

Comparing the Eyes Depicted in Japanese Portraits of Beautiful Women: The Meiji and Modern Periods

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Received: 26 August 2011 / Accepted: 7 December 2011 / Published online: 1 February 2012
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Abstract

Background The women portrayed in the *bijin-ga* of the past, particularly those from the Meiji Period (1868–1912), tended not to show much resemblance to those of women portrayed in the more modern *bijin-ga* (from after World War II), and such an observation came across as a possible indication that Japanese standards of beauty have changed over the two eras. To examine whether the apparent discrepancy can be interpreted as an actual change in the standards or not, a study was designed with the aim of assigning numeric values to several aspects of the eyes and testing for the presence of a statistically significant difference in each of the aspects between the Meiji *bijin-ga* and the modern *bijin-ga*.

Methods For this study, 29 Meiji *bijin-ga* and 36 modern *bijin-ga* were selected. The eye was chosen as the subject of comparison, and five aspects were categorized and measured: (1) presence or absence of a double fold, (2) eye width, (3) eye height, (4) eyebrow-to-upper lid distance, and (D) corneal diameter. The eye width, the eye height, and the eyebrow-to-upper lid distance were divided by the corneal diameter to derive standardized grounds for comparison.

Results The difference in double-fold frequencies between the Meiji *bijin-ga* (24%) and the modern *bijin-ga* (36%) was not found to be statistically significant

($p = 0.298$). There was no difference in the eye width-to-corneal diameter ratio between the Meiji *bijin-ga* (mean 2.57 ± 0.6) and the modern *bijin-ga* (mean 2.61 ± 0.85) ($p = 0.86$). The eye height-to-corneal diameter ratio derived from the Meiji *bijin-ga* (mean 0.62 ± 0.15) was significantly smaller than that derived from the modern *bijin-ga* (mean 0.82 ± 0.18) ($p = 0.000$). The eyebrow to upper lid distance-to-corneal diameter ratio derived from the Meiji *bijin-ga* (mean 2.21 ± 0.83) was significantly greater than that derived from the modern *bijin-ga* (mean 1.36 ± 0.78) ($p = 0.000$).

Conclusions The results of the study support the notion that Westernization contributed to bringing about changes in the Japanese standards of beautiful eyes in the context of *bijin-ga*. However, the fact that the changeover has not occurred in all the categories in question does not indicate that the Occidental characteristics came to be emulated in their entirety.

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Keywords Aesthetic standard · *Bijin-ga* · Eye · Japan · Meiji · Modern · Western

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The Japanese portraits of beautiful women are known as *bijin-ga*. *Bijin* means “beautiful woman,” and *ga* means “picture” or “portrait.” Hence, *bijin-ga* becomes “portrait of beautiful woman” in Japanese art. *Bijin-ga* have been a popular form of art across many generations, especially because they portray the subjects, Japanese women of beauty, in true likeness to real life—a concept known as

nigaoe that evolved together with printmaking technology during the mid 1800s—representing the standards of beauty upheld in their respective periods [1].

Given such understanding, I have been intrigued to notice that the women portrayed in the *bijin-ga* of the past, particularly those from the Meiji Period (1868–1912) (Fig. 1), tend not to show much resemblance to those portrayed in the more modern *bijin-ga*, from after the post-World War II period (Fig. 2). Such observation hinted at the possibility of an actual change in the Japanese standards of beauty over the two eras.

Because changes in the aesthetic standards of women of beauty representing a particular era can be a reflection of the variations in sociocultural factors that have brought about such differences, I initially attributed the differences among the women depicted in the *bijin-ga* to Western influence. Yet because the mere apparent discrepancy in the facial features portrayed cannot in itself be a sufficient or objective indication of an actual change in the beauty standards, I decided to measure the facial features portrayed in the *bijin-ga* of the Meiji and the modern periods to test whether the apparent differences translate to statistically significant ones or not. For the purpose of this research, I chose the eye in particular as the subject of comparison.

This numeric approach, to my knowledge, has not been implemented in studies conducted in English to date. I believed that the results obtained by quantifying and objectively comparing the differences in eye shapes and



Fig. 1 The *bijin-ga* of the Meiji period. An autumn rain [5]



Fig. 2 The *bijin-ga* of modern period. Smiling 20-year-old lady [7]

sizes of women representative of both past and modern beauty depicted in *bijin-ga* could potentially serve as an unbiased ground on which to argue whether Western influence has brought about significant changes to the Japanese perception of attractiveness or not, at least in the context of the eyes.

In essence, I have hypothesized that the Western influence has rendered changes to the concept of attractiveness in Japanese women's eye shape and size toward that of the Westernized ideals, which, if true, would be reflected by statistically significant differences in the measurements obtained from the portraits.

Materials and Methods

Sample Collection

In this research, the differences in eye shapes and sizes were studied by explicitly defining two comparable groups from two different periods: the first group was *bijin-ga* of the Meiji period (1868–1912), and the second group was *bijin-ga* of the modern period (1945 to the present). The two groups were particularly chosen for the following reason: During the Meiji period (1868–1912), an introduction of Western cultural influence was not powerful enough to transform the Japanese standards of beauty to the Caucasian extreme [2, 3], whereas in the post-1945 (1945 to the present) era, a powerful influx of Western values into the life and culture of the Japanese people occurred, rendering Westernization the overwhelming theme in the

nation [4]. Given such a contrast, the authors concluded that the Meiji and post-1945 periods would serve as highly relevant historical backgrounds for effective testing of the hypothesis that the Western influence has brought about changes to the concept of attractiveness in Japanese women's eye shape and size toward that of the Westernized ideal.

The first author selected samples without bias across three books (*Genealogy of Bijin-ga* [5], *Women* [6], and *Bijin-ga II* [7]), which are collections of Japanese *bijin-ga* across many generations. In particular, the author scanned all the works belonging to the Meiji period and the post-1945 era, then selected only those that would enable a clear measurement of the items in categories 1 to 4 and D mentioned later. This resulted in 29 Meiji *bijin-ga* and 36 modern *bijin-ga*.

Measurements

All 65 samples were scanned with CanoScan-CS9000F (Canon, Tokyo, Japan), and for each, the items in categories 2 through 4 and D were measured with Adobe Photoshop CS4 (Adobe Systems Inc., San Jose, CA, USA). All the values were obtained in pixels. For category 1, the presence or absence of the double fold and the number of photos in each Meiji and modern *bijin-ga* groups that depicted the subject with a double fold were simply counted. The five aspects were (1) presence or absence of the double fold, (2) eye width (i.e., distance between the endocanthion and the exocanthion), (3) eye height (i.e., distance between the palpebrale inferius and the palpebrale superius), (4) eyebrow-to-upper lid distance (i.e., distance between the lower margin of the eyebrow and the top of the eyelid at the midpupillary line), (D) corneal diameter (Fig. 3).

Standardization of Data

To render the variations in the size of the eyes depicted as inconsequential, for each eye, the eye width, the eye height, and the eyebrow-to-upper lid distance were divided by the corneal diameter (D), which resulted in a ratio that could serve as the standardized grounds for comparison.

Statistical Analysis

Once these data were collected, I ran two tests on the Statistical Package for the Social Sciences (SPSS) (IBM Corporation, Armonk, NY, USA) for statistical analysis. An independent-samples *t*-test was used to analyze whether there were statistically significant differences in the eye width-to-corneal diameter ratio, the eye height-to-corneal diameter ratio, and the eyebrow to upper lid distance-to-

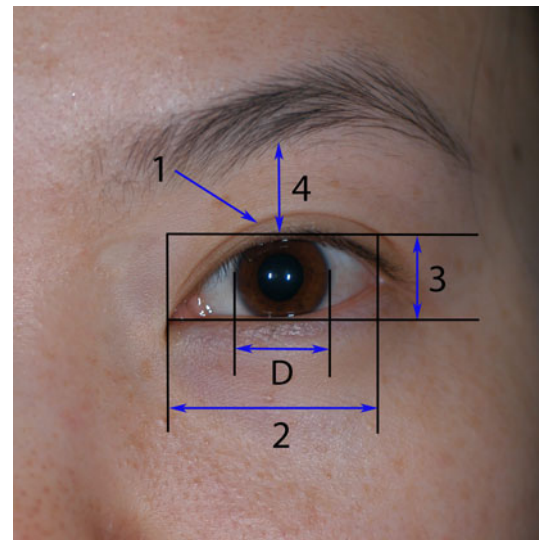


Fig. 3 Parameters for measurement: 1 Presence or absence of the double fold. 2 Eye width (i.e., distance between the endocanthion and the exocanthion). 3 Eye height (i.e., distance between the palpebrale inferius and the palpebrale superius). 4 Eyebrow-to-upper lid distance (i.e., distance between the lower margin of the eyebrow and the top of the eyelid at the midpupillary line). D Corneal diameter

corneal diameter ratio measured between the Meiji *bijin-ga* and the modern *bijin-ga* or not. A two-sided chi-square test was used to determine whether there was a significant proportional difference in the number of women with double fold between the Meiji *bijin-ga* and modern *bijin-ga* groups or not. All *p* values of 0.05 or less were considered significant.

Results

The following results were obtained after running the ratios measured for each portrait on SPSS. The measurements are unit free (Table 1; Fig. 4).

Presence or Absence of Double Eyelid

Of the 36 modern *bijin-ga*, 13 (36%) showed women with double eyelids, and of the 29 Meiji *bijin-ga*, 7 (24%) depicted the same. The difference is not statistically significant ($p = 0.298$, two-sided chi-square test).

Eye Width/Corneal Diameter

An independent-samples *t*-test was conducted to compare the eye width-to-corneal diameter ratio measured in Meiji *bijin-ga* and modern *bijin-ga*. The ratios did not differ significantly between the Meiji (2.57 ± 0.6) and modern (2.61 ± 0.85) groups ($t[63] = -0.17$; $p = 0.86$).

Table 1 Measurements and standardization of data

	Group	<i>n</i>	%	Mean	SD	<i>t</i> (63)	<i>p</i> Value
Eye width (pixels)	Meiji	29		78.37	23.08		
	Modern	36		104.48	25.99		
Eye height (pixels)	Meiji	29		19.31	8.09		
	Modern	36		34.17	11.99		
Eyebrow-to-upper lid distance (pixels)	Meiji	29		63.38	18.20		
	Modern	36		52.90	23.25		
CD (pixels)	Meiji	29		31.94	13.01		
	Modern	36		42.30	12.89		
Eye width/CD	Meiji	29		2.57	0.60	−0.17	0.860
	Modern	36		2.61	0.85		
Eye height/CD	Meiji	29		0.62	0.15	−4.72	0.000
	Modern	36		0.82	0.18		
Eyebrow-to-upper lid distance/CD	Meiji	29		2.21	0.83	4.25	0.000
	Modern	36		1.36	0.78		
Double fold	Meiji	7/29	24				0.298
	Modern	13/36	36				

CD corneal diameter

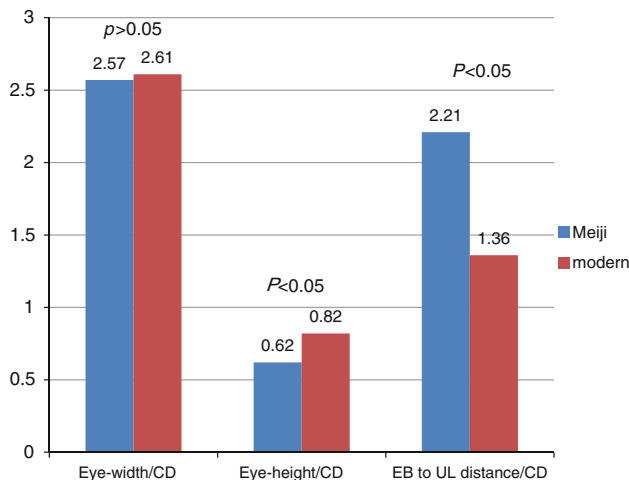


Fig. 4 The Meiji and modern groups did not differ significantly in terms of eye width/corneal diameter (CD). The eye height-to-corneal diameter ratio derived from Meiji *bijin-ga* is significantly smaller than that derived from modern *bijin-ga*. The eyebrow (EB) to upper lid (UL) distance-to-corneal diameter ratio derived from Meiji *bijin-ga* is significantly greater than that derived from the modern *bijin-ga*

These results indicate that the eye width-to-corneal diameter ratios do not differ between Meiji *bijin-ga* and modern *bijin-ga*.

Eye Height/Corneal Diameter

An independent-samples *t*-test was conducted to compare the eye height-to-corneal diameter ratio measured in Meiji *bijin-ga* and modern *bijin-ga*. These ratios differed significantly between the Meiji (0.62 ± 0.15) and modern (0.82 ± 0.18) groups ($t[63] = -4.72$; $p = 0.000$). These

results indicate that the eye height-to-corneal diameter ratio derived from Meiji *bijin-ga* is significantly smaller than that derived from the modern *bijin-ga*.

Eyebrow to Upper Lid Distance/Corneal Diameter

An independent-samples *t*-test was conducted to compare the eyebrow to upper lid distance-to-corneal diameter ratio measured in Meiji *bijin-ga* and modern *bijin-ga*. The ratios differed significantly between the Meiji (2.21 ± 0.83) and modern (1.36 ± 0.78) groups ($t[63] = 4.25$; $p = 0.000$). These results indicate that the eyebrow to upper lid distance-to-corneal diameter ratio derived from Meiji *bijin-ga* is significantly greater than that derived from modern *bijin-ga*.

Discussion

During 250 years of Tokugawa sovereign rule, isolated feudal Japan was dominated by the system of shogun and samurai. Because Japan had little influence from other countries, a distinctive culture and Japanese lifestyle developed and flourished. Women who filled the social roles of good wife and wise mother were perceived as exemplifying Japanese beauty, symbolized by long, slim eyes with single eyelids [2, 3].

However, beginning in 1853, when U.S. Commodore Matthew C. Perry entered Japan and opened the country to the remainder of the world, Japan's transition away from isolation was initiated. In particular, Perry's entry brought chaos into the country, resulting in weakening of the regime, which in turn brought about its eventual collapse

on 3 January 1868 at the hands of Satsuma radicals. This period was marked by an inflow of Western cultural influences—ranging from the import of technology to adoption of Western habits—that continued into the new Meiji era. For instance, the submissive femininity that had flourished during the Tokugawa era was replaced by the modern, albeit restricted, notion of the emancipated woman. Nevertheless, Western influence at this point was not powerful enough to transform the Japanese standards of beauty to the Caucasian extreme [2, 3, 8].

However, after the great Kanto earthquake of 1923, when Tokyo emerged as a cosmopolitan city extremely receptive to Western popular culture [8], and the period of the American Occupation (1945–1952), which instigated a powerful Westernization of Japanese life and culture, Western influence became the overwhelming theme in the post-1945 era [4].

A culture's ideals of physical appearance are dynamic. As reflected in *Dynamic Beauty: Cultural Influences and Changing Perceptions*, a work that approaches variations in the standards of beauty from a theoretical perspective, changes can be triggered by cultural contact, particularly domination. Frazier [9], the author, writes: "This [the phenomenon] concerns one population's indigenous standards of beauty changing as a result of being subjugated by another population; specifically, that of the West subjugating large portions of the non-West, predominantly through means of mass media and commercialism." He mentions that due to the relentless bombardment of Western culture through various sources of media such as Hollywood, aesthetic ideals of Asian nations such as China and Japan have been largely influenced into becoming Westernized.

Such a notion is analogous to and supports the hypothesis that the prevalence of Western values has changed the standards of eye shape and size considered ideal for Japanese beauties in a statistically significant manner. However, the result of this study indicates that the differences in the eye height-to-corneal diameter ratio and the eyebrow to upper lid distance-to-corneal diameter ratio between Meiji *bijin-ga* and modern *bijin-ga* are statistically significant, whereas the differences in the eye width-to-corneal diameter ratio and double-fold frequency are not. Therefore, based on such results alone, we cannot infer that a full-scale change in the aesthetic standards for the eyes of beautiful women has occurred from the Meiji to the modern period. Yet due to a significant difference in the eye height-to-corneal diameter ratio and the eyebrow to upper lid distance-to-corneal diameter ratio and a noticeable upward trend in the double-fold frequency, although not statistically significant, it can be argued that the Japanese standards of beautiful eyes have at least embarked on the path toward Westernization.

The result of the research, which indicates that the eye features depicted in *bijin-ga* changed only partially, also finds some support in the development of Japanese aesthetic eyelid surgery over the years. In 1896, Mikamo [10], a Japanese physician, reported the first cases of an eyelid procedure to make the Japanese eyelid more attractive. He stated that his operation would alter the eyelids to meet what he had concluded to be the "normal" Japanese eyelid and not to create a Caucasian-looking eye. Mikamo's procedure was minimally invasive, using three stitches with silk thread, and focused only on a fold normally found in the Japanese eyelid. Mikamo's publication was followed by a dearth of literature about this procedure, and silence fell for nearly 30 years before another courageous innovator assumed the mantle of advancing aesthetic Asian-eyelid surgery in Japan [2, 8].

Two major events, the Kanto earthquake of 1923 and World War II, physically devastated Japan. Rebuilding assisted by the West produced a Japan resembling the United States and Europe more than the Japan of the 1800s. The temporal gap between Mikamo's work and later techniques demonstrated the emerging need for a surgical means to arrive at a more distant physical ideal.

In 1926, Uchida [11] reported a suture method using catgut. In 1929, Maruo [12] reported the first incisional technique that purposefully deepened the palpebral sulcus by fixing the skin edges to the tarsus. In 1933, Hata [13] reported a suture method using beads to create a 10-mm double eyelid exhibiting a margin found in the Caucasian eyelid but rarely in the Japanese eyelid. In 1939, Hayashi [14] introduced an excisional method modified from the Hotz [15] method for correction of blepharoptosis, in which the orbicular muscle was removed. The development of these procedures suggested a growing acceptance and familiarity with the deep-set and wide aperture of the Caucasian eye [3, 8].

After World War II, the whole country came under the influence of American culture: Americanization arrived. Many Japanese surgeons preferred to create Western eyes in Japanese faces. In the late 1950s and 1960s, the techniques of Fernandez [16] and Uchida [17] popularized a defatting step to remove the excessive supraorbital fat that distinguished the Asian from the Caucasian eyelid. These procedures produced the deep-set eye and removed the fullness of the Japanese eyelid that resulted in a "mildness of expression" so prized in Japanese women during Mikamo's time [3, 8].

However, in 1985, Shirakabe et al. [3] reported that after 1975, the trend in the standardization of the non-Japanese eye features in Japanese faces had been moderated on two counts: the effect of aging on deep-set eyes, which resulted in a sunken appearance, and the standardization of the non-Japanese eye features in the Japanese face. Moreover, these

authors maintained that any eye operation, when used properly, should accentuate the inherent benefits of each eye type while moderating any negative features, and that furthermore, proper caution had to be exercised with regard to the influence of cultural fads and fashions.

Recently, papers emerging from other countries have come to support the opinion of Shirakabe et al. [3]. Chi [18] reported that although most patients desire Westernization of their eyelids, they also desire to maintain their Oriental appearance. Chen et al. [19] also insisted that Asians really do not want to select the height and crease configuration of a Caucasian's or a Westerner's eye. Rather, most Asians who elect to have Asian blepharoplasty want to look like other Asians who have a crease very different from the crease of a Caucasian. In 2011, Chee and Choo [20] reported that Asian blepharoplasty has come to realize that the high lid crease with prominent pretarsal skin show and deep sulci, as seen in Western eyelids, is not as aesthetically pleasing in an Asian patient. The aim of Asian upper lid blepharoplasty is to create a pleasing and permanent upper lid crease that looks natural.

In essence, according to the conclusion drawn by this study and the general development of Japanese aesthetic eyelid surgery over the years, although it is clear that Westernization did in fact have an influence on bringing about changes in the Japanese standards of the beautiful eye, such a fact does not indicate that the Occidental characteristics came to be emulated in their entirety.

Lack of a supratarsal crease (the so-called single eyelid) and the medial epicanthal fold (the so-called Mongolian fold) are the two ethnic characteristics of the Asian upper eyelid [21]. The aesthetic purposes of Asian blepharoplasty are to enhance and create a visually more apparent eyelid opening in terms of both the vertical and the perceived horizontal dimensions of the palpebral fissure size. Therefore, a certain number of Oriental slim eyes need the double-fold operation as well as either epicanthoplasty [22–25] or lateral canthoplasty [26] to lengthen the orbital fissure. Nevertheless, the results of this study indicate that eye height and the eyebrow-to-upper lid distance yield statistically significant differences, whereas eye width does not.

Therefore, although the current trend in Asian blepharoplasty involves the formation of a natural-appearing crease and, when necessary, horizontal lengthening by epicanthoplasty, lateral canthoplasty, or both, the information provided by the eyes depicted in *bijin-ga* indicates a possibility that Japanese patients may not prefer an increase in the horizontal dimension. This, in turn, allows us to conclude that a careful preoperative consultation for lengthening of the orbital fissure may be necessary.

The reason that the eye in particular has been chosen as the subject of the research is that although it would be most

ideal to include other facial features such as the height and angle of the nose and lips, as well as the length and width of the face, this would result in a need to acquire pictures or photographs depicting the subjects from the same distance and the same angle. Unfortunately, most of the faces of the *bijin* depicted in the *bijin-ga* are tilted to one side, rendering adequate numeric measurements of such features impossible. But almost always, one of the eyes can be accurately and effectively measured. Above all, due to the possibility of standardizing the data collected by incorporating the corneal diameter into the calculation, eyes were concluded to be the facial feature that can render the greatest objectivity to the context of this research.

It is true that when a photographer takes an image of his model, he thereby obtains an untainted, true-to-life representation of the person. In contrast, when a painter paints a portrait, he has leeway in making deviations from a purely objective representation of his model. However, in doing so, painters attempt to reflect their respective vision of their ideal in their work. Thus, the painters of *bijin-ga*, or portraits of beauty, depict in their portraits images of women that they respectively believe embody an ideal beauty. Therefore, the manner in which facial features are commonly portrayed in a variety of *bijin-ga* from a particular era indicate the ideal standards of beauty for that period.

Had there actually been beauty contests in the Meiji period and had it been possible to obtain photos of their prize winners, an ideal study involving comparison of Meiji prize winners with their counterparts in modern beauty contests could have been conducted in the course of gathering data reflecting the Japanese standards of beauty in the respective periods. However, such a study is not plausible. Still, even in the report by Mikamo [10] published in 1896, the illustrations were not photos. Instead, they were drawings. Therefore, the author's method of using *bijin-ga* can be considered a very reasonable one for analyzing changes in the Japanese standards for a beautiful eye in the era before the widespread availability of photography.

The fact that the eye height-to-corneal diameter ratio is significantly greater and that the eyebrow to upper lid distance-to-corneal diameter ratio is significantly smaller in the modern *bijin-ga* is well explained by the physiologic phenomenon in which a greater degree of eyelid opening leads to a loss of compensatory action of the forehead or the brow.

Conclusions

The results of the study indicate that the eye height and the eyebrow-to-upper lid distance yield statistically significant differences, and that the eye width and the double-fold

frequency do not. This finding gives support to the notion that Westernization contributed to bringing about changes in Japanese standards of the beautiful eye in the context of *bijin-ga*. However, the fact that the changeover has not occurred in all the categories in question does not indicate that the Occidental characteristics came to be emulated in their entirety.

Acknowledgments This research was supported by Stanford University's Undergraduate Advising & Research (UAR) and the Center for East Asian Studies (CEAS).

References

1. North C (2009) Ukiyo-e prints in the Mike Lyon collection. In: Lyon M (ed) Figuring it out: prints and drawings. Retrieved from http://mlyon.com/wp-content/uploads/beach_museum_exhibition_lettersize.pdf
2. Lam SM (2002) Mikamo's double-eyelid blepharoplasty and the Westernization of Japan. *Arch Facial Plast Surg* 4:201
3. Shirakabe Y, Kinugasa T, Kawata M et al (1985) The double-eyelid operation in Japan: its evolution as related to cultural changes. *Ann Plast Surg* 15:224
4. Yoshimi S (2008) What does "American" mean in postwar Japan? *Nanzan Rev Am Studies* 30:83. Retrieved from <http://www.ic.nanzan-u.ac.jp/AMERICA/kanko/documents/14YOSHIMI.pdf>
5. Yasuhiro S (2009) Genealogy of Bijin-ga. Seigensha Art Publishing, Kyoto
6. Women (2008) PIE Books, Tokyo, Japan
7. *Bijin-ga II* (2009) World Culture Art Co., Ltd., Hidetoshi Kushida, Tokyo, Japan
8. Sergile SL, Obada K (1997) Mikamo's double-eyelid operation: the advent of Japanese aesthetic surgery. *Plast Reconstr Surg* 99:662
9. Frazier C (2006) Dynamic beauty: cultural influences and changing perceptions. *Hohonu J Acad Writing* 4:1. Retrieved from <http://hilo.hawaii.edu/academics/hohonu/writing.php?id=87>
10. Mikamo M (1896) Plastic operation of the eyelid. *J Chugaijish-impo* 17:1197
11. Uchida K (1926) The Uchida method for the double-eyelid operation in 1,523 cases. *Jpn J Ophthalmol* 30:593
12. Maruo M (1929) Plastic reconstruction of a "double eyelid". *Jpn J Clin Ophthalmol* 24:393
13. Hata B (1933) The bead method in the double eyelid operation. *Jpn Rev Clin Ophthalmol* 28:491
14. Hayashi K (1939) The modification of the Hotz method for plastic constructive of a double eyelid. *Jpn Rev Clin Ophthalmol* 34:369
15. Hotz FC (1981) Surgery of the eyelids. In: Wingate RB (ed) *An atlas of ophthalmic surgery*, 3rd edn. Lippincott, Philadelphia, pp 62–198
16. Fernandez LR (1960) Double-eyelid operation in the Oriental of Hawaii. *Plast Reconstr Surg* 25:257
17. Uchida JI (1962) A surgical procedure for blepharoptosis vera and for pseudo-blepharoptosis orientalis. *Br J Plast Surg* 15:271
18. Chi AK (1994) Oriental blepharoplasty: Nonincisional suture technique versus conventional incisional technique. *Facial Plast Surg* 10(1):67
19. Chen W, Khan JA, McCord CD (2004) *Color atlas of cosmetic oculofacial surgery*. Butterworth Heinemann, Oxford, pp 73–107
20. Chee E, Choo CT (2011) Asian blepharoplasty: an overview. *Orbit* 30(1):58
21. Zhao YQ, Luo DA (2010) Modified Y-Y epicanthoplasty with raised medial canthus in the Asian Eyelid. *Arch Facial Plast Surg* 12(4):274
22. Mulliken JB, Hoopes JE (1975) W-epicanthoplasty. *Plast Reconstr Surg* 55:435
23. Lin SD (2000) Correction of the epicanthal fold using the VM-plasty. *Br J Plast Surg* 53:95
24. Park JI (2000) Modified Z-epicanthoplasty in the Asian eyelid. *Arch Facial Plast Surg* 2:43
25. Zhang H, Zhuang H, Yu H et al (2006) A new Z-epicanthoplasty and a concomitant double eyelidplasty in Chinese eyelids. *Plast Reconstr Surg* 118:900
26. Shin YH, Hwang K (2004) Cosmetic lateral canthoplasty. *Aesthetic Plast Surg* 28:317