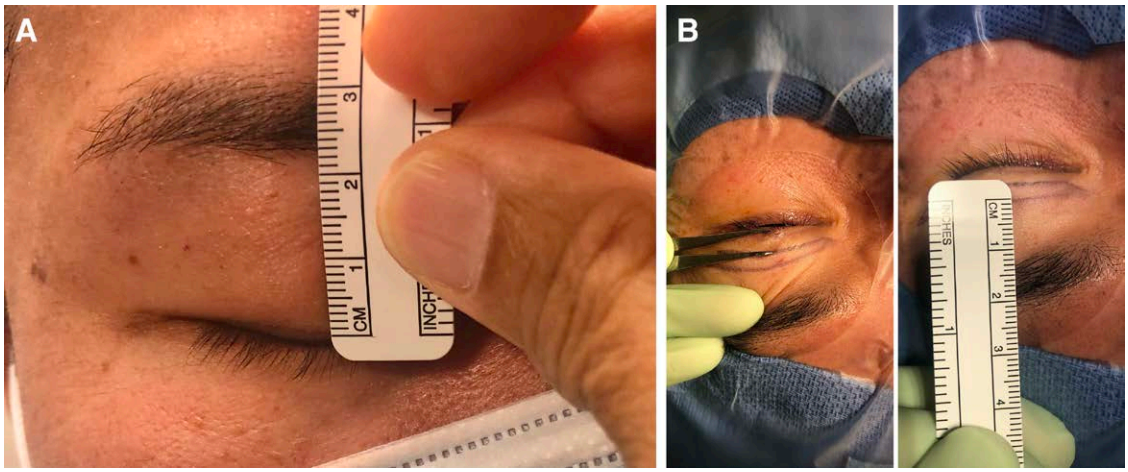

Fig. 3. Preincisional planning shows measurements using paper ruler and caliper to measure the vertical dimension of the whole upper eyelid, the designed crease height, and the upper eyelid segment to preserve. A, Preoperative evaluation for a male patient: the whole upper eyelid segment measured 23 mm. B, During primary Asian blepharoplasty for this patient, crease height was set at 6 mm, and the upper segment designed was designed at 13 mm. The marked tissue for removal between the upper and lower incision lines was 4 mm.

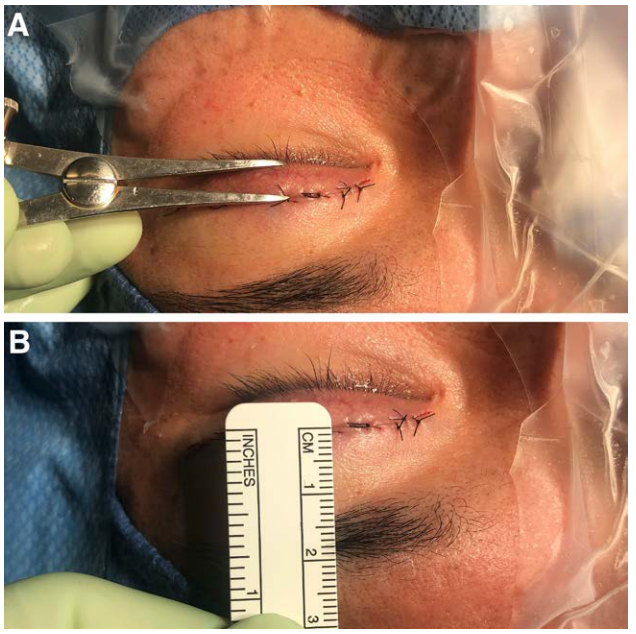

Fig. 4. Immediate postprocedure photographs. A, Confirmation that crease height constructed was 6 mm. B, The remaining upper segment stayed set at 13 mm. Anatomic (U/L) ratio is 13/6 = 2.17.

border commenced). Further data were then collected intraoperatively during Asian blepharoplasty as shown in Figures 3 and 4. These anatomic measurements were repeated at the 2 months' postoperative visit, and then the apparent dimensions of these two segments were recorded to allow computation of an Apparent double-eyelid segments ratio (U/L), with patient's eyes opened gazing ahead, looking frontal, and neutral (OFN).

RESULTS

Of the primary surgery group of 44 women, among those 30 years of age or younger, the 25 eyelids (13 patients) recorded a preoperative mean of 23.4 mm vertical height of the whole upper eyelid (ranging 20–28 mm). Of the 32 eyelids (16 patients) among those 31 and 50 years, the mean whole eyelid height was 25.4 mm (ranging 21–32 mm). Of the 30 eyelids (15 patients) among those 51 years or older, the mean whole eyelid vertical height was 28.1 mm (ranging 23–34 mm) (Fig. 5). Among Asian women, the measurement confirms an age-related progressive lengthening of upper eyelid skin. The means among the three age categories were between 23 and 28 mm, with the range being 20–34 mm (**Supplemental Digital Content 1, http://links.lww.com/PRSGO/D325**).

Of the revisional upper blepharoplasty group of 16 women (Fig. 5) 30 years of age or younger, two eyelids (from one patient) had a mean of 24.5 mm (one eyelid 23 mm, one eyelid 26 mm). Of the 10 eyelids (five patients) between 31 and 50 years, the mean was 22.7 mm (ranging 20–25 mm). Of the 20 eyelids (10 patients) 51 years or older, the mean was 26.5 mm (ranging 23–33 mm). Understandably, the measured mean values are less in this group due to prior Asian upper blepharoplasty by external approach.

The intraoperative CH and upper segment measurements confirm the following among 87 eyelids (44 women patients for primary surgery): mean of anatomic CH (L) designed (by the author) for age 30 years or younger was 6.75 mm and for 31 years or older was 7.0 mm. Mean vertical dimension of anatomic upper segment (U) preserved for age 30 years or younger was 14.7 mm and for 31 years or older was 16.2 mm. We found that the mean of intraoperative U/L ratio, measured anatomically, was 2.25 (ranging from 2.14 to 2.45) (Fig. 6, blue symbol *phi*).

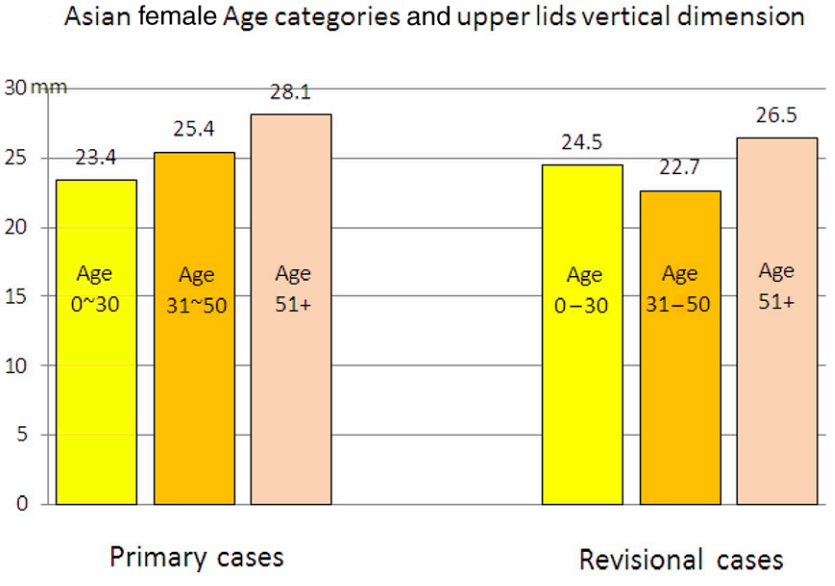

Fig. 5. Length of upper eyelid segments among different age categories of Asian women, showing primary Asian blepharoplasty cases (44 patients; 87 eyelids) and revisional cases (16 patients; 32 eyelids). In the primary surgery group, the distribution among the three age categories were 13 patients (30 y or younger), 16 patients (31–50 y), and 15 patients (51 years of age or older).

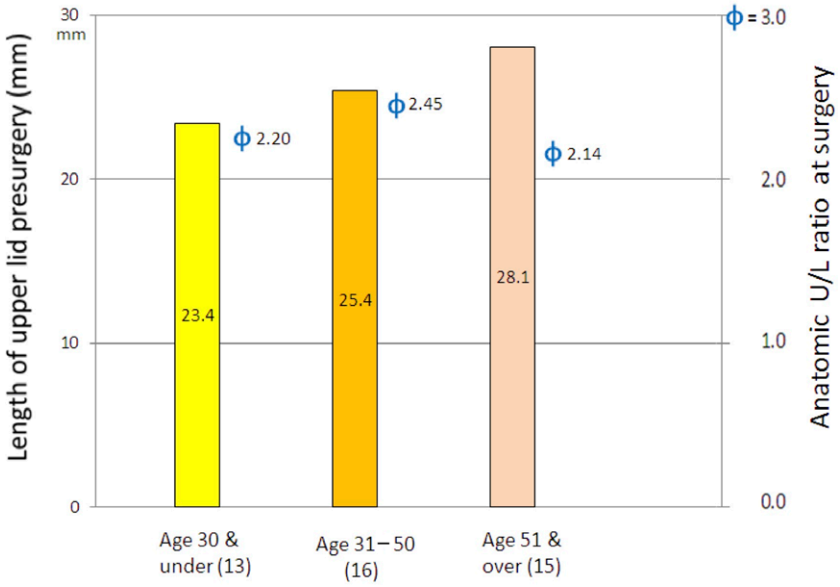

Fig. 6. Among 44 Asian women for primary Asian blepharoplasty, preoperative upper eyelid vertical dimension (the *y*-axis on left side) vs anatomic upper-to-lower segment ratio (U:L) implemented at surgery (right side, secondary *y*-axis). The blue symbol *phi* represents the mean of anatomic U/L ratio at surgery among the three age groups of Asian women; it is posted next to each column. Overall mean anatomic U/L ratio was 2.25.

Among those patients who returned for their 2-month examination (15 patients, 30 eyelids) (**see table, Supplemental Digital Content 2**, which displays a spreadsheet of data collected for Asian women who underwent double-eyelid Asian blepharoplasty and who completed 2 months follow-up. **http://links.lww.com/PRSGO/D326**), the mean of CH measured anatomically for age 30 years or younger was 6.8 mm and for 31 years or older was 7.15 mm. The mean of upper segments measured anatomically (2 mo) for age 30 years or younger was 12.6 mm and 31 years or older was 17.05 mm. The calculated mean of anatomic U/L ratio (2 mo) for age 30 years or younger was 1.85 and for 31 years or older was 2.35. We found that the mean of apparent U/L ratio (double-eyelid segments ratio) was 3.40.

Figure 7 shows the apparent U/L ratio (green bars, secondary *y*-axis) versus the anatomic U/L ratio measured at 2 months postoperative visits among the three age groups of Asian women who underwent Asian blepharoplasty.

When comparing each individual's value of 2-month anatomic U/L ratio to that person's intraoperative anatomic U/L ratio, the mean of change for right eye (OD) was −2.8%, and for left eye (OS) the mean of change was +3.4% among 34 eyelids (17 patients). Individual eyelid variation ranged from the rare extremes of −23% (in case 12) to +34% (in case 14).

DISCUSSION

The parameters that can be readily measured preoperatively are the anatomic vertical height of the whole upper eyelid skin segment and, if there is presence of a well-formed eyelid crease, its anatomic CH and upper segment height. Knowing how much total skin segment we have to start with allows us to work through this double-eyelid procedure formula:

$$\begin{aligned}&\text{Total height of eyelid}\\&= \text{CH designed (anatomic CH, or L = lower segment)}\\&+ c + \text{conserved upper segment height (U)},\end{aligned}$$

where c is the amount of skin-orbicularis oculi-septum that can be safely removed.

We will designate the apparent ratio of upper eyelid segment (U) relative to the lower segment (L, or crease segment), that is, U/L as the double-eyelid segments ratio for clinical use in Asian blepharoplasty. It is measured and calculated upon full recovery, usually beyond 2 months postoperative.

The author prefers to design central CH for Asians at 7 mm[8,9] and to make sure that intraoperative upper segment vertical distance has 14–16 mm or greater (2 × CH + 0–2 mm). This produces an anatomic U/L ratio greater than 2.0 at surgery when the patient's eyes are shut or at extreme downgaze. This satisfies the general dictum of preserving at least 20 mm of skin for the whole upper eyelid and yielding an apparent double-eyelid U/L segments ratio that is beyond 2.8 and ranging up to 4.0.

Conserving a greater upper segment (U) value will give a greater anatomic U/L ratio. Conversely, if one increases the height of the crease incision and is not mindful of the amount of skin excision (c), then the U/L ratio may approach 1.0–1.5, an undesirable result for Asian patients.[8,9] Therefore, either high crease or excess tissue removal will each predispose to an undesirable double-eyelid (U/L) segments ratio upon full recovery.

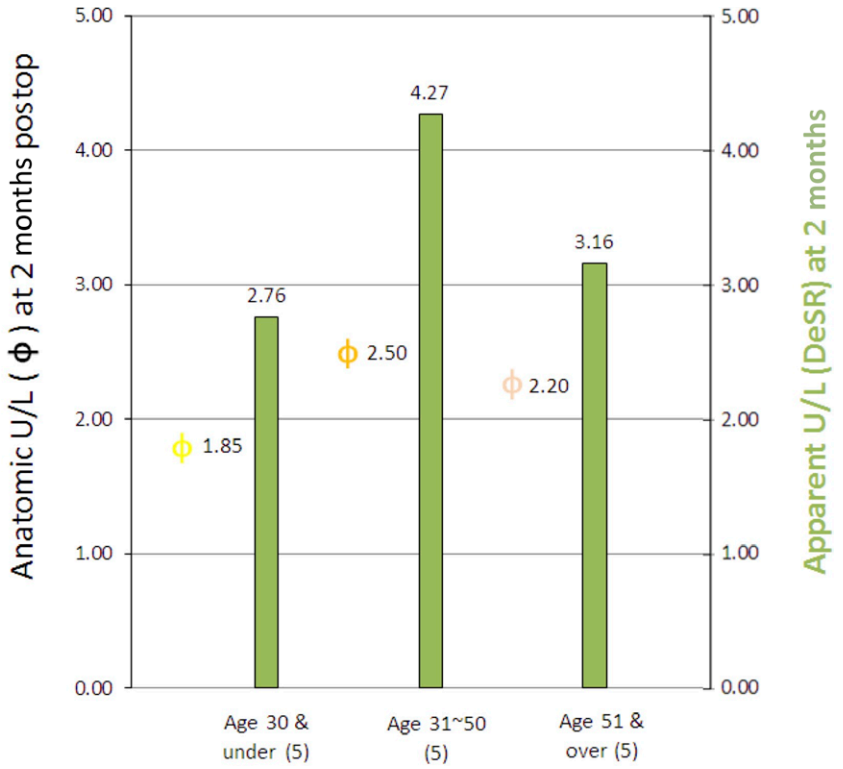

Fig. 7. Among the 15 cases (30 eyelids) of Asian women who underwent primary Asian blepharoplasty with completed 2-month follow-up, their 2-month mean anatomic U/L ratios (phi values) are positioned near their respective apparent U/L ratio (green columns, double-eyelid segment ratio, secondary *y*-axis), showing a roughly additional +50% correspondence in value going from anatomic U/L to apparent U/L ratio. There were five cases in each age group. Overall mean U/L (double-eyelid segments) ratio was 3.40.

We can work through a typical case of mono-eyelid, whose single segment preoperatively falls in the range of 23–25 mm measured with eyes closed, before local anesthetic infiltration. Assuming a young Asian woman's single eyelid whole segment was 23 mm vertical, if we designed 7 mm central CH and removed a 2 mm vertical section of skin+orbicularis oculi+orbital septum and some fat, and then reset the anterior eyelid lamella to the posterior levator-Muller-conjunctiva complex, our immediate intraoperative upper segment should measure 14 mm, resulting in a comfortable anatomic U/L ratio of 2.0 with closed eyelid (14.0 mm ÷ 7 mm), as we complete wound closure. (If the opposite eyelid has 25 mm preoperatively, one may choose to remove an additional 2 mm of skin while still leaving behind an upper segment of 14 mm. This is particularly useful when a patient's two eyelids have different dimensions; it then allows the surgeon to equalize the two side with the same CH design of 7 mm and preserve an equal amount of upper segment skin on each side.)

We find that when measured at 2 months postoperatively, these anatomic lower segment (L, or CH) and upper segment (U) values were relatively constant just as their immediate postoperative measurements (Fig. 8). The values are also seen at 1 wk postoperatively when these were measured.

With the subject sitting and eyes opened, the anatomic CH of 7 mm has a calculated (and measured) vertical equivalent of 5 mm[7–9] (discussed in the Background section), and if there is the presence of a small eyelid fold of 1.0–2.0 mm above and shielding this crease, the visually observed apparent CH will be reduced from vertical equivalent of 5 mm down to 4.0 or 3.0 mm. Other articles have used the term "pretarsal show," "margin-to-fold distance,"[2] and "pretarsal skin height"[1] on primary gaze. With our patient sitting up and eyes opened, the individual's 14 mm anatomic upper segment (U) is likely in a vertical-suspended position from the eyebrow above the orbital rim and shows an apparent height of 10–12 mm with a reduced anterior curve (Fig. 9). Assuming an upper segment value of 12 mm at OFN and the apparent CH (lower segment) of 4.0–3.0 mm, the apparent double-eyelid segments (U/L) ratio is equal to 3.0–4.0 when observed frontally, which is an excellent visual gestalt favored by Asians' sense of beauty and balance.

Anatomic U/L ratio (eyes closed) => Healed => Apparent U/L segments ratio (eyes opened).

The same eyelid exhibits a different ratio value when observed in closed versus open eye position.

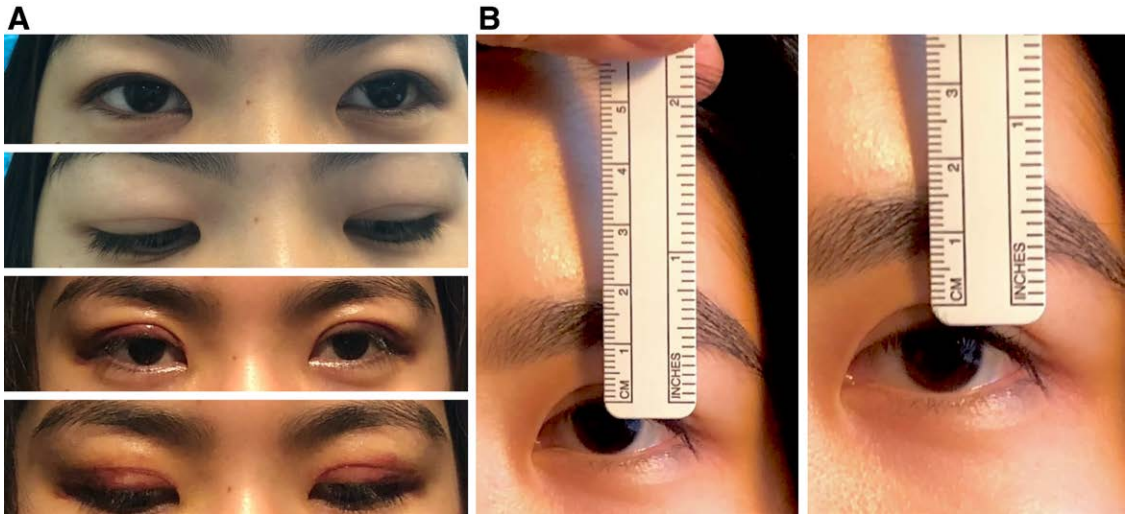

Fig. 8. Preoperative and postoperative views at 1 week and 2 months, respectively. A, Preoperative view straight and downgaze for a 24-year-old woman, and 1 week after Asian blepharoplasty, illustrating a typical recovery, with a lower apparent U/L ratio due to inherent lower eyebrow position. The whole upper eyelid preoperatively measured 23 mm; designed 7 mm CH, resected 2.5 mm, upper segment remaining measured 13.5 mm. B, At the 2-month postoperative visit, apparent crease height was 3 mm, whereas the upper segment was 7 mm.

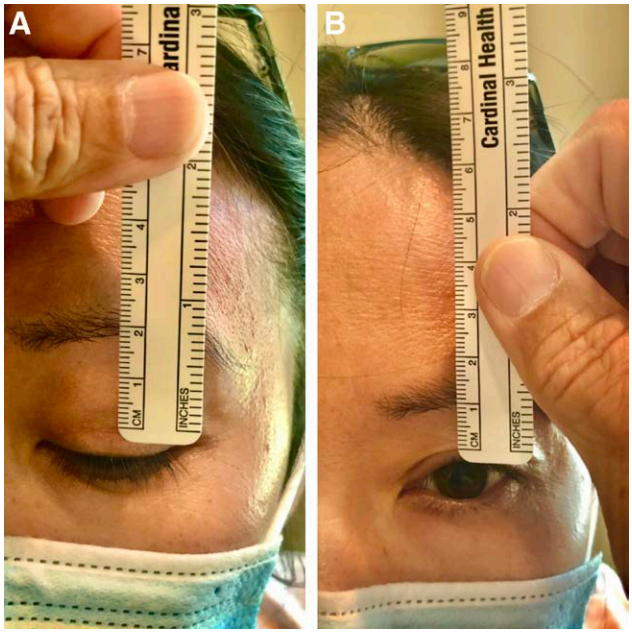

Fig. 9. Measurement of upper segment of same left upper eyelid with eyes looking down (anatomic) compared with straight ahead (apparent). A, Anatomic measurement of upper segment was 18 mm. B, In open eye position, the upper segment was only 10 mm.

Table 1 shows a practical planning strategy and possible surgical solutions in design of crease and upper segment for Asian blepharoplasty.

Desirable results can be achieved through a carefully formulated amount of skin excision with a greater degree of orbicularis oculi resection via a beveled approach, and selective debulking of preaponeurotic fat, followed by the appropriate depth level of crease construction. [**See Video (online)**, which displays WPD Chen's Asian blepharoplasty technique of trapezoidal debulking of eyelid tissues: application in Asian blepharoplasty.[10]] After the technique of Asian blepharoplasty,[7,9] there is generally a deflation in the anterior bulge of the upper eyelid (Fig. 10); this, combined with the reset of anterior and posterior lamellae before wound closure, will help to recruit some upper segment skin and introduce some safety margin to the numerator (U) of the double-eyelid segments ratio (U/L).

We find that among Asians seeking double-eyelid surgery, 21–22 mm should be the minimal amount of skin left behind after incisional double-eyelid plasty (sum of eyelid crease segment L + U, the upper segment skin). The other finding is that designing a crease that is significantly higher than 7 mm CH among Asian women and excision of large fragment of skin (with soft tissue) will predispose to a shortened upper segment skin, resulting in an unfavorable double-eyelid segments ratio. We observed that the anatomic U/L ratios holds true upon healing, and this helps in maintaining proximity in values between two unequal eyelids (see column B in **Supplemental Digital Content 2**, **http://links.lww.com/PRSGO/D326**).

The clinical examples in Figures 11–13 show a range of double-eyelid segments ratio among primary Asian blepharoplasty cases that illustrate the versatility and safeguards built into this method of data-driven preplanning. This article is not claiming that it can produce an exact value of upper and lower segment ratio on demand from the patient nor for the surgeon. A desirable outcome is often dictated and limited by each person's anatomic presentation. There are simply too many variables, including globe position within the orbit, eyebrow position, skin thickness & texture, amount of eyelid fold that is left after surgery, amount of preaponeurotic fat pre- and postblepharoplasty, and other factors—each may affect the apparent dimension of the upper and lower segments.

Table 1. Surgical Planning and Solution for Skin and Orbicularis Oculi Resection, and Design for the Lower and Upper Segments in a Double-eyelid Asian Blepharoplasty, with a Resultant Apparent Double-eyelid Segments Ratio (DeSR)

If Vertical Segment of Mono-lid Measures (mm)	And You Design CH, or Lower Segment (L) (mm) of	Upper Segment (U) Needs to Be Preserved as (or Greater)	Fragment Removed (c) in mm as Measured Vertically, or Less	Anatomic DeSR (Ratio U/L Segments Measured with Eyelids Closed)	DeSR (Ratio U/L with Denominator Value of L Converted to Tilted CH: Vertical Equivalent* of CH as Viewed Frontally	Apparent DeSR (Ratio of U/L) with 1 mm Apparent Eyelid Fold on Top of Crease (Denominator Reduced by 1)
23	7	14	2	14/7	14/5	14/4 = 3.5
26	7	16	3	16/7	16/5	16/4 = 4.0
21	6.5	13	1.5	13/6.5	13/4.6	13/3.6 = 3.6

An algorithm table for reference purposes only, to create an ideal Apparent DeSR ratio after primary Asian blepharoplasty (by Chen). This table is for learning purposes only, and is not meant as an absolute guide toward each physician's surgical decision with their individual patient.

Fig. 10. Side-views of left upper eyelid before and after Asian blepharoplasty procedure by Chen, showing improvement in upper eyelid contour. A, Preoperative view. B, Postoperative view at 1 week: there is elimination of eyelid fold overhang on the eyelid margin, deflation of upper eyelid contour, thinning of pretarsal fullness, slight upturning of lash angle, and addition of an upper eyelid crease.

Fig. 11. Preoperative and 2-month postoperative views. A, Case 1, a 24-year-old female patient. The whole upper eyelid was 23 mm; intraoperatively designed 7 mm CH, resected 2.5 mm, upper segment remaining measured 13.5 mm. B, Apparent double-eyelid segments ratio upon full recovery at 2 months is 7 ÷3 = 2.33, as in Figure 8B.

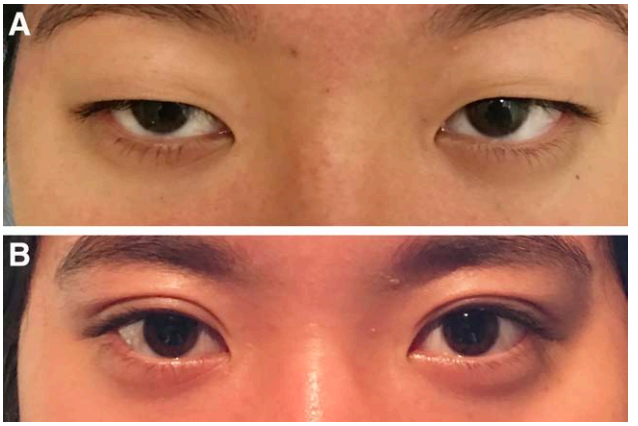

Fig. 12. Preoperative and 2-month postoperative views. A, Case 2, a 17-year-old female patient, whose whole upper eyelid was 22 mm; intraoperatively designed 7 mm CH, resected 2 mm, upper segment remaining measured 13 mm. B, Apparent double-eyelid segments ratio upon full recovery is 7.5 ÷3 = 2.5.

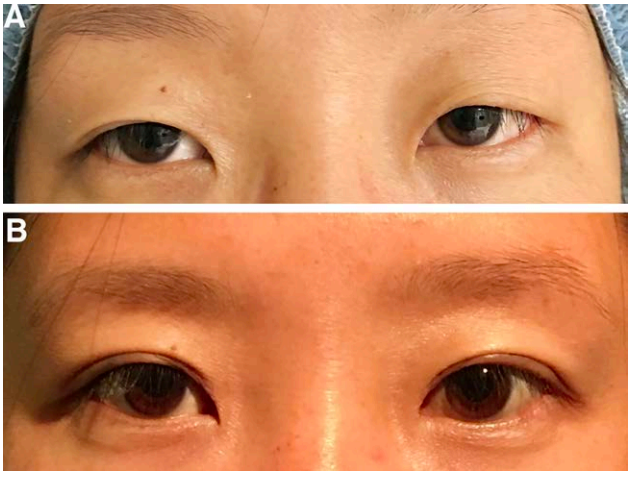

Fig. 13. Preoperative and 2-month postoperative views. A, Case 3, a 29-year-old female patient who had a rudimentary crease on right upper eyelid. The whole upper eyelid was 24 mm; intraoperatively designed 7 mm CH, resected 2.5 mm, upper segment remaining measured 14.5 mm. B, Apparent double-eyelid segments ratio upon full recovery in the right eye is 9 ÷2.5= 3.6; the left eye is 10 ÷2.5= 4.0.

This study showed that our operative guideline of keeping central CH conservatively around 7.0 mm and the anatomic U/L segment ratio of at least 2.0 or greater

at surgery is well suited for female candidates for Asian double-eyelid blepharoplasty; it will usually produce a satisfactory apparent double-eyelid segments ratio of 3.0:4.0 upon completion of healing.

This is in contrast to some articles recommending the golden ratio of eyelid segments among Asians[1,3] or for the U/L ratio values to be between 1.0 and 1.5. Additionally, our finding for Asian anatomy is quite different from similar studies among White[11] and Middle Eastern populations, a finding that is not immediately obvious to those clinicians new to this field.

The author feels that with this proof of concept and analysis, it can guard against suboptimal outcomes and at the same time produce a desirable double-eyelid segments ratio, with better symmetry for a patient's eyelids.

LIMITATIONS

This is a small set of clinical data gleaned from an individual surgeon's experience over a long period while working with Asian Americans in consultation for double-eyelid crease surgery and revisional upper blepharoplasty. Our Asian patients' ethnic heterogeneity reflects the fact that the United States, especially Southern California, is a melting pot, with Asian residents from around the world. It is not narrowly focused on one geographic area as reported in other publications from Asia. This may be our study's weakness, or conversely, may be considered as its strength. The author is hopeful that larger studies will likely reaffirm some of these findings.

CONCLUSIONS

This concept of double-eyelid segments ratio is:

1. Practical for clinical evaluation, planning, and application during surgery.
2. Useful for achieving better symmetry for those with asymmetric upper eyelids, whether for primary or revisional purposes.
3. Helpful in attaining aesthetic and safety benchmarks for Asian double-eyelid blepharoplasty.

William P. D. Chen, MD
Clinical Professor of Ophthalmology
Harbor-UCLA Medical Center
1000 W. Carson Street
Torrance, CA 90502
E-mail: wpdchen@gmail.com

DISCLOSURE

The author has no financial interest to declare in relation to the content of this article.

PATIENT CONSENT

Patients provided written consent for the use of their images.

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